JFA

The Journal of Frailty & Aging

**9th International Conference
on Frailty & Sarcopenia Research
(ICFSR)**
February 20-22, 2019, Miami – USA

POSTERS

ICFSR
International Conference on
Frailty & Sarcopenia Research
www.icfsr.com

JFA
The Journal of
Frailty & Aging
www.jfrailtyaging.com

9th International Conference
on Frailty & Sarcopenia Research (ICFSR)

February 20-22, 2019, Miami – USA

POSTERS

BIOLOGY OF FRAILTY

P1- CIRCULATING INTERLEUKIN-6 IS ASSOCIATED WITH SKELETAL MUSCLE SIZE, COMPOSITION, CONTRACTILE FUNCTION, AND PHYSICAL PERFORMANCE IN MOBILITY-LIMITED OLDER ADULTS.

Brittany B. Barrett[1], Gregory J. Grosicki[1,2], Davis A. Englund[1], Christine Liu[1], Thomas G. Travison[3], Tommy Cederholm[4], Thomas Gustafsson[5], Kieran F. Reid[1], Roger A. Fielding[1] *((1) Nutrition, Exercise Physiology, and Sarcopenia Laboratory, Jean Mayer USDA Human Nutrition Research Center on Aging, Tufts University, Boston, MA, USA; (2) Department of Health Sciences and Kinesiology, Biodynamics and Human Performance Center, Georgia Southern University (Armstrong Campus), Savannah, GA, USA; (3) Institute for Aging Research, Hebrew Senior Life, Harvard Medical School, Boston, MA, USA; (4) Department of Public Health and Caring Sciences, Clinical Nutrition and Metabolism, Uppsala University, Uppsala, Sweden; (5) Division of Clinical Physiology, Department of Laboratory Medicine, Karolinska Institutet, Stockholm, Sweden)*

Background: Advancing age is characterized by a chronic, low-grade inflammation that has been linked to the progressive loss of skeletal muscle mass and strength. Specifically, elevated levels of the pro-inflammatory cytokine interleukin-6 (IL-6) may mediate these effects. **Objectives:** The aim of the present study was to investigate the relationship between circulating IL-6 and skeletal muscle size, composition (i.e., percent of normal density muscle tissue), contractile function, and physical performance in 99 mobility-limited (Short Physical Performance Battery (SPPB) ≤9) older adults (77±5 y; 45% women). **Methods:** Interleukin-6 was measured in resting blood samples using high sensitivity immunoassay. Lean mass and body composition were assessed via dual-energy x-ray absorptiometry and thigh muscle size and composition were obtained with computed tomography scans. Isokinetic knee extensor strength (60°/s) and power (180°/s) were determined on a Biodex System 3 Dynamometer. Measures of physical function included 400-m walk speed, grip strength, stair climb time, and the SPPB score. Correlations between IL-6 and skeletal muscle variables of interest were analyzed using Spearman rank-order correlation coefficients ($P<0.05$). **Results:** IL-6 was inversely related ($P<0.05$) to appendicular lean mass ($r = -0.208$), thigh muscle composition ($r = -0.201$), strength ($r = -0.311$), power ($r = -0.210$), and specific force ($r = -0.248$), and positively associated with stair climb time ($r = 0.256$; $P<0.05$). Circulating IL-6 was not significantly related to age, sex, or body mass index. **Conclusion:** These results suggest that elevated IL-6 is a proximal determinant of skeletal muscle declines that likely contribute to the reduced mobility status observed in this cohort. Therapeutic strategies designed to attenuate elevations in circulating IL-6 may have positive effects on skeletal muscle health.

P2- SARCOPENIA IS ASSOCIATED WITH WIDESPREAD CHANGES IN THE MUSCLE METHYLOME.

Elie Antoun[1], Emma Garratt[1], Alicja Baczynska[2], Sheila J Barton[3], Philip Titcombe[3], Mark A Burton[1], Leo Westbury[3], Sarah Shaw[3], Richard Dodds[4,5], Holly E Syddall[3], Helen C Roberts[2,6], Avan A Sayer[4,5], Cyrus Cooper[3,6], Harnish P Patel[¶ 2,3,6], Keith M Godfrey[¶,3,6], Karen A Lillycrop [¶ 6,7] *((¶) Joint senior authors; (1) Human Development and Health Academic Unit, Faculty of Medicine, University of Southampton, UK; (2) Academic Geriatric Medicine, Faculty of Medicine, University of Southampton; (3) MRC Lifecourse Epidemiology Unit, University of Southampton, UK; (4) AGE Research Group, Institute of Neuroscience, Newcastle University, UK; (5) NIHR Newcastle Biomedical Research Centre; Newcastle University and Newcastle upon Tyne Hospitals NHS Foundation Trust, UK; (6) NIHR Southampton Biomedical Research Centre, University of Southampton & University Hospital Southampton NHS Foundation Trust, UK; (7) Biological Sciences, University of Southampton, UK)*

Background: Sarcopenia is the age-related loss of muscle mass, strength and function, with worldwide prevalence estimates ranging between 3-30%. Epigenetic processes such as DNA methylation which integrate both genetic and environmental exposures have been suggested to mediate the development of sarcopenia. **Objectives:** This study aimed to test whether differences in the muscle methylome are associated with sarcopenia in older individuals. **Methods:** DNA methylation in vastus lateralis muscle biopsies of 83 male participants (12 with sarcopenia) from the Hertfordshire Sarcopenia Study was investigated using the Infinium HumanMethylation 850K bead Chip with respect to sarcopenia, and the 3 clinical parameters which contribute to the definition of sarcopenia: appendicular lean mass index (ALMi), grip strength and gait speed. DNA methylation data were normalised using BMIQ prior to regression analysis to examine associations between DNA methylation signatures and sarcopenia using a false discovery rate (FDR) of <0.05. Pathway analysis was carried out using STRING and enrichment analysis using BiNGO. **Results:** We found 176 differentially methylated CpGs (dmCpGs) associated with sarcopenia. 71 dmCpGs were associated with ALMI, 23 with gait speed and 49 with grip strength. There was significant overlap between the dmCpGs associated with sarcopenia and ALMI, grip strength and gait speed, although there was no overlap between the dmCpGs associated with grip strength, gait speed or ALMi. The dmCpGs associated with sarcopenia were enriched in pathways associated with oxidative phosphorylation and mitochondrial function, together with pathways associated with skeletal muscle fibre development and function. Furthermore, the genes associated with the dmCpGs were enriched for targets of the histone methyl transferase EZH2. **Conclusion:** These data suggest that differences in DNA methylation may mediate the variability in loss of muscle mass, strength and physical function between individuals during ageing and that the epigenetic signatures associated with sarcopenia might be used to identify those at increased risk of accelerated muscle loss with age.

P3- INTRAMUSCULAR FAT INFILTRATION, MUSCLE STRENGTH AND SEDENTARY TIME IN FRAIL OLDER PERSONS.

Natália Maira da Cruz Alves[1], José Ailton de Oliveira Carneiro[2], Karina Pfrimer[1], Thiago Neves[1], Fernanda Pinheiro Amador dos Santo Pessanha[1], Juliana Cristina Lemos dos Santos Marchesi[1], Tatiane Lopes Pontes[1], Julio Cesar Moriguti[1], Nereida Lima[1], Eduardo Ferriolli[1] *((1) Ribeirao Preto Medical School, University of Sao Paulo, Ribeirao Preto, SP, Brazil; (2) Sowthwest Bahia State University, Jequie, BA, Brazil)*

Background: Sedentary behavior has been shown to be a risk factor for increased intramuscular fat (IMAT). This, in turn, may result in functional losses by negatively influencing muscle strength, a critical component in the maintenance of physical function and mobility. **Objectives:** To compare and verify the association of intramuscular fat infiltration level (IMAT) with the muscle strength and sedentary time of frail older persons. **Methods:** Cross-sectional exploratory study. We evaluated 40 older persons (20 frail (F) and 20 non-frail (NF), aged 65-80 years, classified according to Fried's criteria. The quadriceps IMAT was measured by Nuclear Magnetic Resonance (NMR), isometric muscle strength of the lower limb (knee extension) by an extensor chair integrated with a dynamometry system and the sedentary time was recorded continuously for 7 days using an ActivPAL activity monitor. The Mann Whitney U test was used to compare intramuscular fat infiltration between the groups and the Student's t-test for the other variables. The Spearman Correlation test was used to verify the association of IMAT with muscle strength and sedentary time. **Results:** Frail participants had a higher percentage of IMAT as compared to non-frail (8.27%, 95% CI 4.63 – 16.50 versus 6.90%, 1.20 – 9.60, p = 0.002), lower muscle strength (21.37kgf ± 12.99 versus 43.72kgf ± 28.08, p = 0.003), and longer sedentary time (18.64hrs ± 3.53 versus 16.19hrs ± 2.50, p = 0.016). The IMAT had a moderate negative association with muscle strength in both F (r = -0.47) and NF (r = -0.57) groups and a moderate positive association with sedentary time (r = 0.57) only in the F group. **Conclusion:** The results show that sedentary time may contribute to the increase of intramuscular fat in frail older persons which, in turn, negatively influences muscle strength.

P4- SEARCHING FOR BIOMARKERS AND RISK FACTORS OF FRAILTY IN OLDER ADULTS - PRELIMINARY RESULTS FROM THE BIOFRAIL STUDY.

Armanda Teixeira-Gomes[1,2], Filipa Esteves[1,2], Ana Catarina Sousa[3,4,5], M. Ramiro Pastorinho[3,4,6], Joana Carvalho[7], Vanessa Valdiglesias[1,8], João Paulo Teixeira[1,2], Solange Costa[1,2] *((1) EPIUnit – Instituto de Saúde Pública da Universidade do Porto, Porto, Portugal; (2) Environmental Health Department, National Institute of Health, Porto, Portugal; (3) CICS-UBI, University of Beira Interior, Covilhã, Portugal; (4) NuESA, Faculty of Health Sciences, University of Beira Interior, Covilhã, Portugal; (5) CICECO, Department of Chemistry, University of Aveiro, Aveiro, Portugal; (6) Faculty of Health Sciences, University of Beira Interior, Covilhã, Portugal; (7) Research Center in Physical Activity, Health and Leisure (CIAFEL), Faculty of Sports, University of Porto, Porto, Portugal; (8) DICOMOSA Group, Area of Psychobiology, Department of Psychology, University of A Coruña, A Coruña, Spain)*

Background: Over the last decade, the concept of frailty has been established in geriatrics and gerontology fields as a multidimensional syndrome characterized by loss of function and physiologic reserve, and increased vulnerability to external stressors. Frailty has been identified as the most common condition leading to disability, institutionalization and death in older adults. Moreover, frailty became a theme of growing importance due to its ability to be reversed at certain stages. **Objectives:** The presented data are preliminary results of the BioFrail study that aims to identify new cellular and molecular biomarkers associated with frailty syndrome in older adults and to evaluate the impact of environmental and lifestyle factors on older adult's health. **Methods:** This study was conducted in a group of 61 older adults (>=65 years old), assessed for their frailty status according to Fried's phenotype model. Comet assay was used to assess DNA damage in whole blood and gH2AX assay for H2AX phosphorylation in lymphocytes. Blood samples were also used for the quantification of mercury levels. Key exposures were assessed through the application of a lifetime exposure questionnaire. **Results:** The classification of the study population was 47.5% robust, 49.2% pre-frail and 3.3% frail. No significant differences were found between robust and pre-frail groups regarding DNA damage, H2AX phosphorylation and mercury levels. A significant higher prevalence of second-hand smokers was observed in the pre-frail group when compared to robust. Additionally, a higher prevalence of robust individuals consuming home-produced vegetables was found in comparison with pre-frail. Regarding the effect of exposure-related factors on the studied biomarkers significant differences were observed, namely: increases in H2AX phosphorylation among robust individuals that were former smokers compared with never smokers; and decreases in oxidative DNA damage of robust individuals consuming home-produced vegetables. **Conclusion:** These preliminary results encourage further studies on this matter. Understanding if the way we live(d) or worked can impact the way we age are important questions to be explored.

P5- AORTIC PRESSURE WAVE REFLECTION IS ASSOCIATED WITH MUSCLE STRENGTH AND MASS, BUT NOT WITH GAIT SPEED, IN OLDER ADULTS

Arturo Figueroa[1], Salvador J. Jaime[2], Michael J. Ormsbee[3], Arun Maharaj[1], Justin Mason[4] *((1) Department of Kinesiology and Sport Management, Texas Tech University, Lubbock, TX, USA; (2) Department of Exercise and Sport Science, University of Wisconsin, La Crosse, WI, USA; (3) Department of Nutrition, Food, and Exercise Sciences, Florida State University, Tallahassee, FL, USA; (4) Department of Occupational Therapy, University of Florida, Gainesville, FL, USA)*

Background: Sarcopenia is the age-related loss of muscle mass and strength or exercise performance (gait speed). Low muscle strength and muscle mass have been associated with increased brachial blood pressure (BP) and arterial stiffness (pulse wave velocity, PWV), respectively. Aortic pulse pressure (PP) increases with aging due to increase systolic and decrease diastolic BP due to increased PWV. The age-related increase in aortic PP is mainly induced by an increase in wave reflection (augmentation pressure [AP]), which imposes a high pressure load on the left ventricle. This increased wave reflection predicts future cardiovascular events. **Objectives:** The aim of this study was to examine the associations between aortic wave reflection and sarcopenia. **Methods:** Fifty-one individuals (age: 65-84 years; body mass index [BMI]:18.3-30.4 kg/m2) participated in this cross-sectional study. Aortic BP, wave reflection indices (AP, augmentation index [AIx], and reflection magnitude [RM]), and brachial-ankle PWV (baPWV) were calculated using applanation tonometry. Handgrip strength (HGS) and body composition (appendicular skeletal muscle mass [arms+legs lean mass/BMI= ASMBMI] and body fat percentage

[BF%]) were measured via dynamometry and dual-energy x-ray absorptiometry, respectively. **Results:** HGS and ASMBMI ranged from 8 to 61 kg and 0.51 to 1.14 kg/(kg/m2). AP and AIx were related with HGS (r=-0.47, P<0.01 and r=-0.58, P<0.001) and ASMBMI (r=-0.44, P<0.01and r=-0.58, P<0.001). RM was related with HGS (r=0.48, P<0.001), ASMBMI (r=0.37, P<0.01). Multiple linear regression analysis showed that HGS and ASMBMI were associated with AP (β= -0.47, P<0.01and β= -0.42, P<0.05), AIx (β= -0.59, P<0.01 and β= -0.57, P<0.001), and RM (β= -0.47, P<0.01 and β= -0.36, P<0.05), independent of age and PWV. Gait speed was not associated with aortic wave reflection indices. **Conclusion:** Muscle strength and mass are negatively associated with aortic wave reflection in older adults, independently of age and arterial stiffness. These findings suggest that increases in muscle strength and mass may reduce the risk of cardiovascular events in older adults.

P6- POOR GLYCEMIC CONTROL IN PATIENTS WITH DIABETES AND PREVALENCE OF SARCOPENIA: THE MUSCLES-DM STUDY.

Ken Sugimoto[1], Yasuharu Tabara[2], Hiroshi Ikegami[3], Yasunori Takata[4], Yoshihisa Hiromine[3], Kei Kamide[5], Katsuhiko Kohara[6], Masahiro Fukuda[7], Tomohiro Katsuy[8,9], Haruhiko Osawa[4], Hiromi Rakugi[1] *((1) Department of Geriatric and General Medicine, Osaka University Graduate School of Medicine, Suita, Japan; (2) Center for Genomic Medicine, Kyoto University Graduate School of Medicine, Kyoto, Japan; (3) Department of Endocrinology, Metabolism, and Diabetes, Kindai University Faculty of Medicine, Osaka-Sayama, Japan; (4) Department of Diabetes and Molecular Genetics, Ehime University Graduate School of Medicine, Toon, Japan; (5) Department of Health Promotion Sciences, Division of Health Sciences, Osaka University Graduate School of Medicine, Suita, Japan; (6) Department of Regional Resource Management, Faculty of Collaborative Regional Innovation, Ehime University, Matsuyama, Japan; (7) Fukuda Clinic, Osaka, Japan; (8) Katsuya Clinic, Amagasaki, Japan; (9) Department of Clinical Gene Therapy, Osaka University Graduate School of Medicine, Suita, Japan)*

Background: Most of the previous reports showed that the frequency of sarcopenia was higher in diabetes than in non-diabetes. However, the real-world frequency of sarcopenia and risk factors for sarcopenia in independent ambulatory patients with diabetes have not been fully elucidated yet. **Objectives:** Here, we conducted a multicenter cross-sectional study to clarify the association between the severity of diabetes and sarcopenia in treated patients with diabetes. **Methods:** The study participants consisted of type 2 (n = 746, aged 69.9 years) and type 1 (n = 57, aged 62.7 years) diabetes patients. Sarcopenia was defined as weak grip strength or slow usual gait speed and low skeletal mass index. A multi-omics analysis across 24 different humoral factors was leveraged to extract specific markers for sarcopenia in patients with diabetes. **Results:** Among the type 2 diabetes patients, 52 individuals were diagnosed as having sarcopenia. The frequency of sarcopenia linearly increased with HbA1c level, particularly in lean individuals (HbA1c <6.5%: 7.0%, 6.5~6.9%: 18.5%, 7.0~7.9%: 20.3%, >=8.0%: 26.7%). The linear association was independent of major covariates, including anthropometric factors and duration of diabetes (HbA1c <6.5%: reference; 6.5~6.9%: odds ratio = 4.38, P = 0.030; 7.0~7.9%: 4.29, P = 0.024; >=8.0%: 7.82, P = 0.003). HbA1c was specifically associated with the low skeletal mass index rather than weak grip strength or slow gait speed. The frequencies of sarcopenia (type 2: 5.3%, type 1: 8.8%, P = 0.463) and related indices did not differ significantly in the matched comparison between type 1 and type 2 diabetic patients. No significant association was observed in general populations with better glycemic profiles. The

concentrations of IL-1β and IL-5 was significantly higher in sarcopenia than in non-sarcopenia after adjusted for age, gender, BMI, and HbA1c. **Conclusion:** Poorly controlled older patients with diabetes with smaller body size needs careful attention to the prevention of sarcopenia and hyperglycemia might be one of the main causes of sarcopenia in diabetes. Now we continue the longitudinal study to clarify risk factors of development or worsening of sarcopenia.

P7- FRAILTY AND POTENTIAL BIOMARKERS OF AGING.

Geereddy Bhanuprakash Reddy[1], Tattari Shalini[1], Mudili Sivaprasad[1], Boiroju Naveen Kumar[2] *((1) Department of Biochemistry, National Institute of Nutrition (ICMR), Hyderabad- 500007, India; (2) Department of Statistics, National Institute of Nutrition (ICMR), Hyderabad- 500007, India)*

Background: Aging is not a disease but a biological process and is under environmental and genetic control. Frailty (a biologic or geriatric syndrome) is a major clinical and public health concern among older adults. Frailty is a multidimensional process result from the interaction of different pathways including multiple anabolic deficiency, oxidative stress, inflammation, and poor nutritional status. Early detection of frailty status is crucial to prevent or even revert its clinical consequences. Hence, the use of biomarkers would help to characterize the biological age, and better predict the functional capability. **Objectives:** To investigate the status of biomarkers of aging and their association with frailty. **Methods:** This community-based cross-sectional study involved 125 older adults aged 60 years and above residing in Hyderabad city of Telangana state, India. Anthropometric parameters were measured and clinical parameters were analyzed. Plasma levels of advanced glycation end products (AGEs) were assessed cumulatively as AGE-index by spectrofluorometry. Aldose reductase (ALR2) activity in red blood cells (RBC), plasma protein carbonyls were analyzed by spectrophotometer; sorbitol levels in RBC by spectrofluorometer; plasma homocysteine by HPLC; and interleukin (IL-6), insulin-like growth factor (IGF-1), C-reactive protein (CRP) and 8-hydroxy-2 ´-deoxyguanosine (8-OHdG) by ELISA. **Results:** The median (P25-P75) age of the participants was 64.0 (62.0-70.0). Median age and urinary albumin to creatinine ratio was significantly higher, whereas hemoglobin (Hb) was significantly lower in the frail group compared to the non-frail group. The prevalence of frailty was higher in anemic (37%) subjects than the subjects having normal (20%) Hb levels. Median values of ALR2, AGI and IL-6, were significantly higher, while IGF-1 was significantly lower in the frail group compared to the non-frail group. Interestingly, 64% of frail individuals had hyperhomocysteinemia (>15 μmol/L). **Conclusion:** These results suggest that biomarkers of aging are associated with frailty and a better understanding of these markers to adverse outcomes could inform multidimensional assessment and intervention to prevent or manage dependence in frail older adults.

P8- IRON DYSHOMEOSTASIS IS ASSOCIATED WITH MITOCHONDRIAL DNA ALTERATIONS IN SKELETAL MUSCLE OF SEDENTARY HIGH- AND LOW-FUNCTIONING OLDER PEOPLE. Anna Picca[1,2], Riccardo Calvani[1,2], Robert Mankowski[3], Hélio José Coelho-Junior[1,4], Roberto Falco[1,2], Roberto Bernabei[1,2], Christiaan Leeuwenburgh[3], Emanuele Marzetti[1,2] *((1) Università Cattolica del Sacro Cuore, Teaching Hospital "Agostino Gemelli", Rome, Italy; (2) Fondazione Policlinico Universitario A. Gemelli, Rome, Italy; (3) Department of Aging and Geriatric Research, Institute on Aging, Division of Biology of Aging, University of Florida, Gainesville, FL, USA; (4) University of Campinas, Campinas-SP, Brazil)*

Background: Muscle atrophy is caused by several biological disarrangements including mitochondrial dysfunction, altered proteostasis, hormonal deregulation and little renewal capacity of skeletal muscle fibers. However, the primary mechanisms triggering muscle wasting are yet unclear. Altered iron buffering has been found in rodent models of disuse muscle atrophy and is thought to contribute to muscle aging. A link between mitochondrial dysfunction and iron imbalance in late life has been hypothesized. However human studies on the topic are sparse. **Objectives:** We sought to assess whether age-related mitochondrial alterations (mtDNA content variations and damage) are associated with iron perturbation and physical function late in life. Methods: A total of 34 participants (11 young and 23 old men and women) were included. Older adults were classified as low functioning (LF=9) or high functioning (HF=14) based on their Short Physical Performance Battery summary score (≤ 7 or ≥ 11). Percutaneous muscle biopsies were obtained from the vastus lateralis of all participants and processed to isolate purified total proteins and DNA. Total iron content, expression of transferrin receptor 1 (TFR1), and iron transporters ZIP8 and 14 and their association with variations of mtDNA content and damage were determined. **Results:** Participants did not differ for gender and body mass index across groups or for age between HF and LF older participants. The thigh muscle size was lower ($P < 0.05$) in LF participants compared with HF. Total iron levels showed an age-related increase regardless of functional status of older enrollees. Though, the expression of TFR1, ZIP8 and ZIP14 was decreased in LF participants. The content of mtDNA was lower in older persons relative to their younger counterparts, whereas mtDNA damaged followed an opposite pattern. Neither mtDNA content nor damage differed between HF and LF participants. **Conclusion:** The age-related accumulation of iron in skeletal muscle and the decreased levels of iron transporters TFR1, ZIP4 and ZIP 8 in the LF group suggest that iron dysregulation may impact the functional status. Muscle iron metabolism may therefore represent a novel target for intervention.

P9- NOVEL ROLE OF CARDIAC TROPONIN T IN SKELETAL MUSCLE AGING. Xin Feng[1], Juan Dong[2], Bo Feng[2], Tan Zhang[2] *((1) Departments of Otolaryngology, Wake Forest School of Medicine, Winston-Salem, NC, USA; (2) Departments of Internal Medicine, Section on Gerontology and Geriatric Medicine, Wake Forest School of Medicine, Winston-Salem, NC, USA)*

Backgrounds: Troponin T (TnT) is known to mediate the interaction between the Troponin complex and tropomyosin, which is essential for muscle contraction. Cardiac Troponin T (cTnT), the heart muscle-specific TnT isoform, is expressed in skeletal muscle after acute sciatic nerve denervation and in various neuromuscular diseases, but its role in skeletal muscle is largely unknown. We have recently reported that cTnT at the neuromuscular junction (NMJ) increases with aging in fast-twitch muscle fiber and regulates NMJ dysfunction through differential regulation of protein kinase A (PKA) regulatory subunits RIα and RIIα. Given that cTnT, as a novel A kinase anchoring protein, may also interact with PKC, while both PKA and PKC could activate caspases, which are known to play apoptotic and/ or non-apoptotic roles at NMJ for synapse refinement, we hypothesize that cTnT-PKA/PKC-caspase signaling may play important role at NMJ in aging muscle. **Objectives:** We aim to examine the cTnT-PKA/PKC-caspase signaling pathway at the NMJ in aging mouse skeletal muscle. **Methods:** Young and old C57BL/6 mice skeletal muscle and cultured C2C12 myotubes were used for NMJ analysis. Nicotinic acetylcholine receptor (nAChR) pulldown was performed to quantitate total nAChR amount and co-immunoprecipitation and immunoblot were used for protein expression and interaction analysis. Immunofluorescence microscopy imaging was performed for subcellular localization determination. **Results:** We found that in aging mouse fast skeletal muscle, PKA-RIIβ, PKA-RIIβ, and PKCα are all enriched at NMJ. In addition, enrichment of cleaved caspase-3 and -9 were also observed at NMJ in aging fast skeletal muscle. Importantly, the enrichment of those molecules at NMJ coincides with enrichment of cTnT. We further found that total nAChR amount and its binding to PKA-RIα decrease with aging, while cTnT binding with PKA-RIIα increases in old fast skeletal muscle. In addition, transient overexpression of cTnT in fast skeletal muscle or in cultured C2C12 myotubes lead to decreased NMJ or nAChR cluster size, respectively. **Conclusion:** Our findings indicate that cTnT-PKA/PKC-caspase signaling may play important role in regulating NMJ structural and functional deterioration with aging in fast-twitch muscle fibers.

BIOMARKERS AND IMAGING

P10- SERUM CREATININE AND CYSTATIN C BASED INDEX CAN BE A SCREENING BIOMARKER FOR SARCOPENIA IN OLDER POPULATION. Sunny Singhal[1], Sumitabh Singh[1], Srikant Mohta[2], Aparajit Ballav Dey[1], Avinash Chakrawarty[1] *((1) Department of Geriatric Medicine, All India Institute of Medical Sciences, Delhi, India; (2) Department of Internal Medicine, All India Institute of Medical Sciences, Delhi, India)*

Background: Sarcopenia as defined by loss of muscle mass and function has an increased risk of falls, disability, and mortality. In spite of this importance, as of now there is no simple and reliable screening tool for community and outpatient settings to assess sarcopenia. **Objectives:** To use an index based on serum creatinine and cystatin C to screen sarcopenia in elderly outpatients. **Methods:** 100 subjects above the age of 65 years were recruited from the outpatient department of Geriatric medicine of a tertiary care institute in India from July to October 2017. Muscle mass, muscle strength and physical performance was measured by DEXA scan, hand held dynamometer and 4 m gait speed respectively. Sarcopenia was identified using Asian working group of sarcopenia (AWGS) criteria. Serum creatinine and cystatin C was measured for all subjects. Serum creatinine/cystatin C ratio and biochemical total body muscle mass (TBMM) was calculated and its association was checked with sarcopenia. **Results:** The mean age of the subjects was 72.5 ± 6.4 years. Among the 100 subjects, 69% were male and 31% were 75 years or above. Based on the Asian Working Group criteria, the prevalence of sarcopenia was 53%. Mean serum creatinine/cystatin C ratio was 74.79 ± 24.91. It was not significantly associated with sarcopenia. Mean biochemical TBMM of subjects was 36.40 ± 7.88. The lower value of biochemical TBMM was significantly associated with an increased risk of sarcopenia. Cut off of 33.16 was 80.43% sensitive and 50.94% specific in identification of sarcopenia [Odds Ratio (OR) – 4.604, 95% Confidence Interval

(CI) – 1.86-11.40, p <0.001]. **Conclusion:** Out of the 2 indices, only low biochemical total body muscle mass is significantly associated with sarcopenia and a value of less than 33.16 can be used to screen sarcopenia in older people.

P11- IDENTIFICATION AND CHARACTERIZATION OF NEW BIOCHEMICAL MARKERS FOR SARCOPENIA.

Y Henrotin[1,2,3], B Cordier[1], A Labasse[1], S Vander Poelen[1], C Boileau[1], B Costes[1], K Lhote[1] *((1) Artialis Group SA, GIGA Tower, Avenue de l'hôpital, Liège, Belgium; (2) Bone and Cartilage Research Unit, University of Liège, Arthropôle, Institute of Pathology, Sart-Tilman, Liège, Belgium ; (3) Department of Physical Therapy and Rehabilitation, VIVALIA, Princess Paola Hospital, Marche-en-Famenne, Belgium)*

Background: Originally described as an age-dependent loss of muscles mass, sarcopenia is currently defined as a muscle disease associated with low muscle strength as principal determinant and low muscle quantity (mass) and quality as secondary parameters. Several methods exist to objectively measure muscle strength and mass, but globally these methods are burdensome for patients and none of these are sensitive, specific or reliable enough to diagnose and/or prognose sarcopenia. **Objectives:** The objective of this study is to identify soluble biochemical markers of sarcopenia by proteomic analysis of serum. **Methods:** Patients were included and classified according to the EWGSOP definition including handgrip strength test, walking speed and dual energy X-ray absorptiometry. Nineteen patients non-sarcopenic patients (control group, mean age 77.5 min. 68- max.90) and 20 sarcopenic patients with sarcopenia (sarcopenia group, mean age 83.2 min. 70- max.92) were enrolled. As the first-line, the serum of 10 female from the sarcopenia group and of 10 female from the control group were submitted to proteomic analysis by MS/MS spectrometry to identify potential biomarkers. Perseus software was used to compare the protein expression levels between the two groups and to calculate the attached statistical significance (p-value). Biomarkers were next characterized on the entire cohort samples by immunoassay (western blot and ELISA assay). **Results:** Three proteins were detected with higher expression level in the sarcopenia group than in the control group by MS analysis: cathepsin D (2-fold increase, p≤0.001); aldolase A (4.2-fold increase, p≤0.001) and alarmin S100A8 (1.7-fold increase, p≤0.05). The increase in cathepsin D concentration in serum was next confirmed by ELISA assay. Furthermore, western blot experiments showed an enhanced detection of the non-mature form of Cathepsin D and of S100A8 in sarcopenia patients. Regarding Aldolase A, the full length protein was not differentially detected by ELISA or western blot but specific fragments of it were measured as differentially expressed. **Conclusion:** This study demonstrated for the first time that the non-mature cathepsin D, the alarmin S100A8 and specific fragments of Aldolase A are promising measurable biomarkers to diagnose and monitor the sarcopenia in subjects who do not have any underlying sarcopenic disease.

P12- SERUM FREE TESTOSTERONE LEVELS ARE POSITIVELY CORRELATED WITH SKELETAL MUSCLE MASS IN OLDER WOMEN OVER 75 YEARS OLD

Mitsutaka Yakabe[1], Sumito Ogawa[1], Taro Kojima[1], Taisaku Okumura[2], Shinya Takiyama[2], Yumi Umeda-Kameyama[1], Masahiro Akishita[1] *((1) Department of Geriatric medicine, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan; (2) Benesse Style Care Co., Ltd., Tokyo, Japan)*

Background: Low serum testosterone levels have been suggested to contribute to sarcopenia in elderly men. In elderly women, however,

the role of androgens in skeletal muscles are not fully understood. **Objectives:** The present study examined the relationship between serum androgen levels and skeletal muscle mass in Japanese women over 75 years old. **Methods:** Seventy-six women were recruited from private nursing homes in Tokyo. Serum free testosterone (FT), total testosterone (TT) and dehydroepiandrosterone-S (DHEA-S) levels were measured. The skeletal muscle index (SMI) was calculated by using bioimpedance analysis. The grip strength and Barthel index score were also measured. **Results:** Serum FT levels were significantly correlated with SMI, but serum levels of TT and DHEA-S were not associated with SMI. SMI was significantly higher in the group with high serum FT levels (>=1.2 pg/mL) than in the groups with middle or low serum FT levels. The correlation was still significant after adjusting for age and body mass index in a multiple linear regression analysis. **Conclusion:** Serum FT levels are related to skeletal muscle mass in women over 75 and could be a marker for sarcopenia.

P13- DIAGNOSTIC VALIDITY OF BIOCHEMICAL MARKERS FOR THE DIAGNOSIS OF SARCOPENIA IN ADULTS. SYSTEMATIC REVIEW

R Juan C. Galvis, Javier A. Velásquez, José F. Camargo Velandia *(Fundación Universitaria de Ciencias de la Salud, Bogota, Columbia*

Background: Sarcopenia is a clinical entity characterized by decreased muscle mass, loss of strength and major secondary. Given its high impact on health and costs in the systems associated with this condition, as has been reported in different studies and in the increasing recognition of the entity, it is required for the elderly to understand them, as well as optimizing the diagnostic approach and therapeutic to improve patient care. In the present study, the diagnostic accuracy of testosterone, growth hormone, insulin-like growth factor-1 (IGF-1), cortisol, myostatin, interleukin-6 (IL-6), vitamin D (25-hydroxy-vitamin D) is evaluated.) as biological markers for the detection of sarcopenia in adults **Objectives:** To assess the diagnostic accuracy of testosterone, growth hormone, insulin-like growth factor-1 (IGF-1), cortisol, myostatin, Interleukin 6, 25-hydroxy-vitamin D, as biomarkers for the detection of Sarcopenia. **Methods:** A systematic review was performed, using free language, synonyms and orthographic variations ((sarcopenia) AND Diagnosis, (sarcopenia) AND Muscle Weakness, (Muscle Strength) AND sarcopenia, (Muscle Strength Dynamometer) AND sarcopenia, (sarcopenia) AND handgrip, (sarcopenia) AND Biomarkers) in different databases, (MEDLINE (Vía pubmed), Cochrane Library (Via Willey), LILACS (Bireme), EMBASE and Google Scholar, as well as in gray literature sources (Aggresive Research Intelligence Facility (ARIF) , Database of Abstracts of Reviews of Effects (DARE), Health Technology Assessments Database (HTA Database)) and consultation of experts Data were extracted from articles that included the following selection criteria: observational studies (cross section, cases and controls) and cohort) without restriction of date (until the date of consultation) or publication status and in the languages: English, Spanish, French, Portuguese or Italian that include older patients than 50. The risk of bias was assessed with the QUADAS-2 tool. We sought to extract data from biochemical markers, which serve as a diagnostic or prognostic test for Sarcopenia **Results:** With regard to the decrease in vitamin D and according to the data collected in this review, we can say that they can act as a risk factor to be diagnosed with sarcopenia (if we define it as a decrease in muscle mass and the strength of grasp), however there is no.Respect to the PCR, the included studies show inconsistent results, since in one of them there is no evidence of any relationship with the onset of sarcopenia, however, in a meta-analysis in 2011, a possible The relationship with the onset of sarcopenia is consistent with what was proposed by Scharpp in 2006, who mentions that an

increase in CRP would increase the risk of muscle loss. However, we believe that CRP can not be classified as a diagnostic and biological prognostic factor for sarcopenia, due to the inconsistency of the findings and the low statistical power of the few studies that show some type of relationship. The evidence that exists between TNF and the diagnosis of sarcopenia, shows an association with the reduction of muscle mass and muscle strength, however, we can not affirm a cause-effect relationship with a statistical force, since it was only found a cross-sectional study. **Conclusion:** Through the search of current literature of sarcopenia, it can be seen how the definition of it, can vary depending on the researcher and its study objective, currently having definitions such as the one proposed by EWGSOP (2), Rosemberg (1), among others. Therefore, the heterogeneity and methodology used in the different articles prevent a meta-analysis of the systematic review carried out, being consistent with the findings given by the meta-analysis published in 2012 by Beyer (37). In addition, reference values are not found to be able to say that a biomarker can be used with criteria of sensitivity and specified diagnosis, independent of the definitions used for sarcopenia.

P14- DIAGNOSING SARCOPENIA AT THE POINT OF IMAGING CARE: PROSPECTIVE INTEGRATION OF FUNCTIONAL AND OPPORTUNISTIC CT DATA

Patrick M. Kortebein[1,2], Anahit Petrosyan[2], Praman Fuangfa[2], Lawrence Yao[3], John Brock[2], Leon Lenchik[4], Robert D. Boutin[2] *((1) VA Mather, Sacramento, CA, USA; (2) University of California Davis, School of Medicine, Sacramento, CA, USA; (3) National Institutes of Health (NIH), Bethesda, MD, USA; (4) Wake Forest University School of Medicine, Winston-Salem, NC, USA)*

Background: Identification of individuals with sarcopenia can be challenging in clinical practice; contributing factors include time constraints, lack of testing equipment, and more urgent medical conditions. **Objectives:** In order to expand the potential diagnostic pool of patients, we examined the feasibility and safety of diagnosing sarcopenia at the point of care in the Radiology department. **Methods:** Consecutive patients > 65 years of age undergoing clinical PET-CT scans were prospectively evaluated. Physical function evaluation included: [a] SARC-F questionnaire, [b] Frailty Risk Assessment (FRAIL scale), [c] grip strength, and [d] gait speed. CT evaluation of muscle was performed opportunistically at the T12 level, yielding two metrics: skeletal muscle density (SMD, in HU) and skeletal muscle index (SMI, muscle area in cm2/patient height in m2). Sarcopenia was classified into three stages according to the modified EWGSOP criteria (grip strength <26 kg for men and <16 kg for women; gait speed <0.8m/s). Functional and imaging metrics were compared using Spearman correlations. **Results:** 92 patients (45 M, 47 F; mean age, 74.6 +/-5.8) completed the clinical assessment. Functional evaluations took 3.5-6 minutes to complete with no adverse events. Positive screening results by individual measures were: SARC-F (21/92, 23%), FRAIL (32/92, 35%), grip strength (19/92, 21%), gait speed (11/92, 12%), SMD (59/92, 64%), SMI (38/92, 41.3%). SMD was significantly correlated with SARC-F, FRAIL, grip strength, and gait speed (R=-0.36, p<0.001; R=-0.35, p<0.001; R=0.50, p<0.0001; R=0.44, p<0.0001, respectively). SMI was significantly correlated only with grip strength (R=0.29, p<0.01). Based on SMD, the group incidences of pre-sarcopenia, sarcopenia, and severe sarcopenia were 27.2%, 10.9%, and 2.2%; based on SMI, these incidences were 35.9%, 25.0%, and 2.2%, respectively. **Conclusion:** Prospective collection of physical function data and CT muscle mass and muscle density data is both feasible and safe. Such an integrated approach allows the diagnosis of sarcopenia to be established in Radiology departments.

P15- A SYSTEMATIC REVIEW OF THE SECRETOME OF SKELETAL MUSCLE CELLS

Antoine Florin[1], Cécile Lambert[1], Christelle Sanchez[1], Ali Mobasheri[4,5], Yves Henrotin[1,2,3] *((1) Bone and Cartilage Research Unit, Arthropôle Liège, University of Liège, CHU Sart-Tilman, Belgium; (2) Department of Physical Therapy and Rehabilitation, Princess Paola Hospital, Vivalia, Marche-en-Famenne, Belgium; (3) Artialis S.A., Tour Giga, level 3, CHU Sart-Tilman, Liège, Belgium; (4) Department of Regenerative Medicine, State Research Institute Centre for Innovative Medicine, Vilnius, Lithuania; (5) Arthritis Research UK Centre for Sport, Exercise and Osteoarthritis, Queen's Medical Centre, Nottingham, UK)*

Background: In addition to postural retention, locomotion, metabolic regulation, energy production and consumption skeletal muscle also functions as an active endocrine organ that communicates with other body systems through secreted proteins in an auto-, para- or endocrine manner. These proteins are called myokines and mediate a diverse array of functions including metabolic regulation, inflammatory processes, angiogenesis and myogenesis. **Objectives:** Proteomic studies of the secretome of skeletal muscle cells will help to understand the processes that govern the synthesis and organization of skeletal muscle. In this review, we have summarized recent mass-spectrometry based proteomics discoveries of skeletal muscle cells in response to disease, exercise or metabolic stress. **Methods:** A literature search was performed in the Pubmed/Medline and Scopus electronic databases, focusing on articles published between July 2004 and May 2018. Only papers published in English and reporting the analysis of the secretome of isolated skeletal muscle myoblasts or of skeletal muscle explants of all species by mass spectrometry were included. **Results:** A total of 17 papers were identified and analyzed. Published research included comparative analysis of differentially expressed proteins between healthy and unhealthy (Duchenne muscular dystrophy and insulin-resistant cells) muscle cells and comparison of the secretome of skeletal muscle cells during myogenesis and after insulin stimulation or exercising. The proteins were separated into several categories (extracellular matrix, growth factors and cytokines, enzymes, enzymatic inhibitors, cytoskeletal and miscellaneous proteins) and their differential secretion was compared and important differences were highlighted. In total, 288 proteins were listed in this systematic review as being present in the secretome of muscle cells. Among them, 11 proteins were differentially regulated by physical exercise (all upregulated), 28 during myogenesis (3 up- and 25 downregulated), 27 by insulin stimulation (14 up- and 13 downregulated) and finally 164 proteins secreted by insulin-resistant muscle cells (20 up- and 144 downregulated). **Conclusion:** This systematic review of the secretome of skeletal muscle cell in health and diseases provides a comprehensive overview of the most regulated myokines in pathologecal conditions. These myokines may be therapeutic targets or biochemical markers of muscle diseases.

P16- ASSESSMENT OF VISCERAL ADIPOSE TISSUE BY MRI AND BIA.

Alexandra Grimm[1], Andreas Friedberger[1], Wolfgang Kemmler[1], Simon von Stengel[1], Klaus Engelke[1,2] *((1) University of Erlangen-Nürnberg and University Hospital; (2) Department of Medicine 3, Erlangen, Germany)*

Background: Visceral adipose tissue is a risk factor for diseases, such as cancer, stroke or heart failure. Magnetic resonance imaging (MRI) techniques can be used to determine spatial distribution and fat content of the visceral region but are more complicated and less cost effective than bioelectrical impedance techniques (BIA). **Objectives:** To compare MRI Dixon techniques with BIA to quantify abdominal

and visceral soft tissue components. **Methods:** 38 elderly men (G1: 76±4y) of the epidemiological sarcopenic obesity study FranSO and 25 young healthy men (G2: 28±3y) participated in the study. A stack of 12 3.5 mm thick slices centered at the L2-L3 junction was acquired with 2pt gradient echo Dixon MRI (3T MR Skyrafit, Siemens, Germany). Volume (Vol) in cm3 and fat fraction (FF) in ‰ of adipose tissue were determined for the visceral (vis) and for the complete abdominl (abd) region covered by the MR scan. With multi-frequency BIA (InBody770, InBody, Seoul, South Korea) abdominal fat mass (FM) in kg and vis-ceral fat area (FA) in cm2 were obtained. **Results:** Analyses (r2), slope and standard error of the estimate (SEE)) of linear regressions among the various measurements are shown in the table separately for G1 and G2. For BIA but not for MRI correlations between visceral and abdominal measures were high (table rows 1 - 3). Correlations between MRI abdominal volume with visceral or abdominal BIA measurements were similar (rows 5 and 6). Visceral BIA measures correlated higher with MRI abdominal than with MRI visceral FF (row 6 -7). MRI results showed that fat fraction differences in the younger population (G2) were 2.5 times higher in the abdominal compared to the visceral compartment, i.e. were mostly caused by differences in the subcutaneous adipose tissue, while in the older group differences in abdominal and visceral FF were similar.

n Parameter 1 | Parameter 2 | r2 for G1 / G2 | SEE [%] for G1 / G2 | Slope for G1 / G2

1 BIA FM abd | BIA FA vis | 0.95 / 0.97 | 5.2 / 7.7 | 0.09 / 0.12
2 MRI Vol abd | MRI Vol vis | 0.65 / 0.68 | 12 / 20 | 0.95 / 1.92
3 MRI FF abd | MRI FF vis | 0.65 / 0.66 | 5.6 / 16 | 0.98 / 2.46
4 BIA FM abd | MRI Vol abd | 0.54 / 0.44 | 16 / 35 | 0.0059 / 0.0068
5 BIA FA vis | MRI Vol abd | 0.48 / 0.38 | 20 / 38 | 0.059 / 0.053
6 BIA FA vis | MRI FF abd | 0.24 / 0.53 | 24 / 33 | 0.27 / 0.16
7 BIA FA vis | MRI FF vis | 0.12 / 0.24 | 26 / 42 | 0.24 / 0.33

FM: fat mass, FA: fat area, FF: fat fraction, abd: abdominal, vis visceral

Conclusion: Visceral fat area as measured by InBody 770 BIA were more representative for abdominal fat fraction than for visceral fat fraction and did not add information to the BIA fat mass of the abdomen. MRI FF measures best discriminated differences of abdominal and visceral compartments

P17- ON THE DEFINITION OF SARCOPENIA IN THE PRESENCE OF AGING AND OBESITY. Jennifer Linge, Olof Dahlqvist Leinhard *(AMRA Medical AB, Linköping, Sweden)*

Background: Sarcopenia is characterized by progressive loss of muscle mass and function. Low muscle mass is commonly detected by estimating appendicular lean mass (ALM) using Dual-energy X-ray absorptiometry (DXA). A proper adjustment of ALM is debated due to challenges in mortality prediction and detection of sarcopenic obesity. Common measures used to identify low function are acquired at low cost but confounded by, e.g., motivation to perform the test, fitness level, neurological causes, pain or arthritis. **Objectives:** To provide basis for individualized sarcopenia thresholds identifying abnormally low muscle volumes and investigate the additional value of assessing muscle fat infiltration (MFI) by utilizing magnetic resonance imaging (MRI). **Methods:** 9615 participants from the UK Biobank imaging substudy were included. Lean muscle volume (LMV) and MFI was quantified using MRI. For each subject, a virtual control group (VCG) was created using sex and body mass index (BMI), and the individual LMVi (LMV/height2) z-score was calculated (LMVi[VCG]). The value of combining muscle volume and fat infiltration was investigated through number of hospital nights, hand grip strength, stair climbing, usual walking pace, and falls. **Results:** R-squared (R2) for LMVi[VCG] and MFI was 0.13/0.17 (females/

males), and the association between LMVi and BMI (R2=0.663) was normalized through LMVi[VCG] (R2=0.007). Age was negatively associated with LMVi[VCG] (average 5-year difference: -0.20 standard deviations from mean[VCG]), and positively associated with MFI (average 5-year difference: 0.40 pp). The 5-year effect size of LMVi was ~1.9 times higher than that of ALMi, maintained for LMVi[VCG], but highest for MFI. Number of hospital nights, low hand grip strength, slow walking pace, and no stair climbing was positively associated with MFI (all p<0.05) and negatively associated with LMVi[VCG] (all p<0.01). Falls were positively associated with MFI (p<0.01), but not significantly associated with LMVi[VCG]. For all functional outcomes, LMVi[VCG] and MFI combined, resulted in highest diagnostic performance. **Conclusion:** LMVi[VCG] allowed BMI invariant sarcopenia detection, enabling muscle specific sarcopenia assessment within overweight and obesity. 3D-volumetric MRI-assessed LMV provides a better description of the relation to age as compared to DXA-assessed ALM. Further, combining MFI and LMVi[VCG] improves the functional link between imaging biomarkers and outcome, opening up the possibility for objective sarcopenia assessment.

P18- ASSOCIATIONS OF 3-METHYLHISTIDINE WITH FRAILTY STATUS IN THE FRAILOMIC INITIATIVE.

Bastian Kochlik[1,2], Karine Pérès[3], Catherine Féart[3], David Gomez-Cabrero[4], Leocadio Rodriguez-Manas[5], Tilman Grune[1,2,6,7], Daniela Weber [1,2] on behalf of the FRAILOMIC Initiative *((1) Department of Molecular Toxicology, German Institute of Human Nutrition Potsdam-Rehbruecke (DIfE), Nuthetal, Germany; (2) NutriAct-Competence Cluster Nutrition Research Berlin-Potsdam, Nuthetal, Germany; (3) Inserm, Bordeaux Population Health Research Center, UMR 1219, University Bordeaux, 33000 Bordeaux, France; (4) Unit of Computational Medicine, Karolinska Institutet, Stockholm, Sweden; (5) Division of Geriatrics, Hospital Universitario de Getafe, Getafe, Spain; (6) German Center for Diabetes Research (DZD), Munich-Neuherberg, Germany; (7) German Center for Cardiovascular Research (DZHK), Berlin, Germany)*

Background: Frailty is, up to date, mainly diagnosed by physical tests and imaging parameters, however, both approaches are prone to be biased. Therefore, objective and specific biomarkers are needed, that can improve frailty diagnosis and detect e.g. elevated muscle degradation or an unfavorable muscle protein turnover which occur in frailty and sarcopenia. 3-methylhistidine (3-MH; N-tau-methylhistidine) seems to be a suitable biomarker related to muscle protein, thus we hypothesize that 3-MH might support the diagnosis of frailty. **Objectives:** We investigated the association of plasma 3-MH, 3-MH-to-creatinine (3-MH/Crea) and 3-MH-to-GFR (3-MH/GFR; glomerular filtration rate) ratios with the frailty status of people older than 65 years. Additionally, we investigated 1-methylhistidine (1-MH; N-pi-methylhistidine), which is related to meat and fish intake, and GFR, a parameter of kidney function. **Methods:** Plasma 3-MH and 1-MH were measured by UPLC-MS/MS in 360 individuals from two French cohorts (AMI and 3-Cities) of the FRAILOMIC initiative. Participants were classified into robust, pre-frail and frail using Fried's frailty criteria. Associations between biomarker concentrations and frailty status were analyzed by linear and logistic regression models, both stepwise adjusted for several confounders such as anthropometric and (socio-)demographic data, and data on the intake of meat, fish as well as medication. **Results:** Frail participants had significantly higher plasma 3-MH, 3-MH/Crea and 3-MH/GFR ratios than robust individuals and both ratios were significantly positively correlated with frailty status. The likelihood to be frail was significantly higher for every increase in 3-MH quintiles (adjusted odds ratio: 1.31; 95%

confidence interval: 1.03 - 1.68) than being robust. Furthermore, individuals in the highest compared to those in the lower quintiles of plasma 3-MH were more likely to be frail (OR=3.13; 1.31 - 7.44) than robust. Plasma creatinine and 1-MH did not differ between the frailty groups. **Conclusion:** We provide new insights regarding plasma 3-MH in frailty. In two French cohorts we show associations between 3-MH concentrations, 3-MH/Crea and 3-MH/GFR ratios in plasma with frailty status. In addition we implement the 3-MH/GFR ratio as possibility to adjust for the influence of kidney function on plasma 3-MH. However, further studies, especially longitudinal studies are needed to evaluate whether 3-MH can improve the diagnosis of frailty.

P19- SPECIFIC PROFILES OF CIRCULATING MEDIATORS CHARACTERIZE OLDER PERSONS WITH PHYSICAL FRAILTY AND SARCOPENIA: A MULTIBLOCK PLS-DA APPROACH. Riccardo Calvani[1,2], Anna Picca[1,2], Federico Marini[3], Alessandra Biancolillo[3], Jacopo Gervasoni[1,2], Silvia Persichilli[1,2], Aniello Primiano[2], Francesco Landi[1,2], Roberto Bernabei[1,2], Emanuele Marzetti[1,2] *((1) Università Cattolica del Sacro Cuore, Teaching Hospital "Agostino Gemelli", Rome, Italy; (2) Fondazione Policlinico Universitario A. Gemelli, Rome, Italy; (3) Department of Chemistry, 'Sapienza' University of Rome, Rome, Italy)*

Background: Physical frailty and sarcopenia (PF&S) identifies a pre-disability condition that can be diagnosed and monitored in an objective manner. At the same time, the recognition of a clear biological substratum (i.e., muscle atrophy) allows for the search of new biomarkers to be used for detecting and tracking PF&S. Although specific circulating markers have previously been associated with single domains of PF&S, none of them has yet been incorporated into standard practice. Given the complexity of PF&S, the simultaneous analysis of an array of circulating markers may help gain insights in the pathophysiology of PF&S. **Objectives:** We analyzed multiple circulating biomarkers that reflect specific pathophysiological processes directly and/or indirectly linked to muscle aging and its clinical correlates, and develop multivariate statistical models to identify specific biomarkers of PF&S. **Methods:** More than five-hundred persons aged 70+ years were screened. Of these, one-hundred were diagnosed with PF&S. One hundred non-sarcopenic, non-frail persons were enrolled as controls. A panel of 76 serum cytokines, chemokines, growth factors and amino acids was assayed. Multiblock partial least squares discriminant analysis (PLS-DA) was employed to relate levels of circulating analytes with clinical data. **Results:** The PLS-DA model was able to correctly classify more than 90% persons with PF&S and controls. Extracellular heat shock protein 72, myeloperoxidase, P-selectin, platelet-derived growth factor-bb, tumor necrosis factor-alpha and the amino acids aspartic acid, taurine, cystine, alpha amino butyric acid, asparagine, histidine, sarcosine, 3-methyl histidine, methionine were responsible for the separation between PF&S and controls. **Conclusion:** Multivariate modeling of an array of circulating mediators may represent the optimal strategy to identify a set of biomarkers for PF&S. The panel of biomarkers identified will serve for (a) integrating specific biochemical measurements in clinical and research settings, (b) providing hints to the biological pathways leading to functional impairment in old age, (c) identifying novel targets for interventions.

P20- SPECIFIC PATTERNS OF CIRCULATING AMINO ACIDS CHARACTERIZES OLDER PERSONS WITH DIFFERENT TYPES OF FRAILTY. Matteo Tosato[1,2], Riccardo Calvani[1,2], Anna Picca[1,2], Federico Marini[3], Alessandra Biancolillo[3], Jacopo Gervasoni[2], Silvia Persichilli[2], Francesco Landi[1,2], Roberto Bernabei[1,2], Emanuele Marzetti[1,2] *((1) Università Cattolica del Sacro Cuore, Teaching Hospital "Agostino Gemelli", Rome, Italy; (2) Fondazione Policlinico Universitario A. Gemelli, Rome, Italy; (3) Department of Chemistry, 'Sapienza' University of Rome, Rome, Italy)*

Background: Frailty has been defined as a geriatric "multidimensional syndrome characterized by decreased reserve and diminished resistance to stressors," and is often envisioned as a pre-disability condition. Several candidate biomarkers of frailty have been proposed but a gold standard for supporting diagnosis, facilitating tracking and assisting in clinical and therapeutic decision-making is still missing. Dietary protein intake and circulating amino acids play a pivotal role in muscle plasticity and trophism, but also modulate several biological processes (including inflammation, insulin sensitivity, and redox homeostasis) that may be involved in frailty development. **Objectives:** To characterize the profile of circulating amino acids in older people with different types of frailty (Physical Frailty and Sarcopenia and Frailty Phenotype). **Methods:** We compared the profiles of 37 circulating amino acids and derivatives in two populations of frail older adults in whom frailty was identified according to different operational definitions. We developed multivariate statistical models to identify the patterns of circulating biomolecules characterizing the two populations. Ninety-eight older persons aged 70+ were included in the analysis. Partial least squares-discriminant analysis (PLS-DA) was employed to explore the relationship among the measured analytes and the conditions of interest. Double cross-validation procedures were used to validate the predictive ability of the PLS- DA model. **Results:** The prediction power of the model was almost perfect: the proportion of correct classification was 98.2 ± 0.7% with marginal differences depending on the operational definition of frailty adopted. Participants with frailty and sarcopenia showed higher levels of cystine, taurine, aspartic acid, asparagine, and tryptophan, while those with a frailty phenotype had higher levels of arginine, ethanolamine, glutamic acid, 3-methyl hystidine, and ornithine. **Conclusion:** This innovative approach allowed identifying distinct patterns of circulating amino acids and derivatives that characterize older adults with different types of frailty. The dissection of these patterns may provide novel insights into the role played by protein/amino acid perturbations in the disabling cascade and possible new targets for interventions.

EPIDEMIOLOGY

P21- EFFECTS OF MULTIMORBIDITY AND FRAILTY ON FUNCTIONAL DISABILITY IN INDIVIDUALS AGED 80 YEARS OR OLDER. Flávia Silva Arbex Borim[1], Naelly Renata Saraiva Pivetta[1], Anita Liberalesso Neri[1], Ligiana Corona[2], André Fattori[1], Monica Sanches Yassuda[2] *((1) Faculty of Medical Sciences - University of Campinas, Brazil; (2) Faculty of Applied Sciences - University of Campinas, Brazil; (3) School of Arts, Science and Humanities (EACH) - University of São Paulo)*

Background: The high prevalence rates of multimorbidity, frailty and functional disability determine greater susceptibility to adverse outcomes among the elderly. Studies are needed to clarify complex interactions among health problems and identify the associations between these problems and distal, intermediate and proximal

variables to enable the planning of more effective care strategies. **Objectives:** The aim of the present study was to estimate the direct and indirect effects of multimorbidity and frailty on functional disability in individuals aged 80 years or older. **Methods:** A cross-sectional study was conducted with 166 elderly individuals. Multimorbidity was determined by the number of chronic diseases. Frailty was indicated by deficits in the five frailty phenotype criteria. Disability was determined as the need for assistance during the performance of two or more activities of daily living (ADLs). Associations between multimorbiditiy, frailty and functional disability were tested using Path Analysis. **Results:** Women accounted for the majority of the sample (70.5%) and mean age was 83.9 ± 3.6 years. A total of 37.3% had three or more chronic diseases, 32.7% reported requiring assistance for the performance of two or more ADLS and 15.6% were classified as frail. In the path analysis, direct effects were found between sex and the number of chronic diseases (β=0.58); the number of chronic diseases and frailty criteria (β=0.21); and between the number of ADLs on which dependence was determined and age (β=0.10), sex (β=0.59) and frailty criteria (β=0.48). The number of chronic diseases mediated the association between sex and the number of frailty criteria and the number of frailty criteria mediated the association between the number of chronic diseases and functional disability. **Conclusion:** The present study provides evidence of the interactions between multimorbidity, functional disability and frailty. Path analysis enabled the determination of characteristics of the health-illness process in terms of mediation and interaction among elderly individuals.

P22- FRAILTY AND SARCOPENIA AS RISK FACTORS FOR DEATH AMONG BRAZILIAN OLDER ADULTS: A 10 YEAR FOLLOW-UP.

Jair Licio Ferreira Santos, Yeda Aparecida de Oliveira Duarte, Tiago da Silva Alexandre, Alejandra Andrea Roman Lay, Carla Ferreira do Nascimento *(Faculdade de Medicina de Ribeirão Preto - USP, Ribeirao Preto, SSao Paulo, Brazil)*

Background: Frailty and Sarcopenia have been increasingly associated with negative health outcomes. We evaluated survival of elderly people living in São Paulo – Brazil in a 10-year follow-up, considering the presence of frailty and/or sarcopenia at baseline. **Objectives:** To investigate whether frailty, sarcopenia or both conditions togeteher increase the risk of mortality among Brazilian older adults. **Methods:** Data came from the second (2006) and fourth (2015) waves belonging to the Health, Well-being and Aging Study (SABE), a cohort study that began in 2000 with a representative sample of the resident population aged 60 years and over, in the city of São Paulo, Brazil. After baseline, follow-up occurred every five years. Sarcopenia was defined according to the consensus of the European Working Group on Sarcopenia in Older People (EWGSOP) and frailty was assessed according to Fried ́s phenotype. Mortality rates were compared using the Cox regression-based test. Models of Poisson regression were adjusted including age, sex, income and schooling as co-variates. **Results:** Mortality rates (per thousand person years) were: (Non Sarcopenic): 33 (29 – 37) versus (Sarcopenic): 76 (63 – 92); (Non Frail): 26 (22-32) versus (Pre Frail) : 52 (45 – 59) and (Frail):125 (101 – 155). Multivariate analysis showed Incidence Rate Ratios (IRR) as follows: (Sarcopenic): 1.18; (Pre Frail): 1.35; (Frail): 1.67. When considering the combination of both frailty and sarcopenia: (Pre Frail, Non Sarcopenic): 1.42; (Frail, Non Sarcopenic): 1.67; (Non Frail, Sarcopenic): 1.30; (Pre Frail, Sarcopenic): 1.58 and (Frail, Sarcopenic): 2.07. **Conclusion:** Frailty and sarcopenia increased the risk of mortality. This finding highlights the importance of evaluating them in the assessment of elderly health. Both are potentially reversible and their measurements are relatively easy to implement in practice.

P23- SARCOPENIA IS ASSOCIATED WITH FUNCTIONAL CAPACITY, FALLS AND DEPRESSIVE SYMPTOMS IN INDIVIDUALS AGED 80 YEARS OR OLDER FROM A MIDDLE-INCOME COUNTRY.

Flávia Silva Arbex Borim[1], Juliana Carvalho Segato Marincolo[1], Anita Liberalesso Neri[1], Ivan Aprahamian[2], Samila Sathler Tavares Batistoni[3], Monica Sanches Yassuda[3] *((1) Faculty of Medical Sciences - University of Campinas, Brazil; (2) Faculty of Medicine of Jundiaí and Faculty of Medicine - University of São Paulo, Brazil; (3) School of Arts, Science and Humanities (EACH) - University of São Paulo)*

Background: Sarcopenia is a progressive generalized musculoskeletal disorder, which is associated with higher risk of negative health outcomes, such as falls, fractures, functional disability and death. Recently, in both clinical practice and research settings, the SARC-F questionnaire and calf circumference are recommended as first steps or screenings to the identification of sarcopenia. Despite their simplicity, both measures can be associated to adverse outcomes. **Objectives:** Evaluate associations between SARC-F plus calf circumference diameter and functional capacity, falls and depressive symptoms as well as the influence of grip strength and gait velocity on these associations. **Methods:** A cross-sectional study was conducted with 232 community-dwelling individuals aged 80 years or older participating in the FIBRA80+ epidemiological study. The SARC-F was combined with the measurement of calf circumference (CC). The independent variables analyzed were grip strength, gait velocity, depressive symptoms, functional capacity and falls. The association between the variable of interest and the mediating variables grip strength and gait velocity was tested using Path Analysis. **Results:** In the sample, 10.2% had a score of >= 6 on the SARC-F; 61.2% had CC <= 34 cm (men) and 33 cm (women); and 43.9% were classified as sarcopenic based on SARC-F+CC. Direct effects were found in the presence of sarcopenia (SARC-F+CC) and grip strength (β =0.24), functional capacity (β=0.18), falls (β=0.27) and depressive symptoms (β=0.13); grip strength for gait velocity (β=0.20) and falls (β=0.18); and gait velocity for depressive symptoms (β=0.22) and functional capacity (β=0.30). Grip strength mediated the association between sarcopenia (SARC-F+CC) and gait velocity; gait velocity mediated the association between grip strength and depressive symptoms as well as the association between grip strength and functional capacity. **Conclusion:** These findings indicate that sarcopenia, as determined by the SARC-F+CC, exerts a negative impact on falls, functional capacity and depressive symptoms and this effect is increased in the presence of reduced grip strength and slow gait..

P24- EVALUATING COMPONENTS RELEVANT TO RISK SCREENING FOR FRAILTY/MALNUTRITION IN US NATIONAL SURVEYS OF OLDER ADULTS.

Jaime Gahche[1], Mary Weiler[2], Mary Beth Arensberg[2], Johanna T. Dwyer[1,3] *((1) National Institutes of Health, Office of Dietary Supplements; (2) Abbott Nutrition Division of Abbott; (3) Frances Stern Nutrition Center, Tufts Medical Center and Tufts University Schools of Medicine, Friedman School of Nutrition Science and Policy and Jean Mayer USDA Human Nutrition Research Center on Aging)*

Background: In the US with its rapidly increasing older population, older Americans and especially those from low-income minority groups, are at increased risk of frailty (F) and malnutrition (M). Because both F/M impact health/functional outcomes and ultimately intrinsic capacity and healthy aging it is critical to include measures of F/M in national surveys to estimate the prevalence of individuals at risk and monitor them over time. **Objectives:** Identify relevant measures in popular F/M screening tools that are also

present in national surveys sampling older adults. **Methods:** Popular F and M screening tools were evaluated to identify measures that were unique or common to both (9 frailty screening tools and 9 malnutrition screening tools). Unique F screening measures included gait speed, grip strength, balance, activity level, disability, hospitalizations; while unique M screening measures included eating behaviors, stress, food security. Measures common to both F/M screening were body mass index, unintentional weight loss, physical/cognitive functioning, appetite, comorbidities, mental health. We also examined questionnaires and measurements in 7 US national surveys: Medicare Current Beneficiary Survey, National Health and Nutrition Examination Survey, National Health Interview Survey, National Health and Aging Trends Study, National Survey of Older Americans Act Participants, Current Population Survey-Food Security Supplement, and the Medicare Health Outcomes Surveys. Surveys were reviewed to determine which F/M measures were included in collection protocols. **Results:** Of the 7 national surveys, only 2 provided at least 1 physical measurement (i.e., height/weight, grip strength, balance). Most surveys included self-reported data on height/weight, physical functioning, disability, psychological components. Although 6 included questions on food security/food program participation, only 1 collected data on dietary intake. **Conclusion:** Currently national surveys include only limited health measures that can be used to identify F/M risk in older adults. Adding a few simple F/M screening measures such as grip strength, unintentional weight loss, loss of appetite, would allow health professionals to quantify the prevalence of frailty in such national surveys in line with popular screening tools to better estimate those at risk and implement strategies to reduce it as well as provide an opportunity to set national goals/strategies to reduce risk.

P25- PREVALENCE OF SARCOPENIA AMONG PROSTATE CANCER PATIENTS IN KOREA. Kyung Eun Nam, Byung Joo Lee, Min Suk Kang, Joo Hyun Park, Jong In Lee *(Department of Rehabilitation Medicine, Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea)*

Background: Sarcopenia refers to a decrease in skeletal muscle or lean body mass (LBM). Prostate cancer is second most commonly diagnosed cancer in male. The pharmacological suppression of testosterone by androgen deprivation therapies (ADT) has become a mainstay of treatment in prostate cancer patients with or without surgery. Although applying of ADT improves cancer-specific mortality, decline in testosterone leads to a number of side effects, including loss of LBM and increase in fat mass. **Objectives:** The aim of this study is to examine the prevalence of sarcopenia and the effect of ADT on development of sarcopenia in prostate cancer patients. **Methods:** Patients with prostate cancer who had undergone a surgery or ADT had been recruited. Inclusion criteria were 1) Korean male 60-year-old or above, 2) diagnosed with prostate cancer stage I or II (histologically confirmed after undergone radical prostatectomy or had radical radiotherapy) or on current ADT (due to advanced stage of prostate cancer or recurrence of cancer after radical therapy), 3) written informed consent. Exclusion criteria were 1) having treatment within a recent month due to active malignant disease, 2) having bone pain due to bone metastasis or having risk of pathologic fracture, 3) inability to perform 2-minute-walk test, 4) received total knee replacement arthroplasty or total hip replacement arthroplasty, 5) inappropriateness to participate in exercise due to other reasons based on physician's judgement. The sarcopenia was evaluated by using the Asian Working Group for Sarcopenia criteria. **Results:** A total of 86 patients were evaluated. The prevalence of sarcopenia was 12.8% in prostate cancer patients. In subgroup analysis, 6 out of 29

patients (20.7%) in ADT group and 5 out of 57 patients (8.8%) in non ADT group had sarcopenia. The non ADT group showed higher grip strength (p=0.009), skeletal muscle mass index (p=0.019), 2-minute walking distance (p=0.019), and 1 repetition maximum in lower extremity (p=0.016). **Conclusion:** The results suggest that sarcopenia is more prevalent in prostate cancer patients than in general population. ADT has tendency to have an provocative effect on development of sarcopenia. However further study is needed to confirmed the relationship.

P26- EWGSOP 2 VERSUS EWGSOP 1: IMPACT ON THE PREVALENCE OF SARCOPENIA AND ITS OUTCOMES. M Locquet[1], C Beaudart[1], J Petermans[2], JY Reginster[1], O Bruyère[1] *((1) World Health Organization Collaborating Center for Public Health Aspects of Musculoskeletal Health and Ageing, Department of Public Health, Epidemiology and Health Economics, University of Liège, Belgium; (2) Geriatrics Department, CHU of Liège, Belgium)*

Background: In June 2018, we published a manuscript showing that sarcopenia, characterized by the EWGSOP definition (i.e. EWGSOP1), was associated with an increased risk of mortality (doi: 10.1016/j.jamda.2018.06.004). In October 2018, the EWGSOP proposed a new operational definition of sarcopenia (i.e. EWGSOP2). **Objectives:** To compare the prevalence of sarcopenia defined by EWGSOP1 and by EWGSOP2, and to determine the major outcomes associated with each of these definitions. **Methods:** We used data available from the SarcoPhAge (for Sarcopenia and Physical Impairment with Advancing Age) cohort. To characterize sarcopenia, 3 main assessments were performed: the skeletal muscle mass index using DEXA, the muscle strength using hand-dynamometer and the physical performance using SPPB test. According to EWGSOP1, sarcopenia is defined as a low muscle mass (i.e., <5.5kg/m² for women, <7.26kg/m² for men) plus a low grip strength (i.e., <20 kg for women, <30 kg for men) and/or low physical performance (i.e., ≤8points/12). According to EWGSOP2, sarcopenia is characterized by a low grip strength (i.e., <16kg 7for women, <26kg for men) plus a low muscle mass (i.e., <6kg/m² for women, <7kg/m² for men). If low physical performance ((i.e., ≤8points/12) is also present, there is 'severe sarcopenia'. Outcomes were collected yearly during interview or by phone call. Association between sarcopenia and occurrence of outcomes was tested using Cox hazards model or logistic regression with adjustment for covariates known to potentially impact muscle health, including age, sex, BMI, number of comorbidities, number of coprescriptions, nutritional status, and cognitive status. **Results:** 534 subjects were recruited (73.5±6.2 years, 60.5% female). After 3 years, 33 participants were lost to follow-up, so data were available for 501 subjects. According to EWGSOP1, the prevalence of sarcopenia reached 13.6% and, when using the EWGSOP2, 7.4%. Sarcopenia, defined by EWGSOP1, was associated with an increased risk of 3-year mortality (HRadjusted = 2.93 [1.17-7.35]). According to EWGSOP2, this association was no longer significant (HRadjusted = 2.74 [0.98-7.65]), but remained in the same range as observed for EWGSOP1. In the subgroup of subjects with severe sarcopenia, we observed a higher occurrence of death (HRadjusted = 4.50 [1.56-12.98]) and institutionalization (HRadjusted= 5.07 [1.02-25.27]) than in non-sarcopenic individuals. **Conclusion:** The EWGSOP2 definition of sarcopenia appears to decrease its prevalence due to changes in the algorithm and/or the thresholds compared to EWGSOP1. Furthermore, the proposed severity index, based on physical performance assessment, seems to be a determinant of the occurrence of deaths and institutionalizations.

P27- DETERMINANTS AND HEALTH CONSEQUENCES OF A RAPID MUSCLE HEALTH DECLINE IN OLDER ADULTS FROM THE SARCOPHAGE STUDY.

Médéa Locquet[1], Charlotte Beaudart[1], Jean-Louis Croisier[2,3], Jean-Yves Reginster[1], Olivier Bruyère[1,3] *((1) Department of Public Health, Epidemiology and Health Economics, University of Liège, Liège, Belgium; (2) Laboratory of Human Motion Analysis, University of Liège, Liège, Belgium; (3) Department of Rehabilitation and Sport Sciences, University of Liège, Liège, Belgium)*

Background: The determinants and predictive value of a rapid decline of muscle health have been scarcely investigated. **Objectives:** To characterize the muscle health decline of older adults over 1 year and its association with adverse consequences over the 3 following years. **Methods:** The SarcoPhAge cohort follows up 534 older adults to assess health consequences of sarcopenia. Subjects are seen annually and an assessment of muscle mass (DEXA), muscle strength (handheld dynamometer) and physical performance (4-m gait speed) are performed. Outcomes are collected either during annual follow-up visits or by phone. Individual relevant decline of muscle mass, muscle strength and gait speed between baseline and the 1-year follow-up was evaluated using the Edwards-Nunnally index. The association between muscle decline and occurrence of outcomes was tested using logistic regressions. Missing data were handle using multiple imputations. **Results:** 534 subjects were recruited (73.5±6.2 years, 60.5 % women) but during the first year, 7 deaths occurred. Consequently, analyses were performed on 528 subjects. The prevalence of a rapid muscle mass decline was 41.5% (n=219). Subjects presenting a decline of muscle mass had no difference of their demographic or clinical characteristics compared to subjects without decline (all p > 0.05). The prevalence of a rapid decline of muscle strength was 47.3% (n=149). Subjects presenting a decline in muscle strength were more often women (21.2% of male versus 66.0% of male, p=0.02) and had a lower cognitive status (27.6 points versus 28.1 points at the MMSE, p = 0.02). A significant decline in gait speed was observed in 28.2% (n=149) of the whole population. Subjects presenting decline of physical function were older (74.5 years versus 73.0 years, p = 0.01), had lower BMI and cognitive status (25.8 versus 26.8, p = 0.03 and 27.5 points versus 28.0 points at the MMSE, p = 0.04). Over the 3 following years, a rapid decline in muscle mass and strength did not predict the occurrence of falls, fractures and hospitalisations. A rapid decline in gait speed predicted the occurrence of self-reported physical disabilities (adjusted OR = 1.87[1.18-2.96]) as well as deaths (adjusted OR = 2.36 [1.17-4.73]). **Conclusion:** A significant proportion of the older population showed a rapid decline in muscle health, associated with age, sex, BMI and cognitive status. A rapid decline of gait speed predicted the occurrence of 3-year death and disabilities, highlighting the importance of an assessment of gait speed in older subjects.

P28- TRANSFER OF NURSING HOME RESIDENTS TO EMERGENCY DEPARTMENTS : ANALYSIS OF IATROGENY CASES WITHIN FINE COHORT.

A Cambon[2], C McCambridge[1,2], C Cool[2,3,4], E Magre[1,2], S Qassemi[1,2], C Laborde[2], Y Rolland[1,3], A Perrin[1], N Tavassoli[1], C Mathieu[1,2] *((1) Gérontopôle, Centre Hospitalier Universitaire, Toulouse, France; (2) Pôle Pharmacie, Centre Hospitalier Universitaire, Toulouse, France; (3) UMR 1027, INSERM - Université de Toulouse III, Toulouse, France; (4) Service D'Epidémiologie, Centre Hospitalier Universitaire de Toulouse, Toulouse, France)*

Background: The inappropriate and potentially avoidable transfer of nursing home residents to emergency departments has a negative impact on older, fragile or dependent patients and can lead to functional and cognitive decline. Fighting against medicine-related illness is one way to prevent these transfers. **Objectives:** To determine iatrogeny linked to potentially avoidable transfers to emergency departments (PAT) of nursing home residents. **Methods:** A cross-sectional study was realized on the FINE cohort. The FINE study aimed to evaluate factors predisposing nursing home residents to inappropriate transfers towards emergency departments (n=1040). A descriptive analysis was performed to identify potentially inappropriate prescriptions and sub optimal therapies linked to these transfers to emergency departments. For this purpose, tools based on explicit criteria such as the European EU(7)-PIM list or implicit criteria were used. **Results:** Links between iatrogeny and PAT and inappropriate transfers were assumed for 47,5% and 8,1% of nursing home residents respectively. Iatrogeny potentially associated with these transfers was mainly due to psychotropic drugs. There were mainly three classes of drugs involved : anxiolytics (39,3 to 53,2%), antidepressants (36,9 to 41,7%), antipsychotics (25,0 to 32,6%) for cases where transfers were inappropriate or appropriate respectively. The most common type of problem was the presence of drug(s) with an unfavourable benefit-risk ratio mentioned in the European EU(7)-PIM list (65,4% of residents). **Conclusion:** These results show a high percentage of iatrogeny that could be associated with potentially avoidable transfers. This indicates that an efficient intervention must be focused on the optimization of drug prescriptions for primary health care.

P29- AGING AND HEALTH STATUS: HAVE CHILEAN PEOPLE WORST HEALTH STATUS THAN SPANISH PEOPLE? COMPARATIVE RESULTS OF DIABDEM PROJECT.

A Bozanic[1], N Hidalgo-Liberona[2], F Formiga[3] *((1) Medicine and Translational Research, Barcelona University, Barcelona, Spain; (2) Food Science and Nutrition, Barcelona University, Barcelona, Spain; (3) Geriatric Department, Bellvitge Universitary Hospital, Barcelona University, Barcelona, Spain)*

Background: Is well known that aging is a worldwide challenge. In 2050, it is estimated Chile will be the oldest country in Latin America and Spain will be the second oldest country around the world. In this context, it is expected an increase in chronic no communicable diseases like type 2 Diabetes Mellitus (T2DM) and dementia. Previous studies have been shown an association between T2DM and cognitive disorders. The DIABDEM Project will determinate the prevalence of cognitive disorders in old people with type 2 diabetes mellitus (T2DM) in two Hispanic countries, like Chile and Spain. **Objectives:** The present study aim is compared clinical and sociodemographic data, daily habits and cognitive performance tests in order to show the differences in health status between samples. **Methods:** The sample compared 200 subjects from two Hispanic countries (100 from Chile and 100 from Spain), aged 65-80 years and community-dwelling. The research protocol includes the daily habits battery designed to examine dietary, physical activity, perform in activities of daily living, sarcopenia, frailty, sleep, depression, and the neuropsychological battery designed to examine attention, verbal and visual memory, visuo-constructive skills, language, information processing speed, and executive functions. **Results:** Mean age for total sample was 71.2 ± 4.4 years, 8.9± 4.0 years of education and 54.5% women. Chilean subjects had significantly lower scores than Spanish subjects in dietary habits (Questionnarie of Mediterranean Diet Adhrence p.<0.000) physical activities (Rapid Assessment of Physycal Activities (RAPA p.<0.000). On the other hand, had higher scores in sarcopenia (SARC-F p.< 0.003), frailty (FRAIL p.< 0.0000) and depression (GDS-15 p.= 0.047). 35% showed normal cognitive aging (47% spanish), 34% dysexecutive mild cognitive impairment (37% spanish), 41% dental prosthesis (23% spanish), and 13% use bitherapy T2DM

treatment (metformine with insuline) (5% spanish). Finally, there is not differences in Hypertension, Dyslipidemia, Type 2 Diabetes Mellitus, smoking, alcoholism, vision problems, hearing impairment and subjective memory complaints. **Conclusion:** Chilean subjects presented worst daily habits, more geriatric syndromes, and more cognitive dysfunction in comparison to spanish subjects. This could increase the risk of developing a cognitive disorder in future.

P30- ASSOCIATION BETWEEN SARCOPENIA AND OBESITY ELAVUATED THROUGHT FOUR DIFFERENT METHODS IN SOCIALLY ACTIVE ELDERLY WOMEN.

Valéria Baccarin Ianiski[1], Karen Mello de Mattos Margutti[2], Rita Mattiello[3], Carla Helena Augustin Schwanke[1] *((1) Graduate Program in Biomedical Gerontology, School of Medicine, Pontifical Catholic University of Rio Grande do Sul (PUCRS); (2) Nutrition Course, Area of Knowledge of Life Science, University of Caxias do Sul (UCS); (3) Graduate Program in Medicine and Health Science, School of Medicine, Pontifical Catholic University of Rio Grande do Sul (PUCRS)).*

Background: The prevalence of obesity has reached epidemic proportions worldwide. Obesity causes low-grade chronic inflammation that has negative impact in muscle mass. The literature recently presented a new condition called sarcopenic obesity, but still there is not a consensus regarding the diagnosis. **Objectives:** To describe the frequency of sarcopenic obesity and to analize the association between sarcopenia and obesity elavuated throught four different methods in socially active elderly women. **Methods:** A cross sectional study was performed with 338 socially active elderly women (>=60 years). Sarcopenia was diagnosed by European Working Group on Sarcopenia in Older People (EWGSOP) diagnostic criteria [low muscle mass (skeletal muscle mass index), low muscle strenght (hand grip), and low physical performance (gait speed)]. Obesity was classified trough four evaluation methods: OB1= body mass index (BMI) >27 kg/m² (LIPSCHITZ, 1994) + waist circumference (WC) >88 cm (NATIONAL INSTITUTES OF HEALTH, 2000); OB2= BMI >=30 kg/m² (OMS, 2000) + WC >88 cm; OB3= fat% >24% (evaluated by bioelectrical impedance); and OB4= fatty mass index (FMI) >=11,8 kg/m² (KYLE et al., 2005). For the statistical analyses we used generalized linear models [prevalence ratio (PR), confident interval 95% (CI95%), P]. **Results:** The sample mean age was 69.97±6.30 years (60-89 years). The frequency of sarcopenia was 23.1% (n=78), and of obesity was 52.7% (OB1), 27.5% (OB2), 52.7% (OB3), and 8.9% (OB4). The frequency of sarcopenic obesity was 8.0% (OB1), 2.7% (OB2), 10.4% (OB3), and 0.3% (OB4). We observed association between OB1 [PR= 0.211, CI95% 0.328-1.157, P<0,001], OB2 [PR= 2.910, CI95% 1.516-5.588, P=0,001], OB4 [PR= 7.500, CI95% 1.081-52.019, P=0,041], and sarcopenia. **Conclusion:** Surprisingly, non-obese elderly women had more chance to be sarcopenic than the obese. This is important to have a consensus regarding sarcopenic obesity diagnosis through the use of simple and low cost methods, especially in low and middle-income developing countries.

P31- ASSESSMENT OF BODY COMPOSITION IN ELDERLY ADULTS WITHOUT UNDERNUTRITION OF AN AMBULATORY REHABILITATION UNIT.

Marcela Arias Barredo[1], Karen Urra[2], Pablo Gallardo[3] *((1) Physician Chef, Geriatric Hospital Day, National Institute of Geriatrics, Santiago de Chile, Chile; (2) Nutritionist, Geriatric Hospital Day, National Institute of Geriatrics, Santiago de Chile, Chile; (3) Executive, National Institute of Geriatrics, Santiago de Chile, Chile)*

Background: Aging involves changes, among them the increase in fat mass and the decrease in muscle mass and bone mass. The electric bioimpedance (BIA) is a non-invasive and easy to apply method, being a valuable objective evaluation of the nutritional status and body composition of the person. **Objectives:** To evaluate body composition by bioimpedance in older adults without clinical malnutrition. **Methods:** Descriptive, cross-sectional study of people evaluated by a nutritionist as part of the comprehensive intervention plan for older adults who attend therapy in an ambulatory rehabilitation unit during the months of July to October 2018. Nutritional parameters and bioimpedance measurements were determined. **Results:** Total 98 people, 83.6% Women. Average 72.3 years (range 61-91 years) BMI according to WHO: Normal Weight, 15.4%, Overweight 36.8%, Obesity 47.8%. The fat mass had normality parameters in 6.1% and increased 93.8%. The percentage of average fat was 43.2% in women and 35.2% in men, being classified as normality values in 98.9% of the total. Proteins: normal range 69.3% of people, lower than expected 8.1%, over the range of normality 22.4%. Fat-free mass: low 8.1%, normal 64.2%, high 27.5%. The total musculoskeletal mass (SMM) is under the range of normality in 14.2%, normal 59.1%, only presenting over the range of normality in 26.5% of people. Average SMM: Normal Weight 23.06 kg (range 13.1-29), Overweight 23.6 kg (range 16.5-33.7), Obesity 25.3 kg (Interval 15,9-43). **Conclusion:** There is evidence of a high prevalence of malnutrition due to excess in older adults, with an increase in body fat in most of the people evaluated. Not only older adults with excess malnutrition have increased body fat distribution but also those who are normal weight. Malnutrition by excess does not lead to a proportional increase in muscle mass, with the absolute values of SMM being similar in all the nutritional groups. The Bioimpedanciometria constitutes an emergent tool of utility for the objective evaluation of the nutritional state, contributing relevant information to the facultative one.

P32- SOCIAL DETERMINANTS OF HEALTH AND FRAILTY ARE ASSOCIATED WITH ALL-CAUSE MORTALITY IN OLDER ADULTS.

Emmanuel González-Bautista[1], Betty Manrique-Espinoza[2], J. Alberto Ávila-Funes[4,5], Nirmala Naidoo[3], Paul Kowal[3,6,7], Somnath Chatterji[3], Aarón Salinas-Rodríguez[2] *((1) Facultad de Medicina. Universidad Autónoma del Estado de México. Toluca, México; (2) Evaluation and Surveys Research Center. National Institute of Public Health, Cuernavaca, Mexico; (3) World Health Organization, Geneva, Switzerland; (4) Servicio de Geriatría. Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Ciudad de México, México; (5) Univ. Bordeaux, Inserm, Bordeaux Population Health Research Center, UMR 1219, F-33000 Bordeaux, France; (6) University of Newcastle, Research Centre for Generational Health and Ageing, Newcastle, Australia.; (7) Chiang Mai University, Research Institute for Health Sciences, Chiang Mai, Thailand)*

Background: Frailty and the social determinants of health (SDH) impact the population aging process in the context of low- and middle-income countries. In particular, socioeconomic status (SES) and social cohesion (SC) have proven to play a key role in the health of older adults (OA). This study aimed to examine the longitudinal association between the SDH (SES and SC) and frailty status with all-cause mortality in a nationally representative sample of older Mexican adults. **Objectives:** To examine the longitudinal association between the social determinants of health (SDH) and frailty status with all-cause mortality in older Mexican adults. **Methods:** The Study on Global AGEing and Adult Health (SAGE) in Mexico includes a longitudinal nationally representative sample of OA. Our work uses data of Waves 1 (2009) and 2 (2014) collected via face-to-face interviews, including data at the individual level of people aged 60+. Besides descriptive statistics, we used cumulative survival curves and a Cox proportional hazard model to estimate the SDH- (SES and SC) and frailty-related

hazard ratios (HR) for mortality over the 4 years and 5 months of the study period. Wave 1 collected information on 1,873 persons aged 60 and older, from them 354 with missing data were excluded. A total of 1,519 OA composed the analytical sample. **Results:** Higher frequency of inter-personal contacts was associated with a lower mortality risk (HR=0.96; CI95%: 0.95-0.97). Reporting a poor control over one's life for categories sometimes (HR=1.33; CI95%: 1.12-1.58) and fairly/very often (HR=1.88; CI95%: 1.39-2.53) increased the risk of dying compared to never having a lack of control over the important things in their life. Frail OA had a higher mortality risk (HR=2.83, CI95% 2.27-3.53). A significant interaction between older adult's education and mother's education was observed. Having completed primary (HR=0.21; CI95%: 0.14-0.33) and completed secondary school or a higher level (HR=0.18; CI95%: 0.13-0.25) diminished the risk of dying compared to less than primary completed but only if the mother had a primary education completed. **Conclusion:** Public health systems in Mexico could benefit from increasing the capacity of communities and health services to identify frail OA. Efforts should be focused especially in disenfranchised populations and provide a risk-stratified health care accordingly. Not only biomedical conditions such as frailty should be considered, but the implementation of strategies to improve the socioeconomic status and social cohesion of OA are recommended.

P33- ASSOCIATIONS BETWEEN NUTRIENT INTAKES AND SARCOPENIA IN OLDER MEN:THE CONCORD HEALTH AND AGEING IN MEN PROJECT.

Arpita Das[1], Robert G. Cumming[2], Vasi Naganathan[3], Fiona Blyth[3], Vasant Hirani[1] *((1) Nutrition and Dietetics group, School of Life and Environmental Sciences Charles Perkins Centre, University of Sydney, New South Wales, Australia and ARC Centre of Excellence in Population Ageing Research, University of Sydney, New South Wales Australia; (2) School of Public Health, University of Sydney and ARC Centre of Excellence in Population Ageing Research, University of Sydney, New South Wales Australia; (3) Centre of Education and Research on Ageing, University of Sydney and Concord Hospital, New South Wales, Australia)*

Backgrounds: Sarcopenia is the loss of skeletal muscle mass and function associated with aging and can lead to a range of poor health outcomes. Dietary interventions to delay or prevent sarcopenia in older age are of importance for functional health. However, there are limited studies that examine associations between dietary nutrient intakes and sarcopenia among older people. **Objectives:** The objectives of this study were to assess the associations between nutrient intakes and dietary patterns with sarcopenia in older Australian men aged >=75 years. **Methods:** Nutrition and sarcopenia were assessed in 794 men from the Concord Health and Ageing in Men Project study at baseline nutrition (wave 3 of CHAMP) . The outcome measurement was sarcopenia, defined using the Foundation for the National Institutes of Health criteria (low appendicular lean mass adjusted for body mass index <0.789 and grip strength <26.0 kg). Participants were dichotomised as sarcopenic or non-sarcopenic. Dietary adequacy of nutrient intakes was assessed by comparing participants' median intakes to the Nutrient Reference Values (NRVs). Attainment of the NRVs of protein, linoleic, linolenic, dietary fibre, riboflavin, vitamin A, C, E, folate, potassium, magnesium, calcium, iron and zinc was incorporated into a dichotomised variable 'poor' (meeting≤9) or 'good' (meeting>=10) using the cut-point method. Also, the Australian Dietary Guideline Index, a Mediterranean diet score, monounsaturated: saturated fat, n6:n3 fatty acids ratio and individual nutrients were assessed as predictor variables. **Results:** In cross-sectional analyses, 14.2% men had sarcopenia. In adjusted analyses,

there were associations between sarcopenia and poor nutrient intakes [OR: 2.07 (95% CI: 1.16, 3.67, p=0.01)], the lowest quartile of protein intakes [OR: 3.21 (95% CI: 1.47, 7.03, p=0.004)], linoleic acid [OR: 2.22 (95% CI: 1.05, 4.68, p=0.04)], linolenic acid [OR: 3.32 (95% CI: 1.57, 6.99, p=0.002)], calcium [OR: 2.77 (95% CI: 1.28, 6.01, p=0.01)] and magnesium [OR: 2.68 (95% CI: 1.19, 6.04, p=0.02)]. Each unit decrease in n6: n3 ratio was significantly associated with a 9% increased risk of sarcopenia [OR: 1.09 (95% CI: 1.04, 1.16, p=0.001)]. None of the other nutrients and dietary scores had significant associations with sarcopenia. **Conclusion:** Our results suggest that poor intake of nutrients, particularly protein, calcium, magnesium and n6:n3 ratio are associated with sarcopenia in older men. Further studies are required to better understand this area.

P34- FRAILTY AND ITS ASSOCIATION WITH THE MEDITERRANEAN DIET, LIFE SPACE, SOCIAL PARTICIPATION IN CHINESE OLDER PEOPLE

Rick Yiu Cho Kwan, Daphne Sze Ki Cheung, Shirley Ka Lai Lo, Lily Yuen Wah Ho, Patrick Pui Kin Kor, Justina Yat Wa Liu *(Gerontological Nursing, School of Nursing, The Hong Kong Polytechnic University, Hong Kong)*

Background: Frailty is defined as a state of increased vulnerability with five phenotypical components: weight loss, exhaustion, low physical activity, slowness, and weakness. In the literature, the Mediterranean diet was known to reduce the risk of frailty in many populations. However, the Mediterranean diet is uncommon in Chinese older people. Life space and social participation were also associated with frailty. However, their relationships with frailty in the Chinese population is unknown. These relationships are important to know in order to provide better frailty care in Chinese communities. **Objectives:** This study aimed to examine the association between frailty and its phenotypic components with the Mediterranean diet, life-space, and social participation in the community-dwelling older people. **Methods:** A cross-sectional study was conducted to recruit Chinese community-dwelling older people in Hong Kong between May 2017 and May 2018. Data were collected through face-to-face interviews. The dependent variables were frailty and its phenotypic components. The independent variables were the Mediterranean diet (MedDietScore), life space (Life-Space Assessment), and social participation (Reintegration to Normal Living Index). Logistic regression models were employed for the statistical analysis. The strengths of their associations were reported in odds ratios with a 95% confidence interval. **Results:** In the 263 participants, 85 were robust (32.3%), 120 pre-frail (45.6%), and 58 frail (22.1%). The Mediterranean diet, life space, and social participation were all significantly associated with frailty. Regarding the phenotypic components of frailty, all factors were preferentially associated with slowness. The Mediterranean diet and social participation were additionally associated with weakness and low activity, respectively. **Conclusion:** To reduce the risk of frailty in Chinese older people, health policy should be developed to advocate increased compliance with the Mediterranean diet, particularly eliminating foods considered detrimental in the Mediterranean diet. Environmental designs should facilitate the frail older people to maximize their social participation and life-space.

P35- RISK FACTORS OF FRAILTY IN THE COSTA RICAN POPULATION.

José E. Picado-Ovares[1,2] ((1) Hospital Nacional de Geriatría y Gerontología, San José, San José Costa Rica; (2)Universidad de Costa Rica, San Pedro, San José, Costa Rica)

Backgrounds: Between 2000 and 2050, the number of inhabitants on Earth aged 60 years or older will double. A considerable number of them will have an elevated risk of becoming frail. **Objective:** To identify the health risk factors related with the onset of frailty in the Costa Rican population. **Methods:** A subgroup of 3000 people from the CRELES study was analyzed. A frailty phenotype was constructed based on the variables of the phenotypic model: weight loss, exhaustion, weakness, slowness, and low level of physical activity. Patients were classified into frail, pre-frail, and robust. A multinomial logistic model was used, which included data from the three years of study (2205, 2007 and 2009). An exploratory analysis was made, using sociodemographic and health variables. Taking as reference the robust category, the odds ratio was obtained for the frail and pre-frail categories, with 95% confidence. **Results:** Of the analyzed variables, age, osteoarthritis and living alone proved to be risk factors with statistical significance. **Conclusions:** In the Costa Rican population, age, osteoarthritis, and living alone represent risk factors for suffering frailty in the future.

P36- CONSEQUENCES OF FRAILTY IN THE OLDER POPULATION OF COSTA RICA.

José E. Picado-Ovares[1,2] ((1) Hospital Nacional de Geriatría y Gerontología, San José, San José Costa Rica; (2) Universidad de Costa Rica, San Pedro, San José, Costa Rica)

Background: Studies have shown the relationship between frailty and poor outcomes. **Objectives:** To Identify the consequences of the frailty in the Costa Rican older population. **Methods:** A subgroup of 3000 people from the CRELES longitudinal study was analyzed, from the year 2005 to 2009. Frailty phenotype was constructed based on the phenotypic model that includes the variables: weakness, slowness, low physical activity, exhaustion and weight loss. Patients are classified as frail, pre-frail, and robust. A longitudinal analysis was made taking into consideration the initial and final year of the follow-up cohort. The outcomes variables analyzed were mortality, hospital admittances, functional deterioration, falls, and self-perception of worsening of health and the year 2009. A multinomial logistic regression technique is used, using outcome variables as answers or dependent variables, resulting in a model for each of the five results. The frailty condition is used as an independent variable. As a result, there were odds ratio obtained for the incidence of each outcome category with a 95% confidence. **Results:** Frailty is associated with a major functional decline (OR 4,79, CI 1,89;12,1), more hospital admittances (OR 3,21, CI 1,85;5,86), and worsening of the self-perception of health (OR 5,16, CI 3,45;7,75). Frailty was not associated with increased mortality rates (OR 1,9; CI 0.87;4,2) nor to higher risk of falls within the Costa Rican population (OR 1,36; CI 0,93;1,95). **Conclusion:** Frailty is related with poor outcomes in Costa Rica. These represent an opportunity for an early intervention to avoid them.

P37- SARCOPENIC OBESITY IS ASSOCIATED WITH OBSTRUCTIVE SLEEP APNEA: A POPULATION-BASED STUDY.

Ronaldo D Piovezan, Camila Hirotsu, Renato Moizinho, Helton de Sá Souza, Vania D'Almeida, Sergio Tufik, Dalva Poyares (Department of Psychobiology, Universidade Federal de Sao Paulo, Sao Paulo, Brazil)

Background: Evidence suggests increased body weight is associated with changes in sleep quality and quantity, as well as a higher risk of obstructive sleep apnea (OSA). However, investigations including objective evaluations of sleep and body composition states are scarce. **Objectives:** We aimed to evaluate the associations of poor sleep indicators and OSA with body composition states in a sample from the general population. **Methods:** Data from the cohort EPISONO, in a representative sample from the city of São Paulo, Brazil. Questionnaires, actigraphy, and full polysomnography assessed sleep, and bioelectrical impedance analysis evaluated body composition. Appendicular skeletal muscle mass adjusted for body mass index defined sarcopenia (men<0.789; women<0.512); total body fat defined obesity (men>30%, women>40%); and the overlap between both conditions defined sarcopenic obesity (SO). Final results were obtained by multiple multinomial logistic regression analysis. **Results:** 359 adults (median [range] age, 59 [50-88] years; 212 [59.1] female) were enrolled in the study. Obesity was detected in 22.6% of the sample, sarcopenia in 5.6%, and SO in 16.2%. After controlling for covariates, no poor sleep indicator or sleep disorder was associated with obesity or sarcopenia. However, OSA was independently associated with SO (OR=3.14, 95%CI=1.49-6.61). Additionally, nocturnal hypoxemia was associated with both obesity (aOR=2.59, 95% CI=1.49-4.49), and SO (OR=2.92, 95% CI=1.39-6.13). **Conclusion:** Participants with OSA were more likely to have SO, and those with nocturnal hypoxemia were more likely to have both obesity and SO. The findings indicate both fat deposition and muscle mass decline may play a synergistic role in the development of OSA and suggest a more complex pathophysiologic relationship between adverse body composition and OSA, which may go beyond obesity and include lower lean mass. Future research appraising prospective evaluations and therapeutic strategies to reduce the clinical consequences of OSA should simultaneously target adipose and muscle tissues.

P38- PHYSICAL FRAILTY AND THE RISK OF DEMENTIA IN A LONGITUDINAL COHORT OF OLDER ADULTS.

Márlon Aliberti[1], Irena Cenzer[2], Kenneth Covinsky[2,3] ((1) University of Sao Paulo Medical School, Brazil; (2) University of California, San Francisco, US; (3) Veterans Affairs Medical Center, San Francisco, US)

Background: Although physical frailty has been proposed as a risk factor for incident dementia, results in different studies are inconsistent. **Objectives:** We determined the population-level association between physical frailty and subsequent dementia over 8 years. **Methods:** We used the nationally representative Health and Retirement Study (HRS) and assembled a cohort study with biennial interviews of 7338 community-dwelling older adults (mean age=74.4 years; 55% women) without ADL disability at the 2006 or 2008 wave. The five physical frailty criteria of the Cardiovascular Health Study defined individuals as robust (0), prefrail (1-2), and frail (3-5). A well-validated HRS cognitive assessment classified subjects as normal, cognitive impairment without dementia (CIND), or dementia, and those with baseline dementia were excluded. Dementia was tracked through 2014 using methods validated for HRS based on cognitive assessments of self-respondents, and reports of cognitive

functioning provided by a proxy. Hazard models, considering death as a competing risk, measured the association between physical frailty with incident dementia after adjusting for sociodemographics, comorbidities, smoking and drinking status, severe pain, poor hearing and vision, and CIND. We also explored interactions of physical frailty with CIND for the risk of dementia. **Results:** At baseline, 29% of subjects were robust, 56% prefrail, and 15% frail. Compared to robust individuals, those who were prefrail or frail had a higher risk of developing dementia (6% vs 14% vs 20%; adjusted sub-hazard ratio [aHR]=1.5, 95%CI=1.3-1.9 for prefrail; aHR=1.4, 95%CI=1.1-1.9 for frail). However, we found a significant interaction based on baseline cognitive status (P-value for interaction<0.001). Among those who were cognitively normal at baseline, incident dementia developed in 3% of those who were robust, 8% (aHR=1.8, 95%CI=1.4-2.4) of those who were prefrail, and 12% (aHR=2.0, 95%CI=1.4-2.9) of those who were frail. In contrast, among those with CIND at baseline, frailty status was not associated with subsequent dementia (30% vs 36% vs 33%; aHR=1.1, 95%CI=0.8-1.4 for prefrail; aHR=0.9, 95%CI=0.6-1.3 for frail). **Conclusion:** Physical frailty is a strong predictor of incident dementia in community-dwelling older adults cognitively normal but not in those with CIND. Clinicians should monitor physical frailty alongside cognitive status when assessing the risk for dementia in independent older people.

P39- ELDERLY BRAZILIAN MALNUTRITION'S DEATHS BETWEEN 2006-2016.

Claudia Cipriano Vidal Heluany[1], Gabriela Serafim Keller[1], Luan Pedro Santos Rocha[2], Isadora Zaniboni[2], Gabriel Cipriano Vidal Heluany[3] *((1) Geriatric Department, Medicine School, UNESC Universidade do Extremo Sul Catarinense, Criciuma, SC, Brazil; (2) Medicine's Student, Medicine School, UNESC Universidade do Extremo Sul Catarinense, Criciuma, SC, Brazil; (3) São José Hospital, Criciuma, SC, Brazil)*

Background: Brazil is experiencing an accelerated aging of Its population. Public policies aimed at this age range are being implanted but have modest results. Malnutrition is an important mortality and frailty cause in this age range. **Objectives:** Evaluate the progression of death by malnutrition in elderly Brazilian population from 2006 until 2016. **Methods:** Retrospective observational study with secondary data analysis from IBGE data (Brazilian institute of statistics and geography) regarding the cases with malnutrition as primary death cause from 2006 until 2016 being analyzed individuals aged 60 years or more and the total of deaths due this pathology. The quantitative variables were expressed by means of mean values, standard deviation and percentage. Statistical tests were done using a significance level p = 0.05. We used Pearson's test as indications. using the IBM Statistical Package for Social Sciences®, version 22.0. **Results:** There was an increase of 9.88% from 2006 until 2016 in proportion of death from malnutrition among individuals aged 60 years or more that can be explained partially due to the increase in the elderly population or due to the reduction in the malnutrition mortality among other age groups. These cases occur mainly in individuals above 70 years (p<0.016) and in the southwest region (p<0.01), which even if it is more populated is economically better. **Conclusion:** More effective public health policies should be implemented in order to reduce malnutrition in elderly Brazilian population with consequent reduction of death and frailty.

P40- INFLAMMATORY BIOMARKER LEVELS ARE ASSOCIATED WITH SELF-REPORTED MAJOR MOBILITY DISABILITY: A POOLED ANALYSIS.

Daniel P. Beavers[1], Todd M. Manini[2], Walter T. Ambrosius[1], Stephen Kritchevsky[3], Thomas Gill[4], Stephen Anton[2], Mary McDermott[5], Anne Newman[6], Russell Tracy[7], Abby King[8], Roger Fielding[9], Marco Pahor[2] *((1) Department of Biostatistics and Data Science, Division of Public Health Sciences, Wake Forest School of Medicine, Winston-Salem, NC, USA; (2) Department of Aging and Geriatric Research, College of Medicine, University of Florida, Gainesville, FL, USA; (3) Section on Gerontology and Geriatric Medicine, Department of Internal Medicine, Sticht Center for Healthy Aging and Alzheimer's Prevention, Winston-Salem, NC, USA; (4) Department of Internal Medicine, Yale University School of Medicine, New Haven, CT, USA; (5) Department of Medicine, General Internal Medicine and Geriatrics, Feinberg School of Medicine, Northwestern University, Chicago, IL, USA; (6) Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA, USA; (7) Department of Pathology & Laboratory Medicine, Larner College of Medicine, University of Vermont, Burlington, VT, USA; (8) Department of Health Research and Policy, School of Medicine, Stanford University, Palo Alto, CA, USA; (9) Nutrition exercise physiology and sarcopenia laboratory, Jean Mayer USDA Human Nutrition Research Center on Aging Tufts University, Boston, MA, USA)*

Background: Elevated inflammatory biomarkers have been implicated in the etiology of numerous acute and chronic diseases, and research suggests a potential causal role of chronic inflammation in functional declines associated with aging. Exploring these associations, however, are difficult because there are often a relatively low number of participants at increased risk of mobility decline with elevated inflammation in many aging studies. **Objectives:** To estimate the absolute and relative risk of incident self-reported major mobility disability (MMD) by baseline inflammation based on both interleukine-6 (IL6) and C-reactive protein (CRP) across multiple pooled datasets focused on aging, inflammation, and/or body composition. **Methods:** We conducted a pooled analysis stratified by study using individual participant data from three studies in which baseline IL6 or CRP levels were assessed among older adults (age > 60 years) with low gait speed (≤1.0 m/s) and no self-reported MMD. MMD risk was estimated using Cox proportional hazards models using both categorical (IL6 > 2.5 pg/mL, CRP > 3.0 mg/L) and log-transformed continuous biomarker values as predictors. **Results:** Overall 1732 participants qualified for inclusion among the three studies with sufficient IL-6 data (LIFE, LIFE-P, and Health ABC) and two studies with CRP (LIFE-P and Health ABC). Overall elevated baseline IL-6 as well as log(IL6) values were significantly associated with MMD (HR=1.31, 95% CI: 1.12 to 1.54, p<0.01; and HR=1.26, 95% CI: 1.13 to 1.41, p=0.02, respectively). Similarly, elevated baseline CRP and log(CRP) values were significantly associated with MMD (HR= 1.38, 95% CI: 1.10 to 1.74, p<0.01; and HR=1.13 95% CI: 1.03 to 1.24, p<0.01, respectively). Among participants with elevated CRP, the risk of MMD was elevated among those also having elevated IL6 (HR=1.62, 95% CI: 1.12 to 2.33, p<0.01). **Conclusion:** We found in a pooled analysis that inflammatory biomarkers are significantly associated with incident self-reported MMD among participants at risk of mobility limitations across three studies of aging and physical function. Further work should explore whether treatment regimens focused on reducing inflammatory biomarker values could confer functional benefit and ultimately decrease the risk of MMD.

P41- IMPACT OF CHRONOTYPE AND HABITUAL PHYSICAL ACTIVITY WITH SARCOPENIA. H Park *(Dept. of Health Care Science, Dong-A University, Busan, Korea)*

Background: Circadian rhythms are the approximate 24-hour biological cycles that function to prepare the organism for daily environmental changes. Underlying circadian rhythms is a bio-clock mechanism found in most, if not all, cell types including skeletal muscle. Exercise is a sufficient environmental cue to effect clock gene expression in the SCN (central clock) located in the hypothalamus of the brain, and the importance of exercise and more importantly, the timing of exercise in adding stability to the daily rhythms of the circadian system. However, the association among chronotype (timing of exercise), physical activity and sarcopenia in older adults remain unclear. **Objectives:** The purpose of this study was to investigate the association of chronotype and physical activity with sarcopenia in older adults, and to identify the interrelationship among them for prevention of sarcopenia. **Methods:** A total of 230 participants(mean age 77y) were using for this study. Partial correlation coefficients adjusted for age and sex were calculated between measurement; chrontype, habitual PA and sarcopenia status. The intensity of physical activity were measured every 10 s throughout each 24-h period for 6 month, using a specially adapted accelerometer that distinguished up to 9 levels of physical activity (expressed in metabolic equivalents, METs). At the baseline and end of the six month, walking speed and grip strength were measured by specialized exercise physiologist, a bioelectrical impedance analysis assessed each participant's estimated prevalence of sarcopenia. **Results:** The risk of sarcopenia is associated with the chronotype and physical activity. The results showed that elderly people with evening chronograph type had 1.7-2.3 times higher risk of developing sarcopenia than compared to morning chronotype. **Conclusion:** We concluded that most issues related to the lack of physical activity and/or timing of physical activity were associated with risk of sarcopenia. Therefore, it is crucial to develop a personalized strategy in order to prevent sarcopenia by understanding the daily cycle rhythm and physical activity timing of the elderly for health aging.

P42- IS INADEQUATE HEALTH LITERACY LINKED WITH FRAILTY IN MALE OLDER VETERANS? Pravallika Bharatula[1,2], Aakashi Shah[1,2], Dhanya Baskaran[1,2], Yaqub Nadeem Mohammed[1,2], Raquel Aparicio-Ugarriza[1,2], Michael J. Mintzer[2,3], and Jorge G. Ruiz[2,3] *((1) Department of Public Health Sciences, University of Miami Miller School of Medicine; (2) Miami VAHS GRECC Veterans Successful Aging for Frail Elders (VSAFE); (3) Department of Medicine, University of Miami Miller School of Medicine)*

Background: Frailty is a state of vulnerability to stressors resulting in higher morbidity, mortality and healthcare utilization in older adults. Health literacy is the capacity to obtain, process, and use basic health information and services needed to make health decisions. Studies reveal high levels of inadequate health literacy (IHL) among Veterans. Inadequate health literacy is associated with poor function, worse clinical outcomes, and higher healthcare utilization. **Objectives:** The aim of this study was to determine whether inadequate health literacy is related to frailty in male Veterans. **Methods:** This is a cross-sectional study of 470 cognitively intact, non-depressed male Veterans who completed evaluations of health literacy (Newest Vital Sign, 0-6 points) in 2012. A 43-item frailty index was constructed as a proportion of all potential variables (demographics, comorbidities, number of medications, laboratory tests, and activities of daily living) present in a given individual at the time of the evaluation of health literacy in 2012. We compared the proportions of IHL (scores 0-3)

among robust, prefrail and frail patients using Chi square. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated by Multinomial Logistic Regression Models with frailty status (robust, prefrail and frail) as the outcome variable, and with health literacy scores as the independent variable. Age, race, ethnicity, education, socio-economic status and comorbidities were considered as covariates. **Results:** Patients were 100% male, 40% White, 82% non-Hispanic and the mean age was 56.8 (SD= 9.6) years. The proportion of robust, pre-frail and frail patients was 10.0 % (n=47), 61.3 % (n=288) and 28.7 % (n=135) respectively. A total of 258 (54.9%) of all the Veterans displayed inadequate health literacy. There were no significant differences in the proportion of Veterans with IHL between the 3 groups (p=.064): robust (n=22, 46.8%) prefrail (n=151, 52.4%) and frail (n=85, 63.0%). In multinomial logistic regression, health literacy was not associated with frailty in male Veterans after adjustment for covariates (OR=.91, 95% CI=.76-1.09, p=.299). **Conclusion:** This study displays that health literacy is not associated with frailty in community dwelling male Veterans. Studies with larger and more diverse sample sizes and longitudinal follow up may be needed to confirm these findings.

P43- IS GRAPH LITERACY RELATED TO FRAILTY IN MALE OLDER VETERANS? Dhanya Baskaran[1,2], Aakashi Shah[1,2], Pravallika Bharatula[1,2], Douglas Salguero[1,2], Victor Cevallos[1,2], Raquel Aparicio-Ugarriza[1,2], Jorge G. Ruiz[2,3] *((1) Department of Public Health Sciences, University of Miami Miller School of Medicine; (2) Miami VAHS GRECC Veterans Successful Aging for Frail Elders (VSAFE); (3) Department of Medicine, University of Miami Miller School of Medicine)*

Background: Graph literacy has emerged as another important literacy skill in health care, and it refers to the ability to understand basic graphical representations used to present quantitative health-related information. Graph literacy may be especially critical for users to be able to interpret and act on health information as part of self-management activities. On the other hand, frailty is a state of vulnerability to stressors resulting in higher morbidity, mortality and healthcare utilization in older adults. **Objectives:** The purpose was to determine whether inadequate graph literacy is associated with frailty in male Veterans. **Methods:** This is a cross-sectional study of 470 cognitively intact, non-depressed Veterans who completed evaluations of graph literacy in 2012 with a validated 13-item scale that measures three abilities: finding specific information in the graph; finding relationships in the data as shown on the graph; and making inferences and predictions from the data. A 43-item frailty index was created as a proportion of all potential variables (demographics, comorbidities, number of medications, laboratory tests, and activities of daily living) present in a given individual at the time of the evaluation of graph literacy in 2012. Odds ratios (ORs) and 95% confidence intervals (CIs) were run by multinomial logistic regression models with frailty status (robust, prefrail and frail) as the outcome variable and graph literacy scores as the independent variable. Age, race, ethnicity, education, socio-economic status and comorbidities were considered as covariates. **Results:** Patients were 100% male, 40% White, 82% non-Hispanic and the mean age was 56.8 (SD= 9.6) years. The proportion of robust, pre-frail and frail patients was 10.0 % (n=47), 61.3 % (n=288) and 28.7 % (n=135) respectively. In multinomial logistic regression, higher graph literacy scores were negatively associated with frailty (OR=.84, 95% CI=.74-.97, p=.015) in male Veterans after adjustment for covariates. **Conclusion:** This study shows that higher graph literacy scores were associated with a lower risk of frailty in community dwelling male Veterans. Longitudinal studies with larger and more diverse sample sizes may be needed to confirm these

findings.

P44- ASSOCIATION OF FRAILTY IN THE ELDERLY WITH LOWER SERUM CHOLESTEROL LEVEL AND OTHER CARDIOVASCULAR RISK FACTORS. Hyuntae Park (Department of Health Care and Science, Dong-A University, Busan, Rep. of Korea)

Background: Few studies have investigated cardiovascular risk in older persons with frailty syndrome. **Objectives:** The objective of this study was to assess the cardiovascular risk factors of subjects with frailty with emphasis on lipid parameters, as compared with robust and prefrail individuals. **Methods:** The 239 total number of eligible participants were ambulatory adults 70 years of age or older. The assessment of fat-free mass and fat mass measured by bioelectrical impedance analysis. Three components of physical function were measured: (1) hand grip strength; (2) walking speed on gait; (3) Short Physical Performance Battery (SPPB). Time spent engaging in moderate to vigorous physical activity (International Physical Activity Questionnaire-short version) were obtained. After a 48-h period of physical activity avoidance and a 10-h overnight fast, blood samples were measured from each participant. **Results:** Linear increases in physical performance parameters such as grip strength, gait speed, and high-density lipoprotein cholesterol, triglyceride were found across the frailty phenotype (non frail/ pre-frail/frail). A significant association was observed between frailty phenotype and HDL-C, other and moderate to vigorous physical activity levels with the ANCOVA model. A decline in muscle mass was more likely to be associated with frailty status in elderly. The risk of significant HDL-C and lean mass decline was 2.1 and 2.3 times as great in frail elderly adults as in those who were robust even after adjusting for covariates. Further, older adults with a higher oxidized LDL were more likely to meet pre-frailty and frailty. **Conclusion:** Our results expand the knowledge that high levels of HDL cholesterol, oxidized LDL and lean mass are associated with delay of the onset of frailty. Nevertheless, future studies should be aimed at testing the possible benefits produced by interventions on frailty. Higher level of HDL-C and lean mass may reverse the frailty syndrome.

COGNITIVE AND FRAILTY

P45- FRAILTY AS A PREDICTOR OF COGNITIVE DISORDERS: A SYSTEMATIC REVIEW AND META-ANALYSIS. Marcus Kiiti Borges[1], Marco Canevelli[2], Matteo Cesari[3], Ivan Aprahamian[4] ((1) Department of Geriatrics and Psychiatry, "Ambulatório de Alterações Comportamentais em Idosos" (ACID), Faculty of Medicine, University of São Paulo (FMUSP), São Paulo, Brazil; (2) Department of Human Neuroscience, Sapienza University, Rome, Italy; (3) "Fondazione (IRCCS) Ca' Granda - Ospedale Maggiore Policlinico", University of Milan, Milan, Italy; (4) Geriatrics & Psychiatry division, Department of Internal Medicine, Faculty of Medicine of Jundiaí)

Background: Current evidence in the literature supports that there are connections between frailty, cognitive impairment and dementia. Previous systematic reviews and meta-analysis did not include more recently published studies or included studies in which frailty definition and diagnosis could be compromised or the number of incident cognitive impairment among frail participants was not clearly referred. **Objectives:** The main objective of this systematic review and meta-analysis is to describe the risk of development of cognitive disorders in previously cognitive unimpaired community-dwelling older adults or those with MCI associated with frailty in

the baseline from longitudinal and cohort studies. **Methods:** We performed a systematic review and meta-analysis, using MEDLINE, PsycINFO, Scopus and Web of Science as databases for the search. We included cohort and longitudinal studies in qualitative analysis and quantitative synthesis. The studies should assess dementia and cognitive impairment as a primary or secondary outcome, and describe the prevalence of frailty among participants at baseline and follow-up. **Results:** Of 2,210 identified through the systematic review, 6 relevant studies were included in a meta-analysis. Baseline frailty was significantly associated with an increased risk of cognitive disorders (pooled OR = 1.80, 95% CI = 1.11-2.92; p = 0.02). Heterogeneity across the studies was significant (I2 = 79%). **Conclusion:** Our analyses confirmed that frail older adults were at higher risk of incident cognitive disorders than non-frail elders. It seems that frailty status is more associated with the risk of incident dementia. Frailty may represent a risk factor for dementia, and could consist in a novel modifiable target in early cognitive impairment.

P46- THE RELATIONSHIP BETWEEN FRAILTY AND MILD COGNITIVE IMPAIRMENT IN THE ELDERLY: A SYSTEMATIC REVIEW. Natália Oiring de Castro Cezar[1], Marcus Kiiti Borges[2], Alaise Silva Santos de Siqueira[2], Mônica Sanches Yassuda[3,4], Matteo Cesari[5], Ivan Aprahamian[2,6] ((1) Department of Physical Therapy, Federal University of São Carlos (UFSCar), São Carlos, SP, Brazil; (2) Department and Institute of Psychiatry, Faculty of Medicine, University of São Paulo, São Paulo, Brazil; (3) School of Arts, Sciences and Humanities, University of São Paulo, São Paulo, Brazil; (4) Department of Neurology, Faculty of Medicine, University of São Paulo, São Paulo, Brazil; (5) "Fondazione (IRCCS) Ca' Granda - Ospedale Maggiore Policlinico", University of Milan, Milan, Italy; (6) Department of Internal Medicine, Faculty of Medicine of Jundiaí, Jundiaí, Brazil)

Background: Previous cross-sectional and longitudinal studies have shown that physical frailty (PF) is related to poorer cognitive performance. PF appears to be associated with mild cognitive impairment (MCI). **Objectives:** The present study aimed to investigate whether there is a bi- or unidirectional relationship between the PF and MCI. The prevalence of MCI and PF and the rate of conversion of healthy older adult to one of the two conditions (incidence) during the follow-up were also evaluated. The comparison groups were composed by cognitively normal and/or robust older persons. **Methods:** A systematic review was performed according to the PRISMA recommendations in the Pubmed, SciELO and LILACS databases. Five studies were eligible according to inclusion and exclusion criteria. PF was defined according to Fried and colleagues definition. MCI definition followed one of three possible operational definitions: (1) mild neurocognitive disorder according to The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5); (2) National Institute on Aging–Alzheimer's Association and the International Working Group for New Research Criteria for the Diagnosis of MCI; or (3) the Mayo Clinic criteria from 1999. **Results:** The systematic search identified 49,563 articles in the PubMed database (Figure 1). Nineteen articles were retrieved from LILACS and SciELO. Of those, 16 were duplicates and three additional studies were identified from these databases. From 70 studies for full-text review, sixty-five were excluded for not meeting inclusion criteria for this study. Therefore, five remaining articles were considered for further analysis that included qualitative synthesis. The number of participants varied between 115 and 5,104. Regarding the study design, cross-sectional studies prevailed. Most studies showed a positive association between PF and MCI. Moreover, PF seems to predict a worse cognitive trajectory among participants with MCI and

it is associated to a higher risk of developing MCI. **Conclusion:** Our findings suggest a significant association between PF and MCI. Further longitudinal studies are needed to better explore causality.

P47- COGNITIVE FRAILTY: RESULTS FROM SABE COLOMBIA STUDY.

Estephania Chacón-Valenzuela[1,2], Elly Morros-González[1,2], María Paula Vargas-Beltrán[1,2], Luis Carlos Venegas-Sanabria[1,2], Diego Chavarro-Carvajal[1,2], Carlos Alberto Cano-Gutiérrez[1,2] *((1) Semillero de Neurociencias y Envejecimiento, Aging Institute and Faculty of Medicine, Pontificia Universidad Javeriana, Bogotá, Colombia; (2) Geriatric Unit, Hospital Universitario San Ignacio and Pontificia Universidad Javeriana, Bogotá, Colombia)*

Background: Cognitive frailty (CF) has been considered a potentially reversible condition, so early detection could decrease the risk of functional disability, worsening quality of life, and hospital admissions. **Objectives:** To estimate the prevalence of cognitive frailty among older adults in Colombia and identify variables associated with this condition. **Methods:** Data come from the "Salud, Bienestar y Envejecimiento" (SABE) Colombia Study, a cross-sectional study conducted in 2015 at the urban and rural research sites (244 municipalities) in Colombia. Sociodemographic, health, cognitive and anthropometric measures were collected from 23694 community-dwelling adults aged 60 years and older, representative form the total population. Cognitive frailty was created using a FRAIL instrument for clinical frailty and clinical dementia rating (CDR) score of 0.5 for cognitive impairment. Logistic regression analyses were used to identify factors associated with cognitive frailty. **Results:** 18305 people were analyzed, a total of 1904 elderly had cognitive frailty (10.4%). Older age (>70 years) was significantly associated with CF (OR 1.25, 95% CI 1.13-1.38). Living in a rural area (OR 1.19, 95% CI 1.06-1.33), malnutrition (OR 2.06, 95% CI 1.65-2.56) and poor oral health were also significantly associated (1.40, 95% CI1.24-1.58). Poor self-perceived health status and polypharmacy were significantly associated to CF (OR 1.19, 95% CI 1.05-1.31 and 1.57, 95% CI 1.36-1.80, respectively). Related to clinical conditions, CF was significantly associated with cardiovascular disease (OR 1.53,95% IC 1.37-1.71), chronic pulmonary disease (OR 1.95, 95% IC 1.70-2.24), diabetes (OR 1.59, 95% IC 1.41-1.80), cancer (OR 1.32, 95% IC 1.06-1.63), mental and osteoarticular disease (OR 1.26, 95% IC 1.07-1.48 and OR 1.72, 95% IC 1.55-1.91, respectively). Finally, high educational level (OR 0.72, 95% IC 0.64-0.83) and physical activity (OR 0.72, 95% IC 0.65-0.80) were associated with less CF. **Conclusion**: The prevalence of CF in Colombia was found in 10.4% of the surveyed population and represents a considerable proportion in Latinoamerica and worldwide. There are potentially preventable, treatable and reversible factors that are associated with cognitive frailty in this sample. Physical activity and high educational level were associated with less CF.

P48- SEX DIFFERENCE OF THE TENDENCY OF FOOD HABIT OF COGNITIVE FRAIL PATIENT AND CAREGIVER.

Yumi Umeda-Kameyama, Kiyoshi Yamaguchi, Mitsutaka Yakabe, Taro Kojima, Yasuhiro Yamaguchi, Sumito Ogawa, Masahiro Akishita *(Department of Geriatric Medicine, The University of Tokyo, Japan)*

Background: Sarcopenia and dementia (cognitive frail) patient involve an elderly people in nursing care, and both of them have relationship to nutrition. Good meals with nutrition play important roles for prevention of sarcopenia and dementia. However, elderly people have many difficulties about meals, including shopping, cooking, ingestion and swallowing, appetite, dysgeusia and dyssomnia. **Objectives:** In order to carry out a diet advice, we investigate food habit of not only a dementia patient but also caregiver who lives together and cooks and compare them with National Health and Nutrition Examination Survey of elderly people more than 70 years old (fish, female: 85.9g/day, male: 94.6g/day; confection, female: 26.8g/day, male: 24.6g/day). **Methods:** 69 amnestic mild cognitive impairment (aMCI) and Alzheimer's disease (AD) patients (female: 40, male: 29) who went to our forgetfulness outpatient clinic in our department, and their caregiver were investigated about the food habit using the simple type dietary history method questionnaire (brief-type self-administered diet history questionnaire; BDHQ). **Results:** Our female patients took significantly few fish and our male and female patients took significantly much confections. Female patient (AD+aMCI) took 52g/day of few fish on average (caregiver 51g/day), while male patient took 102g/day of fish (caregiver 95g/day). Especially, AD female patients took only 43g/day of fish (caregiver 37g/day). Female patient took 73g/day of confections on average (caregiver 76g/day), and male patient took 84g/day of confections (caregiver 60g/day). **Conclusion:** The tendency of our patient's food habit was a similar to a caregiving household regardless of the caregiver's sex. It is important to guide the caregiver who prepared a meal ready appropriately to prevents cognitive frail.

P49- SARCOPENIA AND COGNITION IN THE OLDEST OLD: DATA FROM THE FIBRA STUDY IN BRAZIL.

Mônica Sanches Yassuda[1,2], Gabriela Cabett Cipolli[1], Flávia Arbex Borim[2], André Fattori[2], Ligiana Pires Corona[2], Anita Liberalesso Neri[2], Ivan Aprahamian[3] *((1) University of São Paulo; (2) State University of Campinas; (3) Jundiaí Medical School)*

Background: Sarcopenia is a syndrome characterized by progressive and widespread loss of skeletal muscle mass and strength. It is unclear whether sarcopenia has negative effects on cognition among the oldest old. **Objectives**: To examine whether the relationship between sarcopenia and cognition is observed when different strategies are used to diagnose sarcopenia. **Methods:** Cross-sectional study using data from the second wave of the Frailty in Brazilian Elderly study (FIBRA). The sample comprised 205 cognitively unimpaired older adults, 80+ years old, who completed a single session of data collection in the home environment. The protocol included sociodemographic and cognitive variables (Mini Mental State Examination - MMSE), anthropometric measures, gait speed and hand grip strength. Muscle mass was calculated using the Lee formula. The SARC-F scale was also applied. Sarcopenia was identified using three diferente strategies: 1. SARC-F score >= 6; 2. SARC-F score + calf circumference >= 11; and 3. The criteria of the European Working Group on Sarcopenia in Older People (EWGSOP) = reduced gait speed and/or hand grip strength + reduced muscle mass (Lee Formula). Three separate multivariable regression analyses were carried out with MMSE score as the dependent variable and age, sex, schooling and sarcopenia status as independent variables. **Results:** SARC-F identified 19 sarcopenic individuals (9.27%), SARC-F score + calf circumference identified 50 individuals (24.51%), and the EWGSOP criteria identified 38 individuals with sarcopenia (19.1%). Sarcopenic individuals, identified according to the EWGSOP criteria, had significantly lower MMSE scores. The other two strategies to identify sarcopenia did not yield significant differences in cognitive scores, when sarcopenic and non-sarcopenic individuals were compared. In the multivariable regression analyses, sarcopenia status was not a significant predictor of cognitive performance. **Conclusion:** Sarcopenia may have negative repercussions on the cognitive status of the oldest old. The relationship between sarcopenia and cognition may be more evident when the sample includes higher variability in cognitive scores.

P50- PHYSICAL FRAILTY AND COGNITIVE FUNCTIONING IN NON-DEMENTED COMMUNITY-DWELLING OLDER ADULTS: CHINA COMPREHENSIVE GERIATRIC ASSESSMENT STUDY.

Lina Ma, Li Zhang, Fei Sun, Yun Li, Zhe Tang *(Department of Geriatrics, Xuanwu Hospital, Capital Medical University, China National Clinical Research Center for Geriatric Disorders)*

Background: Aging is associated with both physical and cognitive decline. Physical frailty, characterized by reduced physiologic complexity and ability to cope with stressors, is closely associated with cognitive impairment, which increases the risk of poor clinical outcomes. Although a growing number of studies are now focusing on the relationship between physical frailty and cognitive impairment, the literature has generally considered them two different entities. To better capture the association between physical frailty and cognitive impairment, a new construct, cognitive frailty, has been proposed. So far, there is little evidence on the relationship between physical frailty and cognition, as well as cognitive frailty, in Chinese older adults. **Objectives:** We aimed to elucidate whether physical frailty is associated with cognitive functioning in a Chinese older population. **Methods:** Data were from the China Comprehensive Geriatric Assessment Study (CCGAS). 6867 community-dwelling older adults from seven cities in China were included. Physical frailty was assessed using frailty phenotype. Cognitive functioning was assessed by the Mini-Mental State Examination (MMSE). 3081 dementia-free older adults on whom complete data relating to both physical frailty and the MMSE were available were included. **Results**: The prevalence of physical frailty, prefrailty, cognitive impairment, and cognitive frailty was 9.9%, 33.9%, 7.5%, and 2.3% respectively (weighted: 8.8%, 33.8%, 6.5%, and 2.0%). The prevalence of the combination of prefrail/frail and cognitive impairment was 5.1% (weighted 4.5%). Frail participants performed worse on global cognition and all cognitive domains than robust and prefrail participants. The MMSE total score was positively correlated with walking speed and negatively correlated with age, frailty phenotype score, and frailty index. Multivariate logistic regression revealed that after adjusting for age, gender, education level, living area, and chronic diseases, physical frailty [hazard ratio (HR): 2.571(1.789–3.695), p<0.001], exhaustion [HR: 2.099(1.389–3.172), p<0.001], slowness [HR: 1.859(1.327–2.606), p<0.001], and inactivity [HR: 1.709(1.250–2.335), p=0.001] were significantly associated with global cognition. **Conclusion**: The standard prevalence of physical frailty, prefrailty, cognitive impairment, and cognitive frailty in community-dwelling older adults in China was 8.8%, 33.8%, 6.5%, and 2.0%, respectively. Physical frailty, exhaustion, slowness, and inactivity were significantly associated with poor global cognition.

P51- COULD DELIRIUM BE A MANIFESTATION OF SYMPATHETIC OVER-DRIVE?

Elaine Shanahan[1], Sheila Carew[2], Aine Costelloe[2], Tina Sheehy[2], Catherine Peters[2], Tom Kiernan[1], Declan Lyons[2], Margaret O'Connor[1] *((1) University Hospital Limerick, Ireland and Graduate Entry Medical School School, University of Limerick, Ireland; (2) University Hospital Limerick, Ireland)*

Background: Delirium is a common condition with a poorly understood underlying pathyophysiology. Imaging studies have shown that delirious patients have reduced cerebral perfusion. Patients with orthostatic hypotension (OH) have been shown to have lower middle cerebral artery blood flow velocities during Head-Up tilt (HUT) testing. We hypothesised that patients with delirium would have a higher rate of OH than controls. **Objectives:** To assess the response of participants with recent delirium to HUT and to ascertain if they have higher rates of OH than controls. **Methods:** Participants aged 65 years and older were recruited. Delirium was assessed using DRS-R98. Participants were included in the delirium group (DG) if they met DSM-IV criteria for delirium and in the CG if they did not meet criteria. Pre-existing cognitive impairment was assessed using the AD8 informant questionaire. HUT took place when the participant was free of delirium and acute illness that could interfere with the results. OH was defined as a reduction in systolic blood pressure (SBP) of at least 20mmHg or in diastolic blood pressure (DBP) of at least 10mmHg. Orthostatic hypertension (OHTN) was defined as an increase in blood pressure (BP) by the same values. **Results:** 29 patients completed Head Up Tilt (HUT) testing. 58.6% (17) had a diagnosis of delirium. Age and gender were equally distributed within the two groups. The DG and CG had a median decrease in SBP of 1mmHg (IQR 38.5) and 17.5mmHg (IQR 20.75) respectively, p=0.04. As DRS-R98 severity scores increased SBP change during HUT also increased (rs= 0.42, p=0.03). 35.3% (6) of patients in the DG had OH compared to 50% (6) of the CG. 47.1% (8) of the DG had OHTN compared to 8.3% (1) of the CG (p=0.14). When a subgroup analysis of participants (19) without cognitive impairment was carried out, the rate of OHTN was 53.8% (7) in the DG and 0% in the CG (p=0.03). **Conclusion:** Participants in the delirium group had higher rates of OHTN with delirium severity correlating to increasing BP during HUT. This suggests that participants in the delirium group may have higher sympathetic activity, although further research would be required to confirm this.

P52- STUDY OF COGNITIVE FRAILTY IN A HEALTH-SEEKING POPULATION.

Meenal Thakra, Avinash Chakravarthy, Aparajit Ballav *(Department of Geriatric Medicine, AIIMS, India)*

Background: Dementia is a global health burden associated with elderly dependence and poor quality of life. Therefore, an early detection of at-risk older adults at its reversible stage is of prime importance. A precursor of neurodegenerative processes is represented by Cognitive frailty. It is a heterogeneous clinical manifestation characterized by the simultaneous presence of both physical frailty and cognitive impairment in the absence of concurrent dementias. There is a paucity of knowledge in terms of its prevalence and associated biochemical and neuroimaging markers in the Indian scenario. **Objectives:** The aim of this study was to determine the frequency of cognitive frailty in older adults in hospital-based settings and to identify blood-based biomarkers and neuroimaging biomarkers of cognitive frailty. **Methods:** It was a cross-sectional observational study in which 160 patients, of age 65 years and above visiting the OPD of Geriatric Medicine department, AIIMS, India, were recruited from February 2017 to October 2018. Patients were screened for frailty by Rockwood's criteria and cognitive assessment of frail patients was done using Clinical dementia rating (CDR) scale. Frail patients with mild cognitive impairment (CDR=0.5) were defined as cognitive frail. Their blood samples were collected to look for their association with cognitive frailty. FDG PET of selected patients was also done. **Results:** Among the 160 patients screened 67(41.9%) were frail and 33(20.6%) had cognitive frailty. Among patients with Cognitive frailty mean age was 73.03 (+/-6.9) and mean years of formal education was 5.58 years. 19 were males and 14 were females among cognitive frail patients. The mean Rockwood Index in patients with cognitive frailty was 0.36 (+/- 0.09). Among 33 patients with cognitive frailty, 7(21.25%) were employed. Memory complain was present in 21(63.6%) out of 33 patients with cognitive frailty whereas 6 (18.2%) had no complaint of memory problem. **Conclusion:** This study provides the prevalence and demographic relations of cognitive frailty in the Indian tertiary care hospital settings. We have identified

various factors associated with cognitive frailty, which will help in identifying cognitive frailty when considered for the assessment of older adults.

P53- LOWER CEREBRAL VOLUMES IN FRAIL VERSUS ROBUST NON-DEMENTED ELDERLY.

Debora Lee Vianna Paulo[1], Camila Vieira de Ligo Teixeira[3], Amanda Veigas Sardelia[2], Amanda Ximenes Reis[1], Maria Fernanda Bottino Roma[1], Heitor Moreno Junior[1], Paula Teixeira Fernandes[2], André Fattori[1] *((1) Gerontology Program,Faculty of Medical Science, University of Campinas (UNICAMP); (2) Faculty of Physical Education - UNICAMP; (3) Neurology Department -UNICAMP)*

Background: Frailty is one of the major geriatric syndromes associated to many adverse effects including disabilities, hospitalization time and mortality. It is a complex syndrome, affecting physical, psychological, and social aspects; also leading to cognitive impairment. However, the effects of frailty on cerebral structure is not well elucidated in the literature. **Objectives:** The aim was to compare the cerebral volume between frail (F) and non-frail(NF) elderly. **Methods:** The cerebral volume of 31 women (70 to 85 years), 15 F and 16 NF according to Fried et al. (2001), with no dementia diagnosis were assessed by Magnetic Resonance Imaging (MRI) and the software FreeSurfer. T-test and Mann-Whitney were used respectively for normally and non-normally distributed data, identified through Shapiro Wilk test. Data is presented in mean ± standard deviation and $P < 0.05$ was considered significant. **Results:** There was no difference between groups regarding age (F:79±5 and NF:77±5years) and years of education (F:6±4 and NF:7±6years).There was significant differences between F and NFfor Mini Mental state examination (F:23±4 and NF: 26±3),right and left hippocampal volume(right F:3219±463 and NF: 3681±419; and left F:3122±477 and NF: 3495±344), right and left amygdala volume(right F:1391±307 andNF:1698±297; and left F:1257±250 and NF:1538±168), right and left cerebellar cortex volume (right F:35121±3358 and NF:38476 ±3485; and left F:34511±3782 and NF:37619±3121), left entorhinal cortex volume(F:3.15±0.6 and NF: 3.31±0.3),right and left cortical poles frontal volume(right F:2.69±0.4 and NF: 2.74±0.3; and left F:2.71±0.4 and NF:2.50±0.2), right inferior parietal volume(F:2.17±0.2 and NF: 2.12±0.1) and right insula volume(F:2.81±0.2 and NF: 2.82±0.1). **Conclusion:** These findings suggest cerebral changes associated with memory and limbic system. Previous studies have shown moderate to severe cortical atrophy in frail, but limited information regarding regional volumes have been investigated on the literature. Another studycorroborates our findings considering the lower hippocampal and cerebellar volumes in frail elderly.Although only longitudinal studies could address a cause-effect relationship, these data suggest a strong association between frailty and cerebral structure modifications.

P54- IMAGING AND FRAILTY.

Mathieu Maltais, Philipe de Souto Barreto, Yves Rolland, Bruno Vellas *(Gérontopôle of Toulouse, France)*

Background: Frailty is a prevalent geriatric condition and its association with brain health is still poorly investigated. White matter lesions (WML) measured by magnetic resonance imaging (MRI) and cortical amyloid ß (Aß) load are both cornerstones for the measurement in brain health. Cross-sectional associations between WML and Aß with frailty have been shown, but no studies have examined the prospective association of WML and Aß load with frailty in community older adults. **Objectives:** The objective of this study was to examine whether brain WML and cortical Aß load were related to longitudinal changes in frailty severity in community-dwelling older adults. **Methods:** Data from the imaging ancillary studies of MAPT were used in this study. Frailty was assessed using Fried's frailty phenotype as an ordinal variable (range from 0 to 5, higher is worse) at baseline, 6, 12, 24 and 36 months and with a 19-item frailty index not directly linked to cognition. We obtained brain WML data using MRI at the first and last year of the trial. Brain Aß was assessed using the positron-emission-tomography scan. Regional and cortical-to-cerebellar standardized uptake value ratios were obtained. **Results:** Our results indicate that people with higher baseline WML had a higher likelihood of increasing their frailty phenotype score. Furthermore, a significant, positive cross-sectional and prospective relationship was found for Aß load in the anterior putamen, posterior putamen and precuneus regions with increasing frailty. **Conclusion:** WML and Aß load were associated with frailty severity over time. This study provides new information regarding the presence of WML and Aß load in the context of the evolution of frailty in older adults. The potential mechanisms involved require further investigation.

P55- FRAILTY MEDIATES SENILITY IN MEXICAN-AMERICANS.

RF Palmer[1], DR Royall[1-4] *((1) Departments of Family & Community Medicine; (2) Psychiatry; (3) Medicine; (4) The University of Texas Health Science Center at San Antonio and the South Texas Veterans Health Administration Geriatric Research Education and Clinical Center (GRECC))*

Background: The latent construct "δ" (for "dementia") offers a continuously distributed transdiagnostic dementia severity metric. Age is significantly associated with δ. Its unique effect (i.e., "senility") can be shown to be partially mediated by certain serum proteins, including the "somatomedins" insulin-like growth factor (IGF) and IGF binding protein 2 (IGFBP2). IGFBP2 fully attenuates age's unique 3-fold effect on 5 year prospective Mild Cognitive Impairment (MCI) conversion risk in the Texas Alzheimer's Research and Care Consortium (TARCC). These findings implicate senility as a form of "cognitive frailty". **Objectives:** We test whether frailty mediates age's effect on 6 year prospective change in dementia severity in Mexican-Americans (MA), using data from the Hispanic Established Population for Epidemiological Studies in the Elderly (HEPESE). Methods: Age was regressed onto the 6yr prospective slope of change in δ (Δδ) in N = 880 [mean age = 77.4 (6.1) at wave 3]. The "dMA" homolog was used. dMA has a high Area Under the Receiver Operating Characteristic Curve (AUC /ROC) for dementia's diagnosis (c = 0.94 in TARCC MA). dMA also correlates r = -0.88 with Clinical Rating Scale Sum of Boxes. Δδ was estimated by a latent growth curve (LGC) indicated by latent dMA scores across three HEPESE waves (i.e., 3, 5 and 6). "Frailty" was assessed by a modified version of Fried et al.'s construct observed at wave 6, and was tested as a mediator of age's association with Δδ. The mediation effect was estimated by MacKinnon's method. **Results:** dMA at each wave, and the LGC of Δδ all had acceptable model fit (e.g. RMSEA <.05). Age was significantly associated with Δδ. 51% of their association was explained by frailty. Conclusion: At least in MA, frailty mediates the majority of age's association with dementia severity. Not only does this support the existence of a cognitive "frailty" syndrome in MA, it also implicates an effect of frailty on intelligence (as δ is derived from Spearman's general intelligence factor "g"). Their association may be mediated by blood-based serum biomarkers, including somatomedins, which may offer targets for the treatment and /or prevention of senility in frail elderly persons.

FUNCTIONAL ASSESSMENT

P56- COMPARISON OF DIAGNOSTIC CRITERIA FOR IDENTIFICATION OF SARCOPENIC OBESITY IN ADULTS WITH KNEE OSTEOARTHRITIS. Kristine Godziuk[1], Carla M. Prado[2], Linda J. Woodhouse[3], Mary Forhan[4] *((1) Faculty of Rehabilitation Medicine, University of Alberta, Edmonton, Alberta, Canada; (2) Department of Agricultural, Food and Nutritional Science, Faculty of Agricultural, Life and Environmental Sciences, University of Alberta, Edmonton, Alberta, Canada; (3) Department of Physical Therapy, Faculty of Rehabilitation Medicine, University of Alberta, Edmonton, Alberta, Canada; (4) Department of Occupational Therapy, Faculty of Rehabilitation Medicine, University of Alberta, Edmonton, Alberta, Canada)*

Background: Adults with obesity and end-stage knee osteoarthritis (OA) may be particularly at risk for development and progression of sarcopenia, due to the complex and combined influences of OA, obesity, aging and pain-related immobility on skeletal muscle mass, strength and function. However, few studies have examined the prevalence of sarcopenic obesity in clinical OA populations. As muscle mass, strength and function have important relevance in management of knee OA, clarity on sarcopenic obesity prevalence rates and diagnostic approaches is needed. **Objectives:** To identify and compare the prevalence of sarcopenic obesity in adults with knee OA using accepted diagnostic approaches that use low muscle mass alone or in combination with low function and/or strength. **Methods:** Adults with unilateral or bilateral end-stage knee OA and a body mass index (BMI) >=30 kg/m2 were included. Patients had their body composition measured by dual-energy x-ray absorptiometry (DXA). Physical function was assessed using gait speed over 4 meters, with a cut-off of 0.8 m/s indicating low function. Muscle strength was assessed by maximal isometric handgrip strength using a Jamar handgrip dynamometer, with cut-offs of <20 kg in females and <30 kg in males indicating low strength. **Results:** The sample consisted of 151 adults (59% female) with a mean age 65.1±7.9 years, and a mean BMI 37.1±5.5 kg/m2. Comparing sarcopenic obesity diagnostic cut-offs that consider appendicular skeletal muscle mass (ASM) relevant to height2, weight and BMI, prevalence varied from 1%, to 15%, to 27%, respectively. Using a combined approach of low muscle mass with the presence of low strength and/or low function, prevalence was 9%. Sarcopenic obesity prevalence was higher in males versus females when using all ASM adjusted criteria, and higher in older adults (>=age 65 years) versus middle-aged adults (age 40-64 years) when using the combined approach. **Conclusion:** Prevalence of sarcopenic obesity varied depending on the diagnostic criteria, with primarily older adults (>=age 65 years) identified when using a combined diagnostic approach. Given the independent influence of OA on mobility and physical function, other assessments or cut-offs for low strength or function may be needed to identify sarcopenic obesity in younger OA populations.

P57- EVALUATION OF SLEEP DISORDERS AND ACCOMPANYING FACTORSEVALUATION OF SLEEP DISORDERS AND ACCOMPANYING FACTORS. Banu Ozulu Turkmen *(Istanbul University Istanbul Medical School Department of Internal Medicine Division of Geriatrics)*

Background: Sleep is a normal, transient, periodic and psychophysiological status that is caused by the decline in nervous sensation and voluntary muscle movements of organic activities. It is characterized by temporary loss of consciousness, decreased response to envoirmental factors and stereotypical EEG changes. American Academy of Sleep Medicine guideline 2017 defined insomnia disorders as the subjective report of the problems with falling asleep, duration and quality that cause daytime impairment. Sleep problems are highly prevalent in those over the age of 65, with up to 50-70% in some studies. In elderly population sleep disorders have been associated with poor quality of health, falls, inappropriate medication use and higher rates of morbidity and mortality. **Objectives:** In our study, we aimed to evaluate the frequency of sleep problems and their relationship between the possible factors in our outpatient clinic. **Methods:** A retrospective review of medical reports of 295 patients, admitted (november 2013-november 2016) was conducted and the association between sleep problems and age, gender, falls, fraility, restless leg syndrome (RLS) were evaluated. **Results:** 295 geriatric patients were included in out study 66% (n=196) was female and, 34% (n=99) male. Mean age was 75.6±6.8. Prevalence of sleep problems was 47.8%. In bivariate analysis, the relation between insomina and age, polypharmacy, RLS was significant.There was no statistically significant difference between both genders. In regression analysis, the association between sleep problems and age, polypharmacy and RLS was found independent. **Conclusion:** Sleep disorders in elderly is a major health problem affecting quality of life negatively and should be questionned during polyclinic visits. It should be kept in mind that the sleep problems may be related with important geriatric syndromes as polypharmacy.

P58- FUNCTIONAL ASSESSMENT OF THE WORKABILITY, FUNCTIONAL DECLINE AND FRAILTY IN THE ELDERLY SUBJECTS. Olena Tomarevska, Oleksandr Poliakov *(Laboratory Occupational-Labor Rehabilitation, Social gerontology and Public Health Department, Institute of Gerontology by D.F. Chebotarev of National Academy of Medical Sciences of Ukraine, Kyiv, Ukraine)*

Background: Workability is indicator of health in conditions of heterochronic aging on the functions and tissues of the human organisms under aging population. Compliance with the trend of aging population is imply the rapid maturity of the average age of workers and the age-friendly change in working places and living conditions in the city or village. More adulthood is creating the interesting situation relationship higher professional requirements for mental capacity and lower physical performance to workers of working disability and independence and frailty of older people in modern environment. **Objectives:** The objective of research was assessment impact factors of the social, health and professional status on residual working capacity of the elderly people and workers. **Methods:** The methods has been studied anthropometric and functional parameters of respiration, physical performance, mental and psychomotor activity, sensory skills, as well as the rate of functional aging in the 120 persons aged 60 - 89 years, and 43 men aged 20 - 30 years. According to the physiological and ergometric tests and subsequent clustering, correlation and regression analysis made it possible to develop a method for determining the residual working ability of the 60 years subjects and more. **Results:** In results the reduction of the use of information sources is a prognostic factor of 7.95%, level education 15.18%, the migration 7%, hypertension 6.72%, breath hold on inhale 40% and exhale 38% which determines the amount of residual capacity in the retirement age. Quantitative characteristic indicators of the impact of professional activity, which has been in the past or ongoing at the time the study showed a greater percentage impact than the parameters of physical activity or nutrition on the remaining amount of the elderly. Association level migration and residual capacity (r = -0.265; p<0.01), aging (r = -0.784; p<0.001), hand grip strength left & right (r = -0.255; r = -0.259, p<0.01). **Conclusion:** It was found general involution trends, which deals to the deterioration of

anthropometric and functional parameters, muscle strength, mind and sensory skills. Assessment the residual capacity of elderly with help to view overall quantitative positive impact the outcomes the physical activity, householder, and employees.

P59- FINDINGS OF A SYSTEMATIC REVIEW OF PSYCHOMETRIC PROPERTIES FOR DAILY ACTIVITIES (ADL) QUESTIONNAIRES FOR OLDER COMMUNITY-DWELLING PERSONS: A SYSTEMATIC REVIEW.

Marijke Hopman-Rock[1], Helmi van Hirtum[1], Paul de Vreede[2], Ellen Freiberger[3] *((1) Research center Body@Work TNO (Netherlands Organization for Applied Scientific Research) and VU university Medical Center, Leiden/Amsterdam, The Netherlands; (2) Department of Public Health, Erasmus MC, University Medical Center Rotterdam, The Netherlands; (3) Institute for Biomedicine of Aging, Friedrich-Alexander University Erlangen-Nürnberg, Nuremberg, Germany)*

Background: In community-dwelling older persons (CDOP) screening and assessing the ability to conduct activities of daily living (ADL), such as getting out of bed, toileting, bathing, dressing, grooming, and eating are frequently used. These measurements are used to detect early onset of functional decline or disability and are key factors for care management. In most cases, this information is obtained with questionnaires and commonly used to refer to basic or personal ADL (i.e. self-care activities (B)ADL). However, many of these instruments are not specially designed for use CDOP, and the question remains how valid and reliable they are when used in such a context. **Objectives:** To assess ADL instruments for use in CDOP on psychometric properties. **Methods:** Electronic databases (Medline, EMBASE, AMED, Psycinfo, CINAHL) were searched, using MeSH terms and relevant keywords. Studies, published in English, were included if they evaluated one or more psychometric properties of ADL instruments in CDOP aged 60 years and older. Studies were excluded if they did not utilize a separate ADL scale; if the instrument used was developed for populations with specific diseases; or if the ADL scale had less than three items; or was rated inadequate for reporting reliability, validity, and/or responsiveness. **Results:** In total we found 140 articles describing more than 50 different ADL instruments. Ten instruments which were applied in minimally three different articles of good quality (clear descriptions and adequate design according to the protocol), were evaluated for reliability, validity and responsiveness; each received a summary score. The four instruments with the highest scores were the Functional Autonomy Measurement System (SMAF), 5-items Katz list (although content and wording is often inconsistent across studies), Functional Independence and Difficulty Scale (FIDS) and the Barthel Index. **Conclusion:** Based on this systematic review, we recommend the SMAF, 5-item Katz, FIDS and Barthel index as ADL measures for research and clinical practice in older populations. Nevertheless, only a few well documented valid and reliable measures for ADL in Community dwelling older person exist. Most instruments were originally developed in nursing home setting or disease specific and transferred to the community setting without further evaluation.

P60- CORRELATION BETWEEN CLINICAL QUESTIONNAIRES AND GAIT PARAMETERS WITH FOOT PRESSURE PATTERNS IN PATIENTS WITH KNEE OSTEOARTHRITIS.

Si-hyun Kim[1], Kyue-nam Park[2] *((1) Department of physical therapy, Sangji University, Wonju, South Korea; (2) Department of physical therapy, College of Medical Science, Jeonju University, Jeonju, South Korea)*

Background: Knee osteoarthritis is usually verified by radiological examination accompanied by clinical questionnaires to assess pain intensity, symptoms, and functional activity. Patients with knee osteoarthritis exhibit gait adaptation and changes in foot pressures during gait. **Objectives:** The aim of this study was to investigate the correlation between gait parameters with foot pressure patterns and clinical questionnaires in knee osteoarthritis. **Methods:** 71 patients with knee osteoarthritis (59 females and 12 males, age; 63.71 ± 8.7, BMI; 23.5 ± 6.0) were included, confirmed by radiological examination. All patients completed Knee Injury and Osteoarthritis Outcome Score (KOOS) and SF (Short Form) -36. Specific gait parameters (length, width, and velocity of step, angle of foot rotation and percentages of each gait phase) and foot pressure patterns (maximum force and pressure in forefoot, midfoot and heel) during gait were measured by gait analyser FDM. Relationship between gait parameters or foot pressure and self-assessment questionnaires were analyzed by Pearson or Spearman correlations. **Results:** There were no significant correlations between clinical questionnaires (KOOS and SF-36) and step length or width or rotation degrees of the foot ($r = -0.33$ to -0.11, $P > 0.05$). All KOOS subscales (stiffness, pain, ADL function, sport and recreation function and quality of life) except of symptoms subscale showed positively moderate correlations with percentages of each gait phase (load response phase, pre-swing phase and double-stance phase) (rho = 0.44 to 0.63, $P < 0.05$), but percentages of mid-stance and swing phase showed negatively moderate correlation with KOOS subscale (rho = -0.66 to -0.44, $P < 0.05$). A positively moderate correlation was detected between SF-36 scores and maximal force in midfoot region ($r = 0.56$, $P < 0.05$). **Conclusion:** Percentage of gait phases and maximum force in midfoot region during gait correlates moderately with the level of pain, restriction of ADL or sports/recreation function and quality of life for patients with knee osteoarthritis. These findings help to understand relationship between clinical questionnaires and gait adaptation with changes of foot pressure during gait for patients with knee osteoarthritis. This work was supported by the National Research Foundation of Korea(NRF) grant funded by the Korea government(MSIT) (No. 2018R1C1B5083305 and 2017R1C1B5017986).

P61- INVESTIGATION OF THE INFLUENCE OF THE INTERACTION BETWEEN SKELETAL MUSCLE MASS AND FAT MASS ON MUSCLE STRENGTH AND PERFORMANCE IN JAPANESE OLDER PEOPLE.

Kiyoshi Tozaki[1], Naoto Kamide,[1,2], Takuya Maeda[3], Tetsuharu Nakazono[4], Miki Sakamoto[2], Haruhiko Sato[1,2], Yoshitaka Shiba[2], Naonobu Takahira[1] *((1) Graduate School of Medical Sciences, Kitasato University, Japan; (2) School of Allied Health Science, Kitasato University, Japan; (3) Department of Rehabilitation, Kitasato University East Hospital, Japan; (4) Department of Rehabilitation, Kitasato University Hospital, Japan)*

Background: The European Working Group on Sarcopenia in Older People (2010) defines sarcopenia as decreased skeletal muscle mass and muscular strength or performance. For muscle mass evaluation, the skeletal muscle index (SMI) is generally used. Although SMI is related to muscle strength, it is sometimes not related

to performance. We hypothesized that performance is affected by the interaction between fat mass and muscle mass. **Objectives:** This study aimed to examine the influence of the interaction between skeletal muscle mass and fat mass on performance in Japanese older people. **Methods:** The subjects were 512 Japanese elderly people >65 years old who live independently in their community (135 men, 377 women, average age 71.4±4.6 years). Appendicular skeletal muscle mass and fat mass were measured using bioelectrical impedance analysis, and SMI and fat mass/weight (fat%) were calculated. Grip strength and isometric knee extension muscle strength were measured as muscle strength tests, whereas maximum walking speed and timed up-and-go test (TUG) time were measured as performance tests. According to the Asia Working Group of Sarcopenia definition, subjects were classified as SMInormal and SMIlow (men: SMI <7.0 kg/m2, women: SMI <5.7 kg/m2). According to the Ministry of Health, Labor and Welfare in Japan definition, subjects were classified as fat%normal and fat%obese (men: fat% >25%, women: fat% >30%). Multiple regression analysis stratified by sex was performed, with the interaction term of SMI (normal/low) and fat% (normal/obese) set as an independent variable, muscle strength or performance test as a dependent variable, and age as a covariate. The level of significance was <0.05%. Results: In men, SMIlow/fat%normal showed a significant association only with the 2 muscle strength tests, but the interaction term of SMI/fat% had no significant association with the 2 performance tests. In women, regardless of fat%, SMIlow showed a significant association with the 2 muscle strength tests. The 2 performance tests were significantly related to only SMInormal/fat%obese. Conclusion: The interactions between SMI and fat% are not absolutely associated with muscle strength and performance in Japanese older people. We suggest that SMI has a limitation as an index of muscle strength and function in Japanese older people.

P62- LIFE-SPACE MOBILITY AS A CLINICAL MARKER FOR PHYSICAL FITNESS IN COMMUNITY-DWELLING OLDER ADULTS: GENDER DISPARITY OBSERVATIONS. EL Tay, YSNg, A Latib, SM Mah, L Tay *(Sengkang General Hospital, Singapore)*

Background: Declines in physical fitness begin as early as middle life and may be an antecedent to frailty. However, its assessment requires a skilled therapist and may not reflect the extent of an older person's mobility in the community. Life-space assessment (LSA) has been introduced but gender disparity in LSA remains unclear. **Objectives:** We aim to examine the relationship between life-space mobility and physical fitness in community-dwelling older adults, with special reference to gender specificity. **Methods:** This is a cross-sectional analysis of 225 community-dwelling older adults who had completed a multi-domain geriatric screen, and physical fitness battery. LSA questionnaire documents where and how often individuals travel, and any assistance required over the past month. The physical fitness battery included tests of upper and lower limb strength, power and dexterity (grip strength, Box-and-Block-Test, 30s-chair-rise test), upper and lower limb flexibility, static (tandem stand) and dynamic (Timed-Up-Go, TUG) balance, gait speed and cardiorespiratory endurance (6-minute walk test, 6MWT). We performed correlation analyses between LSA and individual physical fitness measures for the overall cohort and by gender, followed by linear regression adjusted for age. **Results:** 69 (30.7%) of our cohort (mean age 67.4 + 6.7years) were males and 156 (69.3%) were females. LSA was significantly restricted with increasing age (r = -.230, p=0.001). With the exception of flexibility, LSA correlated significantly with all physical fitness measures: TUG (r = -.303, p<0.001), chair-rise (r = .252 , p<0.001),10mWT duration (r = -.216 , p=0.001), Box-and-

Block-Test (r = .164, p=0.016), tandem stands (r = .141, p=0.037), 6MWT (r = .136, p=0.047), and grip strength (r = .192, p=0.004). In subgroup analyses by gender adjusted for age, life-space increased significantly with endurance (B = 0.224, p<0.05), grip strength (B = 0.364, p<0.05), and upper limb dexterity (B = -0.252, p<0.05) in men, but with no significant association between LSA and any of the physical fitness measures in women. **Conclusion:** Restricted LSA may identify community-dwelling older adults who require a more detailed assessment of function to plan and target appropriate interventions. While LSA may reflect declining fitness in men, its relation with physical fitness in older women appears to be largely driven by age.

P63- DEVELOPING A NOVEL TOOL FOR THE ASSESSMENT OF PHYSICAL FRAILTY IN OLDER ADULTS WITH A DIAGNOSIS OF PSYCHIATRIC DISORDER. Rebecca Gould, Robert Howard *(Division of Psychiatry, University College London, United Kingdom)*

Background: Frailty in the context of psychiatric disorder requires specialist assessment, particularly given the bi-directional associations between frailty and psychiatric disorder, the co-morbidity of the two, and associated increased risks for adverse outcomes. To date, no frailty assessment tool has been developed for or validated in older adult psychiatric populations. **Objectives:** To develop a tool to assess physical frailty in older adults with a diagnosis of psychiatric disorder. **Methods:** How physical frailty may best be conceptualized and measured in the context of psychiatric disorder was explored through two expert Delphi studies, focus groups with mental health clinicians, and design meetings with a sample of the population such a tool would be used with. The results, in addition to two systematic reviews of the literature, informed the design of the Tool for the Assessment of Frailty in Functional mEnTAl health disorders (TAFFETA). The comprehensibility, acceptability, and feasibility of TAFFETA was explored through two pilot test studies. TAFFETA was revised based on feedback from both studies. Preliminary examinations of inter-rater reliability and convergent and discriminant validity were also completed. **Results:** TAFFETA is a multi-component clinical assessment tool which assesses physical frailty across five frailty domains. Frailty indicators are identified in each domain, and then examined as to whether they are likely to be associated with physical and/or psychiatric difficulties to inform treatment planning. TAFFETA was considered comprehensible, acceptable, and feasible by both a sample of the population TAFFETA is designed for use with (pilot test 1 n=10, pilot test 2 n=26) and clinician researchers (pilot test 1 n=5, pilot test 2 n=9). Preliminary examinations of reliability and validity indicate excellent inter-rater reliability (final frailty score ICC= 0.973, 95% CI = 0.942-0.988) and good convergent validity (TAFFETA frailty scores and Tilburg Frailty Indicator physical frailty domain scores: r = 0.582, n = 23, p = 0.02). Examinations of discriminant validity lacked statistical significance owing to the pilot study's small sample size (n=26). **Conclusion:** TAFFETA is a novel tool to assess physical frailty in older adults with a diagnosis of psychiatric disorder. Further research with a larger sample size (n= >=100) is required to confirm reliability and validity.

P64- EXPLORING HOW BEST TO CONCEPTUALIZE AND MEASURE FRAILTY INDICATORS IN THE CONTEXT OF PSYCHIATRIC DISORDERS: RESULTS FROM TWO DELPHI STUDIES. Rebecca Gould, Robert Howard *(Division of Psychiatry, University College London, United Kingdom)*

Background: Older adults with psychiatric disorders are at an increased risk of becoming frail and often experience the highest

levels of frailty. Construct overlap exists between indicators of frailty, as conceptualized within existing frailty assessment tools, and indicators of common psychiatric disorders. To date, no tool has been developed for or validated in older adult psychiatric populations. In developing a new frailty assessment tool specifically for this population, exploration of how best to conceptualize and measure frailty indicators in the context of psychiatric disorder was warranted. **Objectives:** To establish a consensus of academic expert opinion on: i) the influence of depression/anxiety on frailty assessment; ii) the importance of differentiating between indicators of frailty and depression/anxiety for which there is significant construct overlap; and iii) how best to conceptualize and measure frailty indicators in the context of psychiatric symptoms. **Methods:** Two Delphi studies were completed, one with experts in frailty assessment (study 1, n=13) and one with experts in frailty and psychiatric disorder (study 2, n=8). Both studies followed the classic Delphi approach. The first-round questionnaire consisted of open-ended questions, generating ideas specific to the study objectives. First-round responses were analysed through content analysis, which informed the development of statements for experts to rate their agreement with in the subsequent two Delphi rounds. Statements with >=66% agreement were accepted. **Results:** Consensus was reached for 40% of study 1 statements and 43% of study 2 statements. Consensus was primarily reached for statements concerning: i) the potential impact of depression/anxiety on the assessment of frailty at a wider level; and ii) possible means of conceptualizing and measuring frailty indicators in the context of psychiatric symptoms. However, little consensus was reached concerning the importance and ease of differentiating between indicators of frailty and of depression/anxiety for which there is significant construct overlap. **Conclusion:** The Delphi studies provide a valuable exploration and consensus of expert academic opinions concerning conceptualization and measurement of frailty indicators in the context of psychiatric symptoms. However, the importance and ease of differentiating between indicators of frailty and of depression/anxiety represent areas with limited consensus.

P65- CONGENITAL, UNTREATED, SEVERE ISOLATED GROWTH HORMONE DEFICIENCY PREDISPOSES OR PROTECTS AGAINST FRAILTY AND SARCOPENIA?

Miburge Bolívar Gois-Junior[1,2], Alana Lalucha Guimarães[2], Giulliani Moreira Brasileiro[2], Ananda A Santana-Ribeiro[2], Jansen Atier Estrazulas[1], Cesar Ferreira Amorim[1], Fernanda Gonçalves Civitella[1], Inaê Caroline Gadotti[1], Manuel Hermínio Aguiar-Oliveira[3], Roberto Salvatori[4], Edgar Ramos Vieira[1] *((1) Department of Physical Therapy, Florida International University, Miami, Florida, USA; (2) Laboratory of Motor Control and Body Balance, Center for Health Science Research, Federal University of Sergipe, Aracaju, Sergipe, Brazil; (3) Division of Endocrinology, Federal University of Sergipe, Aracaju, Sergipe, Brazil; (4) Division of Endocrinology, Diabetes and Metabolism, Johns Hopkins University, Baltimore, Maryland, Baltimore, USA)*

Background: People with isolated growth hormone deficiency (IGHD) have altered body composition and endocrine problems. Frailty and sarcopenia are multifactorial and are affected by endocrine problems. IGHD caused by a mutation in the GH-releasing hormone gene promotes low serum levels of GH, IGF-I, and reduced fat free mass. However, it is unclear if this condition predisposes or protects against frailty and sarcopenia. **Objectives:** To compare factors related to frailty and sarcopenia between mid-age people with and without IGHD.: **Methods:** Thirty one mid-age people with IGHD (50% males, age = 47±12 years, height = 126±8 cm, weight = 38±7 kg, body mass index – BMI = 23±3 Kg/m2, and international physical activity questionnaire – IPAQ score = 1.5±0.5) and of 40 mid-age people without IGHD (50% males, age = 43±11 years, height = 166±10 cm, weight = 67±11 Kg BMI 24±3 Kg/m2, and IPAQ score = 1.5±0.5) participated in the study. Their lower limb strength, fatigue (fractal dimension %), timed up and go (TUG), walking capacity (6-minute walk test), and dyspnea levels (Borg scale) were assessed. **Results:** There were significant differences the between those with and without IGHD in fat mass (37±13 vs. 23±9%, p< 0.001), fat free mass (61±13 vs. 77±8%, p<0.001), and knee extension strength/fat free mass (0.8±0.4 vs. 0.4±0.2 kgf/kg, p<0.001). There were no significant differences the groups in knee extension strength (19±8 vs. 20±10 kgf, p=0.920), fatigue of the vastus medialis (44±9 vs. 43±9%, p= 0.119), rectus femoris (43±7 vs. 43±7%, p= 0.786) and vastus lateralis (51±6 vs. 52±9%, p=0.186), time to complete TUG (9±2 vs. 7±1 s, p=0.659), walking capacity (342±68 vs. 349±63 m, p=0.652), resting heart rate (103±19 vs. 100±16 bpm, p=0.456), and dyspnea (4.7±1.3 vs. 4.6±1.2, p=0.808). **Conclusion:** Middle-age people with IGHD had higher fat mass and lower fat free mass, but higher knee extension strength/fat free mass than those without IGHD. Despite the height differences, knee extension strength, fatigue, TUG time, and walking capacity were similar between groups. Higher fat mass and lower fat free mass may predispose people with IGHD to sarcopenia in general and to sarcopenic obesity in particular. However, they presented similar physical performance and their risk of frailty may be similar to those without IGHD.

P66- REMOTELY CAPTURED DAILY MOBILITY PATTERN IN AGE-RELATED SARCOPENIA. A PILOT CLINICAL STUDY.

Lorenzo Maria Donini[1], Alberto Rainoldi[2], Eleonora Poggiogalle[1], Luca Carlo Feletti[3], Gianluca Zia[3,4], Susanna Del Signore[4] *((1) Sapienza University, Rome, Italy; (2) NeuroMuscularFunction Research group, School of Exercise and Sport Sciences, Department of Medical Sciences - University of Turin, Italy; (3) Caretek srl, Torino, Italy; (4) BlueCompanion ltd, London, United Kingdom)*

Background: Physical Frailty&Sarcopenia, PF&S, (Del Signore, Roubenoff, 2017) represents an underestimated health risk among older adults leading to increased morbidity (including falls/injurious falls) and mobility disability. In physically frail older adults mobility should be carefully assessed in order to prevent further deterioration. Connected actimetry allows to gather relevant information about mobility patterns of the older person without interfering with everyday activity - an innovative application of the Internet of Things (IOT) to Clinical Trials. **Objectives:** The key objective of this study was to record remotely the pattern of physical activity, e.g. a sedentary life style and to test its relationship with the patient reported difficulty in physical function, assessed by a Patient-Reported-Outcome (PRO) and with an established functional tests, the gait speed at the 400-metre walking test(400mWT). **Methods:** Twenty-five community-dwelling older adults (71±6 years; 60% women) worn continuously ADAMO for a week. The mobility index (MI) is a parameter explaining the daily grade of performed physical activity, as: Very Low (VLM), Low (LM), Medium (MM), High (HM), and Very High (VHM) Mobility. Walking ability and physical frailty were estimated using the 400 m walking test and the Tilburg Frailty Indicator (TFI), respectively. **Results:** Controlling for age and gender, ANCOVA showed that frail and robust participants were different for VLM (frail=58.8%, robust=42.0%, p<0.001), LM_MM (frail=25.5%, robust=33.8%, p=0.008), and HM_VHM (frail=15.7%, robust=24.2%, p=0.035). Using cluster analysis, participants were divided into two groups, with higher or lower mobility. Age and gender controlled linear regression showed that the MI clusters were associated with total (r=0.571, p=0.002) and physical frailty (r=0.381, p=0.031); and the

400mWT was associated with total (r=0.404, p=0.043) and physical frailty (r=0.668, p=0.002). These 1-week observation results will be discussed with respect to medium-term (>= 90 days continuous recording) collected in a different cohort from the "DECI" study. **Conclusion:** Connected ADAMO wristwatch demonstrated being a reliable mobility tracking system to record, non-intrusively, continuous data on mobility levels. The MI appears closely related to objective measurements (400mWT) or self-reported indicators (TFI) of physical frailty. As a next step, longitudinal studies in homogenous populations suffering from Physical Frailty&Sarcopenia should determine ADAMO MI suitability as an endpoint for clinical trials.

P67- FUNCTIONAL RESERVE INDEX DETERMINED THROUGH BALANCE REHABILITATION UNIT: FOLLOW-UP OF OLDER ADULTS WITH BALANCE ALTERATION.

Marcela Arias Barredo[1], Maria Victoria Figueroa Souper[2] *((1) Physician Chef, Geriatric Hospital Day, National Institute of Geriatrics, Santiago de Chile, Chile; (2) Physical therapist, Geriatric Hospital Day, National Institute of Geriatrics, Santiago de Chile, Chile)*

Background: The postural control is altered in the population as it gets older because of the progressive degeneration that suffer the various systems involved in the correct maintenance of the balance. The loss of the resulting stability favors the falls, being an important factor in the fragility of the older adult population due to its possible complications and functional limitation. The BRU (Balance Rehabilitation Unit) is an equipment capable of delivering information to the physician to carry out an individualized rehabilitation program based on a clinical and functional assessment through the inclusion of the subject to virtual reality, incorporating the determination of the Functional Reserve Index balance (FRI) which measures the relationship between the limit of stability and speed of oscillation of the center of pressure, without alteration of the base of support. **Objectives:** To evaluate the FRI by B.R.U in older adults with a diagnosis of balance alteration, incorporating it as part of the functional determination in the clinical evaluation after treatment. **Methods:** Prospective, non-experimental study of patients discharged from BRU during June 2015-May 2016. Demographic data, Tinetti initial and final, final FRI, FRI the year of discharge and 2 years of graduates were evaluated. **Results:** 36 patients. 80.5% Women. Average 77 years (62-88 years), 8.2 sessions / patient. Technical Assistance: 58.4% orthopedic cane. 66.6% use 4 or more drugs, among them 66.6% hypotensive, 41.3% hypnotic The upper limit of the FRI reached was 0.8, the lower limit was -2.21 77.7% worsened their FRI 2 years after therapy, 11.1% maintained it and 11.1% improved it. 44.4% with FRI with negative values. 74% Tinetti without risk of falling to discharge: 75% worsened the FRI, 75% had negative values at 2 years. 100% of them did not continue any maintenance exercise program. **Conclusion:** The use of BRU is a useful tool to assess the risk of falling or loss of functionality in older adults by determining the FRI. The functional reserve of balance is an objective parameter to determine the functional loss after therapy in the BRU, indicating to the clinician the opportunity of re-entry to rehabilitation.

P68- HOW YOUNG IS YOUR MUSCLE? FUNCTIONAL ASSESSMENT WITH AGEING.

Swati Banerjee[1,2], Loubna Imrani[1,4], Sofiane Boudaoud[1,4], Kiyoka Kinugawa[1,2,3] *((1) Sorbonne University, Paris, France; (2) CNRS, UMR 8256 Biological Adaptation and Aging, Sorbonne University, Paris, France; (3) Functional Exploration Unit of older patients, University Hospitals Pitié-Salpêtrière-Charles Foix. DHU FAST, Assistance Publique Hôpitaux de Paris (APHP), Paris, France; (4) Laboratoire Biomécanique et Bioingénierie UMR 7338, Université de technologie de Compiègne, Sorbonne Universities)*

Background: According to the World Health Organization (WHO)'s report on Global Health and Ageing, the older population will have a sudden inflation in the next few decades, with a huge economic and societal burden. To promote active ageing and fight against sarcopenia, by maintaining a healthy musculoskeletal system, healthcare professionals need its precise evaluation. **Objectives**: • The aim of this work is to design a Sit-To-Stand (STS) protocol to realise the study of chairlift movement on the right Rectus Femoris muscle contraction. • The objective of this work is to study and improve clinical evaluation of motor function efficiency with ageing. **Methods:** Study Protocol: In this study 48 participants, aged 25 to 75 years old, were recruited to perform a STS test. The participants were healthy without any history of muscular, neurological and endocrinological disorder, and without any medication interfering with muscle function. Data Acquisition: Two-dimensional adhesive array of 32 electrodes (circular shape, inter-electrode distance of 4 mm and electrode diameter $Ø1.5$ mm) was used for recording of the High-Density Surface Electromyogram (HD-sEMG signals) signals. The signals were recorded by placing the electrode array over the Rectus Femoris muscle. Acceleration data was also acquired during this time. **Results:** 1. The participants were divided among 5 age groups, viz, 29.7±4.9, 41 ±0.70, 50.75±2.99, 63.5±0.71, 70.33±2.08 yr with 41% female. The chair rise test duration for all the participants was observed to be 7.6 ±1.88 sec. 2. Maximum Amplitude, Maximum Acceleration and STS extracted from EMG data were observed to be significant for the analysis. The average Max. amplitude is 162±59.31 and 127.16±103.11 microVolts and average STS duration were observed to be 1.72±0.51 and 1.56±0.22 sec for male and female, respectively. The average max acceleration for the male and female is 34.53±23.46 and 21.34±4.18 m/sq. The obtained p-value for the ANOVA test is less than 0.0001 and is a significant marker for discrimination among the age categories. **Conclusion:** The aim of this study is oriented towards the functional assessment with ageing. An innovative protocol has been enlisted for the acquisition of HD-EMG. Parameters thus extracted shows significant differences in various age groups. Acknowledgements: This work has received support from EIT Health BP2018.

P69- ACCURACY OF INERTIAL SENSORS VS OPTICAL MOTION CAPTURE SYSTEM FOR ANALYSIS OF MOVEMENT - PRELIMINARY RESULTS.

Jansen Atier Estrazulas[1,2], Fernanda Gonçalves Civitella[1], Miburge Bolívar Gois-Junior[1], Jorge Carreño[1], Inaê Caroline Gadotti[1], Jaisson Agne Estrázulas[2], Edgar Ramos Vieira[1] *((1) Department of Physical Therapy, Florida International University, Miami, Florida, USA; (2) School of health, Amazonas State University, Manaus, Amazonas, Brazil)*

Background: The concept of frailty is understood as increased vulnerability. As our population is living longer, quantifying parameters of frailty to predict health outcomes is a growing interest. Evaluating static and dynamic balance allows the researcher to

understand the effects of aging on stability. Physiological changes with aging such as postural deviations and sarcopenia can directly affect one's balance and ability to adapt to instability. The technologies commonly used to assess balance either require a laboratory setting or the disruption of natural environment. Being able to accurately assess movement in real conditions without manipulating the environment may facilitate and improve the investigation of actual affects of frailty on mobility. **Objectives:** To evaluate the inertial sensors system in comparison to the gold standard optical motion capture system for analysis of movement. **Methods:** A healthy adult subject (male, 36y, 1.78m, 75kg) participated in this preliminary study. Qualisys Track Manager and Xsens System were used simultaneously. The subject was evaluated in the orthostatic position with eyes open performing lateral-lateral (LL) and to antero-posterior (AP) trunk sway, and returning to static balance for 10 seconds. The complete spatial model of each system, Kinematic devices and Inertial Centrals, were used to calculate the subject's center of mass (COM) and subsequent analysis of the displacement and velocity in LL and AP. **Results:** The behavior of COM displacement during the task was similar for the evaluated devices: Xsens (LL: mean 3.88cm; max 13.60cm – AP: mean 1.71cm; max 6.60cm) and Qualisys (LL: mean 3.87cm; max 14.19cm – AP: mean 1.82; max 4.62cm). The RMSE of COM displacement between devices was: LL 0.33cm and AP 1.03cm. The velocity of COM in LL and AP obtained an equal average for Xsens and Qualisys system (LL: 0.04 m/s; AP: 0.02 m/s). The RMSE for velocity was: LL 0.01m/s and AP 0.01m/s. **Conclusion:** Based on these preliminary results, we can infer that the use of inertial sensors system is a good alternative to evaluate the movement in real conditions with good validity against optical motion capture system. However, a larger sample with a statistical comparison is needed to confirm these results.

P70- AN INNOVATIVE PLATFORM BASED ON WEARABLE SENSOR TO QUANTIFY PHYSICAL FRAILTY PHENOTYPES. He Zhou, Bijan Najafi, Michael E. DeBakey *(Department of Surgery, Baylor College of Medicine, Houston, TX, USA)*

Background: One of the most widely used models to identify frailty stages is assessing physical frailty phenotypes. However, current tools for determining physical frailty phenotypes are time-consuming, not practical in busy hospitals and small clinics, and not suitable for bed-bound patients and non-ambulatory patients. **Objectives:** This study evaluated the ability of an innovative wearable sensor based platform, called instrumented trail-making task (iTMT), to quickly quantify frailty phenotypes, without the need of walking test. **Methods:** 61 older adults (age=72.8 ± 9.9years, BMI=27.4±4.9kg/m2) were recruited and their physical frailty phenotypes were determined by Fried Frailty Criteria. All subjects participated the iTMT test by standing in front of a computer, wearing a wearable sensor on the front lower shin. The sensor tracked the subject's ankle movement and projected it on the computer-screen as a moving cursor at real-time. The subject rotated the ankle joint to navigate the cursor to reach 5 indexed circles (including numbers 1-to-3 and letters A&B placed in random orders) in the alternative order of numbers and letters. The iTMT required the coordination of brain and body movement, testing the subject's cognitive-motor function. The sensor quantified ankle-rotation biomechanics during the test. Comparative assessment included walking speed. **Results:** The average completion time of the iTMT test was less than 3 minutes. The ankle-rotation velocity generated during the test distinguished between the presence and absence of Slowness phenotype with very large effect size (Cohen's d=1.40, p<0.001). Its decline determined the presence of Exhaustion phenotype (d=0.98, p=0.003). The ankle-power generated during the test determined the presence of Weakness phenotype (d=1.38, p<0.001). The ankle-velocity variability determined the presence of Inactivity phenotype (d=0.90, p<0.001). In addition, a significant correlation was observed between the ankle-rotation velocity and walking speed (r=0.684 p<0.001). **Conclusion:** This study demonstrated the feasibility and validity of an innovative iTMT to quantify physical frailty phenotypes determined by Fried Frailty Criteria. This new platform is time-efficient and does not require walking test. It is more practical for routine assessment in small and busy clinics among patients with mobility limitation.

P71- PROGNOSTIC VALUE OF A RAPID SARCOPENIA MEASURE IN ACUTELY ILL OLDER ADULTS. Márlon J. R. Aliberti[1], Claudia Szlejf[2], Kenneth E. Covinsky[3,4], Sei J. Lee[3,4], Wilson Jacob-Filho[1], Claudia K. Suemoto[1,2] *((1) Division of Geriatrics, University of Sao Paulo Medical School, Brazil; (2) Center for Clinical and Epidemiological Research, Hospital Universitario, University of Sao Paulo, Brazil; (3) Division of Geriatrics, University of California, San Francisco, US; (4) Veterans Affairs Medical Center, San Francisco, US)*

Background: Current recommendations to assess sarcopenia requiring specialized equipment hinder its use as a prognostic tool in busy acute settings. **Objectives:** To investigate the prognostic value of a rapid sarcopenia measure in acutely ill older outpatients for 1-year adverse outcomes. **Methods:** A prospective cohort study with 665 acutely ill older adults (mean age 78.7±8.3 years; 63% women) in need of intensive management (e.g., intravenous therapy, laboratory test, radiology) to avoid full-time hospitalization at an academic medical center at the University of Sao Paulo Medical School, Brazil. Sarcopenia was screened upon admission, defined as the presence of both low muscle strength and low muscle mass. Low muscle strength was determined by handgrip strength according to the cutoffs of the Foundation for the National Institutes of Health (<16 kg for women and <26 kg for men). Low muscle mass was assessed by calf circumference, a validated surrogate measure of skeletal muscle mass, using previously established thresholds (≤33 cm for women and ≤34 cm for men). Outcomes were time to hospitalization, new dependence in basic activities of daily living (ADL), worsening walking ability, and death. To investigate the association of sarcopenia and its components with outcomes we used hazard models, considering death as a competing risk, adjusted for sociodemographic factors, Charlson comorbidity index, cognitive impairment, depressive symptoms, and weight loss. **Results:** On admission, 203 (31%) patients had sarcopenia. Comparing 1-year adverse outcomes between older adults with and without sarcopenia, respectively, cumulative incidences for hospitalization were 46% vs 32% (adjusted sub-hazard ratio [sHR]=1.51; 95% CI =1.14-2.01), for new ADL dependence, 47% vs 24% (adjusted sHR=1.69; 95% CI=1.24-2.32), for worsening walking ability, 28% vs 13% (adjusted sHR=1.88; 95% CI=1.23-2.85), and for death, 22% vs 10% (adjusted HR=1.68; 95% CI=1.05-2.69). Low muscle strength alone was associated with all outcomes, and low muscle mass was associated with all outcomes except mortality. **Conclusion:** Sarcopenia was a strong predictor of 1-year adverse outcomes among acutely ill older outpatients. Combining handgrip strength with calf circumference may be a practical and efficient approach to screen for sarcopenia, and thereby identify high-risk older adults in busy clinical settings.

P72- PHYSICAL FUNCTION PREDICTS SARCOPENIA: RESULTS FROM A REPRESENTATIVE POPULATION-BASED CROSS-SECTIONAL STUDY IN TONANTINS, AMAZONAS.

Alex Lima[1], Élvio Gouveia[2,3,4], Andreas Ihle[4,5], Mathias Kliegel[4,5], Jansen Estrázulas[6], Bruna Gouveia[3,4,7,8], Adilson Marques[9,10], Fátima Baptista[9,10] ((1) Centro Universitário do Norte – Uninorte; (2) Department of Physical Education and Sport, University of Madeira, Funchal, Portugal; (3) Madeira Interactive Technologies Institute, Funchal, Portugal; (4) Center for the Interdisciplinary Study of Gerontology and Vulnerability, University of Geneva, Geneva, Switzerland; (5) Department of Psychology, University of Geneva, Geneva, Switzerland; (6) Department of Physical Therapy, Florida International University, Miami, Florida, USA; (7) Health Administration Institute, Secretary of Health of the Autonomous Region of Madeira, Funchal, Portugal; (8) Escola Superior de Enfermagem São José de Cluny, Funchal, Portugal; (9) Centro Interdisciplinar de Estudo da Performance Humana, Faculdade de Motricidade Humana, Universidade de Lisboa, Lisboa, Portugal; (10) Centro de Investigação em Saúde Pública, Escola Nacional de Saúde Pública, Universidade Nova de Lisboa, Lisboa, Portugal)

Background: Sarcopenia is a result of age-related losses of skeletal muscle function and mass, that differs in rate between individuals. This can be partly explained by unmodifiable factors, such as age, however it is necessary to better understand the contribution of other modifiable factors in order to prevent it. To identify different reliable diagnostic tests for sarcopenia is important from a clinical practice perspective. **Objectives:** This study aimed to determine if physical function-related variables (i.e., physical function scale score and 8-foot up-and-go test) could be used as reliable diagnostic tests for sarcopenia, after controlling for age. **Methods:** The sample consisted of 188 older adults, 101 men and 87 women. The mean age was 70.3 yrs (SD=7.1) in men and 69.6 yrs (SD= 8.0) in women. Regional representativity was granted, while the sample comprised 46.3% of women and 53.7% of older men from Tonantins, Amazonas, Brazil. Physical function was assessed using the physical function scale (i.e., composite physical function) and 8-foot up-and-go test (Senior Fitness test; Rikli & Jones, 2013). Dominant hand grip strength was measured. BMI was also assessed following this protocol. Sarcopenia was defined according to the European Working Group on Sarcopenia in Older People's definition. **Results:** Individuals with sarcopenia were older (p=.006), presented lower independence scores (p<.001) and had lower scores in 8-foot up-and-go test (p<.001). The full model containing age, BMI, physical function scale score and 8-foot up-and-go test score was statistically significant, $\chi 2$ (4, N=188) = 45.45, p<.001, explaining 22% to 29% of the variance in sarcopenia. The strongest predictor of reporting sarcopenia were physical function scale score and 8-foot up-and-go test, recording an odds ratio of 1.15 and 1.50, respectively. **Conclusion:** Sarcopenia was associated to lower performances in physical function assessments. The physical function scale score and the 8-foot up-and-go test can be also considered as reliable tools to screen for Sarcopenia in clinical practice.

CLINICAL TRIALS

P73- EXERCISE REHABILITATION IN OLDER, SARCOPENIC AND FRAIL PATIENTS.

Ellen Freiberger[1], Monika Siegrist[2], Wolfgang Kemmler[1], Cornel Sieber[3] ((1) Friedrich-Alexander University Erlangen Nuremberg, Institute for Biomedicine of Aging; (2) Institute for Medical Physics (FAU); (3) Hospital Barmherzige Brüder Regensburg)

Introduction: Numerous research has demonstrated that physical activity is an effective method to counteract the aging process. Especially exercise is playing an important role in rehabilitation. The task of recruiting and including older sarcopenic and frail persons into these exercise programs is challenging. Less is known about the recruitment processes. Furthermore, different types of exercise programs are existing. The presentation will give an overview of different methods of exercise for frail and sarcopenic older persons and will be supported by the results of different exercise interventions (PreFalls and FORMOSA). Different recruitment strategies also will be addressed. **Methods:** In the PreFalls study local general practitioners (GP) cluster randomized to either the usual care group or the multi-component exercise group and recruited physical limited older persons. In the FORMOSA study older sarcopenic obese females (70 years and above) were recruited by local news and information and randomized to either a Whole-Body Electromyostimulation (WB-EMS) exercise group (WB-EMS) or a WB-EMS group in combination with protein supplement or control group. **Result:** In the PREFALL intervention 33 GP were included and participants of the multi-component group (N = 222) showed significant improvements in physical function e.g. a decrease in the TUG (–2,39 s,[–3,91; –0,87] p = 0,014) and an increase in balance measured with the Romberg test (1,70 s [0,35; 3,04] p = 0,037) after 12 compared to the control group (N = 156). Elevated function was maintained after a 12 months retention phase. In the FORMOSA study the WB-EMS group showed significant improvements compared to the control group in variables of physical function. **Conclusion:** Different types exercise interventions in older sarcopenic and frail persons can help restore or maintain physical function. Nevertheless, including this population in exercise programs is challenging.

P74- THE FORCE TRIAL: FOCUS ON REDUCING DOSE-LIMITING TOXICITIES IN COLON CANCER WITH RESISTANCE EXERCISE (RT): BASELINE FUNCTIONAL STATUS.

Bette Caan[1], Kathryn H. Schmitz[2], Elizabeth M. Brighton[3], Justin C. Brown[3], Kristin L. Campbell[4], Adrienne Castillo[1], Elizabeth M. Cespedes Feliciano[1], Valerie S. Lee[1], Charles P. Quesenberry[1], Sara K. Quinney[5], Barbara Sternfeld[1], Renate M. Winkels[2], Jeffrey A. Meyerhardt[3] ((1) Kaiser Permanente of Northern California, Oakland, CA, USA; (2) Penn State Cancer Institute, Penn State College of Medicine, Hershey, PA, USA; (3) Dana Farber Cancer Institute, Boston, MA, USA; (4) University of British Columbia, Vancouver, Canada; (5) Indiana University School of Medicine, Indianapolis, IN, USA)

Background: Low muscle mass (MM) has been associated with increased chemotherapy toxicities. Maintaining dose intensity, with less dose delays and dose reductions, can improve survival outcomes in colon cancer patients. **Objectives:** Our primary goal of this "trial in progress" is to determine if strength training during adjuvant chemotherapy will increase average relative dose intensity of combined chemotherapy regimens. Our secondary objective is to study changes in MM and in specific inflammatory markers (e.g. CRP, IL-6 and TNF-RII) as indicators of change in response to RT. **Methods:**

FORCE will randomize 180 newly diagnosed Stage II and III colon cancer patients receiving chemotherapy with a fluoropyrimidine (5-fluorouracil[5-FU] or capecitabine [CAP])+/- oxaliplatin (OX) from Kaiser Permanente of Northern California, the Penn State Cancer Institute, and the Dana Farber Cancer Institute to either RT or waitlist control. Patients will receive 4-6 in-person training sessions over the course of chemotherapy, and will complete 2 training sessions per week at home until the completion of chemotherapy. Data on body composition, dietary intake, quality of life, fatigue and functional status, will be collected at both baseline and post-intervention. We will examine between group differences for RT versus waitlist control for relative dose intensity. **Results:** We randomized 31 (18%) of the 174 patients who met initial eligibility. In examining the first 31 patients recruited, we report: 61.3% male, 90.3% stage III, and 54.9% receiving FOLFOX. Mean (SD) age and BMI is 57.2 (15.1) years and 26.9 (6.2) kg/m2, respectively. At baseline, the median (interquartile range) gait speed is 1.0 (0.91-1.29) meters/second; the repeated chair stand (5 times) is 12.2 (9.7 -14.0) seconds; and the dominant hand grip strength for females is 28.5 (26.5-32.8) kg, and for males is 42.0 (35.0-60.0). On the short physical performance battery, 25% of the patients scored <10, indicating one or more mobility limitations. We will further report on baseline body composition from DXA and from CT, and the relationship of body composition measures to functional status measures. **Conclusion:** Newly diagnosed non-metastatic colon cancer patients undergoing chemotherapy have adequate functional status to engage in a strength training intervention.

P75- THE EFFECTS OF AEROBIC, RESISTANCE, AND COMBINED TRAINING FOR THE MANAGEMENT OF FRAILTY IN OLDER ADULTS WITH SUBJECTIVE COGNITIVE IMPAIRMENT: A RANDOMIZED CONTROLLED TRIAL. Chi Hsien Huang[1,2,3,4] , Hiroyuki Umegaki[2], Tomoharu Kitada[1], Aiko Inoue[1], Taeko Makino[1], Takahiro Hayashi[1], Hiroyuki Shimada[5], Masafumi Kuzuya[1,2] *((1) Institute of Innovation for Future Society, Nagoya University, Nagoya, Japan; (2) Department of Community Healthcare and Geriatrics, Graduate School of Medicine, Nagoya University, Nagoya, Japan; (3) Department of Family Medicine, E-Da Hospital, I-Shou University, Kaohsiung City, Taiwan; (4) School of Medicine for International Students, I-Shou University, Kaohsiung City, Taiwan; (5) Department of Preventive Gerontology, Center for Gerontology and Social Science, National Center for Geriatrics and Gerontology, Obu, Japan)*

Background: Physical exercises are reported to prevent frailty progression in older adults. Aerobic and resistance, or combined exercise have been linked to reduce frailty. However, the evidence of beneficial effects is not robust enough on the community-dwelling elderly with subjective cognitive impairments. In addition, optimal exercise type is under investigation in these older adults. **Objectives:** We designed a RCT to investigate the effects of aerobic training(AT), resistance training(RT), and combined training(AT/RT) on reducing frailty in older adults with subjective cognitive impairments. **Methods:** Our study involved 464 community-dwelling older adults (53.2% men) who did not have diagnosis of dementia and had subjective cognitive complaints. We randomly assigned all participants in a 1:1:1:1 ratio to one of four groups: AT, RT, AT/RT, and a control group. The training included a group training (60min per session, twice a week, 26 weeks) and a self-paced home training. Lectures about health promotion were provided to all participants. The interviews were arranged at baseline, week 26, and week 52. A 92-item frailty index (FI) based on deficit accumulation model including, psychological, cognitive, physical, qualify of life domains was used to determine the effects of exercise intervention. All participants were categorized into robust and non-robust group by Fried phenotype for subgroup analysis. **Results:** At baseline, the mean age was 72.5±4.7 years, and the mean BMI was 22.8±2.9 kg/m2. At week 26, participants in the AT, RT, AT/RT, control group had a reduced FI scores by a mean of -0.052(p<0.001),-0.047(p<0.001),-0.0453(p<0.001),-0.027(p=0.003), respectively. At week 52, participants in the AT, RT, AT/RT, control group had a reduced FI scores by a mean of -0.051 (p<0.001), -0.046 (p<0.001), -0.0445(p<0.001), -0.031(p=0.001), respectively. AT group had significant greater reduction than the control group in FI scores at week 26(mean: -0.025, p=0.04) but had no reduction at week 52. In subgroup analysis, robust participants in AT group had a reduced FI scores by a mean of -0.037(p=0.01), -0.035(p=0.02) at week 26 and 52 compared to the control group, respectively. No significant results were found in non-robust group. **Conclusion:** Aerobic exercise can reverse frailty in older adults with subjective cognitive impairments, especially for the robust elderly.

CLINICAL TRIALS AND THERAPEUTICS

P76- GLUTAMINE SUPPLEMENTATION FOR URINARY INCONTINENCE: A PROSPECTIVE, RANDOMIZED CONTROLLED, DOUBLE-BLIND STUDY. Gulistan Bahat[1], Birkan lhan[1], Nalan Capan[2], Cihan Kilic[1], Cenk Yasa[3], Funda Gungor[3], Ozlem Persil Ozkan[4], Ayse Karan[2], Mehmet Akif Karan[1] *((1) Istanbul University, Istanbul Medical School, Department of Internal Medicine, Division of Geriatrics, Istanbul, Turkey; (2) Istanbul University, Istanbul Medical School, Department of Physical Medicine and Rehabilitation,Turkey; (3) Istanbul University, Istanbul Medical School, Department of Urogynecology, Turkey; (4) Istanbul Arel University, Nutrition and Dietetics, Turkey)*

Background: The pelvic floor muscles are important in maintenance of continence. Weakness of muscles may lead to stress incontinence and facilitate the urgency and functional incontinence. **Objectives:** Determining the effect of additional oral glutamine supplementation to Kegel exercise on pelvic floor strength and clinical parameters of urinary incontinence in females. **Methods:** It is a randomized, double-blind study. Females with urinary incontinence were included. Digital test and a vaginal manometer were used for measuring the strength of the pelvic floor muscles. 24 hours pad weight test was examined. Participants were randomized into 2 groups as oral Glutamine 30 gr/day and placebo. It was asked to use the supplemantation and Kegel exercises to all participants for 3 months. Basic and 3th month measurements were compared by Paired sample T –test and Wilcoxon tests in each group. The progression between measurements at basic and 3th months was compared between the groups by using Mann-Whitney-U test. (Clinical Trials protokol ID: 2014/1203). **Results:** There were 11 patients in the glutamine arm and 18 patients in the placebo arm. Mean age was 58.2±6.6 years. Mean body mass index was 32.9±4.8kg/m2. There was no age difference between the groups [glutamine 59±3.8,placebo 57.8±7.9 years, p>0.05]. In glutamine arm,vaginal muscle strength assessed by digital test was higher at the end of 3 months [2.9±0.7 ve 4±0.9;0-3 months respectively, p=0.014]; perinemeter measurements were not statistically different [27.4±8.3 ve 31.2±8.9; 0-3 months respectively, p>0.05]; 24 hour pad weight was not different [p>0.05]. In placebo arm,there was statistically significant progress in vaginal muscle strength assessed by both digital test and perinemeter,and 24 hour pad weight (p values: 0.005,0.011,0.002, respectively). When we compare the progression scores between the groups; there was no statistically significant difference [p>0.05]. **Conclusion:** Our study suggests that glutamine supplementation does not provide additional benefit in the treatment of pelvic muscle sarcopenia in patients without protein-

energy malnutrition.

P77- DESIGN, METHODS AND BASELINE CHARACTERISTICS OF THE FIT-JOINT PILOT RCT OF A MULTI-MODAL INTERVENTION IN FRAIL PATIENTS WITH OSTEOARTHRITIS.

Alexandra Papaioannou[1,2], Ahmed M Negm[1,3], Courtney C Kennedy[1], George Ioannidis[1], Olga Gajic-Veljanoski[1], Lehana Thabane[4], Stephanie Atkinson[5], Mitchell Winemaker[6], Julie Richardson[3], Jonathan D Adachi[2], For the Fit Joint Investigators *((1) Geriatric Education and Research for the Aging Sciences (GERAS), St Peter's Hospital; (2) Department of Medicine, McMaster University; (3) School of Rehabilitation Science, McMaster University; (4) Department of Clinical Epidemiology and Biostatistics, McMaster University; (5) Department of Pediatrics, McMaster University; (6) Department of Surgery, Division of Orthopaedics, McMaster University)*

Background: Joint replacement provides significant improvements in pain, physical function, and quality of life in patients with osteoarthritis. With a growing body of evidence indicating that frailty can be treated, it is important to determine whether targeting frailty in joint replacement patients improves post-operative outcomes. **Objectives:** To describe the study design, methodology and the baseline characteristics of the participants. **Methods:** The Fit Joint primary objective is to examine the feasibility of a RCT comparing a preoperative multi-modal frailty intervention (MMFI) to usual care in pre-frail/frail older adults undergoing elective unilateral hip or knee replacements. The secondary objectives include examining the effectiveness of the MMFI in improving frailty and mobility between baseline and 6-weeks post-operative using Fried Frailty Phenotype (FFP), Short Performance Physical Battery (SPPB) and Oxford Hip/Knee Score (OHS/OKS) respectively. In this pilot randomized controlled trial (RCT), participants: 1)>=65 years old; 2) Pre-frail (score of 1-2; (FFP)) or frail (score of 3-5; FFP); 3)having elective unilateral hip or knee replacement with surgery wait times between 3-10 months were recruited from the Regional Orthopedic clinicMcMaster University, Ontario Canada. The MMFI consisted of tailored exercise, protein and vitamin D supplementation, and medication review. **Results:** We describe the baseline characteristics of 69 subjects randomized between September 2016 and May 2018. The included participants' mean age was 73.9 (7.5) years; (standard deviation (SD)) 68.1% were women; 30.0% lived alone, body mass index was 31.9 kg/m2 (7.2) and 44.9% were former smokers. Of the participants, 78.3% were referred for total hip replacement and 21.7% for knee replacement. Sixty four percent of the participants were prefrail and 36% were frail on FFP at the baseline assessment. SPPB mean was 7.0 (2.2). For participants with hip osteoarthritis, OHS mean (SD) was 19.5 (7.3) and for participants with knee osteoarthritis, OKS mean (SD) was 24.5 (7.2). **Conclusion:** This is the first study to examine the feasibility of an RCT to assess the effect of MMFI in pre-frail/frail older adults undergoing joint replacement. This study will inform the planning and designing of a definitive trial to evaluate the effects of MMFIs in patients waiting for joint replacement.

P78- EVALUATION OF SAFETY AND EFFICACY OF BIO101, A NEW INVESTIGATIONAL DRUG FOR SARCOPENIA: A DOUBLE-BLIND, PLACEBO CONTROLLED, RANDOMIZED CLINICAL TRIAL.

Waly Dioh[1], Cendrine Tourette[1], Carole Margalef[1], René Lafont[2], Philippe Dupont[1], Pierre Dilda[1], Stanislas Veillet[1], Susanna Del Signore[3], Samuel Agus[1] *((1) Biophytis, UMPC – BC9, 4 place Jussieu, 75005 Paris, France; (2) Sorbonne Universités, UPMC Univ Paris 06, CNRS - Institut de Biologie Paris Seine (BIOSIPE), 75005 Paris, France; (3) Bluecompanion ltd, London, United Kingdom)*

Background: Sarconeos (BIO101) is an oral investigational new drug activating the MAS receptor of the Renin Angiotensin System. Development of BIO101 for targeting muscle disorders including sarcopenia involves phase 1 and phase 2 studies. SARA-PK, the completed phase 1 showed safety and tolerability of BIO101 in older healthy volunteers. Two phases 2 studies, observational (SARA-OBS) and interventional (SARA-INT) are currently ongoing in USA and Europe for a 6-month period for both studies. Both observational and interventional studies are hosted within an innovative clinical trial management platform: SARA-Data. **Objectives:** SARA-INT objective is to evaluate safety and efficacy of BIO101 in a randomized placebo controlled study in patients aged 65 years and beyond, suffering from sarcopenia and at risk of mobility disability. SARA-INT study will evaluate BIO-101 effect on physical function improvement versus placebo and will estimate BIO101 effect on decreasing the risk of mobility disability after a 6 month treatment. **Methods:** SARA-INT takes place in at least 20 sites in EU and US and consists of four main visits (baseline, Month1, Month3, and Month6). Patients are selected based on the FNIH criteria (Studenski at al., 2014; and ALM/BMI < 0.512 in women and < 0.789 in men or ALM <19.75 kg in men and <15.02 kg in women) and SPPB ≤8. Patients dosed at 175 mg b.i.d. and 350 mg b.i.d. are recruited from SARA-OBS or are newly enrolled. The 400-meter walking test gait speed is the main end-point. Key secondary end-points are the questionnaire PF-10 within SF-36 and raising from a chair at SPPB. Several other endpoints (6-minute walking distance, body composition, grip strength and physical activity by actimetry) will are evaluated. Patient Reported Outcomes (SF-36, SarQoL and TSD-OC) and biomarkers of sarcopenia and Renin Angiotensin system are studied. **Results:** Baseline characteristics of SARA-OBS as well as change from baseline of the first set of SARA-OBS patients will be presented. SARA-INT recruitment strategy including prescreening and screening methods as well as baseline characteristics will be presented. **Conclusion:** SARA clinical program allowed the development of BIO101 in age related sarcopenia and paved the way for other muscle disorders.

P79- VIRTUAL ONLINE COMMUNITIES FOR AGING LIFE EXPERIENCE (VOCALE).

Oleg Zaslavsky[1], Annie Chen[2], Andrew Teng[2], Shih-Yin Lin[3], Soojeong Han[1], George Demiris[4] *((1) School of Nursing, University of Washington, Seattle, WA, USA; (2) Biomedical Informatics and Medical Education, University of Washington, Seattle, WA, USA; (3) College of Nursing, New York University, New York, NY, USA; (4) School of Nursing, University of Pennsylvania, Philadelphia, PA, USA)*

Background: Although behavioral strategies exist to manage frailty, few of these approaches have been embedded in older persons' natural environments, leveraged technologies and targeted psychological factors such as self-efficacy. Online virtual communities are a promising avenue for reaching older demographics because Internet use has been steadily increasingly in this age group. **Objectives:** The overall objective of this study was to explore the

use of Facebook to facilitate communication with and between older participants about their bodily experience with regard to frailty symptoms and evaluate changes in self-efficacy. **Methods:** We piloted Facebook platform in a group of community dwelling older people with frailty symptoms over 10 weeks for moderated discussions. Participants engaged in a collective exploration of different signs and symptoms of aging and frailty and discussed techniques for managing their health. We employed a mixed-methods study design. We collected data using questionnaires at baseline and post-test, exit interviews, and weekly Facebook online discussions. Descriptive statistics were used to summarize quantitative data including participant demographics, health management self-efficacy, and chronic disease management self-efficacy. We also collected and inductively analyzed the qualitative data, including the semi-structured interview data, the online discussion data, and open-ended questionnaire data. **Results:** Eight older adult participants (age range: 78-90 years; 62.5% female) enrolled in the study. Two participants dropped out due to loss of interest. During the 10 weeks of online discussion, participants shared their experience of and changes in sleep, pace, physical activity, energy levels/fatigue, weight, physical strength, pain, mood, and functional ability, as well as health management and coping strategies, contributing 160 posts and comments. Among participants who completed the study, we observed a positive trend of change in their average health management self-efficacy score and average chronic disease management self-efficacy score. **Conclusion:** Online discussions can provide older adults with an opportunity to exchange both experiences and strategies for frailty self-management. This experience can facilitate information exchange among older adults, empowering them to leverage their own acquired knowledge along with those of their peers, to reach personal health goals

PHYSICAL FRAILTY AND AGE-RELATED BODY COMPOSITION MODIFICATIONS

P80- PREVALENCE OF SARCOPENIA AMONG HEALTHY AMBULATORY SUBJECTS: THE SARCOPENIA BEGINS FROM 45 YEARS. Christophe de Jaeger[1], Elena Voronska[1], Carla Lamberti[1], Saskia Kruiskampf[1], Patrick Cherin[2] *((1) Institut de médecine et physiologie de la longévité, Paris, France; (2) Service de Médecine Interne 2, Bâtiment IE3M, CHU Pitié-Salpétrière, Paris, France)*

Background and aims: Sarcopenia has been indicated as a reliable marker of frailty and poor prognosis among the oldest individuals. There are only few data on sarcopenia in healthy general population. We evaluated the prevalence of sarcopenia and its association with functional and clinical status in a population of healthy ambulatory subjects over 45 years living at home, in Paris (France). **Objectives:** The present study has for objective to show that in healthy ambulatory subjects over 45 years living at home, sarcopenia is more common than expected. **Methods:** This study was conducted selecting all ambulatory participants (n = 1,445) aged 45 years and older from October 2008 to September 2011, consulting in the Institute of Physiology (Institut de Jaeger) from Paris (France) for a functional and muscular evaluation, and did not have limitations to moderate physical exercise. All were healthy people. All subjects performed a medical examination, associated with evaluation of muscle mass (body composition assessment using dual-energy X-ray absorptiometry) and of muscle function (by hand grip strength). Diagnosis of sarcopenia required the documentation of low muscle mass with low muscle strength according to the current international consensus definition of sarcopenia. **Results:** From 1,421 participants (553 males and 868

females) definitively enrolled, 221 subjects (135 females and 86 males) (15.5 %) were identified as sarcopenic. Results from multivariate logistic regression models showed that sarcopenia was inversely associated with BMI with those participants with BMI higher than 22 kg/m2 showing a lower risk of sarcopenia relative to those with BMI less than 21 kg/m2 (OR 0.72; 95 % CI 0.60-0.91). Similarly, probability of sarcopenia was lower among subjects involved in leisure physical activities for 3 h or more per week (OR 0.45; 95 % CI 0.24-0.93). According to the category of age [45-54; 55-64; 65-74; 75-84 and 85 years or more], the prevalence of sarcopenia in women increase from 9.1; 12.7; 14.5; 19.4; to 33.3 %, respectively. For the men, the percentage of sarcopenia increase with aging from 8.6; 15.6; 13.6; 63.8 to 45.5 %, respectively. **Conclusion:** The present study suggests that among healthy ambulatory subjects over 45 years living at home, sarcopenia is frequent, even to the youngest subjects of the studied population, taking place from 9 % from 45 years, until 64.3 % for the subjects over 85 years. Our findings support the hypothesis that muscle mass and function are associated with BMI and physical activity, whatever the age of the subject.

P81- PREVALENCE OF OSTEO-SARCOPENIA AND OSTEO-SARCOPENIA OBESITY IN HEALTHY AMBULATORY SUBJECTS OLDER THAN 45 YEARS IN FRANCE. Christophe de Jaeger [1], Elena Voronska[1], Carla Lamberti[1] Saskia Kruiskampf[1], Patrik Cherin[2] *((1) Institut de medecine et physiologie de la longévité (IDJ), 4 rue de Galliera, 75116 Paris, France; (2) Service de Médecine Interne 2, Bâtiment IE3M, CHU Pitié-Salpétrière, 47 bd de l'hôpital 75013 Paris, France)*

Background: This study aims to determine the prevalence of sarcopenia and osteopenia/osteoporosis among a population of 1508 healthy ambulatory subjects over 45 years living at home, in Paris (France). **Objectives:** This study aims to determine the prevalence of sarcopenia and osteopenia/osteoporosis among a population of 1508 healthy ambulatory subjects over 45 years living at home, in Paris (France). **Methods:** This study was conducted selecting all ambulatory participants aged 45 years and older, consulting in the Institute of Physiology from Paris, for a functional, muscle and bone mineral density evaluation, and did not have limitations to moderate physical exercise. All were healthy people. Lombar, femoral bone mineral density and muscle body composition were measured with dual-energy X-ray absorptiometry. Skeletal muscle mass index and handgrip strength were used for sarcopenia diagnosis. Independent samples t tests determined group differences in body composition and functional ability according to recommended diagnostic cut points. **Results:** From 1409 participants definitively enrolled, prevalence of sarcopenia was 16.1 % (135 females and 86 males) according to the EWGSOP definition. The prevalence of osteopenia in the cohort was 33.5 % and osteoporosis was 17.9 %, according to the standard WHO-based T-score criterion. From the age of 45 years, more than 10 % of the sarcopenic population suffers from osteoporosis. Osteosarcopenia begins from 45 years and the risk increases with the advanced in age. Sarcopenia increased as BMD decreased as follows: normal BMD: 5.7 %, osteopenia 27.1 %, and osteoporosis 34.2 % respectively. After adjustment for age and BMI, the adjusted odds ratio (OR) (95% confidence interval) for sarcopenia was respectively 2.21 (1.36 - 4.28) for the osteopenic group, and 1.88 (1.15 - 3.84) for the osteoporotic group (p < 0.05). Using the WHO definition, the percentage of sarcopenic obesity was 35.6 % of our sarcopenic female population, and 33.7 % of the sarcopenic males. In this sarcopenic obesity sub-population, 21.5 % of women (29/135) and 22.1 % of men (19/86) were osteoporotic. Brought back in the whole studied population, sarcopenic obesity and osteosarcopenic obesity were

observed in respectively 5.6 % and 3.4 % of women; and in 5.3 % and 3.5 % of men. **Conclusion:** The present study suggests that among healthy ambulatory subjects living at home, osteosarcopenia is frequent and begin from 45 years. The prevalence of osteosarcopenic obesity is less frequent. Attention for sarcopenia are needed in subjects showing low BMD to prevent and manage poor quality of life and specific morbidity.

P82- WEIGHT LOSS AND INCIDENCE OF DISABILITY AMONG THE OLDEST OLD: THE FIBRA STUDY LONGITUDINAL FINDINGS.

Flavia C. D. Andrade[1], Flavia S. A. Borim[2], Ivan Aprahamian[3], André Fattori[2], Matteo Cesari[4], Monica S. Yassuda[5], Anita L. Neri[2] *((1) College of Applied Health Sciences – University of Illinois at Urbana-Champaign; (2) Faculty of Medical Sciences – University of Campinas; (3) Faculty of Medicine of Jundiaí; (4) Fondazione (IRCCS) Ca' Granda - Ospedale Maggiore Policlinico", University of Milan, Milan, Italy; (5) School of Arts, Sciences and Humanities (EACH) – University of São Paulo)*

Background: Nutritional status is a key modifiable risk factor associated with disability, and further evidence suggests that weight change is also linked to this adverse outcome. Literature shows that weight loss is frequently associated with worse physical condition, but some studies show that weight gain can be more harmful than weight loss. **Objectives:** The aim of this study is to evaluate weight changes and incident disability of instrumental activities of daily living (IADL) in a seven-year period among a sample of Brazilian oldest old adults. **Methods:** The FIBRA study (Frailty in Older Brazilians) is a population-based multi-center investigation carried out in 2008/2009, with follow up data collected in 2016/2017. Participants were 80 years or older, after excluding those with previous IADL disability (n=34), the final sample is restricted to 132 participants. Logistic regression was performed to examine the effect of weight loss (stable weight x weight loss >= 5%) in incident disability controlling for covariates (gender, age, schooling and morbidity). Weight gain had a very low occurrence in the period (n=10; 8.4%), so individuals who gained weight were combined with those who had stable weight. **Results:** Total cumulative IADL disability incidence was 40.9%, among those 34.6% had stable weight and 55.6% had lost weight. Weight loss in the follow-up period was associated to higher risk of developing disability (OR = 2.58; p = 0.014), even after controlling for gender, age, schooling and morbidity. **Conclusion:** At older ages, weight loss is more common than weight gain, especially amongst the oldest old, because losing weight may be the most visible consequence of sarcopenia, a process that is more intense after 80 years old. Weight loss is a risk factor associated with increased incidence of IADL impairment in this sample of Brazilian oldest old. These findings help understand the links between nutritional status and disability in older adults, providing knowledge for preventive strategies on modifiable risk factors directed to persons aged 80 and older.

P83- PRESERVED PHYSICAL FITNESS IS ASSOCIATED WITH LOWER 1-YEAR MORTALITY IN FRAIL ELDERLY PATIENTS WITH A SEVERE COMORBIDITY BURDEN.

Maria Bäck[1], Björn Karlson[2], Niklas Ekerstad[3], Birgitta Öberg[4] *((1) Department of Medical and Health Sciences, Division of Physiotherapy, Linköping University, Linköping, Sweden, Department of Occupational Therapy and Physiotherapy, Sahlgrenska University Hospital, Gothenburg, Sweden; (2) Division of Internal and Acute Medicine, NU Hospital Group, Trollhättan-Uddevalla, Sweden, Department of Molecular and Clinical Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden; (3) Department of Medical and Health Sciences, Division of Health Care Analysis, Linköping University, Linköping, Sweden, Department of Research and Development, NU Hospital Group, Trollhattan, Sweden ; (4) Department of Medical and Health Sciences, Division of Physiotherapy, Linköping University, Linköping, Sweden)*

Background: Medical emergency hospital care is often necessary for frail elderly patients. Physical deterioration in connection to a care episode is common. Interdisciplinary and structured care through Comprehensive Geriatric Assessment has been shown to positively affect and preserve physical fitness. **Objectives:** The objective of this study was twofold; 1) to analyze how physical fitness predict 1-year mortality in hospitalized frail elderly patients with a severe comorbidity burden. 2) to analyze the 1-year prognostic impact of a preserved physical fitness during the first 3 months after discharge from emergency hospital care. **Methods:** Frail older adults (>=75 years) in need of inpatient medical emergency care were included. Aerobic capacity (6-Minute Walk Test, 6MWT) and muscle strength (Hand-grip Strength Test, HS) were assessed during the hospital stay and at 3 months follow-up. The results were analyzed using two different models of multivariate Cox regression; 1) 0-12 month analysis 2) 0-3 months change in physical fitness in relation to 1-year mortality. The analyses were adjusted for age, sex, comorbidity and degree of frailty. **Results:** This study included 408 hospitalized frail elderly patients of whom 390 were evaluable (56.7% female, mean age 85.7 (5.4) years, Charlson's index mean 6.8 (1.9)). The 3-month mortality was 11.5% and the 1-year mortality 37.9%. After adjustments, the Cox-regression analysis showed that both 6MWT and HS were associated with 1-year mortality, HR6MWT 3.31 (95% CI 1.89-5.78, p<0.001) and HRHS 2.38 (95% CI 1.33-4.27, p=0.003). The 0-3 month change in 6MWT and HS were associated with 1-year mortality, where patients who deteriorated had a worse prognosis than those with preserved/improved fitness, HR6MWT 3.57 (95% CI 1.86-6.84, p<0.001) and HRHS 2.41 (95% CI 1.23-4.72, p=0.011). **Conclusion:** In frail elderly patients with a severe comorbidity burden, physical fitness in connection to emergency hospital care was independently associated with 1-year mortality. Moreover, the preservation or improvement in physical fitness the first months after hospital care was associated with a better long-term prognosis. These results emphasize the importance of providing hospital care designed to prevent physical deterioration in frail elderly patients.

P84- SARCOPENIA, OBESITY, AND SARCOPENIC OBESITY PREVALENCE AND RESPECTIVE BODY COMPOSITION IN MIDDLE-AGED WOMEN. Edgar Ramos Vieira[1], Maria Socorro Medeiros de Morais[2], Rafaela Andrade do Nascimento[3], Mariana Carmem Apolinário Vieira[3], Mayle Andrade Moreira[4], Saionara Maria Aires da Câmara[5], Álvaro Campos Cavalcanti Maciel[3] *((1) Department of Physical Therapy, Florida International University, Miami, FL, USA; (2) Health Sciences Center, Federal University of Rio Grande do Norte, Natal, RN, Brazil; (3) Graduate Program in Physical Therapy, Federal University of Rio Grande do Norte, Natal, RN, Brazil; (4) Department of Physical Therapy, Federal University of Ceará, Fortaleza, CE, Brazil; (5) Trairi College of Health Sciences, Federal University of Rio Grande do Norte, Natal, RN, Brazil)*

Background: Changes in body composition (e.g. weight gain, increase in abdominal and total body fat) and sarcopenic obesity are more common in middle-aged women than men. However, the prevalence of sarcopenia, obesity, and sarcopenic obesity and respective body composition measures of middle-aged women, particularly in Northeastern Brazil, are unknown. **Objectives:** To assess the prevalence of sarcopenia, obesity, and sarcopenic obesity and the respective body composition measures in a sample of middle-aged women in Northeastern Brazil. **Methods:** A total of 491 middle-aged (50±6, range 40-65 years) women participated in this cross-sectional study. Sarcopenia was assessed using bioelectrical impedance to measure appendicular skeletal muscle mass. Obesity was assessed based on waist circumference (obese >= 88 cm). Those with both sarcopenia and obesity were classified as having sarcopenic obesity. Those who were not obese nor sarcopenic were classified as "normal". The prevalence of the conditions was calculated and body composition measures were presented for each group. **Results:** Of the 491 middle-aged women, 12% were sarcopenic, 67% were obese, 7% had sarcopenic obesity, and 13% were normal. The skeletal muscle mass indexes were respectively: 5.5±0.4, 7.2 ±0.7, 5.7 ±0.3, and 6.6 ±0.4 kg/m². The waist circumferences of the groups were: 81±5, 100±8, 93±3, 83±6 cm. The body mass indexes were: 23±2, 31±4, 26±3, and 25±2 Kg/m2, and the wait-to-hip circumference ratios were: 88±4, 92±5, 91±6, and 84±7%. The skeletal muscle and body mass indexes, and waist-to-hip circumferences were highest in those who were obese and lowest in those who were sarcopenic (P<0.001). **Conclusion:** Two thirds of the middle-aged women evaluated were obese and approximately 20% were sarcopenic. Those with sarcopenia alone had lower BMI and waist circumference than those that were obese, had sarcopenic obesity, or had neither of those conditions. The number of obese women is rapidly increasing in Latin America, even in less developed and economically disadvantaged regions such as Northeastern Brazil. Our findings indicate that a substantial proportion of middle-aged women in this region may be affected both by obesity and low muscle mass. Efforts to reduce these issues are much needed to reduce the public health burden.

P85- THE ROLE OF BIOELECTRICAL IMPEDANCE ANALYSIS (BIA) IN IDENTIFICATION OF SARCOPENIA. COMPARISON AMONG DIFFERENT CLASSIFICATIONS. Sara Tagliaferri[1], Fulvio Lauretani[2], Mario Pedrazzoni[1], Giovanni Passeri[1], Marcello Maggio[1,2] *((1) Dept. of Medicine and Surgery, University of Parma, Parma, Italy; (2) Frailty of Elderly Lab, Geriatric Clinic Unit, University-Hospital of Parma, Parma, Italy)*

Background: Sarcopenia is a widespread clinical condition among elderly, characterized either by reduced muscle mass and muscle strength. BIA has been used in the identification of sarcopenia through skeletal muscle index (SMI). Different methods to estimate SMI are available. **Objectives:** The aims of the study were: 1. to evaluate the concordance between different SMIs and DXA in the identification of sarcopenia; 2. to examine the relationship between different sarcopenia criteria, in frail outpatient older individuals. **Methods:** Dual energy X-ray Absorptiometry (DXA) was the reference method used to extrapolate appendicular lean mass (aLMcrude and aLM/BMI) and to identify sarcopenic subjects. Three different SMI definitions with different cut-off values were considered (Janssen et al. 2002, Chien et al. 2008, Janssen 2004). The statistical analysis was conducted by Pearson correlation and Mantel-Haenszel tests. **Results:** The population was composed by 93 community-dwelling outpatients (62 women) age>=70. A significant correlation was observed between SMI% and aLM/BMI (r=0.57, p<.0001) and between SMI kg/m2 and aLMcrude (r=0.37, p=.0004). Sensitivity and specificity of different SMI definitions were extrapolate in low gait-speed subgroup (n=31, speed<0.8 m/s) and were respectively: 85% and 33% for SMI%, 71% and 65% for SMI kg/m2 (Janssen 2004), 36% and 94% for SMI kg/m2 (Chien 2008). **Conclusion:** Our research confirmed good concordance between BIA (SMI) and DXA in muscle mass estimate of outpatient older individuals. Sensitivity and specificity varied along with different SMIs, indicating the one by Janssen (2004), supported by EWGSOP, as the best estimate of sarcopenia, at least in European population.

P86- THE ASSESSMENT OF PAIN IN OLDER FRAIL SARCOPENIC AND OSTEOSARCOPENIC SUBJECTS. Yari Longobucco[1], Sara Tagliaferri[1], Elisa Adorni[1], Chiara Benedetti[1], Michele Pessina[1], Fulvio Lauretani[1,2], Marcello Maggio[1,2] *((1) Dept. Medicine and Surgery, University of Parma, Parma, Italy; (2) Frailty and Multimorbidity Lab, Geriatric Clinic Unit, University-Hospital of Parma, Parma, Italy)*

Background: Increasing age is associated with a parallel increase of geriatric syndromes such as physical frailty, a condition that precedes disability and can be associated with sarcopenia and osteosarcopenia (the combination of osteoporosis and sarcopenia). Daily pain is prevalent among frail elderly subjects in the community but its role in sarcopenia and osteosarcopenia has not been fully investigated. **Objectives:** The purpose of this study was to understand the characteristics of pain and its prevalence in frail sarcopenic and osteosarcopenic subjects. **Methods:** We enrolled 70 subjects community-dwellers aged >=70 years (40 sarcopenic and 30 osteosarcopenic). Sarcopenia was determined by DXA according to the criteria released by the Foundation for the National Institutes of Health (ALM/BMI <0.789 men, <0.512 women; ALMcrude <19.75 kg men and <15.02 kg women); osteosarcopenia was defined as the presence of sarcopenia and osteoporosis (T-Score <-2.5). To assess physical frailty we used the Short Physical Performance Battery (Cut-off: >=3 and <9) and the hand-grip strength (Cut-off: <30kg in men, <20kg in women). We investigated the number of sites, the duration of symptoms and the level of pain by Numerical Rating Scale (NRS) and Body Chart. **Results:** All osteosarcopenic (OS) and 85% of sarcopenic (S) subjects reported pain. Greater, but not statistically significant, intensive pain (NRS=7.12±0.33) was observed in S than in OS (NRS=6.7±0.31), (p=0.18). No significant difference was found in terms of number of sites between S (2.94±0.36) and OS (3.07±0.33) (p=0.4). Osteosarcopenic were more likely to have more prolonged pain (>=1 year) (78%) than S (58%) (p=0.09). In OS, stratified by muscle-strength, NRS score was significantly different (NRS=7.33±0.45 weak vs NRS=6.07±0.37 no-weak, p=0.02). A significant association was observed in sarcopenic subjects between NRS and gender with men having lower levels (NRS=5.93±0.53) than women (NRS=8.05±0:26) (p <0.001). **Conclusion:** In a population of frail individuals, the prevalence and pain intensity are high in S and OS, without difference

regarding the number of sites. In OS, we observed a longer duration of symptoms and an inverse association between muscle-strength and NRS. Only in Sarcopenic subjects, men showed lower intensity of pain than women. • Hassan E.B. et al, Osteosarcopenia: A new geriatric syndrome. Australian family physician, 2017 Nov;46 (11):849-853. • Landi F. et al, Pain management in Frail, community-living elderly patients. Archives of internal Medicine, 2001; 10-24;161(22):2721-4. • Schofield P., The Assessment of Pain in Older People: UK National Guidelines, Age and Ageing, 2018 Mar 1;47(suppl_1):i1-i22

P87- HIGH LIPID ACCUMULATION PRODUCT AND LOW ESTIMATED GLUCOSE DISPOSAL RATE INDICATE INCREASED CARDIO-METABOLIC RISK AND DECREASED INSULIN SENSITIVITY IN POSTMENOPAUSAL WOMEN WITH SARCOPENIC OBESITY. Eleonora Poggiogalle, Carla Lubrano, Lucio Gnessi, Stefania Mariani, Mikiko Watanabe, Andrea Lenzi, Lorenzo Maria Donini *(Sapienza University, Rome, Italy)*

Background: In overweight and obesity excess energy and changes in body composition may favor the onset of metabolic derangements. Combined with excess adiposity, the age-related decline in lean body mass can accelerate the development of insulin resistance and the consequences in terms of cardiovascular risk. **Objectives:** The aim of our study was to investigate the association between the phenotype of sarcopenic obesity and cardio-metabolic risk in postmenopausal women. **Methods:** Postmenopausal women were recruited among subjects admitted to the High Specialization Centre for the Care of Obesity (CASCO), at the Sapienza University, Rome, Italy. Fat mass (FM) and fat-free mass (FFM) were assessed by DXA. Obesity was defined as body fat >= 35%. Appendicular skeletal muscle mass (ASMM) was calculated. Sarcopenia was defined as ASMM/weight < 2SD than the sex-specific mean of a young population. The cut-point was ASMM/weight< 0.2347. The Lipid Accumulation product was calculated: LAP = (waist circumference cm -58) × triglycerides mmol/l]. The estimated Glucose Disposal Rate (eGDR) was calculated. High-sensitivity C-reactive protein (hs-CRP) was measured. **Results:** 335 women were included (age: 58.7 ± 7.2 years, BMI: 37.1 ± 6.3 kg/m2). Sarcopenia was diagnosed in 57.6% of study participants. Sarcopenic obese women were older than nonsarcopenic women (59.4 ± 6.7 vs. 57.7 ± 7.7 years, p=0.04). LAP was higher in sarcopenic obese women compared to their nonsarcopenic counterparts (96.8 ± 51.3 vs. 87.7 ± 55.8, p=0.03) after adjustment for age, body fat, and hs-CRP levels. Estimated GDR was significantly lower in sarcopenic obese women (4.02 ± 2.28 vs. 5.55 ± 2.36, p=0.03) after adjustment for age and body fat. An inverse association emerged between the index of sarcopenia, ASM/weight, and LAP (beta: -3.9*10-5, SE: 1.9*10-5, p=0.03), independent of age, body fat, and hs-CRP levels. A positive association was observed between ASM/weight and eGDR (beta: 1.4*10-3, SE:4.7*10-4, p=0.004) adjusting for age, body fat, and hs-CRP levels. **Conclusion:** Postmenopausal sarcopenic obese women exibithed a high LAP and a low eGDR, indicating increased cardiometabolic risk and decreased insulin sensitivity, respectively.

P88- ASSOCIATION BETWEEN SKELETAL MUSCLE MASS AND ARTERIAL STIFFNESS IN FRAILTY OLDER PEOPLE. Nariaki Shiraishi[1], Kiwako Okada[2], Taiji Noguchi[1], Takahiro Hayashi[3], Yusuke Suzuki[4] *((1) Department of Rehabilitation, Faculty of Health Science, Nihon Fukushi University; (2) Nagoya School of Nutritional Sciences, Nagoya University of Arts and Sciences ; (3) Faculty of rehabilitation and care, Seijoh University; (4) Department of Comprehensive Community Care Systems, Nagoya University Graduate School of Medicine)*

Background: Age-related loss of muscle mass and strength, known as sarcopenia, is an important cause of physical dysfunctions such as falling, fracture, frailty, including cardiovascular disease. However, the underlying contribution of sarcopenia to the development of atherosclerosis is unclear. **Objectives:** This study was aimed to clarify the association of skeletal muscle mass index(SMI) and atherosclerosis, measured by the cardio-ankle vascular index(CAVI) and ankle-brachial pressure index(ABI). **Methods:** The Study was performed in 96 frail older persons. Data were collected by questionnaires and specific tests; demographic, health characteristics, body mass index and body composition measured by the bioelectrical impedance analysis, CAVI, ABI, the Mini-Nutritional Assessment, handgrip strength(GS), and walking speed. A Multiple regression analysis with multiple imputation were performed to examine the association of atherosclerosis with SMI. **Results:** The Multiple regression analysis adjusted by conventional, nutritional, and anthropometric parameters showed that SMI was independently associated with CAVI(B -0.87, 95% CI -1.60, -0.14, p=0.02). **Conclusion:** Higher CAVI are significantly related to lower SMI in frail older people , even after adjusted by ABI, and other multiple factors. The present results suggested that decline in skeletal muscle mass was associated with arterial stiffness rather than stenosis.

P89- SARCOPENIA AND RELATED FACTORS IN HOSPITALIZED PATIENTS. O Yilmaz *(Istanbul University Istanbul Medical Faculty Internal Medicine Department Geriatrics Division, Istanbul, Turkey)*

Background: Patients admitted to the hospital due to an acute illness may develop sarcopenia due to the acute illness itself or previous chronic diseases, decreased physical activity and nutrition and appetite problems. **Objectives:** We aimed to investigate sarcopenia and associated factors in patients admitted to our inpatient clinic. **Methods:** Between April 2017-December 2017, prospectively with patients admitted to the study. Patients were evaluated with bioimpedance analysis(BIA), normal gait speed(NGS) and hand grip strength(HGS) within the first 48 hours after admission and BIA, NGS and HGS measurements were repeated during discharging. Age, height, weight and gender data were also recorded. **Results:** A total of 143 patients admitted to the study were included. The mean age of the patients was 62.3±17.6. The prevalence of sarcopenia was 24%. There was a significant difference the HGS(21.8±11.4 at the time of admission and 23.9±10.4 at the discharge) between admission and discharge. The difference between the mean values of the BIA muscle analysis(47±9.2 on admission and 44.8±7.4 on exit) between admission and discharge was found to be statistically significant(p =0.02). **Conclusion:** There was a significant positive correlation between hand grip strength and BIA muscle analysis at admission and discharge.This suggests that patients recovering from acute illness may have improved muscle function, although there is no increase in muscle mass(Table 1). Conclusion: In the study, it was determined that muscle function measured by HGS and NGS was better at the discharge. This suggests that recovery of acute disease can improve

muscle function without changing muscle mass.

P90- COMPARING SARC-F WITH SARC-CALF TO SCREEN SARCOPENIA IN COMMUNITY LIVING OLDER ADULTS.

G Division[1], Meryem Merve Oren[1], Ozlem Yilmaz[1], Cihan Kilic[1], Kubra Aydin[2], Mehmet Akif Karan[1] *((1) Istanbul University Istanbul Medical Faculty; (2) Ataturk University Istanbul Medical Faculty)*

Objectives: To compare the diagnostic value of the SARC-F combined with calf circumference (SARC-CalF) with the standard SARC-F to screen sarcopenia in community-dwelling older adults. **Methods:** Design: Cross-sectional, diagnostic accuracy study. Setting: Geriatric outpatient clinic. Participants: Older adults>= 65 years. Measurements: Muscle mass, hand grip strength, and usual gait speed. Currently used diagnostic criteria EWGSOP, FNIH, IWGS, and SCWD were applied. SARC-CalF was performed by using two different calf circumference(CC) threshold: standard cut-off 31 cm (SARC-CalF-31) and national cut-off 33 cm (SARC-CalF-33). The sensitivity/specificity analyses of the SARC-CalF and SARC-F tools were run. **Results:** We included 207 subjects; 67 male and 140 female with a mean age of 74.6±6.7 years. The prevalence of sarcopenia ranged from 1.9% to 9.2%. The sensitivity of SARC-F was between 25% (EWGSOP) and 50% (IWGS); specificity was about 82%. For SARC-CalF-31 and SARC-CalF-33 sensitivity was similar -between 25-50%- which pointed out that SARC-CalF was not superior to SARC-F for senstivity in this sample. Corresponding specificities for SARC-CalF-31 and SARC-CalF-33 were higher than SARC-F and were between 90-98%. The AUC values, which indicates the diagnostic accuracy of a screening test, were in general higher for SARC-CalF-33 than the SARC-F and SARC-CalF-31. **Conclusion:** We reported that addition of CC item to SARC-F improved the specificity and diagnostic accuracy of SARC-F but it didn't improve the sensitivity in a community-dwelling Turkish older adult population sample that had low prevalence of sarcopenia. The performance of SARC-CalF tool to screen sarcopenia is to be studied in different populations and living settings.

P91- PERFORMANCE OF SARC-F IN REGARD TO SARCOPENIA DEFINITIONS, MUSCLE MASS AND FUNCTIONAL MEASURES.

Gulistan Bahat, Ozlem Yilmaz, Cihan Kilic, Meryem Merve Oren, Mehmet Akif Karan *(Istanbul University Istanbul Medical Faculty Internal Medicine Department Geriatrics Division)*

Objectives: To assess the reliability and validity of Turkish version of SARC-F in regard to current definitions of sarcopenia, muscle mass and functional measures. **Methods:** Cross-sectional. Setting: Geriatric outpatient clinic. Participants: Patients aged >=65 years Measurements: Muscle mass(MM), handgrip strength(HGS), usual gait speed(UGS), chair sit-to-stand test(CSS), functional reach test(FRT), short physical performance battery(SPPB), SARC-F questionnaire, FRAIL questionnaire Sarcopenia was evaluated with different definitions EWGSOP, FNIH, IWGS SCWD. **Results:** After cross-cultural adaptation, 207 subjects were analysed. Mean age was 74.6±6.7 years, 67.6% were women. Against EWGSOP, FNIH, IWGS and SCWD definitions of sarcopenia, sensitivity of SARC-F were %25, 31.6%, 50% and 40%; specificity were 81.4%, 82.4%, 81.8% and 81.7%, respectively. Positive predictive values(PV) were between 5.1-15.4% and negative PVs were 92.3-98.2%. Low MM, sensitivity were about 20% and specificity were about 81%. For low HGS, sensitivity of SARC-F were 33.7% (Turkish cut-off); 50% (FNIH cut-off); specificity were 93.7% (Turkish cut-off) and 85.8% (FNIH cut-off). Against low UGS, poor performance in CSS, FRT, SPPB and presence

of positive frailty screening sensitivity were 58.3%, 39.2%, 59.1%, 55.2% , 52.1% while specificity were 97.3%, 97.8%, 88.1%, 99.3%, 91.2%, respectively. **Conclusion:** The psychometric performance of Turkish SARC-F was similar to the original SARC-F. It revealed low sensitivity but high specificity with all sarcopenia definitions. Sensitivity and specificity were higher for muscle function(MF) tests reflecting its inquiry and input on MF. Our findings suggest that SARC-F is an excellent test to exclude MF impairment and sarcopenia. SARC-F is relatively a good screening test for functional measures.

P92- NUTRITIONAL STATUS, SARCOPENIA AND FRAILTY IN NURSING-HOME RESIDENTS - PREVALENCE AND RELATIONSHIPS.

Helena Grönstedt[4,5], Erika Franzén[1,3,6], Åke Seiger[1,7], Sofia Wikström[1,6], Anders Wimo[1,7], Anne-Marie Boström[1,3,8], Tommy Cederholm[8] *((1) Department of Neurobiology, Care science and Society, Karolinska Institutet, Stockholm, Sweden; (2) Division of clinical geriatrics; (3) Stockholms Sjukhem R&D unit, Stockholm, Sweden; (4) Karolinska University Hospital, Stockholm, Sweden; (5) Division of physiotherapy; (6) Division of Occupational Therapy; (7) Division of neurogeriatrics; (8) Division of nursing, Department of Public Health and Caring Sciences, Division of Clinical Nutrition and Metabolism and Division of Geriatrics, Uppsala University, Uppsala, Sweden)*

Background: Malnutrition, sarcopenia and frailty frequently coexist in older people. **Objectives:** To study the prevalence of these conditions and how they related to each other in nursing-home residents that were participants in the Older Persons Exercise and Nutrition (OPEN) study. **Methods:** Data from 120 residents, living in 8 nursing homes in 2 municipalities, were collected. Inclusion criteria were age >=75 years, able to rise from a seated position. Body mass index (BMI) >30, treatment with protein-rich oral supplement, severe dysphagia, tube feeding, bedridden, severe kidney disease and terminal illness were exclusion criteria. Malnutrition was assessed using the Mini Nutritional Assessment-Short Form (MNA-SF). SARC-F Questionnaire (0-10p; >=4=increased risk) was employed to screen for sarcopenia. Physical frailty was assessed by the Frailty Questionnaire: Screening Tool (>3p=frail). Fat free mass index (FFMI) kg/m2 and fat mass index (FMI) kg/m2 was measured by bioelectrical impedance (BIA), (ImpediMed: SFB7). **Results:** The residents were 86.1±5.4 years old, 59% women. According to the MNA-SF 42 (35%) persons were assessed as at risk or malnourished. Forty-five (41%) persons were at increased risk for sarcopenia. Frailty was identified in 16 (15%) persons. Three and 37 percent displayed all and none of the three conditions, respectively. Mean FFMI was 17.4±2.3 (kg/m2) in male and 15.6±2.04 (kg/m2) in female residents. FMI was 8.4±2.5(kg/m2) and 9.7± 3.3 (kg/m2) in male respective female. The recently published criteria for diagnosis of malnutrition by the Global Leadership Initiative on Malnutrition (GLIM) and the European Working Group consensus on definition and diagnosis of Sarcopenia in Older People (EWGSOP2) will be applied to diagnose malnutrition and sarcopenia in these residents and will be presented. **Conclusion:** One third of these nursing-home residents did not display risk for any of the three conditions. There was a moderate co-existence of the catabolic conditions at risk of sarcopenia, at risk of malnutrition and frailty. Nearly all of the frail residents were sarcopenic, whereas about one third of sarcopenic persons were also frail.

P93- THE STYLE OF LIFE IN FUNCTIONAL HEALTH OF ELDERLY PARTICIPANTS IN UNATI-AM HEALTH PROJECTS AND QUALITY OF LIFE. M Faber[1], Jefferson Jurema Silva[1], Claylton Cardoso dos Santos[1], José David e Silva Gomes[2], Euler Ribeiro[1], José Antônio Cardoso[1] *((1) Universidade do Estado do Amazonas, Brazil; (2) LPEMH/Universidade do Estado do Amazonas Fátima Baptista - Universidade de Lisboa, Portugal)*

Backgrounds: Different lifestyles influence positively or negatively on the cumulative effects of diseases and physiological changes on functional health in old age ( ). The University Open to the Third Age - UNATI / UEA – AM offers a free health and quality of life program consisting of oriented physical activities, medical and nutritional consultations, playful and manual cognitive activities. Exploratory research ( ) will provide greater familiarity with the problem and will allow probing for signs of sarcopenia favoring the establishment of strategies that reduce the effects of longevity. **Objectives:** Characterize the lifestyle and to explore precursors of sarcopenia in elderly participants of the health and quality of life program developed by UNATI - AM. **Methods:** This is a quantitative, exploratory and documentary research carried out on 150 medical records in the Index of Clinical-Functional Vulnerability of the Elderly (IVCF-20) with both sexes between 49 years old (middle-aged) and senile of 88 years ( ), with 122 (81.3%) women and 28 (18.7%) men attending the UNATI AM between 2017/2018 and applying sociometric and socioeconomic questionnaire addressed. The data collected were submitted to descriptive statistical treatment. **Results:** The descriptive statistical treatment showed for age medium was 65.10± 7.53; systolic pressure 13.53 ± 2.13; Diastolic Pressure 7.57 ± 1.30; Glycemia 134.40 ± 52.71, for weight the result was 70.84±13.98; height was 1.54 ± .07, the BMI showed 29.54 ± 5.48. For the abdominal circumference the results were 100.26 ± 9.97; relationship between height / abdominal circumference showed 1.25 ± 1.85, and the calf circumference was 37.82 ± 3.66. Showed pre-diabetics 38.0%, diabetics 38.7%, overweight 79.3%. The sociometric and socioeconomic questionnaire showed that 47% improved their social life and perception mobility condition increased from 22% to 45% and 10.7% fragile elderly, 36.0% potentially fragile elderly and robust elderly 53.3%. **Conclusion:** The relationship between medical records, classification to the risk of clinical-functional vulnerability of the elderly (IVCF-20) revealed diabetes, overweight, cardiac risk and indicative of vulnerability, both moderate and high, and associated with the measurement of sociometric status, related to socioeconomic status predicted significantly, satisfaction with his new way of living life.

P94- CHANGES IN MUSCLE MASS-STRENGTH AND FUNCTION WITH AGE AMONG COMMUNITY ELDERLY IN CHINA - A LONGITUDINAL STUDY WITH 4 YEARS FOLLOW-UP. Ying Zhang[1], Xiaoyan Chen[2], Xu Lin[2], Dan Qing[2], Lisha Hou[1], Hui Wang[1], Shan Hai[1], Li Cao[1], Birong Dong[1] *((1) National Clinical Research Center for Geriatrics, West China Hospital Sichuan University, Chengdu, Sichuan, China; (2) Collaborative Innovation Center of Sichuan for Elderly Care and Health, Chengdu, Sichuan, China)*

Backgrounds: Data about Changes in muscle mass and strength with age in Chinese elderly is lacking. **Objectives:** The aims of this report are: (i) to assess the prevalence of sarcopenia in community elderly (ii) to assess changes in muscle mass/muscle strength and fuction with age by 4 years Follow-up. Methods: 556(male 282 ; female 274) community-dwelling Chinese individuals aged >=60 years were included in 2014, and followed by 4 years to 2018. Muscle mass measured by bioelectrical impedance analysis (BIA) method using Inbody720, Biospace.Muscle strength and physical function measured by handgrip strength and 6 m walking speed. Sarcopenia was diagnosed using the Asian Working Group for Sarcopenia criteria ((AWGS). **Results:** A total of 489 elderly (male 242 ; female 247) completed follow-up, with an average age 68.71±6.61 in 2014, 72.16+6.2 in 2018. The incidence of sarcopenia increased from 4.68% (male 4.54% female 6.07%) in 2014 to 29.86% (male 32.64% female 27.13%) in 2018. The average appendicular skeletal muscle mass index (SMI) of male decreased from 7.31±0.69 in 2014 to 7.2±0.72 (p<0.01) and SMI of female decreased from 6.67±0.94 to 6.65±0.95(p<0.01). The average handgrip strength of male fell from 37.00±7.43kg in 2014 to 27.37±7.29kg in 2018 (p<0.01) and female fell from 23.99.00±4.42 kg to 17.96±4.46 kg (p<0.01) with age. The average gait speed was 1.07±0.18 m/s in 2014 , but it slowed to 0.79±0.37 m/s in 2018 (p<0.01). **Conclusion:** The incidence of sarcopenia in elderly increase with age,it increased from 4.68% to 29.86% by four years. Muscle mass, muscle strength and physical function both decrease with age, but the decrease in muscle strength and physical function is more pronounced.

ANIMAL MODELS

P95- MBNL1-ASSOCIATED MITOCHONDRIAL DYSFUNCTION AND APOPTOSIS IN C2C12 MYOTUBES AND MOUSE SKELETAL MUSCLE. Shingo Yokoyama[1], Yoshitaka Ohno[2], Tatsuro Egawa[2,3], Ayane Nakamura[2], Katsumasa Goto[2] *((1) Laboratory of Physiology, School of Health Science, Toyohashi SOZO University, Toyohashi, Japan; (2) Department of Physiology, Graduate School of Health Science, Toyohashi SOZO University, Toyohashi, Japan; (3) Laboratory of Sports and Exercise Medicine, Graduate School of Human and Environmental Studies, Kyoto University, Kyoto, Japan)*

Background: Sarcopenia, aging-associated loss of skeletal muscle mass and function, impacts on individual health as well as social medical cost. Although the impaired mitochondrial function may be a key factor for development of sarcopenia, the molecular mechanisms for sarcopenia is not fully elucidated. On the other hand, myotonic dystrophy type 1 (DM1) is also characterized by skeletal muscle atrophy with mitochondrial dysfunction and apoptosis. These symptoms of skeletal muscles in DM1 patients are similar with sarcopenia. It is suggested that the development of DM1 muscular pathology is closely associated with the dysfunction of Muscleblind-like 1 (MBNL1), a tissue-specific alternative splicing factor. However, physiological role of MBNL1 in mitochondria-mediated apoptosis remains unclear. **Objectives:** In the present study, we investigated a possible physiological role of MBNL1 in the mitochondrial-associated apoptosis in skeletal muscle cells. **Methods:** Mouse myoblasts-derived C2C12 cells were used in this study. Three days after the initiation of differentiation, C2C12 myotubes were transfected with MBNL1-targeting or non-targeting siRNA for 24 h. 48 h after the transfection, mitochondrial membrane potential of myotubes were assessed using JC-1 fluorescence signal ratio (535/595 nm). The expression level of PGC-1α, Bax, and Bcl-2 were evaluated by Western blotting. Expression level of MBNL1 of plantaris muscle in young (10-week) and aged (100-week) C57BL/6J mice was also investigated. **Results:** The expression of PGC-1β and the fluorescence signal ratio of JC-1 in MBNL1-knockdown C2C12 myotubes decreased. On the other hand, the upregulation of Bax and the increase of Bax/Bcl-2 ratio were observed in MBNL1-kncokdown cells. Aging-associated changes in in PGC-1β, Bax, and Bax/Bcl-2 ratio in mouse plantaris muscles were similar with those in MBNL1-knockdown cells. **Conclusion:**

NUTRITION AND AGING

P96- THE INFLUENCE OF MIDLIFE WEIGHT CHANGE ON COGNITIVE IMPAIRMENT IN OLD AGE: THE SINGAPORE CHINESE HEALTH STUDY. Woon-Puay Koh, Mohammad Talaei *(Health Services and Systems Research, Duke-NUS Medical School, Singapore)*

Background: Retrospective studies and studies with short-term follow-up suggest that low BMI or weight loss could be associated with cognitive impairment or risk of dementia. However, there are few prospective studies with long duration of follow-up risk to assess how weight change earlier in life can affect cognitive function in old age. **Objectives:** We studied the association between midlife weight change and risk of cognitive impairment in old age. **Methods:** We used data from 16,048 participants of the Singapore Chinese Health Study, a population-based prospective cohort of Chinese men and women living in Singapore, who were aged 45-74 years at recruitment (1993-1998) and re-interviewed after about 6 years at follow-up 1 interview (1999-2004). Weight change was computed by percentage difference in weight at follow-up 1 interviews relative to weight at recruitment, and categorized as excessive loss (≥10%), moderate loss (5.1 to 9.9%), stable (±5%), moderate gain (5.1-9.9%), and excessive gain (≥10%). These participants were re-interviewed at follow-up 3 (2014-2016), about 10.3 to 16.6 years later, to have cognitive function assessed using the Mini-Mental State Examination (MMSE). Education-specific cutoffs were used to define cognitive impairment. **Results:** The mean ages of participants were 59 years at follow-up I and 73 years at MMSE assessment. Compared to participants with stable weight, those with excessive weight loss had a 53% higher risk of cognitive impairment [odds ratio (OR): 1.53; 95% confidence interval (CI): 1.29-1.81], while those with excessive weight gain had a 50% higher risk (OR: 1.50; 95% CI: 1.28-1.75). When stratified by BMI at baseline, among those who were lean (baseline BMI<23kg/m2), participants who either experienced excessive weight loss (OR: 1.41; 95% CI: 1.07-1.86) or weight gain (OR: 1.58; 95% CI: 1.30-1.91) had increased risk of cognitive impairment. Similarly, among those who were heavier at baseline (BMI≥23kg/m2), both excessive weight loss (OR: 1.59; 95% CI: 1.28-1.97) and weight gain (OR: 1.38; 95% CI: 1.04-1.84) had increased risk of cognitive impairment. **Conclusion:** Excessive change in weight at midlife may increase risk of cognitive impairment. Further studies are needed to understand why excessive fluctuation of weight at midlife may hasten cognitive impairment at later age.

P97- VITAMIN D IN RELATION TO INCIDENT SARCOPENIA AND CHANGES IN MUSCLE PARAMETERS AMONG OLDER ADULTS: THE KORA-AGE STUDY. Romy Conzade[1], Eva Grill[2], Heike A. Bischoff-Ferrari[3], Uta Ferrari[4], Alexander Horsch[5], Wolfgang Koenig[6,7,8], Annette Peters[1], Barbara Thorand[1] *((1) Helmholtz Zentrum München, German Research Center for Environmental Health (GmbH), Institute of Epidemiology, Neuherberg, Germany; (2) Institute for Medical Information Processing, Biometrics and Epidemiology, Ludwig Maximilian University of Munich, Munich, Germany; (3) Centre on Aging and Mobility, University of Zurich and City Hospital Waid, Zurich, Switzerland; (4) Department of Medicine IV, University Hospital, Ludwig Maximilian University of Munich, Munich, Germany; (5) Department of Computer Science, UiT - The Arctic University of Norway, Tromsø, Norway; (6) Heart Centre Munich, Technical University of Munich, Munich, Germany; (7) DZHK (German Centre for Cardiovascular Research), Partner Site Munich Heart Alliance, Munich, Germany; (8) Ulm Medical Center, Department of Internal Medicine II—Cardiology, University Hospital Ulm, Ulm, Germany)*

Background: Effects of low serum 25-hydroxyvitamin D (25OHD) on age-related changes in muscle mass and muscle function are the subjects of ongoing research but remain largely unclear. Moreover, very few prospective studies have examined vitamin D status in relation to the development of sarcopenia in older adults. **Objectives:** Our aims were to explore the associations of 25OHD levels with the incidence of sarcopenia and to determine whether low baseline 25OHD levels were associated with changes in muscle parameters over three years in older adults. The role of parathyroid hormone (PTH) as a potential mediator was also examined. **Methods:** Out of 1079 individuals aged 65-93 years participating in the population-based KORA-Age study, 976 at baseline (2008/2009) and 702 at follow-up (2012) were studied. Sarcopenia status was assessed using the EWGSOP definition as low muscle mass combined with low grip strength or low physical performance (i.e. slow gait speed or more time needed for the TUG test). Baseline serum 25OHD and PTH levels were measured using an electrochemiluminescence immunoassay. Potential confounders in multivariable regression analyses included sex, age, nutrition, physical activity, BMI and vitamin D supplement use. **Results:** The risk for developing incident sarcopenia was not significantly elevated in individuals with low baseline 25OHD levels <25 vs. >=50 nmol/L. However, when including death as a combined outcome alongside incident sarcopenia, there was a strong positive association in adjusted analysis (OR (95% CI): 3.19 (1.54-6.57) for 25OHD <25 vs. >=50 nmol/L). Furthermore, vitamin D deficiency at baseline was associated with a greater loss of muscle mass and an increased time for the TUG test. There was no evidence for a mediating effect of PTH. **Conclusion:** Vitamin D deficiency at baseline was associated with unfavorable changes in muscle mass and physical performance over three years in older adults. Replenishing 25OHD levels may be important for preserving specific sarcopenia-related muscle parameters, but randomized trials are needed to confirm causality. Low vitamin D status was not associated with incident sarcopenia, but there was a significant association with the combined endpoint of incident sarcopenia and death, highlighting the need for future well-designed studies addressing the issue of competing risks such as mortality.

P98- ASSOCIATION OF NUTRIENTS INTAKE AND SARCOPENIA IN BRAZILIAN OLDER ADULTS.

L Corona[1], Graziele M. Silva[1], Larissa M. Hara[1], Carolina N. Freiria[2] ((1) College of Applied Sciences-University of Campinas; (2) College of Medical Sciences-University of Campinas)

Background: Older persons are more likely to have lower food intake for several reasons, such as reduced appetite, reduction of sensory function, poor oral health, changes in body composition, chronic diseases, polypharmacy, reduced nutrients absorption, immobilization and isolation, periods of lengthy hospitalization, depression, as well as retirement from paid work, bereavement and increasing frailty. It is also known that sarcopenia, the process involving losses in muscle mass and function, is linked to lower nutrient consumption. **Objectives:** The aim of this study is to evaluate the prevalence sarcopenia in older adults and its association with nutrients intake. **Methods:** This is a cross-sectional study in 130 older adults that are followed in geriatric clinical care in Campinas, Brazil. The sarcopenia was evaluated using the SARC-f screening questionnaire, with five components: strength, assistance with walking, rise from a chair, climb stairs and falls. The scores range from 0 to 10, with 0 to 2 points for each component, with a total score of 10 points. Older adults with score >4 were classified as sarcopenic. Food consumption was estimated using data from a 24 hours recall. Average nutrients intake was accessed according to the presence of sarcopenia, and differences were estimated using the Wilcoxon test. **Results:** The prevalence sarcopenia according to SARC-F was 46%, and sarcopenic individuals presented lower intake of most macronutrients when comparing to non sarcopenic: total calories (1291 kcal/day versus 1480 kcal/day, p=0.022), proteins (55 g/day versus 70 g/day, p=0.001), total fat (38 g/day versus 47 g/day, p=0.019) and fiber (15 g/day versus 19 g/day, p=0.008). Intake of some of the micronutrients was also lower in sarcopenic in relation to non-sarcopenic: 7mg iron/day versus to 9mg/day (p=0.002); 7mg zinc/day versus 8 mg/day (p = 0.040) and 1131 mg sodium/day versus 1382 mg/day (p=0.018), respectively. **Conclusion:** Our study shows that lower nutritional intake and sarcopenia were associated in older adults. These two factors are part of the negative spiral of frailty, where both sarcopenia can lead to reduced intake because of lower energy expenditure, and lower intake may lead to loss of muscle mass and sarcopenia.

P99- THE ROLE OF BIOLOGICAL SEX ON NUTRITIONAL HABITS AND MUSCULAR HEALTH AMONG MIDDLE-AGED, HEALTHY ADULTS.

Kara Trautman[1], Christopher Kotarsky[1], Nathan Dicks[1], Bailee Sawyer[1], Steven Mitchell[1,2], Sherri Stastny[1], Kyle Hackney[1] ((1) Department of Health, Nutrition, and Exercise Sciences, North Dakota State University, Fargo, ND, USA; (2) Sanford Health, Fargo, ND, USA)

Background: Sarcopenia has been reported in individuals as early as in their 20's, with the majority of sarcopenia diagnosis in those 65 years of age and older. Total protein intake and animal-based protein sources are recommended countermeasures to losses in muscle strength of older adults. However, research on this topic in middle-aged adults is limited. **Objectives:** To examine differences in animal-based protein intake (AP), plant-based protein intake (PLP), and knee extensor and upper body strength in middle-aged males and females.: **Methods:** 28 men (age: 52.1 ± 6.2 yrs, height: 179.0 ± 9.0 cm, weight: 87.4 ± 14.8 kg) and 23 women (age: 53.2 ± 7.9 yrs, height: 164.8 ± 5.6 cm, weight: 71.9 ± 14.8 kg) volunteered for this study. Participants completed handgrip strength (HG), 30-second sit-to-stand (STS), knee extensor peak torque (KEPT), and a food frequency questionnaire (FFQ) that was used to estimate AP and PLP based on self-reported intake during the last 90 days. Independent sample t-tests and Pearson correlations were performed. An alpha level of p < .05 determined significance. **Results:** There were no significant differences in mean age between men and women. Men were significantly taller (p<.001) and heavier (p=.001) than women. Men consumed more AP (56.4 ± 26.4 g vs. 36.8 ± 19.4 g, p=.005) and PLP (43.4 ± 17.6 g vs. 32.5 ± 18.7 g, p=.037) than women. Men also had greater upper (55.2 ± 7.4 kg vs. 32.1 ± 5.0 kg, p=<.001) and lower body strength (194.7 ± 32.9 Nm vs. 113.6 ± 20.8 Nm, p<.001) than women. When KEPT was analyzed as a percentage of body weight, men had significantly higher values than women (p<.001). AP and PLP were positively correlated with KEPT (R2=.234, p=<.001 and R2=.127, p<.05, respectively) and HG (R2= .181, p<.05 and R2= .088, p<.05, respectively). **Conclusion:** Men consume more AP and PLP per day and have greater HG and KEPT than women even when KEPT is normalized to body weight. These results indicate that potential hormonal or muscular mechanisms related to biological sex may contribute to differences in the muscle mass and function of middle-aged men and women. Funded by the Beef Checkoff, through the National Cattlemen's Beef Association, Minnesota Beef Council and North Dakota Beef Commission.

P100- THE ROLE OF NUTRITION IN THE DEVELOPMENT OF CHRONIC DISEASES AMONGST ELDERLY PEOPLE.

Nataliia Prokopenko (Institute of Gerontology of National Academy of Medical Sciences, Kiev, Ukraine)

Background: Nutrition is the important component of the socio-hygienic characteristics of lifestyle. Overeating and malnutrition, poor-quality and irregular meals cause defined harm at the organism. The organism's reactions to the level and quality of food manifest, as a rule, with a time lag. **Objectives:** The object of the study is to determine the contribution of the prolonged action of the nutrition on the development of chronic diseases. **Methods:** 2000 people participated in the study (at age of 60 years and elder). We obtained the characteristics of nutrition, of the environment, and the lifestyle of the respondents in conformity with six periods of life (the retrospective-anamnestic method was used): up to 14 years, 15-29, 30-39, 40-49, 50-59 and 60-69 years. The author determined the contribution of nutrition to the development of pathology according to the worked out models (regression and factor models). The calculations were executed on the assumption of influences of all other factors (conditions of work, of residence, physical and social-cultural activity, level of well-being, smoking, abuse by alcohol, stresses and other). **Results:** Only 7.2% of men and 4.8% of women adhered to a balanced diet throughout their lives. More than 30% of the respondents were malnourished, mainly in their childhood and youth. Men were more abused by «dry food» (36.5% compared with 26.7% of women), women - by bread products (25.3% compared with 16.2% of men). The malnutrition contributed to the development of the pathology of the nervous system; overeating - cardiovascular, endocrine, digestive, urogenital; dry food - digestive; abuse of bakery products - digestive, endocrine; abuse of fatty foods - digestive, urogenital system. The low quality of nutrition contributed to the development of diseases of the skin, musculoskeletal system, respiratory organs, and malignant tumors. The contribution of nutrition to the development of pathologies in old age for men was 11.4%, for women - 10.2%. **Conclusion:** The pattern of nutrition throughout life has a significant impact on the development of pathologies in old age, both in men and women. Certain dietary habits are risk factors for various diseases. Thus, nutrition is one of the basic elements of health.

P101- NUTRITIONAL THERAPY, MULTIPROFESSINAL TEAM AND NUTRICIONAL NEEDS. I.P. Mota, P. Amante, L. Borba, M. J Santos, C. Kovacs, C.D. Feres F. Magnoni *(Instituto dante pazzanese de cardiologia, Sao Paulo, Brazil)*

Background: Rationale: Enteral nutritional therapy is an important tool to reach nutritional needs, but intercurrences hamper the achievement of caloric and protein goals, requiring attention of the multiprofessional team. **Objectives:** The objective of this study was to observe and compare the prevalence of diarrhea and gastroesophageal reflux (GR) among patients with cardiovascular disease in nutritional therapy. **Methods:** We analyzed the sequential record of 102 patients, 66,8 + 12,9 years old, in enteral nutritional therapy with cardiovascular disease and observed the prevalence of diarrhea and GR in this group for a period of 2 months. **Results:** Results: Digestive tract complications in patients with cardiovascular disease in nutrition therapy: ILL Patients Critical ILL Patients Total; n % n % n; Without DT complications 20 19,61 35 34,3 55; Diarrhea 9 8,824 14 13,7 23; GR 2 1,961 20 19,6 22; Diarrhea + GR 1 0,98 1 0,98 2; Total 32 31,37 70 68,6 102. **Conclusion:** Not only diarrhea, but GR is an important complication and must be a clinical concern in critical ill patients with cardiovascular disease receiving enteral tube feeding. Aspiration can result in pneumonia leading to increases in the use of antibiotics, length of hospital stay, and the risk of mortality. As with diarrhea, GR prevents nutritional goals from being attained, generating a greater risk of in-hospital malnutrition.

P102- ALCOHOL AND ELDERLY SARCOPENIA, AN UNDERESTIMATED PROBLEM. Alessia Medioli, Waifro Colosio, Annalisa Arcangeli, Luigina Scaglia *(Fondazione Richiedei: geriatric acute care unit, alcohol rehab centre, Parma Italy)*

Background: The term sarcopenia describes the loss of skeletal muscle mass, strength, and function in old age. Sarcopenia progression is also affected by lifestyle factors which are controllable. These factors include various aspects of nutrition, physical activity, exercise, and alcohol intake. **Objectives:** Alcohol misusers frequently suffer from low muscle mass and strength, muscle pain, and falls. This phenomenon is known as alcoholic myopathy. This work shows that this is a widespread problem in the over 65 population, and as this is often associated with a low intake of supplements such as vitamin D or/and calcium and bisphosphonates and to fragility fractures. **Methods:** All patients admitted to the Department of Acute Geriatrics (UGA) of Palazzolo S/O (Italy) in the years 2011-2018, have evaluated the number and the body localization of the incoming and outgoing fractures to correlate with the following risk factors: alchol use and abuse, and with the following protective factors: Vitamin D, calcium, bisphosphonates intake before the fracture match. We also made a comparative study by comparing the data related to over 65 inpatients of a alcohol rehab centre to patients admitted to a geriatric acute care unit. **Results:** Out of 1145 patients admitted for alcoholism 6.63% were over 65. Out of 5149 patients admitted to the geriatric unit 1.26% needed alcohol-based detoxification. On 5149 patients, average age 84 years, hospitalized at our UGA from1/1/11 to 1/31/ 18, 285 (5,71%) had fractures. Of these 285 patients with new fracture diagnosis the 77,78% had fractured due to falls, the 22,22% were doing prevention therapy with vitamin D or/and calcium, bisphosphonates. None of the patient over 65 hospitalized for alcohol rehabilitation were doing prevention therapy. **Conclusion:** Alcohol abuse appears to affect skeletal muscle severely, promoting its damage and wasting. Lifestyle habits regarding nutrition, physical activity, alcohol consumption have a substantial impact on the progression of sarcopenia and the ability to prevent and treat the loss of muscle mass and function in old age.

Therefore, raising the public awareness regarding the importance of lifestyle habits on the status of skeletal muscle in old age is of great importance in the management of sarcopenia.

P103- HOW EFFECTIVE IS ESPEN CRITERIA FOR NUTRITION SCREENING. Ozlem Yilmaz, Gulistan Bahat, Banu Ozulu Turkmen, Cihan Kilic, Mehmet Akif Karan *(Istanbul University Istanbul Medical School Department of Internal Medicine Division of Geriatrics)*

Background: Malnutrition is a frequent problem in geriatric patients and a significant cause of morbidity an mortality. Due to its frequency and negative effects on prognosis, screening is important for early detection of malnutrition. ''Mini Nutritional Assessment''(MNA) is the gold standard for screening of malnutrition in elderly. In ESPEN consensus statement, published in 2015, new criteria were suggested for the screening of malnutrition. **Objectives:** The aim of our study was to compare ESPEN 2015 criteria with the Mini Nutritional Assessment (MNA) to determine the success for detection of malnutrition. **Methods:** Patients were screened for malnutrition by MNA and ESPEN between November 2015- January 2018 and also questioned for loss of weight, and it was further questioned if the weight loss was voluntary or not. Patient's hand grip strength, age, gender, weight, the body mass index (BMI) <18.5 kg/m2 is accepted as malnutrition due to ESPEN criteria. Additionally, fat free mass index <15 kg/m2for female and <17 kg/m2 for male with involuntary weight loss or BMI values <20 kg/m2 , for <70 years of age and <22 kg/m2 for >70 years of age were accepted as malnutrition due to this criteria. <7 point for short-form MNA and <17 point for long-form MNA were accepted as threshold values. **Results:** 438 geriatric patients were included in our study; %34.5 was male and %65.5 female. Mean age was 75,0±6,2 (65-97). Mean BMI was 29,4±5,4. According to MNA (gold standard), sensitivity and specifity of ESPEN criteria were %64.3 and %80.4, respectively. Positive predictive value and negative predictive value of ESPEN criteria were found %9.8 and 98.6 respectively. Avarage of the strength in the malnourished group according to MNA test was statistically low (p=0,004). According to ESPEN criteria, in the malnourished group, avarage of hand grip strength was not significantly different (p=0,26). Average of BMI was significantly lower in the malnourished group according to both MNA and ESPEN criteria(p<0,001). **Conclusion:** Due to the low sensitivity and positive predictive values of ESPEN 2015 criteria, it is considered that use of ESPEN 2015 criteria for screening of malnutrition may not be appropriate. However, ESPEN 2015 is found to be very effective for the determination of elderly patients without malnutrition.

P104- A STUDY OF PHYSICAL CHARACTERISTICS AND NUTRITION INTAKE STATUS OF THE PREFRAIL ELDERLY - THE NAGOYA LONGITUDINAL STUDY FOR HEALTHY ELDERLY. Chiharu Uno[1], kiwako Okada[1], Eiji Matsushita[2], Sachiyo Shitasue[2], Hiroshi Shimokata[1], Shosuke Satake[3,4], Masafumi Kuzuya[5,6] ((1) Graduate School of Nutritional Sciences, Nagoya University of Arts and Sciences, Nisshin, Aichi, Japan; (2) School of Nutritional Sciences, Nagoya University of Arts and Sciences, Nisshin, Aichi, Japan; (3) Section of Frailty Prevention, Department of Frailty Research, Center for Gerontology and Social Science (CGSS), National; Centre for Geriatrics and Gerontology (NCGG), Obu, Aichi, Japan; (4) Department of Geriatric Medicine, Hospital, NCGG, Obu, Aichi, Japan; (5) Department of Community Healthcare & Geriatrics, Nagoya University Graduate School of Medicine, Nagoya, Aichi, Japan; (6) Institutes of Innovation for Future Society, Nagoya University, Nagoya, Aichi, Japan)

Background: Nearly 32 million people in Japan are elderly aged 65 years or over, and it is predicted that this number will continue to increase. Efforts related to disease prevention and health management in the elderly are required to extend healthy life span. As the promotion of care prevention in the elderly, preventive intervention of prefrailty is considered to be an important issue. **Objectives:** In this study, we aimed to clarify the relationship of the physical characteristics and nutrition intakes with prefrailty which is the preliminary stage of frailty and diseases in the elderly. **Methods:** Subjects were 332 male and female participants (63 to 88 years old) in the Nagoya Longitudinal Study for Healthy Elderly (NLS-HE) 2017, excluding those who had missing values of the examinations. Frailty and prefrailty was diagnosed by Japan-Cardiovascular Health Study (J-CHS) criteria. **Results:** The number of the subjects diagnosed as frail, prefrail, and robust was 5, 121, and 206, respectively. A comparison between the prefrail group and the robust group was made. There were no significant differences in age, sex, number of teeth, chewing force, and occlusal force between the two groups. Mini Nutritional Assessment (MNA) and grip strength, walking speed at the normal and maximum speed, percent body fat were significantly lower in the prefrail group than the robust group. Intake of water, protein, vitamins B2 and B6, niacin, pantothenic acid, calcium, phosphorus, and magnesium is significantly lower in the prefrail group than the robust group. As for the intakes by food group, intakes of fishes and shellfishes, seeds and dairy products were significantly lower in the prefrail group than the robust group. **Conclusion:** Although the percentage of frailty was low, the percentage of prefrailty was relatively high, and about one third was prefrail in a community-living elderly people. Prefrail elderly people had less fishes and shellfishes, seeds, and dairy products intakes. Nutritional status of protein, minerals, and vitamins may be insufficient in the prefrail elderly people. Aggressive nutritional intervention for the elderly people living in a community was considered necessary.

P105- DIETARY INTAKE OF VARIOUS FOOD GROUPS AND NUTRIENTS ASSOCIATED WITH FRAILTY. Shalini Tattari[1], Kumar Boiroju Naveen[2], Madhavi Gangupanthulu[3], Reddy Geereddy Bhanuprakash[1] ((1) Department of Biochemistry, National Institute of Nutrition (ICMR), Hyderabad, Telangana, India; (2) Department of Statistics, National Institute of Nutrition (ICMR), Hyderabad, Telangana, India; (3) Department of Community Studies, National Institute of Nutrition (ICMR), Hyderabad, Telangana, India)

Background: The proportion of geriatric population is increasing worldwide. This epidemiological transition of increased life expectancy is associated with the burden of several age-related diseases including frailty. The aging process is multifactorial, and nutrition plays a vital role in aging. However, frailty assessment and the association between dietary intake and the risk of frailty among older adults have seldom received the attention of the caregivers and investigators in India. **Objectives:** To assess the prevalence of frailty and to investigate the association between dietary intakes and the risk of frailty among older adults. **Methods:** This community-based cross-sectional study involved 125 older adults aged 60 years and above residing in Hyderabad city of Telangana state, India. Data were obtained on socio-demographic details. A three 24-h dietary recall was obtained to assess the nutrient and food group intakes. Frailty indicators like weight loss, low physical activity, exhaustion were assessed using a questionnaire; handgrip strength by Jamar dynamometer and gait speed by a walk test. Using the Fried's frailty phenotype criteria, a person who gets a score of 0-2 (out of 5) was categorized as non-frail and 3-5 score as a frail person. **Results:** Among the study participants, 25% were frail, and 75% were non-frail. The prevalence of frailty in >=66 years age group (38%) was significantly higher than 60-65 years age group (14%). Women were more prone to frailty compared to men. Lower educational status and income were found to be associated with frailty. The median intakes of cereals/millets, pulses/ legumes, green leafy vegetables, nuts/ oilseeds, spices/condiments, fruits, and fats/oils and all the nutrients (except vitamin B12) were significantly lower when compared to the non-frail group. The prevalence of frailty was observed to be higher in the lowest tertile of most of the food groups and nutrient intakes compared to highest tertile and the associations remained the same in the weighted models (age, gender and energy). **Conclusion:** The study demonstrated that poor nutritional intake is an essential factor contributing to frailty among older adults. It highlights the need to educate older adults to choose healthy foods and practice dietary diversity for healthy aging.

P106- FOOD INTAKE, NUTRITIONAL STATUS, ABILITY TO FUNCTION AND LIFE QUALITY IN OLDER ADULTS: FINDINGS IN THE POWER MEALS TRIAL. Marika Laaksonen[1], Susanna Kunvik[2], Petra Rautakallio-Jarvinen[2], Terttu Nordman[2], Jussi Loponen[1], Marianne Nordblom[3], Harri Sievanen[4], Merja Suominen[5] ((1) Oy Karl Fazer Ab Research Team, Finland; (2) Pori Health and Social Services, Finland; (3) Fazer Food Services Oy, Finland; (4) UKK Institute, Finland; (5) Society for Gerontological Nutrition in Finland)

Background: Previous studies have shown that 86 % of Finnish home-care clients are malnourished or have high risk for malnutrition and about 80 % of older adults have inadequate protein intake. Home meal services have shown to increase the intake of energy, protein and certain vitamins and minerals. **Objectives:** To investigate the effects of 8-week home meal service on dietary intake, ability to function and life quality in home-dwelling older adults over 65 years of age. **Methods:** Subjects (N=78, 47 women, average age 78,2 y) were recruited from home care clients or family caregivers and their inmates in Pori area, Finland. Subjects were randomized into three groups receiving: 1) protein enriched meals, snacks and bread 2) regular meals 3) no meal service (control group). Consumption of meal service portions was recorded daily, MNA and 3-day food diaries at baseline and at the end, and one-day food diaries in the middle of the intervention. Physical activity and rest were measured with hip-worn triaxial accelerometer (UKK RM42). At baseline visit, subjects performed MMSE questionnaire and SPPB and grip strength measurements. Based on the geriatric evaluation, over- or underweight (< 18,5 or > 40 kg/m2), cognitive and functional impairment, and medications, diseases and diets restricting compliance were used as exclusion criteria.

Protein content in enriched meals was 20-25 g, in snacks 10-15 g and in breads 8-10 g/two slices. **Results:** At baseline, 25 subjects (32,1 %) had an increased risk for malnutrition. MNA-score was lower for home care clients compared to family caregivers and their inmates (t-test, p=0,002). Average protein intake was 0,85 g/body weight kg and 0,90 g/ideal body weight kg (ikg, BMI 20-30). Only 39,7 % of the subjects achieved the recommended protein intake over 1,0 g/ikg. Potassium and vitamin E intakes in women, and intakes of fibre, iron, folate and vitamin D in both sexes were lower than recommended for this age group. **Conclusion:** Every third of the subjects were at risk for malnutrition. Lack of protein, fibre and vitamins reduced the quality of the diet. Further results on the intervention will be published at the congress.

P107- DIETARY INFLAMMATORY INDEX IS DIFFERENTLY ASSOCIATED WITH ECTOPIC FAT DEPOTS IN OVERWEIGHT AND OBESE ADULTS. Eleonora Poggiogalle[1], Carla Lubrano[1], Federica Luisi[1], James R. Hebert[2], Nitin Shivappa[2], Michele Di Martino[3], Lucio Gnessi[1], Stefania Mariani[1], Andrea Lenzi[1], Lorenzo Maria Donini[1] *((1) Department of Experimental Medicine, Sapienza University, Rome, Italy; (2) University of South Carolina, Columbia, South Carolina, United States; (3) Department of Radiological Sciences, Sapienza University, Rome, Italy)*

Background: In overweight and obesity energy unbalance is responsible for the accumulation of ectopic fat. Excess energy and metabolic alterations, namely insulin resistance, may favor ectopic fat depositions. However, the role played by dietary factors, especially the pro-inflammatory properties of dietary patterns, in ectopic fat storage is not thoroughly understood. **Objectives:** The aim of our study was to investigate the association between the Dietary Inflammatory Index (DII) and different ectopic fat depots. **Methods:** Participants were recruited among subjects admitted to the High Specialization Centre for the Care of Obesity (CASCO), at the Sapienza University, Rome, Italy. Inclusion criteria were: age 18-75 years, body mass index (BMI) >= 25 kg/m2. The intrahepatic lipid content (IHL) and the intramyocellular lipid content (IMCL) were assessed through magnetic resonance spectroscopy, whereas intermuscular adipose tissue (IMAT, as adipose tissue between skeletal muscle bundles and beneath the muscle fascia), visceral and subcutaneous adipose tissue (VAT and SAT) were evaluated by magnetic resonance imaging. 3-day dietary records were administered and analyzed by a registered dietician. The DII score (adjusted for energy density) and the HOMA-IR were calculated. High-sensitivity C-reactive protein (hs-CRP) was measured. **Results:** 77 subjects (males: 18%) were included (age: 47.7 ± 13.5 years, BMI: 37.1 ± 5.7 kg/m2). The DII score was positively associated to IHL (beta: 0.221, SE: 0.101, p= 0.03) and IMAT (beta: 0.140, SE: 0.066, p= 0.04) after adjustment for age, sex, hs-CRP levels, HOMA-IR, and VAT. No associations emerged between DII score and IMCL or VAT, or SAT. **Conclusion:** A more pro-inflammatory dietary pattern is associated with fatty liver, and intermuscular adipose tissue, but it does not seem to affect intramyocellular lipid storage.

P108- SARCOPENIC OBESITY AND FUNCTIONAL LIMITATIONS IN OLDER CHILEANS. Cecilia Albala, Carlos Marquez, Lydia Lera, Barbara Angel, Mario Moya, Patricia Arroyo *(INTA universidad de Chile, Vitacura, Chile)*

Background: The aging of the population and the growing obesity epidemic poses a risk of adverse health outcomes even greater than the one associated to sarcopenia as is sarcopenic obesity (SO). **Objectives:** To study the association of functional limitation and SO in older Chileans. **Methods:** Baseline evaluation of ALEXANDROS cohorts designed to study disability associated with obesity in community-dwelling people 60y and older living in Santiago/Chile. At baseline 1121 participants, (68.5% women, mean age 72y±6.7) had DXA scan measurements and the measurements needed for the determination of fat mass and diagnosis of sarcopenia using the algorithm from the EWGS validated for Chile. Obesity was defined by using the 60th percentile of fat mass (p60FM) from the sample and the 75th percentile of the index fat mass/ fat-free mass (FM/FFM). All the subjects underwent interviews including the history of chronic diseases, self-reported disability/functional limitations, and mobility. Anthropometry, dynamometry, Timed up and go (TUG) and Chair-stands were measured. Functional limitation (FL) was defined has to have limitations in one ADL or MMSE <22 or 2 IADL or 3 mobility limitations. Age and sex-adjusted logistic regression for FL according SO with both definitions of obesity were estimated. **Results:** Results. The 60thpercentile of body fat corresponded to 33% of the fat mass in men and 44% in women. 75thp of FM/FFM was 0.667 for men and 1.034 for women. Sarcopenia was observed in 19,1% of the sample and sarcopenic obesity according p60 fat mass was 5,5% similar in both men and women. The proportion of sarcopenic obesity identified with FM/FFM index was 3.3% higher in women than men (3.3 vs. 0.3%). SO according to FM/FFM was associated with moderate/severe functional limitation, association not observed when SO was defined with p60FM. After age, sex and education adjusted logistic regression analysis, SO according to FM/FFM was associated with functional limitation (OR=3.4; 95%CI 1.2-9.6) but not with sarcopenia neither obesity. Same analysis for SO according to p60FM, and functional limitation fails showing the association. **Conclusion:** FM/FFM index is better predictor of functional limitations than p60 of fat mass in older Chileans

P109- ASSOCIATION OF TOTAL ENERGY EXPENDITURE MEASURED BY THE DOUBLY-LABELED WATER METHOD AND DIFFERENT PARAMETERS OF PHYSICAL ACTIVITY. Tatiane Lopes de Pontes[1], Jair Licio Ferreira Santos[1], Fernanda Pinheiro Amador dos Santos Pessanha[1], Natália Maira da Cruz Alves[1], Karina Pfrimer[1], Renato Campos Freire Júnior[2], Priscila Giacomo Fassin[1], Nereida Kilza da Costa Lima[1], Julio Cesar Moriguti[1], Eduardo Ferriolli[1] *((1) Ribeirao Preto Medical School, University of Sao Paulo, Ribeirao Preto-SP, Brazil; (2) Federal University of Amazonas – Manaus-AM, Brazil)*

Background: The doubly-labelled water (DLW) method is the gold standard method for measuring total energy expenditure (TEE) in free-living conditions. Physical activity (PA) affects positively energy balance and muscle mass, and thus, it has been considered a key factor in the prevention and treatment of sarcopenic obesity. However, the determinants of energy expenditure are not fully understood in the older population. **Objectives:** This study aimed to investigate the association of TEE with different parameters of PA in older people. **Methods:** A cross-sectional study was conducted with a sample of 55 participants living in Ribeirão Preto – Brazil, aged 60 years and older, including both men and women. The DLW method was used to measure TEE, and the direct assessment of physical activity parameters was performed by the use of a PA monitor based on accelerometry (ActivPAL, PAL Technologies, Scotland, UK). The following variables were studied: sedentary time (time sitting and lying), time standing, time walking, fragmentation of sedentary time, number of steps taken per day and metabolic equivalents (METs). In addition, the IPAQ short version questionnaire was applied to assess self-reported physical activity. The method of partial correlations controlled by lean mass was used to verify the association of TEE with

different PA parameters. All statistical analyses were performed by the Statistical Software STATA version 13.0. Statistical significance was set at p<0.05. **Results:** The participants were aged 70.13±6.3 years. Total energy expenditure was significantly associated with sedentary time, walking time (r=0.334, p=0.017), sedentary time fragmentation (r=0.468, p=0.0006), Mets (r=0.304, p=0.031), and IPAQ score (r=0.336, p=0.0120). There was near significance in the association of TEE with number of steps (r=0.263, p=0.064) and standing time (r = 0.253, p = 0.075). **Conclusion:** The total energy expenditure of Brazilian older adults was inversely associated with the sedentary time and directly associated with different parameters of physical activity such as walking time, mets and IPAQ score. Interestingly, the sedentary time fragmentation was independently associated with total energy expenditure.

NUTRITION INTERVENTION

P110- IMPACT OF NUTRITION GUIDELINES ON THE DIETARY BEHAVIOUR OF THE ELDERLY IN ONDO WEST OF NIGERAI.
Jerome Abiola Olomo, Emsie Dicks, Jeanette Kearney, Lola Otitoola *(Federal polytechnic EDE, Nigeria)*

Background: According to a survey carried out by the International Food Information Council Foundation (IFICF) in the United States of America, protein enriched foods were confirmed as choice priority for the elderly. Hence the need for protein ranked in the top three for diet desirability after fiber and whole grain in America (IFICF 2014: 250). In Nigeria, there is poverty that is peculiar with the elderly in the community hence the difficulty they experience in accessing nutritious meal that are expensive to afford (Olasumbo & Ayo 2013: 219). In Nigeria, there is no nutrition guidelines for the caregivers of the elderly to use on their job responsibly. **Objectives:** The main objective of the study is to determine the impact of nutrition guidelines on the dietary behaviour of the elderly in Ondo West City of Nigeria following the conceptual framework in the research study. **Methods:** The study followed an experimental pre-test, post-test research design of a descriptive nature. The quantitative study design included socio-demographic, 24-hour recall, food frequency and nutrition knowledge questionnaires. The research method involved is survey-based in six phases: Phase 1- Baseline survey and pre-test, Phase 2- Planning and development Phase 3-. Training the caregivers, Phase 4- Intervention, Phase 5- Post-Evaluation and Phase 6- Determining the impact of guidelines. A new nutrition guideline was developed as a review to the existing ones with suitable information for Nigerian elderly needs from; Dietary Guidelines for Americans 2015-2020, New Zealand Guidelines for older people, South African Food-Based Dietary Guidelines and Nigerian Food- Based Dietary Guidelines respectively. **Results:** The result from the study according to the pre and post test evaluation of the three months nutrition education intervention training programme for the caregivers involving the use of the reviewed developed guidelines confirmed the increase in nutrition knowledge of the trainees. This implied an assurance of high work performance to the elderly. The implementation of the new guidelines effectively improved the dietary behaviours of the elderly in the community consistently. Also from a follow- up report, the new menu list that is nutrient enriched than the old ones is followed up consistently. **Conclusion:** The research study confirmed the suitability of the new nutrition guidelines for the elderly in Ondo West in Nigeria making use of menu lists tailored towards their cultural traditionally sourced food products in the community.

P111- EFFECTS OF INDIVIDUALIZED PER-MEAL PROTEIN PRESCRIPTION, NUTRITION EDUCATION, AND TELE-DIET COACHING ON DIETARY PROTEIN INTAKE AND PHYSICAL FUNCTION IN ECONOMICALLY DISADVANTAGED OLDER ADULTS.
Sareen Gropper[1], Maude Exantus[1], Kelley Jackson[1], Seana Reid[1], Shane Spiers[2], Melody Romano[3], Deborah D'Avolio[1], Andra Opalinski[1], Ruth Tappen[1], Edgar Ramos Vieira[4] *((1) Christine E Lynn College of Nursing, Florida Atlantic University, Boca Raton, FL, USA; (2) Medical School, St. George's University, Grenada, West Indies; (3) Charles E Schmidt College of Science, Florida Atlantic University, Boca Raton, FL, USA; (4) Department of Physical Therapy, Florida International University, Miami, FL, USA)*

Background: Protein intake of older adults often fails to meet recommendations and may contribute to reductions in muscle strength and function, and increase the risk of frailty and sarcopenia. **Objectives:** This 10-week intervention study evaluated the effects of improving dietary protein intake among a group of older adults with limited-resources. **Methods:** Eleven older adults (73% females, age = 75+9 years, body mass index = 26±5 kg/m2 were recruited from congregate meal and low-incoming housing sites and participated in the study. Five were at-risk for malnutrition based on the Mini-Nutritional Assessment short form. All participants received individualized per-meal protein prescription and in-person nutrition education. They were called weekly for diet coaching tailored to food preferences and constraints. Dietary intake was assessed using 24-hour dietary recalls at baseline, week 5 and 10. Grip strength, timed up-and-go (TUG), 3m walk, chair rise tests, and the short physical performance battery (SPPB) were conducted at baseline and 10 weeks. Data were analyzed using repeated measures analysis of variance. **Results:** The participants attended 98% of the tele-coaching sessions. At baseline, 20% of meals met the per-meal protein guidelines, while 55% of the meals met the requirements at week 10. Protein intake at week 10 was significantly higher than at baseline for breakfast from 10 to 27g, lunch from 17 to 34g, and dinner from 19 to 27g. Protein intake/body weight also significantly increased from 0.8 g/kg body weight to 1.3 g/kg body weight. Weight did not change significantly. Significant improvements in times were observed for TUG (13 vs. 10s, p=0.003), 3m walk (5 vs. 4s, p=0.005) and time to complete 5 chair-rises (18 vs. 14s, p=0.005), but grip strength and SPPB scores did not change significantly. **Conclusion:** The use of an individualized per-meal protein prescription, nutrition education, and tele-diet coaching helped to improve dietary protein intake, walking and chair-raising times of economically disadvantaged older adults.

P112- EFFECTS OF NUTRITIONAL SUPPLEMENTATION (SYNBIOTICS OR GLUTAMINE) ON THE SYSTEMIC INFLAMMATION AND SOME CONSEQUENCES ON BODY COMPOSITION IN ELDERLY: A RANDOMIZED CLINICAL TRIAL.
Marcus Vinicius LS Quaresma[1], João Valentini-Neto[1], Camila Maria de Melo[2], Sandra ML Ribeiro[1,2] *((1) School of Public Health, University of São Paulo, SP, Brazil; (2) Federal University of Lavras, MG, Brazil; (3) School of Arts, Sciences and Humanities-University of São Paulo, SP, Brazil)*

Background: This study hypothesizes that, when the intestinal environment of elders is improved by nutritional supplements, the systemic inflammation can be benefited, and consequently, outcomes such as loss of lean mass can be attenuated. **Objectives:** To evaluate the effects of two different supplements, synbiotic and glutamine, in some inflammatory markers and body composition in elderly. **Methods:** This is a randomized, parallel double-blind controlled

clinical trial (Brazilian Registration of Clinical Studies – REBEC; RBR-6qr9xx), with elders (65 and 90 years; 74 participants) of either gender. They were randomly assigned into three groups: Synbiotic [S-group; two daily doses (6g+6g) of a substance containing fructooligosaccharides (6 g), Lactobacillus paracasei (10^9 to 10^8 CFU), Lactobacillus rhamnosus (10^9 to 10^8 CFU), Lactobacillus acidophilus (10^9 to 10^8 CFU) and Bifidobacterium lactis (10^9 to 10^8 CFU)]; Glutamine group [G-group; two daily doses (6g+6g) of glutamine amino acid]; and Placebo group (P-group; two daily doses (6g+6g) of maltodextrin]. The experiment lasted 6 months. At the beginning and at the end of the study the participants were evaluated for: Body composition (DEXA); Serum inflammatory markers (Il-10, Il-6 and TNF-alpha); Biomarkers of nutritional status (leptin and albumin). Data were analyzed using multiple linear regression, as well as comparison of means by repeated measures ANOVA (G-group vs. P-group and S-group vs. P-group). **Results:** The three experimental groups increased their lean mass and reduced their body fat and plasma leptin. IL-10, an anti-inflammatory cytokine, showed negative association with P-group and positive association with S-group. In turn, TNF-alpha showed negative association with S- group and positive association with P-group. Intriguingly, lean mass showed positive association with S-group and negative association with P-group. **Conclusion:** Our hypotheses were partially confirmed; the synbiotic substance showed a subtle advantage in the inflammatory status, but not in body composition. In a way, our results could suggest that apparently healthy community-dwelling elderly could benefit more from attention planning than from supplementation alone. More studies, with larger sample size, are needed.

P113- NUTRITIONAL TREATMENT AS A TOOL PREDICTION OF MORTALITY IN INTENSIVE THERAPY UNIT.

Ana Margaret Nascimento Gomes Farias Soares, Ana Paula Aparecida Rodrigues Assunção, Fabiana Ferreira da Silva, Camila Regina Leite de Campos, Isabela Cardoso Pimentel, Maria José dos Santos, Fausto Feres, Carlos Daniel Magnoni *(Instituto Dante Pazzanese de Cardiologia, São Paulo, Brazil)*

Background: In hospitalized cardiopathy patients with nutritional impairment can trigger an increase in morbidity and mortality, so early identification of malnutrition is necessary through the nutritional screening instrument. Nutrition Risk Screening, 2002 (NRS, 2002) is certified by the European Society of Clinical Nutrition and Metabolism as a communication tool in the identification of nutritional risk. **Objectives:** To identify the nutritional profile of patients with cardiopathy in intensive care units (ICU) in the rear and spine with mortality. **Methods:** Cross-sectional observational study. Nutrition and Nutrition Service database from June 2016 to June 2017. Body Mass Index (BMI), nutritional risk of NRS, 2002, arm circumference (CB), use of oral nutritional therapy (TNO) , enteral (NER) and parenteral (NPT) in 315 patients hospitalized in ICU. **Results:** In the sample, 61.3% were men, 36.5% presented diabetes, 30.8% dyslipidemia, 67.3% hypertension, 120 (38.1%) after nutritional screening and 195 (61.9%). %) underwent nutritional reevaluation. 41.3% TNO, 29.5% used TNE, 1.6% used mixed nutritional therapy (TNE + oral diet) and 0.6% used NPT. 50.5% of the patients died. The nutritional assessment criteria via NRS, 2002 (score >= 3), and evolved to death totaled 26.4% (p = 0.007). The history was also significant when compared to older age, BMI <18.5 kg / m2 in the adult and <23.0 kg / m2 no09 and CB <26.76 cm and 25.77 cm in women and men. One NRS 2002 and one CE reached 69% and 57%, respectively, of the evidence of science. Patients who were not compared with TNO compared those who were used, were not marked, and it could be proved that there was a failure in the evaluation of the patients. Those classified as malnourished by BMI when compared to non-malnourished can not be used as indicators of mortality, but those with a higher ratio in nutritional screening also showed a higher chance of progressing to death. **Conclusion:** Patients who are more likely to not present the best nutritional screening instrument, NRS 2002, and lower CB measurement appear to be more likely to progress to death.

FRAILTY IN CLINICAL PRACTICE AND PUBLIC HEALTH

P114- ASSOCIATIONS BETWEEN FRAILTY AND ORAL HEALTH: FINDINGS FROM THE CONCORD HEALTH AND AGEING IN MEN PROJECT (CHAMP).

Eduardo Valdez[1], F.A. Clive Wright[1], Vasi Naganathan[1,2], Kate Milledge[1,3], Fiona M Blyth[1,4], Vasant Hirani[5], David G. Le Couteur[1,2], David J. Handelsman[6], Louise M. Waite[1,2], Robert G. Cumming[1,3] *((1) Centre for Education and Research on Ageing, Concord Clinical School, The University of Sydney, and the Ageing and Alzheimer's Institute, Concord Repatriation General Hospital, Sydney Local Health District, Concord, NSW, Australia; (2) Department of Geriatric Medicine and Rehabilitation Medicine, Concord Repatriation General Hospital, Sydney Local Health District, Concord, NSW, Australia; (3) School of Public Health, Sydney Medical School, The University of Sydney, Sydney, NSW, Australia; (4) Concord Clinical School, The University of Sydney, Concord Repatriation and General Hospital, Concord, NSW Australia; (5) School of Life and Environmental Sciences, Charles Perkins Centre, The University of Sydney, Sydney, NSW, Australia; (6) ANZAC Research Institute, The University of Sydney, Concord Repatriation General Hospital, Concord, NSW, Australia)*

Background: Poor oral health has been associated with some frailty components. Less is known about the influence of frailty on oral health outcomes. **Objectives:** To examine whether frailty in older men leads to poorer oral health and lower levels of dental service utilisation. **Methods:** A cross-sectional analysis. Data were collected from 601 older men with both frailty status and oral health information. Frailty was defined as meeting three or more of the Cardiovascular Health Study criteria: weight loss, weakness, exhaustion, slowness and low activity. Dental service utilisation [DSU] behavior was collected from self-response questionnaires and face-to-face interviews. Oral status (number of remaining and functional teeth, periodontal disease, dental decay, and self-rated oral health [SROH]) was recorded by two oral health therapists. The association between frailty and oral health behavior and risk markers was modelled using logistic regression. **Results:** Nineteen percent of the participants were frail. There were significant associations between frailty and dental status (odds ratio [OR]: 2.49, 95% confidence interval [CI]: 1.17-5.30), and frailty and active decay (OR: 3.01, CI: 1.50-6.08) but only active decay remained statistically significant after adjusting for confounders (adjusted OR: 2.46, CI: 1.17-5.18). There was no association between frailty and DSU and frailty and SROH. **Conclusion:** Frailty was independently associated with presence of active coronal decayed surface. However, dental service utilisation, self-rated oral health and other oral health markers were not significantly associated with frailty after adjusting for confounders. The prevalence of periodontal disease was high regardless of their frailty status.

P115- THE RELATIONSHIP BETWEEN PHYSICAL FRAILTY AND DEPRESSIVE SYMPTOMS IN COMMUNITY-DWELLING OLDER ADULTS: THE MEDIATING AND MODERATING ROLE OF SOCIAL SUPPORT. Yaru Jin[1], Cuili Wang[2], Huaxin Si[1], Xiaoyu Tian[1], Xiaoxia Qiao[2], Xinyi Liu[1] *((1) School of Nursing, Shandong University, Jinan, China; (2) School of Nursing, Peking University, Beijing, China)*

Background: A variety of researches have explored the relationship between frailty and depressive symptoms, while few have focused on the underlying mechanism of such relationship. Social support is a well-known interpretative factor in the relationship of stress and depressive symptoms. **Objectives:** This study aims to explore the roles of three dimensions of support (objective support, perceived support and support utilization) in the relationship of frailty with depressive symptoms. **Methods:** A cross-sectional design was conducted among 1936 community-dwelling older adults aged 60 years and older in a Chinese city. Depressive symptoms, frail status, and social support were measured by the 5-Item Geriatric Depression Scale (GDS-5), the Fried Frailty Physical Phenotype and the Social Support Rating Scale (SSRS), respectively. **Results:** Perceived support and support utilization played mediating (perceived support: $\beta = 0.031$, $P < 0.05$; support utilization: $\beta = 0.096$, $P < 0.05$) and moderating (perceived support × frailty: $\beta = -0.056$, $P = 0.008$; support utilization × frailty: $\beta = -0.069$, $P = 0.001$) roles in the relationship between frailty and depressive symptoms, but objective support had neither mediating ($\beta = 0.001$, $P > 0.05$) nor moderating effect (objective support × frailty: $\beta = 0.001$, $P = 0.946$). **Conclusion:** Perceived support and support utilization could mediate and moderate the relationship between frailty and depressive symptoms, while objective support couldn't. These findings imply that it may be more effective to promote perceived support and support utilization instead of objective support to relieve depressive symptoms in the context of frailty.

P116- THE ASSOCIATION BETWEEN FRAILTY AND MEDICATION ADHERENCE AMONG COMMUNITY-DWELLING OLDER PATIENTS WITH CHRONIC DISEASES: MEDICATION BELIEFS ACTING AS MEDIATORS. Xiaoxia Qiao[1], Cuili Wang[1], Xiaoyu Tian[2], Yaru Jin[2], Huaxin Si[2], Xinyi Liu[2] *((1) School of Nursing, Peking University, Beijing, China; (2) School of Nursing, Shandong University, Jinan, China)*

Background: Frailty and low medication adherence are common among community-dwelling older patients with chronic diseases. Medication concerns and necessity beliefs have been confirmed to associate with medication adherence in older patients. However, little was known about the association between frailty, medication beliefs and medication adherence. **Objectives:** This study aims to explore the association between frailty and medication adherence by modeling medication necessity and concerns beliefs as mediators. **Methods:** A total of 780 community-dwelling older patients with chronic diseases were recruited from Jinan City, China. Frailty, medication adherence and medication beliefs were assessed using the Comprehensive Frailty Assessment Instrument (CFAI), the 8-item Morisky Medication Adherence Scale (MMAS-8), and the Beliefs about Medicines Questionnaire-Specific (BMQ-Specific), respectively. The multivariate liner regression was used to test the association between frailty, medication beliefs and medication adherence. The bias-corrected non-pararametric percentile Bootstrap method was used to examine the mediate effects of medication beliefs (i.e. necessity and concerns) on the association between frailty and medication adherence. Data were also collected on socio-demographic characteristics, cognitive function, comorbidity and the number of medicine. **Results:** Frail

older patients had higher medication concerns ($\beta=1.867$, $P<0.001$), higher medication necessity ($\beta=0.426$, $P=0.049$) and lower medication adherence ($\beta=-0.524$, $P<0.001$) after adjusting socio-demographic characteristics, cognitive function, comorbidity and the number of medicine. With further adjustment for the medication concerns and medication necessity, frailty was not statistically associated with medication adherence ($\beta=-0.235$, $P=0.097$), and medication adherence was negatively associated with medication concerns ($\beta=-0.180$, $P<0.001$) and positively with medication necessity ($\beta=0.108$, $P<0.001$). The bootstrap test showed that the association between frailty and medication adherence was fully mediated by medication concerns and necessity beliefs, and the mediate effect of medication concerns overweighed that of medication necessity. **Conclusion:** Frail older patients have low medication adherence. Higher medication concerns among the frail inhibits their medication adherence, which cannot be offset by the positive effect of their higher medication necessity. Therefore, interventions should target medication beliefs among frail patients, particularly concerns about medications, to most efficiently improve their medication adherence.

P117- 30-DAY READMISSION DIAGNOSES IN OLDER ADULTS PREVIOUSLY ADMITTED FOR A DIAGNOSIS OF SEPSIS. Alison Kohn[1], Angelina Avdella[1], Gabriella Engstrom[1], Bernardo Reyes[1], Joseph Ouslander[1] *(Charles E. Schmidt College of Medicine at Florida Atlantic University, Boca Raton, FL, USA)*

Background: Hospital readmissions are financially burdensome and associated with poor outcomes. In the general population, sepsis survivors are at higher risk for readmission within 30 days due to an infectious process. Due to multiple factors, older adults are at an increased risk for sepsis. The rate and causes of 30-day readmission has not been studied in this patient population. **Objectives:** To investigate the frequency and causes of 30-day readmission in older adults initially admitted with the diagnosis of sepsis. **Methods:** Data were analyzed for 6,826 patients aged 75 and over admitted to non-ICU beds at a community hospital from July 2016 to June 2017. Only the first admission during this time period was included for each patient in this analysis. Patients were grouped based on index admission diagnosis (sepsis n=194 [3%] vs non-sepsis n=6,222 [97%]). If a patient was readmitted in the 30 days following discharge, we identified the reason for readmission. Diagnoses in each patient group were analyzed by ICD code. **Results:** Thirty-day readmission rates were 20% and 11% in initially septic and non-septic patients, respectively. Nineteen percent of initially septic patients were readmitted within 30 days for infection associated illness, compared to 11% of initially non-septic patients. Moreover, 8% of initially septic patients were readmitted within 30 days for sepsis, compared to 4% of non-septic patients. The most common readmission diagnoses in the initially septic group were genitourinary (n=6, 19%), circulatory (n=6, 19%), and digestive complaints (n=6, 19%), versus circulatory (n=225, 34%), digestive (n=98, 15%), and respiratory complaints (n=63, 9%), in the initially non-septic group. **Conclusion:** Among patients aged 75 and over admitted to non-ICU beds at a community hospital, an index admission for sepsis was associated with a higher 30-day readmission rate in older adults. The majority of initially septic patients were readmitted within 30 days for non-infectious causes, which is true for other common conditions, such as heart failure. However, initially septic older adults were more likely to be readmitted for an infection associated illness than initially non-septic older adults. Our results reflect an association between sepsis and risk of readmission and subsequent infection.

P118- ASSOCIATIONS OF 30 DAY READMISSIONS FOLLOWING HIP FRACTURES IN PATIENTS 75 AND OLDER. Angelina Avdella, Alison Kohn, Grabriella Engstrom, Bernardo Reyes, Joseph Ouslander *(Florida Atlantic University, Schmidt College of Medicine, Boca Raton, FL, USA)*

Background: As part of the Affordable Care Act, the Hospital Readmissions Program penalizes hospitals with high 30-day readmission rates. The Safe Transition for At-Risk (STAR) patients is a quality improvement program that was implemented at Boca Raton Regional Hospital (BRRH) from July 2015 to June 2017. The aim of the program is to reduce 30-day readmissions. One of the high-risk populations within this program are hip-fracture patients. Previous research suggests that hospital readmissions following a hip fracture are common and the associated risk factors are multi-faceted. **Objective:** The purpose of this study is to explore associations between readmissions and hip fractures, and to determine modifiable risk factors to improve patient outcomes. **Methods:** This is a secondary analysis of an existing database created during implementation of the STAR program. The BRRH Research Committee and the University IRB approved the study as a quality improvement project. The database includes demographics, length of hospital stay, number of medications at admission and at discharge, diagnoses, and the Charlson comorbidity index. Hip fracture patients were identified using ICD 9 and 10 codes. Hip fracture patients that were readmitted were compared to those who were not. **Results:** Among 548 patients admitted for a hip fracture, 12% were readmitted within 30 days. Significant associations with readmission (p value < 0.05) included a higher Charlson comorbidity index, more medications at discharge, and notable comorbidities such as congestive heart failure and malignancy. Other comorbidities assessed included diabetes, chronic pulmonary disease, dementia, and hemiplegia/paraplegia, however no statistically significant associations with these conditions were observed. There were also no significant associations between readmission and length of stay of the index admission, age, gender, or race. **Conclusion:** Hip fracture patients age 75 and older who were readmitted within 30 days, compared to those who were not, were prescribed more medications at discharge, had a higher Charlson comorbidity index, and more commonly had a diagnosis of congestive heart failure and underlying malignancy. Optimizing medical therapy and closely monitoring older hip fracture patients with these identifiable risk factors may further reduce hospital readmission rates among hip fracture patients and achieve more optimal health outcomes.

P119- CO-EXISTENCE OF PHYSICAL FRAILTY AND SARCOPENIA IS ASSOCIATED WITH POORER FUNCTIONAL FITNESS AND ADVERSE HEALTH OUTCOMES IN COMMUNITY-DWELLING OLDER ADULTS. Laura Tay[1], Ling Tay Ee[2], Aisyah Latib[3], Min Mah Shi[2], Huda Abu Bakar[1], Sien Ng Yee[4] *((1) Department of Geriatric Medicine, Sengkang General Medicine. Singapore; (2) Department of Physiotherapy, Sengkang General Hospital. Singapore; (3) Office of Regional Health System. SingHealth. Singapore; (4) Department of Rehabilitation Medicine, Singapore General Hospital. Singapore)*

Background: Despite being inter-related with over-lapping operational characteristics, physical frailty and sarcopenia are distinct. The clinical relevance for physical frailty with and without sarcopenia remains unclear. **Objectives:** We aim to (i) identify determinants for co-existing physical frailty and sarcopenia, and (ii) examine the impact of their co-existence on fitness and health outcomes. **Methods:** This is a cross-sectional analysis of 225 community-dwelling older adults who had undergone a multi-domain geriatric screen and physical fitness assessment. Frailty and sarcopenia were assessed using FRAIL and SARC-F respectively. Participants were categorized as neither frail nor sarcopenic (PF-S-), pre-frail/ frail or sarcopenic in isolation (PF+/S+), or pre-frail/ frail and sarcopenic (PF+S+). The geriatric screen comprised social profiling, cognitive performance, mood (Geriatric Depression Scale), functional performance, nutrition (Mini-Nutrition Assessment-Short Form), and life-space mobility. The physical fitness battery included tests of upper and lower limb strength and power, upper and lower limb flexibility, tandem and dynamic balance, single- and dual-task gait speed (serial 2-step-forward calculation on 10m-walk), and cardiorespiratory endurance. **Results:** One-hundred-eighty-three (81.3%) were PF-S-, 35 (15.6%) PF+/S+, and 7 (3.1%) PF+S+. There was a trend for PF+S+ to be older (p=0.057). Lower socio-economic status was more prevalent in PF+S+, reflected by housing type (p=0.045), employment status (p=0.025), and report of insufficient expenses (p=0.031). Depression was most prevalent in PF+S+ (p=0.008), who were also most likely to be at-risk of malnutrition or malnourished (p=0.010). Weak grip was most commonly observed in PF+S+ (p<0.001). PF+S+ had worst lower limb strength and power (timed 5-chair stands: 17.60+5.30sec; 9.92+3.70sec; 9.25+3.01sec, p<0.001), tandem (p=0.001) and dynamic balance (p<0.001), and endurance (6-minute-walk distance: 327.0+134.8m; 442.9+82.6m; 486.4+182.8m, p=0.027). Despite being slowest on single-task gait speed (p=0.002) and similar cognitive performance, PF+S+ were fastest on dual-task gait speed (0.97+0.31m/s; 1.15+0.30m/s; 1.23+0.27m/s, p=0.039). PF+S+ had significantly poorer functional performance (p<0.001), were most likely to attend Emergency Department (p=0.013) or fall (p=0.001) in the preceding year, and had most restricted life-space mobility (p=0.023). **Conclusion:** Co-existence of physical frailty and sarcopenia confers worse fitness and health outcomes, and may be alleviated through interventions to enhance social support, mood and nutrition. The differential single- and dual-task performance warrants further investigation into alternate pathways for frailty independent of sarcopenia.

P120- VISUAL IMPAIRMENT AND FRAILTY: AN IMPORTANT, YET UNDERSTUDIED RELATIONSHIP. Bonnielin K. Swenor[1], Moon Jeong Lee[1], Jing Tian[2], Varshini Varadaraj[1], Karen Bandeen-Roche[2] *((1) Department of Ophthalmology, Johns Hopkins School of Medicine, Baltimore, USA; (2) Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA)*

Background: Visually impaired older adults are at increased risk of many negative health outcomes, however, there is limited research examining the relationship between visual impairment (VI) and frailty. **Objectives:** Test the hypotheses that visually impaired older adults are more likely to be frail and are at increased risk of frailty than those without visual impairments. **Methods:** Cross-sectional and longitudinal relationships between VI (defined using distance visual acuity) and frailty (frailty phenotype criteria) were examined using data from the National Health and Nutrition Examination Survey (NHANES, 1999-2002 limited to adults >=60 years) and the Women's Health and Aging Studies (WHAS III). Imbalance of potential confounders, particularly age, was addressed using propensity score-based adjustment. Multinomial logistic regression determined the odds of prefrailty/frailty at baseline (NHANES and WHAS III) and incident frailty over 3 years (WHAS III) after adjustment for age and additional confounders, and probability weighting using the product of survey weights and inverse propensity scores. **Results:** In NHANES analyses (n=2,589, 8% VI), individuals with VI were more likely to be prefrail (OR=2.6; 95% CI: 1.4-4.6) and frail (OR= 3.2; 95% CI:

1.5-6.8) than those without VI. In WHAS III (n=634, 26% moderate VI, 37% severe VI), participants with moderate VI were more likely to be frail (OR=4.3; 95% CI: 2.4-7.5) and severe VI were more likely to be prefrail (OR=5.3; 95% CI: 1.8-15.9) and frail (OR=24.0; 95% CI: 8.5-68.0) after similar adjustments. Additionally, a one-line increase in logMAR score (worsening visual acuity) was associated with greater odds of being prefrail (OR=1.7; 95% CI: 1.5-1.9) and frail (OR=2.1; 95% CI: 1.8-2.5). Of those not frail at baseline in WHAS III (n=549), a one-line increase in logMAR score was associated with a greater odds of incident frailty (OR=1.3; 95% CI: 1.1-1.5) after 3 years of follow-up. **Conclusion:** Our results suggest that VI may be an important yet understudied risk factor for frailty among older adults. The magnitude and coherence of these results across both cohorts, use of longitudinal analyses to establish temporality, and the use of rigorous methods to account for age and other potential confounders, including propensity score-based adjustment, underscore the strength of these results.

P121- COMMUNITY NURSING CARE APPROACHES BASED ON ACTIVITIES OF COMMUNITY-DWELLING SENIOR COUPLES LIVING INDEPENDENTLY AT HOME.
Pingping Zhang *(Saitama Prefectural University, Japan)*

Background: As Japan is a rapidly aging society, nursing approaches that help enable the elderly to lead longer and more independent lives are needed. **Objectives:** The objective of the present study was to clarify what types of activities and community nursing care approaches can help the elderly, such as senior couples, continue to live independently at home. **Methods:** The study participants were three community-dwelling senior couples living independently at home. Data were collected through semi-structured interviews and analyzed using a qualitative synthesis method (KJ method). This study was approved by the Ethics Committee of Saitama Prefectural University. **Results:** The three senior couples had a mean age of 73.3 years and marital histories ranging from 46 to 48 years. The couples' activity structures for continuing to live independently at home consisted of the following five characteristics: [use daily time effectively and enjoy a satisfying life], [engage in free discussion to alleviate stress and maximize happiness while living the lifestyle of a senior couple], [mutually thank and support each other while living the lifestyle of a senior couple], [devise ways to adapt to the various challenges of aging, such as physical, emotional, economic, and environmental changes], and [focus on health promotion and the ability to perform self-care]. **Conclusion:** The results of the present study suggest that to promote health among the community-dwelling elderly, such as senior couples, in an aging society, nursing care should consist of interventions that focus on physical activity and involve systems of comprehensive support.

P122- FRAILTY WAS PREDICTIVE OF DEATH AFTER DISCHARGE FROM THE EMERGENCY SERVICE: A 6-MONTH PROSPECTIVE STUDY FROM A MIDDLE-INCOME COUNTRY.
Gabriella Vano Aricó de Almeida[1], Carla Fernanda de Vasconcellos Romanin[1], Tarsila Gomes Caldas[1], Nadia Tiemi Antunes Yoshitake[1], Lia Bataglini[1], Matteo Cesari[2], Ivan Aprahamian[1] *((1) Group of Investigation on Multimorbidity and Mental Health in Aging (GIMMA), Department of Internal Medicine, Faculty of Medicine of Jundiaí, Brazil; (2) "Fondazione (IRCCS) Ca' Granda - Ospedale Maggiore Policlinico", University of Milan, Italy)*

Background: The number of older adults attending emergency services is increasing all over the world. Usually, those patients are potentially more complex due to their greater number of comorbidities, cognitive disorders, and function or physical disabilities. Frailty is a vulnerable state that could predict adverse outcomes of those patients. There is only very few studies that addressed this topic in the emergency setting, and none of them used the FRAIL questionnaire. **Objectives:** The primary outcome was to evaluate the association between frailty at baseline and death after a 6-month follow-up period after hospital discharge from the emergency service. Secondary outcomes was readmission to the emergency and disability after 6 months. **Methods:** A 6-month follow-up prospective study (FASES study) was conducted at an university-based emergency service in Jundiaí, southwestern of Brazil. A total of 316 older adults aged 60 or older were randomly included based on a lottery of their medical record admission number. Frailty was evaluated through the FRAIL questionnaire. The association between frailty and death was estimated through a logistic regression adjusted for age, sex, and number of comorbidities. **Results:** From the total sample, mean age was 72.11±8.0 years, and 51.6% were women. Participants presented 2.28-1.4 number of comorbidities and 25.6% were frail. Mean hospital stay was 5.43-5.6 days. Death occurred in 52 participants, readmission to the emergency in 55, and new disability in 27. Frailty was associated with an odds ratio of 2.18 for death after 6 months (95% CI = 1.10–4.31; p = 0.024). There was no association between frailty status at baseline and readmission to the emergency service or disability after 6 months. **Conclusion:** The identification of frailty at admission was predictive of death after a 6-month period of follow-up after discharge from the emergency service. Simple frailty assessment could identify patients at higher risk of adverse outcomes in the follow-up.

P123- NON-MOTOR CHARACTERISTICS BUT NOT MOTOR SIGNS OF PARKINSON'S DISEASE WERE ASSOCIATED WITH FRAILTY.
Richard Murdoch Montgomery[1], Matteo Cesari[2], Ivan Aprahamian[1] *((1) Group of Investigation on Multimorbidity and Mental Health in Aging (GIMMA), Department of Internal Medicine, Faculty of Medicine of Jundiaí, Brazil; (2) «Fondazione (IRCCS) Ca' Granda - Ospedale Maggiore Policlinico", University of Milan, Italy)*

Background: Frailty and Parkinson's disease (PD) are common conditions in aging. There is robust evidence reporting the importance of frailty as a significant contributor to worse morbidity evolution and higher risk of mortality, and as an important tool for efficient identification of patients at increased risk of developing a worse general prognosis. There is lack of observational studies that detail the relationship between frailty and PD. **Objectives:** We investigated the prevalence of frailty at baseline and evaluated which variables were associated with the progression of frailty status among older patients with PD. **Methods:** We studied 90 clinically stable patients with PD (Hoehn & Yahr mean 1.63) between January 2, 2016 and July 10, 2016 (183 days). Frailty was evaluated according to Fried's phenotype criteria taking into account the presence of 3 or more of the following: low walking speed, low physical activity, exhaustion, low strength and unintentional weight loss. Severity and progression of PD was measured through the Unified Parkinson's Disease Rating Scale (UPDRS). We used the Mini Mental State Exam (MMSE) to evaluate cognition. **Results:** There was a positive and significant association between the UPDRS score at baseline and the frailty phenotype at the end of the study (OR 1.08, CI95% 1.02-1.14, p = 0.004). This relationship was due to the score of the first part (non-motor aspects of PD) of UPDRS instrument (OR 1.50, CI95% 1.03-2.17, p = 0.03). We also found an association between the MMSE score at baseline and progression to frailty at the end of the study. In addition, we observed a correlation between walking speed at baseline and frailty status and worse UPDRS score after 6 months. In association with this finding, the presence of physical activity at baseline presented an inverse correlation with frailty. UPDRS score at baseline (71.20) and

after 6 months (70.91) did not show statistically significant changes. **Conclusion:** Non-motor characteristics but not motor signs of patients with PD were significantly associated with frailty after 6 months. Studies with longer follow-up and larger samples sizes should better investigate these findings.

P124- SELECTIVE SEROTONIN RECEPTOR INHIBITOR MONOTHERAPY WAS ASSOCIATED WITH FRAILTY AND FALLS IN A CLINIC COHORT OF OLDER ADULTS FROM A MIDDLE-INCOME COUNTRY. Ivan Aprahamian[1], Sumika Mori Lin[1], Alaise Silva Santos de Siqueira[1], Marina Maria Biella[1], Matteo Cesari[2], Wilson Jacob-Filho[1] *((1) Geriatrics Division, Faculty of Medicine, University of São Paulo, Brazil; (2) «Fondazione (IRCCS) Ca' Granda - Ospedale Maggiore Policlinico", University of Milan, Italy)*

Background: Depression and frailty are important topics of interest in geriatrics. The relationship between depression and frailty is still controversial, based on few cross-sectional and longitudinal studies. The study of geriatric depression as well as the possible adverse effects from the use of antidepressants as risk factors for frailty is even less study. **Objectives:** The primary outcome was to evaluate the association between Selective serotonin receptor inhibitor (SSRI) monotherapy for depression, and frailty after a 12-month follow-up in older adults. Secondarily, to assess the risk of death, hospitalization, falls and disability in the same period. **Methods:** A 12-month follow-up prospective cohort study was conducted at an university-based geriatric outpatient clinic in São Paulo, Brazil. A total of 811 older adults aged 60 or older were included. Depression was diagnosed as follows: (1) a diagnosis of major depression disorder (MDD) according to DSM-5; or (2) an incomplete diagnosis of MDD, referred as minor or subsyndromic depression, plus Geriatric Depression Scale 15-itens >= 6 points, and social or functional impairment secondary to depressive symptoms and confirmed by relatives. Frailty was evaluated through the FRAIL questionnaire. The association between the use of SSRI and primary and secondary outcomes was estimated through a generalized estimating equation adjusted for age, sex, medication in use, and comorbidities. **Results:** Participants were characterized by mean age of 81.65 years, 72.9% of women, 18.7% of depressive disorders and 37.7% of frailty. Frailty prevalence was different between depressed older adults and controls (p = 0.001). The use of SSRI was associated with an odds ratio of 1.69 for incident frailty (95% CI = 1.03–2.77; p = 0.037) and 1.75 for falls (95% CI = 1.08–2.83; p = 0.021), adjusted for the presence of depressive symptoms after 12 months. **Conclusion:** It appears that SSRI monotherapy is associated with frailty and falls, and this association should be explored in further longitudinal studies.

P125- RELATIONSHIP BETWEEN IMMUNE CELL PROFILES AND FRAILTY IN PATIENTS WITH BREAST CANCER RECEIVING CHEMOTHERAPY. Nikesha Gilmore, PhD[1], Mostafa Mohamed[1], Lianlian Lei[1], Allison Magnuson[1], Ronald Maggiore[1], Supriya Mohile[1], Mary Ontko[2], Jerry Mitchell[3], Kelley Young[4], Michelle Janelsins[1] *((1) University of Rochester Medical Center, Rochester, NY, USA; (2) Dayton Clinical Oncology Program, Dayton, OH, USA; (3)- Columbus NCORP, Columbus, OH, USA; (4) Kansas City NCORP, Prairie Village, KS, USA)*

Background: Frailty, especially in older adults, is an important factor in determining risk of chemotherapy toxicity. Chronic inflammation is a significant physiologic feature of frailty, but its role and clinical relevance in cancer-related frailty remain unknown. While an association of inflammation with survival has been shown, the relationship of inflammation with risk of developing frailty is not understood. **Objectives:** To determine whether changes in immune cell profiles are predictive of frailty after chemotherapy in patients with breast cancer. **Methods:** Secondary analysis of a large nationwide cohort study. Patients had stage I-IIIc breast cancer (n=583, mean age 53; range 22-81) and were scheduled to receive adjuvant/neoadjuvant chemotherapy. Frailty was assessed by a modified Fried score (0-4) using self-reported measures of weakness, exhaustion, physical activity, and walking speed (pre- and post-chemotherapy). Absolute counts of immune cell types as well as neutrophil:lymphocyte ratios (NLR) and lymphocyte:monocyte ratios (LMR) were calculated pre-chemotherapy (≤ 7 days before first cycle) and post-chemotherapy (> 1 month after last cycle). Separate linear regressions were used to evaluate the associations of pre-chemotherapy cell counts and ratios with post-chemotherapy frailty, controlling for relevant covariates and baseline frailty. Additional analyses examined the associations of changes in cell counts and ratios with changes in frailty (post-chemotherapy minus pre-chemotherapy). **Results:** Chemotherapy significantly increased the mean frailty score (pre-chemotherapy: 1.28, post-chemotherapy: 2.0; p<0.001). From pre- to post-chemotherapy, baseline frailty was negatively associated with frailty change score (β=-0.68; p<0.001). Higher pre-chemotherapy LMR was significantly associated with higher post-chemotherapy frailty (β=0.20; p=0.035). Lower NLR was marginally associated with higher post-chemotherapy frailty (β=-0.158; p=0.078). In both linear regression models higher baseline frailty and older age were significantly predictive of post-chemotherapy frailty. From pre-chemotherapy to post-chemotherapy, greater lymphocyte decreases (β=-0.27; p=0.036) and NLR increases (β =0.18; p=0.015) were predictive of higher frailty change scores. LMR decreases (β =-0.17; p=0.058) were also marginally associated with increased frailty scores. **Conclusion:** Baseline LMR and lymphocyte declines were both predictive of post-chemotherapy frailty in patients with breast cancer. Immune cell counts may help clinicians identify patients at risk of frailty post-chemotherapy. Research is needed to elucidate the molecular mechanisms of inflammation in frailty.

P126- DETECTING THE FEATURES OF FRAILTY CRITERIA BY COMPARING WITH COMPREHENSIVE GERIATRIC ASSESSMENT (CGA) VIA LINKING TO THE INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH (ICF). Naoki Tomita[1], Yuki Ohashi[2], Aiko Ishiki[1], Akiko Ozaki[3], Mitsuyuki Nakao[4], Hiroyuki Arai[1] *((1)Department of Geriatrics and Gerontology, Institute of Development, Aging and Cancer, Tohoku University; (2) Rakuwakai Rehabilitation Hospital; (3) Department of Gerontological and Home Healthcare Nursing, Division of Health Sciences, Graduate School of Medicine, Tohoku University; (4) Laboratory of Biomodeling, Department of Applied Information Sciences, Graduate School of Information Sciences, Tohoku University)*

Background: There are many diagnostic criteria for frailty, and each is a multidimensional assessment tool for evaluating the elderly in various aspects. On the other hand, Comprehensive Geriatric Assessment (CGA) is used as a comprehensive assessment of the elderly; it contains common comprehensive tools combined into a single indicator for the purpose of screening (CGA screening), and a combination of single measurement tools formed by combining existing evaluation batteries for detailed assessments (CGA assessment). It is not yet discussed the difference between frailty criteria and CGA in detail. The International Classification of Functioning, Disability and Health (ICF) is a common reference framework for functioning. Linking the components of diagnostic

measures to ICF components is a well-known unified approach to understand the characteristics of measures. With respect to frailty diagnostic criteria and CGA screening, the ICF linkage is already being performed . However, there is still no report of an ICF linkage pertaining to CGA assessment. **Objectives:** We aim to clarify the difference between frailty criteria and CGA assessment, and to find points to be improved, by comparing the fraction of ICF components composing frailty criteria and CGA assessment. **Methods:** We performed an internet-based survey twice with the participants including healthcare professionals and healthy elderly volunteers. The opinions of the respondents were aggregated using the Delphi method. We compared the ICF composition of the frailty criteria used in previous studies with the results of the present survey. **Results:** A total of 182 participants (50 healthcare professionals and 132 healthy elderly volunteers) responded in the survey period spanning from March to June 2018. Regarding the social concept that must be included in CGA, the response selected by over 60% was social support and social participation, followed by social networking, broadening of living space, and social role. It was shown that CGA contained all the ICF components as well as the items not present in the ICF. The opinions of the healthcare professionals and elderly were divided, regarding whether frailty must be included as a social concept evaluated by CGA. **Conclusion:** The concept of social frailty may still be too ambiguous for elderly respondents to understand, even with the explanation of the concept. When reporting the result of assessment, each component should be plesented by itself, rather than using the concept of «social frailty». The phenotype model (the Cardiovascular Health study (CHS) standard) of frailty is formed from the ICF body function and activity/participation. Meanwhile, the criteria based on the accumulation of deficit model include all the ICF items and those not defineable or covered by ICF(nd/nc), making it close to the CGA composition. A study investigating how the items present in nd/nc differ based on CGA and frailty criteria is necessary.

P127- ASSOCIATION OF LOW SERUM 25-HYDROXYVITAMIN D LEVELS WITH THE FRAILTY SYNDROME IN ELDERLY POPULATION AT COLIMA, MÉXICO.

Katia Carmina Farías-Moreno[1], Karla Berenice Carrazco-Peña[2], Benjamín Trujillo-Hernández[3], Zahira Cecilia Aguilar-Mancilla[4], Alejandra Pulido-García[4], Deyadira Santillán-Luna[4], Karina Rodríguez-Pedraza[4], Mariana Trujillo-Magallón[4], Lizeth Ramírez-Covarrubias Estefania[5], Perla Guillermina Cervantes-Santa Cruz[5] *((1) Second year student of Master in Medical Sciences, Faculty of Medicine, Universidad de Colima, Mexico; (2) Full time professor, Faculty of Medicine, Universidad de Colima, Mexico; (3) Full time professor, Faculty of Medicine, Universidad de Colima, Mexico; (4) Fifth year Medical student, Faculty of Medicine, Universidad de Colima, Mexico; (5) Sixth year Medical student,Faculty of Medicine, Universidad de Colima, Mexico)*

Background: The frailty syndrome and low serum 25-hydroxyvitamin D (25-OHD) are common and infra-diagnosed conditions in elderly. Frailty is related with adverse health-related outcomes, higher risk of falls and mortality. Meanwhile low serum 25OHD levels are linked with bone pain, weakness, osteoporosis, fractures and functional dependency. **Objectives:** Determine association of low serum 25-hydroxyvitamin D levels with the frailty syndrome. **Methods:** This cross-sectional study evaluated 175 community-dwelling elderly with an age >= 60 years inscribed to Centro de Convivencia de la Tercera Edad Parque Regional, Colima, Mexico. Patients with dementia diagnosis or acute pathology (<14 days) at the time of assessment were excluded. All patients signed informed consent. Frailty status was defined as proposed by Freid

criteria (weight loss, exhaustion, slow walking speed, weakness and decreased physical activity); three or more criteria was frail, between one-two criteria was prefrail and any criteria was not frail. The serum levels of 25OHD were measured from peripheral blood samples by ELISA (Enzyme-Linked Immunosorbent Assay) and reported in ng/ml. The levels divided in: sufficiency when the levels were >=30ng/ml and low levels include deficiency <=20 ng/ml and insufficiency 21-29 ng/ml. Statistical analysis: X2, t test and one-way ANOVA. **Results:** Mean age was 71.7 ± 6.7 years, the 82.9% (n=145) were women. Frail elderly were older (p<0.001) and have more frequency of falls (p 0.003), while the height (p <0.001) and weight (p 0.002) were lower than not frail patients. Mean 25OHD levels was 27.9 ± 14.7 ng/ml. Not frail elderly had sufficiency (33.7 ± 17.7) of 25-OHD (p<0.001), meanwhile prefrail (26.2 ± 12.8) and frail (23.5 ± 11.6) were in insufficient levels (p<0.001). Exhaustion (p <0.001) and weakness (p 0.006) criteria were associated with lower levels of 25-OHD. **Conclusion:** A not frail status associated with 25OHD sufficiency. The prefrail and frail patients had lower levels of 25 OHD.

P128- APPROPRIATENESS OF NEW-ORAL ANTICOAGULANT DOSE ADJUSTMENT IN OLDER ADULTS.

Tugba Erdogan[1], Onur Erdogan[2], Gülistan Bahat Ozturk[1], Mehmet Akif Karan[1] *((1) Istanbul University, Istanbul Medical School, Department of Internal Medicine, Division of Geriatrics, Istanbul, Turkey; (2) Istinye State Hospital, Department of Cardiology, Istanbul, Turkey)*

Background: Atrial-fibrillation (AF) remains the major cause of stroke. Non-vitamin K antagonists-oral-anticoagulants(NOACs) use for stroke prevention in non-valvular-AF, increasing rapidly. However current guidelines recommend dose-adjustment according to certain criteria for each NOAC, physician judgement may be a strong influence for reduced NOAC. Physicians may take account presence of frailty and falls while making a decision for dose adjustment in oral anticoagulants and can make off label dose lowering. Our aim is to determine if use of inappropriate NOAC prescribing is a significant problem and whether this is related to the existing diseases, demographic-data, CHADSVASc and HASBLED score, frailty and falls. **Objectives:** Our aim is to determine if use of inappropriate NOAC prescribing is a significant problem and whether this is related to the existing diseases, demographic-data, CHADSVASc and HASBLED score, frailty and falls. **Methods:** Older adults between the ages of 60-99 who have AF and under the treatment of NOACs admitted to outpatient clinic were included. Demographic data, clinical data were obtained. Frailty was evaluated by FRAIL-scale. For each patient the doses of NOACs were evaluated according to the recommendations of the guideline and it was categorized as appropriate or inappropriate-dose. **Results:** A total of 302 older-adults were included. The mean-age was $75.5 +\_ 7.2$ years, and %64 of patients were female. Rivaroxaban was the most commonly used NOAC observed in 173 patients (% 57.3). A total of 121 patients (40.1%) were dosed inappropriately according to AF guideline dose adjustment recommendations. Thirty seven percent of patients who use NOAC and 92.6% of the patients who had an inappropriate dose usage, were prescribed a dose lower than recommended. Three percent of patients who use NOAC and 7.4% of the patients who had an inappropriate dose usage, were prescribed a dose higher than recommended. Factors associated with inappropriate-low-dose use were lower weight, lower GFR, older age and frailty (p:0.002, p:0.032, p:0.027 and p:0.012 respectively). In regression analysis independent factor was higher age (OR= 1.07, 95%CI=1.01-1.13, p<0.02). **Conclusion:** Our study suggests that ; a significant proportion of AF patients who receive NOACs were receiving low dose;

and the majority of reduced dose NOAC use was not consistent with guideline recommendations and dose reduction is performed only in consideration of the age factor, contrary to the guideline recommendations in clinical practice.

P129- DETECTING THE FEATURES OF FRAILTY CRITERIA BY COMPARING WITH COMPREHENSIVE GERIATRIC ASSESSMENT (CGA) VIA LINKING TO THE INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH (ICF). Naoki Tomita[1], Yuki Ohashi[2], Aiko Ishiki[1], Akiko Ozaki[3], Mitsuyuki Nakao[4], Hiroyuki Arai[1] *((1) Department of Geriatrics and Gerontology, Institute of Development, Aging and Cancer, Tohoku University; (2) Rakuwakai Rehabilitation Hospital; (3) Department of Gerontological and Home Healthcare Nursing, Division of Health Sciences, Graduate School of Medicine, Tohoku University; (4) Laboratory of Biomodeling, Department of Applied Information Sciences, Graduate School of Information Sciences, Tohoku University)*

Background: There are many diagnostic criteria for frailty, and each is a multidimensional assessment tool for evaluating the elderly in various aspects. On the other hand, Comprehensive Geriatric Assessment (CGA) is used as a comprehensive assessment of the elderly; it contains common comprehensive tools combined into a single indicator for the purpose of screening (CGA screening), and a combination of single measurement tools formed by combining existing evaluation batteries for detailed assessments (CGA assessment). It is not yet discussed the difference between frailty criteria and CGA in detail. The International Classification of Functioning, Disability and Health (ICF) is a common reference framework for functioning. Linking the components of diagnostic measures to ICF components is a well-known unified approach to understand the characteristics of measures. With respect to frailty diagnostic criteria and CGA screening, the ICF linkage is already being performed . However, there is still no report of an ICF linkage pertaining to CGA assessment. **Objectives:** We aim to clarify the difference between frailty criteria and CGA assessment, and to find points to be improved, by comparing the fraction of ICF components composing frailty criteria and CGA assessment. **Methods:** We performed an internet-based survey twice with the participants including healthcare professionals and healthy elderly volunteers. The opinions of the respondents were aggregated using the Delphi method. We compared the ICF composition of the frailty criteria used in previous studies with the results of the present survey. **Results:** A total of 182 participants (50 healthcare professionals and 132 healthy elderly volunteers) responded in the survey period spanning from March to June 2018. Regarding the social concept that must be included in CGA, the response selected by over 60% was social support and social participation, followed by social networking, broadening of living space, and social role. It was shown that CGA contained all the ICF components as well as the items not present in the ICF. The opinions of the healthcare professionals and elderly were divided, regarding whether frailty must be included as a social concept evaluated by CGA. **Conclusion:** The concept of social frailty may still be too ambiguous for elderly respondents to understand, even with the explanation of the concept. When reporting the result of assessment, each component should be plesented by itself, rather than using the concept of «social frailty». The phenotype model (the Cardiovascular Health study (CHS) standard) of frailty is formed from the ICF body function and activity/participation. Meanwhile, the criteria based on the accumulation of deficit model include all the ICF items and those not defineable or covered by ICF(nd/nc), making it close to the CGA composition. A study investigating how the items present in nd/nc

differ based on CGA and frailty criteria is necessary.

P130- CHARACTERISTICS OF LIFESTYLES OF THE FRAILTY PREVENTION AMONG COMMUNITY-DWELLING ELDERLY WOMEN OF POSITIVE ATTITUDE TOWARD HEALTH PROMOTION ACTIVITIES. Mariko Zensho[1], Osamu Fujinawa[2], Koji Sugano[3], Ryo Kubota[1], Toyo Kikumoto[1], Hiromi Nakamura-Thomas[1], Hiroko Kohara[4], Yuko Morikagi[5], Hajime Toda[6] *((1) Saitama Prefectural University; (2) Fukui Health Science University; (3) Juntendo Tokyo Koto Geriatric Medical Center; (4) University of Kochi; (5) Yamagata University; (6) Kitasato University)*

Background: The difference between the average life expectancy and the healthy life expectancy in Japan is 9 years for men and 12.5 years for women. Since the differences is 3.5 years longer, frailty prevention measures for women are important. **Objectives:** The purpose of this study was to explore the characteristics of lifestyles of the frailty prevention among community- dwelling elderly women of positive attitude toward health promotion activities. **Methods:** The participants were 14 elderly women. As for evaluation of frailty and health literacy, all participants were robust in a basic health checklist and score high marks in HLS-EU-Q47-J. The interviewers an author. Based on the common theme of all of the interviews («what do you think positive attitude toward health promotion activities for yourself»), we made interview guide and performed semi-structural individual interviews. The interviews were recorded, and a word-for-word record was created. The interviews took place in 2018 and lasted for 10-30 minutes per person. Data analysis was extracted and important contents from the word-for-word record were abstracted. Ethical considerations: The participants were given written and spoken explanations about the research and about private information protection. Written consent was obtained. **Results:** The results were classified into six core categories and related subcategories as follows. 1. Make a habit of going-out for myself fun: don't want to put so much money on it, usually use transportation, trying to stay active, training the mind. 2. Planning few months schedule: carry the schedule planner, write it in the home calendar, make use of the smartphone, have a good memory. 3. Create the volunteer opportunity: respect for the elderly, go to the local festival, interact with the children 4. Family-minded: happy dining, nutritionally balanced diet, don't want to bother their. 5. Optimist: everything will be OK in the end, cope with ambiguity, smiles bring happiness, get along with all people 6. Philosophy of life: person of culture, deep knowledge. **Conclusion:** It was suggested that the results of this study should be useful for preparing appropriate frailty prevention and health promotion activities support plans for those undergoing community- dwelling elderly women.

P131- COMMUNITY BASED DUAL TASK INTERVENTIONS TO REDUCE THE PREVALENCE OF FRAILTY: FINDINGS FROM HAPPY PROGRAM. Reshma A Merchant[1], Matthew Chen[2], Surein Sandrasageran[2], Tan Weng Mooi[3], Chris Tsoi Tung[2] *((1) (Yong Loo Lin School of Medicine, National University of Singapore, Singapore; (2) National University Hospital, Singapore; (3) Agency of Integrated Care)*

Background: With ageing population, prevalence of frailty and its consequences will increase expenditure in healthcare. Effective interventions for preventing or delaying onset of frailty is urgently required. Given its multidimensional nature, the intervention need to encompass physical, cognitive and social domains. **Objectives:** Healthy Ageing Promotion Program for You (HAPPY) has been modelled from cognicise in Japan with incorporation of physical

activity, brain activity and empowerment of seniors conducted within community centers and housing estate in Singapore. The key objective of Happy is to delay the onset or reverse frailty at population level. **Methods:** HAPPY incorporates case finding with functional screening for seniors within the community identified by local authorities where those screened to be prefrail or have underlying cognitive impairment are invited to participate in HAPPY program over a minimum of 6 months. Interventions are conducted twice weekly in the community setting comprising of stretching, dual task activity and aerobic exercise.200 seniors aged 60 years and above across 25 centers have been enrolled where 99 and 67 seniors have completed 3 months and 6 months follow up respectively. Frailty was assessed using FRAIL scale. Cognition was assessed using Chinese Mini Mental Status Examination (cMMSE) and Montreal Cognitive Assessment (MoCA). Gait speed, grip strength and Short Performance Battery Test were used to assess functional status. Depression was assessed using Geriatric Depression Scale and quality of life using EQ-5D **Results:** Characteristics of seniors include mean age 74.1 years, prevalence of depression 13.6%, cMMSE 26 or less 61.2%, subjective memory complaints 60.4%, prefrail 78.1%, frail but ambulant 6%. At 6 months, prevalence of frailty reduced from 6 to 1.5% and 52.2% considered themselves as robust. There was significant improvement in SPPB, FRAIL, cMMSE, MoCA scores, loneliness and quality of life. 81% of seniors showed improvement in MoCA scores at 6 months and prevalence of depression reduced by 50%. 63% showed improvement in FRAIL scores and 58.7% of seniors improved in total SPPB scores. **Conclusion:** Multidomain interventions such as HAPPY has shown to reverse frailty, improve cognition and reduce depression.

P132- IDENTIFYING THE IMPORTANT ITEMS TO BE INCLUDED IN A FRAILTY SPECIFIC PATIENT-REPORTED OUTCOMES : A QUALITATIVE STUDY AMONG PATIENTS AND PROFESSIONALS.

F. Buckinx[1], J-Y. Reginster[1], Y. Rolland[2], M. Cesari[3], C. Beaudart[1], R. Rizzoli[4], J. Petermans[5], B. Fougère[6], O. Bruyère[1] ((1) Department of Public Health, Epidemiology and Health *Economics, University of Liège, Belgium; WHO Collaborating Centre for Public Health Aspects of Musculoskeletal Health and Ageing; (2) Gérontopôle, University Hospital of Toulouse III, Toulouse, France, University of Toulouse III, France; (3) Geriatric Unit, Fondazione Ca' Granda - Ospedale Maggiore Policlinico, Milano, Italy; (4) Service of Bone Diseases, Department of Internal Medicine Specialties, Geneva University Hospitals and Faculty of Medicine, Geneva, Switzerland; (5) Department of Geriatrics, CHU-Liège, Liège, Belgium; (6) Division of Geriatric Medicine, Saint Louis University School of Medicine, St Louis, US)*

Background: In recent years, there has been an increased focus on placing patients at the center of health care research. However, few studies have investigated the relationship between frailty and QoL. Moreover, quality of life is usually assessed by generic tools. **Objectives:** In this sense, the aim of this study was to identify important items of quality of life for the specific population of frail older subjects. **Methods:** A Delphi survey was conducted among professionals in the field of frailty (i.e. members of the working groups on frailty from the EUGMS or ESCEO). We also performed two focus groups, one in frail community-dwelling older subjects and one in frail nursing home residents. Frailty was assessed using different definitions. **Results:** The important items to assess quality of life related to frailty, highlighted by frail patients themselves (n=14) or by professionals (n=35), have been indexed in 6 domains, based on the concept of intrinsic capacity proposed by the WHO: locomotion, sensory, vitality, psychosocial, cognition and others. Respectively 78 and 52 items have been highlighted by the Delphi Approach and

the focus groups. Globally, professionals and older patients cited a majority of items from the domain of vitality (i.e. 14 items cited by both professionals and patients). Moreover, community-dwelling elderly cited many items in the psychosocial field (i.e. 8 items) while nursing home residents did not (i.e. 1 item). Professionals also place a lot of importance on locomotion (i.e. 13 items). A second round of the Delphi survey was performed to precise, among the 130 items, the most relevant to assess quality of life related to frailty (I.e. when >= 75% of the respondent think that the item is relevant or strongly relevant). By this was, we selected 42 items. **Conclusion:** Based on the items identified both by the Delphi approach and the focus groups, the authors are curently developing a frailty specific Patient-Reported Outcomes (PRO).

P133- DIABETES IN FRAIL OLDER ADULTS: ASSESSMENT OF GLYCAEMIC CONTROL AND PRESCRIPTIONS.

Anne-Sophie Mangé[1], Cécile Mccambridge[1], Arnaud Pages[1,2], Charlotte Laborde[1,2], Sandrine Sourdet[1,2], Anne Ghisolfi[1], Bruno Vellas[1,2], Philippe Cestac[1,2] *((1) Centre Hospitalier Universitaire de Toulouse, Toulouse, France ; (2) Inserm UMR1027, Université de Toulouse III Paul Sabatier, Toulouse, France)*

Background: Elderly patients with diabetes are particularly at risk of iatrogenic effects and loss of autonomy. The latest recommendations for diabetes care adjust the glycaemic targets based on the frailty. **Objectives:** The objective of this study was to describe the glycaemic control and prescription profile in elderly diabetic patients seen at our outpatient geriatric frailty clinic (GFC). **Methods:** A retrospective study was performed, focusing on diabetic patients among those who were hospitalized in the outpatient GFC over the year 2016. Glycaemic control was estimated using the last HbA1c (glycated haemoglobin). According to the 2013 recommendations from the French Health Authority (HAS), HbA1c targets must be ≤7%, 8% or 9% in respectively robust, frail and sick (i.e. dependent) patients. Frailty was evaluated using the Fried frailty criteria. The potentially inappropriate nature of antidiabetic's prescription was determined using the EU(7) PIM list mixed with an implicit approach (kidney function, HbA1c, medical history and frailty index). Prescriptions were labelled as "non-conforming" when they diverged from reference documents for at least 1 aspect. **Results:** Of the 110 diabetic patients, the mean age was 81.7 years, 67.3% were considered frail; 61.8% were being treated with oral antidiabetic drugs and 35.5% with insulin. The mean HbA1c was 7.11%. The level of glycaemic control, and the number and type of antidiabetic treatments did not differ significantly between frail and non-frail patients (respectively p1 = 0.35; p2 = 0.79; p3 = 0.66). The distribution of HbA1c relative to the HAS targets varied by frailty status (p= 0.0016), with a trend towards overly tight glycaemic control in frail patients. A non-conformity in diabetes treatment was identified in 64.5% of patients. 40.9% of patients were potentially over-treated; 16.4% of patients were insufficiently treated. Hypoglycaemia episodes were suspected or confirmed in 9.1% of patients. **Conclusion:** It appears that glycaemic targets are not always tailored to the health condition of frail patients. Several of our findings suggest the frailest patients are being over-treated, increasing the risk of iatrogenic effects. Our study reveals a lack of compliance with the latest recommendations.

P134- PREVALENCE OF FRAILTY IN OLDER ADULTS WITH RHEUMATOID ARTHRITIS. K Colvine[1], K Bloomfield[2], T Xian Zhang[3] *((1) Waitemata District Health Board; (2) University of Auckland, Waitemata District Health Board; (3) Otago University)*

Background: There is growing international interest in the concept of frailty, a condition which confers increased risk of adverse outcomes in a variety of clinical settings. However there is minimal published literature about frailty in Rheumatoid Arthritis (RA). **Objectives:** We wished to assess the prevalence of frailty in patients with RA and investigate for any relationship between frailty, and markers and management of disease. **Methods:** Consecutive patients over 60 years with RA (by 2010 American college of rheumatology/European league against rheumatism criteria) attending a rheumatology outpatient clinic over a four month period were collected. Baseline demographics, tender and swollen joints counts, disease activity score (DAS28), Simple Disease Activity Score (SDAI), medication history, serology, CRP, Health assessment questionnaire (HAQ) and comorbidity score (Charlson Comborbidity Index (CCI) were documented. Frailty was assessed using the FRAIL questionnaire screening tool. **Results:** Of 64 patients, mean age was 71 years, 64% were women and the mean duration of disease was 10.4 years. Eighteen (28%) were frail and 30 (47%) pre-frail. There was no significant difference in age, disease duration, erosions or positive anti-CCP for those frail or pre-frail vs non frail. Methotrexate use was lower in frail patients. Biological agent use was highest amongst the pre-frail (33%). Frailty status was predicted by Rheumatoid Factor status (Odds ratio 0.30, 95% CI [0.09, 0.99], p-value 0.04), CCI (odds ratio 3.01, 95% CI [1.33-6.85], p-value 0.008) and DAS28-CRP (odds ratio 2.65, 95% CI [1.69, 4.15], p-value <0.0001). **Conclusion:** Frailty and pre-frailty are common amongst patients with Rheumatoid Arthritis over the age of 60. Frailty was associated with CCI, disease activity and RF status. Those with frailty have higher disease activity and are possibly undertreated with methotrexate.

P135- RELATIONSHIP BETWEEN PREDICTIVE RISK FACTORS FOR OROPHARYNGEAL DYSPHAGIA AND DYSPHAGIA IN CARDIOVASCULAR DISEASE. Tatiana Magalhães de Almeida, Debora Afonso, Livia Gomes, Isabela Mota, Maria Jose dos Santos, Roberta G Silva, Fausto Feres, Carlos Daniel Magnoni *(Instituto dante pazzanese de cardiologia constantino de sousa (Brazil)*

Background: Dysphagia may be associated with cardiac postoperative and other clinical conditions related with cardiovascular disease in hospitalized patients. **Objectives:** To relate the predictive risk factors for oropharyngeal dysphagia and dysphagia in the individual with cardiovascular disease hospitalized in reference Hospital in Cardiology. **Methods:** Retrospective cross-sectional clinical study. Analyzed 175 medical records of individuals in clinical or postoperative care at a Reference Hospital in Cardiology, diagnosed with oropharyngeal dysphagia between January and June 2017 by the Speech-Language Pathology and Audiology team. Of these, 100 medical records were included, 41 of the female gender and 59 of the male gender (mean age 67.56 years) and excluded patients who died or aged between 0 and 18 years. We collected the diagnosis of oropharyngeal dysphagia from the clinical evaluation with a specific protocol and studied the predictive risk factors for dysphagia such as stroke, nutritional status, age range and prolonged orotracheal intubation. We used the Mann-Whitney test and Fisher's test for statistical analysis. **Results:** Stroke (O.R = 2.93 p = 0.02) and malnutrition (O.R = 2.89 p = 0.02) were statistically significant predictors of risk in the presence of oropharyngeal dysphagia in

this population. On the other hand, the age group (p = 0.06) and the prolonged orotracheal intubation that ranged from 2 to 18 days (p = 0.47) were not significant. **Conclusion:** The presence of stroke and malnutrition in this population were predictive factors of risk for oropharyngeal dysphagia.

P136- SCREENING FOR SARCOPENIA: EVALUATING THE PERFORMANCE OF DIFFERENT CASE-FINDING STRATEGIES USING SARC-F IN COMBINATION WITH MUSCLE STRENGTH AND PERFORMANCE MEASURES. Justin Chew[1], Junpei Lim[1], Laura Tay[2], Noor Hafizah Bte Ismail[3], Wee Shiong Lim[3] *((1) Department of Geriatric Medicine, Tan Tock Seng Hospital. Singapore. Institute of Geriatrics and Active Ageing. Tan Tock Seng Hospital. Singapore; (2) Department of General Medicine (Geriatric Medicine), Sengkang General Hospital. Singapore; (3) FAMS, Department of Continuing and Community Care. Tan Tock Seng Hospital. Singapore, Institute of Geriatrics and Active Ageing. Tan Tock Seng Hospital. Singapore)*

Background: EWGSOP2 recommends use of the SARC-F questionnaire to identify individuals at risk of sarcopenia. However, while SARC-F has excellent specificity, it has low-to-moderate sensitivity for the diagnosis of sarcopenia. Thus, the optimal approach to case-finding for sarcopenia is still not established. **Objectives:** To evaluate if case-finding strategies using SARC-F alone or in combination with either slow gait speed, chair stand or low grip strength will improve diagnostic performance and predictive validity for the outcomes of (1) low muscle mass (height-adjusted appendicular skeletal mass, ASM/ht2); (2) physical limitation and frailty status at one year. **Methods:** We recruited 200 fully independent community-dwelling older adults in the GERILABS study (mean age 68.0±7.9 years). Subjects were screened using SARC-F alone and in combination with gait speed, repeated chair stand or grip strength. Gait speed cutoff was <0.8m/s and five-times-sit-to-stand used ROC-defined cutoff of >12.5s. DXA-derived low muscle mass and low grip strength were defined according to Asian Working Group (AWGS) criteria. The Frenchay Activities Index (FAI) was classified into groups using pentile cutoffs and physical limitation defined as remaining inactive or declining activity level at one year. Frailty outcome was defined as worsening or remaining in the same stage of frailty at one year by modified Fried's criteria. **Results:** Using SARC-F alone, only 19(9.5%) were screened positive. With gait speed, chair stand or grip strength in combination with SARC-F, the proportion of individuals screened positive increased to 25(12.5%), 40(20%) and 88(44%) respectively. Among the 4 case-finding strategies, SARC-F + grip strength showed the highest sensitivity for the diagnosis of low muscle mass (sensitivity 56%/specificity 59%), compared to SARC-F + chair stand (sensitivity 21%/specificity 81%), SARC-F + gait speed (sensitivity 13%/specificity 88%) and SARC-F alone (sensitivity 10%/specificity 91%). In adjusted logistic regression models, only SARC-F + grip strength significantly predicted physical limitation (OR:2.04, 95%CI:1.09-3.82) and frailty status (OR:5.60, 95%CI:2.67-11.8) at one year. **Conclusion:** A case-finding strategy using SARC-F + grip strength improved sensitivity for sarcopenia diagnosis and is superior to SARC-F alone or with chair stand or gait speed in predicting adverse outcomes. Our results suggest that a combination of a symptom-based score with a strength or performance measure may be a suitable strategy for sarcopenia screening in clinical practice.

P137- FRAILTY AND ITS RISK FACTORS IN DUTCH ADULTS WHO HAVE HAD CHILDHOOD CANCER.

Emma J. Verwaaijen[1], Daniëlle M. Corbijn[1], Annelienke M. van Hulst[1], Marry M. van den Heuvel-Eibrink[1], Annelies Hartman[2], Saskia M.F. Pluijm[1] *((1) Princess Maxima Center for Pediatric Oncology, Utrecht, The Netherlands; (2) Department of Pediatric Physiotherapy, Erasmus MC-Sophia Children's Hospital, Rotterdam, The Netherlands)*

Background: Adults who have had childhood cancer have an increased risk of chronic diseases, including underweight, sarcopenia, fatigue, impaired physical performance, difficulties with Activities of Daily Living (ADL) and physical inactivity. When these chronic diseases co-occur, they may become frail already at younger age. Recently, one cohort study examined the occurrence of (pre)frailty in 1922 adult survivors of childhood cancer and showed that it was 17.9%, comparable with healthy older adults of 65 years and older. **Objectives:** The aim of our study was to confirm the finding that survivors of childhood cancer have a high risk of (pre)frailty compared to healthy peers, and to identify risk factors of (pre)frailty. **Methods:** In this cross-sectional study, we used previously reported data of 71 survivors (median age 28.8 years (18.8-62.8)) of acute myeloid leukemia (AML)(n=17), neuroblastoma (NBL)(n=26) and Wilms tumor (WT)(n=28), and 75 age and sex-matched healthy controls (median age 26.9 years (17.9-61.7)). Prefrailty and frailty were defined as respectively having 2 and >=3 of the following five indicators: underweight (body mass index <18.5kg/m2) , muscle weakness (hand grip strength or vertical jump peak power <-2.0 SD), slow walking speed (lowest 20% on the six-minute walk test), physical inactivity (beneath Dutch exercise standard) and self-rated physical limitations in ADL. Potential risk factors, such as, type of cancer and treatment (radiotherapy, stem cell transplantation and surgery), follow-up time, gender, ethnicity, attained age, age at diagnosis, current smoking, alcohol use and heavy physical work, were examined in both survivors and controls using logistic regression analysis with (pre)frailty as outcome measure. **Results:** Frailty occurred in 13% of the survivors and 3% of the healthy controls (p0.02), respectively, and prefrailty in 35% of the survivors and in 24% of the controls. The occurrence of frailty was highest in survivors of AML (29%) compared to NBL (8%) or WT (7%). In addition, smoking was identified as a risk factor for frailty (OR=2.4, 95% CI 1.1-5.2). **Conclusion:** Adults who survived childhood cancer, in particular those who have had AML, were more often prefrail and frail compared to healthy controls. Smoking seems a potentially modifiable risk factor to prevent or reduce (pre)frailty in this group.

P138- IMPACT OF FRAILTY ON POST-OPERATIVE OUTCOME OF MAJOR ORTHOPEDIC SURGERY IN OLDER INDIAN.

Sumitabh Singh, Prasun Chatterjee, Rishav Bansal, Gevesh Chand Dewangan, Aparajit Ballav Dey *(Department of Geriatric Medicine, All India Institute of Medical Sciences, New Delhi, India)*

Background: Orthopaedics procedure in elderly is on surge, especially after the introduction of life modifying surgeries like total knee replacement and total hip replacement. But the predictors of post-operative complications are still unclear. **Objectives:** To assess the impact of frailty on post-operative outcome of elective major orthopedic surgery in the older adults. **Methods:** A prospective cohort study of 100 elderly patients (aged >= 60years) who underwent major elective orthopaedic surgery in a tertiary care hospital of India was conducted. Subjects were assessed via pre-defined protocol before surgery to assess for frailty via NSQIP (National Surgical Quality Improvement Program) questionnaire. Post-operative outcomes like delirium, electrolytes imbalance, acute kidney injury (AKI), inotropes use, etc. were assessed on day 3 after surgery. Length of hospital stay and mortality was assessed on day 30 after surgery. Chi square/ fisher exact test was used for comparison of categorical variables. Continuous variables not following normal distribution were compared with Wilcoxon rank-sum test. Result was considered significant at 5% level of significance (p<0.05). **Results:** Mean age of the patients was 67.8 ± 6.75 years. Among them, 45% were male. On frailty assessment using NSQIP, 72% patients were frail. Frail patients had significantly higher post-operative complications like delirium (50% vs 4.17%; p value = 0.001), hyponatremia (35.7% vs 1.3%; p value = 0.001) and AKI (28.6% vs 5.6%; p value = 0.03) when compared with non-frail patients. Length of hospital stay in frail patients was also significantly higher (Median 9 days vs 5 days; p value = 0.001). Mortality was higher in frail patients but it was not statistically significant (7.18% vs 0%; p value = 0.076). **Conclusion:** Frailty is a risk factor for post-operative complications in major orthopedic surgery. All elderly patients should be assessed for frailty before undergoing surgery to identify the patients at higher risk of complications and managed with utmost care.

P139- PREVALENCE OF FRAILTY IN ELDERLY PATIENTS WITH AORTIC STENOSIS INCLUDED IN AN GERIATRIC ASSESSMENT PROGRAM.

Pablo E Solla, Eva M López, Juan J Solano, José Gutiérrez *(Geriatric Department, Área de Gestión Clínica de Geriatría, Hospital Monte Naranco, Oviedo, Asturias, Spain)*

Background: Aortic Stenosis (AS) is the most common valve disease in the elderly and its treatment consists of Surgical Aortic Valve Replacement (SAVR) or Transcatheter Aortic Valve Implantation (TAVI). Frailty and special characteristics of these older patients may involve a negative impact on health outcomes, increasing mortality and hospital readmission and worsen their quality of life. **Objectives:** Frailty detection and description of patients over 75 years of age with AS included in an Geriatric Assessment Program. **Methods:** Prospective study, including the first 30 patients over 75 years of age with AS referred from cardiology to a specialized geriatric consult. Variables: age, sex, functionality (Lawton and Barthel indices), comorbidity (prescribed drugs, previous diagnoses, Charlson index), Body Mass Index (BMI), nutritional status [Mini Nutritional Assessment, (MNA)], cognitive function [Mini Mental State Examination (MMSE), Resiberg Global Deterioration Scale (GDS)], mood status (Yesavage Geriatric Depression Scale) and social status (Gijón Scale). Frailty [Short Physical Performance Battery (SPPB), Essential Frailty Toolset (EFT)]. **Results:** n=30, age 82.6±3.38, 70% female. Lawton 6±2.20. Barthel 93.5±11.61, (ADL independent 76.7%, slight dependence 23.3%). Prescribed drugs 6.17±3.51, previous diagnoses 9.37±3.16, Charlson 1.28±1.46. BMI 27.6±5.65, non-overweight (<25): 36.60%. MNA 11.2±1.79; at risk of malnutrition (8-11): 43%, malnourished (<8): 3.30. MMSE 25.85±3.34; normal (>=27): 53.80%, probable cognitive impairment (25-26): 26.90%, cognitive impairment 19.20%. GDS Reisberg 1.30±0.92; no cognitive decline 73.30%, mild cognitive decline 20%, mild-moderate cognitive decline 6.60%. Yesavage 3.60±2.87; normal (0-4): 63.30%, mild depressives (5-8): 30%, moderate depressives (9-11): 6.60%. Gijón socio-familiar Scale 6.60±2.31. SPPB: 8.08±2.81; non-frail (10-12): 30,77%, pre-frail (7-9): 46.15%, frail (4-6): 11.50% disabled (0-3): 11.5%. EFT: 1.30±1.15; score 0-1: 73.91%, score 2: 13.04%, score 3: 8.70%, score 4: 0%, score 5: 4,35%.**Conclusion:** Elderly patients with AS included in our study were mostly women in good functional, cognitive, mood and social status. Comorbidity and polypharmacy were found. Most of them were in good nutritional status. However, we found a non negligible prevalence of overweight. Frailty was frequently detected. SPPB

indicates a higher prevalence of frailty than EFT.

P140- FRAILTY ASSESSMENT AND ITS IMPACT ON TREATMENT OF ELDERLY PATIENTS WITH AORTIC STENOSIS.

Pablo E Solla, Eva M López, Juan J Solano, José Gutiérrez *(Geriatric Department, Área de Gestión Clínica de Geriatría, Hospital Monte Naranco, Oviedo, Asturias, Spain)*

Background: Aortic Stenosis (AS) is the most common valve disease in the elderly and its treatment consists of Surgical Aortic Valve Replacement (SAVR) or Transcatheter Aortic Valve Implantation (TAVI). Frailty and special characteristics of these older patients may involve a negative impact on health outcomes, increasing mortality and hospital readmission and worsen their quality of life. For this reason, it is necessary to optimize a selection, to decide which patients are unsuitable candidates and should be rejected for SAVR or TAVI. **Objectives:** To study relationship between functionality, cognitive status, nutritional status and frailty and the decision of reject SAVR/TAVI in elderly patients with AS. **Methods:** Prospective study, including the first 30 patients over 75 years of age with AS referred from cardiology to a specialized geriatric consult, in the second quarter of 2018. Variables: age, sex, functionality (Lawton and Barthel indices), nutritional status [Mini Nutritional Assessment, (MNA)], cognitive function [Mini Mental State Examination (MMSE)]. Frailty scales [Short Physical Performance Battery (SPPB), Essential Frailty Toolset (EFT)]. **Results:** n=30, age 82.6±3.38, 70% female. 3 patients (2 female, 1 male) were conservatively managed (medical treatment), being rejected for SAVR/TAVI. Significant differences were found between the functionality indices of those accepted for SAVR/TAVI versus those who were not: Lawton 6.4±1.9 in accepted, 2.3±0.6 in rejected (p=0.001) and Barthel 96.0±8.0 in accepted, 70.0±5.0 in rejected (p=0.000). We found differences between the nutritional status of those accepted for SAVR/TAVI versus those who were not: MNA 11.2±1.8 in accepted versus 7.7±1.5 in rejected (p=0.000). There were also differences between the cognitive function of those accepted for SAVR/TAVI versus those who were not: MMSE 26.7±1.8 in accepted versus 19.0±5.0 in rejected (p=0.000). Besides, significant differences were found between the Frailty assessment of of those accepted for SAVR/TAVI versus those who were not: SPPB 8.6±2.1 in accepted, 4.0±1.4 in rejected (p=0.010) and EFT 1.05±0.74 in accepted, 4.0±1.4 in rejected (p=0.000). **Conclusion:** Elderly patients with AS which were unsuitable candidates for SAVR/TAVI had a poor functional, cognitive and nutritional status. Moreover, patients rejected for SAVR/TAVI were frail. Frailty screening and geriatric assessment are useful and neccesary to optimize a selection in these cases.

P141- FRAILTY PROFILES: AN ANALYSIS OF ROUTINELY COLLECTED HOSPITAL DATA.

Louise Lafortune[1], Joyce Coker[1], Rhian Simpson[2], Roman Romero-Ortuno[3] *((1) Cambridge Institute of Public Health, University of Cambridge, Cambridge, United Kingdom; (2) Cambridgeshire and Peterborough NHS Foundation Trust, Fulbourn Hospital, Cambridge, United Kingdom; (3) School of Medicine, Trinity College Dublin, Dublin, United Kingdom)*

Background: Routinely collected data matched with robust analytical tools provide a unique opportunity to identify and actively manage frailty in clinical practice through the provision of preventative care and tailored discharged planning. **Objectives:** To use anonymised routinely collected clinical data from a large university hospital in England to: (i) identify and characterise clinically meaningful subgroups of frail older adults; and (ii) test the effects of known predictors of length of stay (LOS), readmission and mortality. **Methods:** Logistic and Cox regression models were used to explore predictors of 30-day readmission and 30-day mortality in a pseudo-anonymised subset of routinely collected hospital data (n=14,329 patients), comprising demographic information; Clinical Frailty Scale scores; ICD-10 codes; cognitive health status; and information about admission, transfer, discharge destination and movement through hospital. This pseudo-anonymised subset was used to refine a data request for a full dataset (n=37,663 patients, and 72,228 care episodes) which was used to explore frailty subgroups using latent class and fixed mixture models. **Results:** The median age of the sub-cohort was 84-years. 56% were female. 33% were not frail, 13% mildly frail, 15% moderately frail, 10% severely/very severely frail and 1% terminally ill (28% had no frailty score). Drivers of 30-day readmission and mortality varied according to frailty score but explained only a small proportion of the variation in these outcomes. Anxiety was a unique predictor of 30-day readmission among the mildly frail (OR=2.0, p=0.038) and discharge destination among those severely frail to terminally ill (p=0.025). LOS varied by frailty score and was a unique predictor of 30-day readmission among the non-frail. For every day spent in hospital, the odds of 30-day readmission increased by 1 among the non-frail (p<0.001). LOS was also a driver of 30-day mortality across all frailty categories except in the severely frail to terminally ill. **Conclusion:** Frailty status influenced predictors of 30-day readmission and 30-day mortality following discharge from hospital. Better characterisation of frailty and linked datasets comprising hospital, community and social care data are crucial to thoroughly explore and identify predictors of readmission and mortality post discharge from hospital among frail older adults living in the community.

P142- FRAILTY CRITERIA ARE ASSOCIATED WITH CIRCADIAN REST-ACTIVITY RHYTHM DISTURBANCES IN INSTITUTIONALIZED OLDER ADULTS.

Patrícia Vidal de Negreiros Nobrega[1], Rafaella Silva dos Santos[2], Alvaro Campos Cavalcanti Maciel[2], John Fontonele-Araujo[1], Edgar Ramos Vieira[3] *((1) University Center of João Pessoa, João Pessoa, PB, Brazil; (2) Graduate Program in Physical Therapy, Federal University of Rio Grande do Norte, Natal, RN, Brazil; (3) Department of Physical Therapy, Florida International University, Miami, FL, USA)*

Background: Aging is related with circadian rest-activity rhythm changes. These changes are more pronounced in institutionalized older adults. Frailty and sleep disorders share some characteristics such as weight loss, fatigue, slowness, weakness, and low levels of activity. The potential association between frailty and changes in circadian rest-activity rhythm need to be investigated. **Objectives:** To assess if the frailty criteria are associated with changes in circadian rest-activity rhythm in institutionalized older adults. **Methods:** Sixty-one institutionalized older adults (age: 79±8 years) participated in the study. Circadian rest-activity rhythm was measured using activity monitors (ACT10, Consultoria Eletrônica - CE, Firmware v1.11 Rev. C, Brazil), and the following Fried's phenotype frailty criteria were assessed: 1) Unintentional weight loss of 10 lbs or more in the past year; 2) Self-reported exhaustion 3 or more days per week; 3) Grip strength <23 lbs for women and <32 lbs for men; 4) Walking speed <80 cm per second, and 5) Reporting to sit quietly and/or laying down for the vast majority of the day. Descriptive statistics was calculated and Student t-tests were used to compare activity levels between groups with the significance level set to P < 0.05; 95% confidence intervals and effect sizes were also calculated. **Results:** Approximately half (47%) of the participants were frail. Interdaily stability and intradaily variability of the circadian rest-activity rhythm was worse among those who reported weight loss, slowness, and weakness. The participants who were frail had more circadian rest-activity rhythm irregularities (minute-to-minute interdaily stability = 0.32±0.14; P =

0.041) and fragmentation (hourly intradaily variability = 0.97±0.31; P = 0.045, and minute-to-minute intradaily variability = 0.88±0.23, P = 0.032) than those who were not frail. **Conclusion:** Different frailty criteria (i.e. weight loss, slowness, and weakness) were associated with circadian rest-activity rhythm disturbances in institutionalized older adults.

P143- IS IMPLICIT AGEISM ASSOCIATED WITH FRAILTY IN OLDER VETERANS? Douglas Salguero[1,2], Nadeem Mohammed[1,2], Juliana Ferri-Guerra[1,2], Raquel Aparicio[1,2], Zubair Rahaman[2], Jorge G. Ruiz[2,3] *((1) Department of Public Health Sciences, University of Miami Miller School of Medicine; (2) Miami VAHS GRECC Veterans Successful Aging for Frail Elders (VSAFE); (3) Department of Medicine, University of Miami Miller School of Medicine)*

Background: Frailty is a state of vulnerability to stressors resulting in higher morbidity, mortality and healthcare utilization in older adults. Ageism is "a process of systematic stereotyping and discrimination against people because they are old." Implicit ageism are automatic feelings toward older adults that occur and operate without conscious awareness, intention, or control. Studies show that self-directed ageism is a risk factor for increased morbidity and mortality. **Objectives:** The purpose of this study was to determine the association of implicit ageism with frailty in Veterans. **Methods:** This is a cross-sectional study of 339 Veterans 50 years and older who completed the Implicit Association Test (IAT) to evaluate implicit attitudes towards older people from July 2014 through April 2015. We retrospectively constructed a 44-item frailty index as a proportion of all potential variables (demographics, comorbidities, number of medications, laboratory tests, and activities of daily living) present in a given individual at the time of the explicit ageism evaluation. We compared IAT scores among patients who were robust, prefrail and frail using ANOVA. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated by multinomial logistic regression models with frailty status (robust, prefrail and frail) as outcome variables, and with implicit ageism (IAT latencies higher than 0) as the independent variable. Age, race, ethnicity, and comorbidities were considered as covariates. **Results:** Patients were 89.4% male, 46.6% White, 88.2% non-Hispanic and the mean age was 60.20 (SD= 6.73) years. The proportion of robust, pre-frail and frail patients was 9.7% (n=33), 60.5% (n=205) and 29.8% (n=101) respectively. There was an implicit strong preference (IAT >= .65) for younger people in this sample: 52.8% (n=179). There were no differences in IAT scores between the 3 groups (p=.744): robust (.6754, SD=.4575), prefrail (.6302, SD=.4606) and frail (.58349, SD=.5091) groups. In multinomial logistic regression, implicit ageist attitudes were not associated with frailty in Veterans (OR=.97, 95% CI=.37-2.53, p=.950). **Conclusion:** This study shows that implicit ageist attitudes are not cross-sectionally associated with frailty in community dwelling Veterans. Further longitudinal, larger and more diverse studies should evaluate the independent value of implicit ageism in older adults with frailty.

P144- IS EXPLICIT AGEISM ASSOCIATED WITH FRAILTY IN OLDER VETERANS? Juliana Ferri-Guerra[1,2], Nadeem Mohammed[1,2], Douglas Salguero[1,2], Raquel Aparicio-Ugarriza[1,2], Zubair Rahaman[2], Jorge G. Ruiz[2,3] *((1) Department of Public Health Sciences, University of Miami Miller School of Medicine; (2) Miami VAHS GRECC Veterans Successful Aging for Frail Elders (VSAFE); (3) Department of Medicine, University of Miami Miller School of Medicine)*

Backgrounds: Frailty is a state of vulnerability to stressors resulting in higher morbidity, mortality and healthcare utilization in older adults. Ageism is "a process of systematic stereotyping and discrimination against people because they are old." Explicit biases involve deliberate or conscious controls, while implicit bias involve unconscious processes. Multiple studies show that self-directed ageism is a risk factor for increased morbidity and mortality. **Objectives:** The purpose of this study was to determine whether explicit ageist attitudes are associated with frailty in Veterans. **Methods:** This is a cross-sectional study of 381 Veterans 50 years and older who completed the Kogan's Attitudes towards Older People Scale (KAOP) scale to assess explicit ageist attitudes toward older persons from July 2014 through April 2015. We retrospectively constructed a 44-item frailty index as a proportion of all potential variables (demographics, comorbidities, number of medications, laboratory tests, and activities of daily living) present in a given individual at the time of the evaluation of explicit ageism. We compared KAOP scores among patients who were robust, prefrail and frail using ANOVA. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated by multinomial logistic regression models with frailty status (robust, prefrail and frail) as the outcome variable, and with KAOP scores as the independent variable. Age, race, ethnicity, and comorbidities were considered as covariates. **Results:** Patients were 89.76% male, 48.03% White, 87.93% non-Hispanic and the mean age was 60.51 (SD= 7.16) years. The proportion of robust, pre-frail and frail patients was 11.02 % (n=42), 59.58 % (n=227) and 29.40% (n=112) respectively. There were no differences in the KAOP scores between the 3 groups (p=.457): robust 123.36 (SD=12.52), prefrail 120.89 (SD=13.13) and frail 120.76 (SD=8.59) groups. In multinomial logistic regression, explicit ageist attitudes as measured with the KAOP scale were not associated with frailty in community dwelling Veterans (OR=.98, 95% CI=.95-1.01, p=.221). **Conclusion:** This study shows that explicit ageist attitudes are not associated with frailty in community dwelling Veterans. Further longitudinal and larger studies with more diverse samples and measured with other ageism scales should evaluate the independent contribution of ageist attitudes to frailty in older adults.

P145- THE ASSOCIATION OF OBSTRUCTIVE SLEEP APNEA WITH FRAILTY IN OLDER VETERANS WITH DIABETES. Christopher Lewis[1], Valeria Baldivieso[1], Isaac Peña[1], Isis Romero[1], Raquel Aparicio-Ugarriza[2,3], Jorge G. Ruiz [3,4] *((1) Jackson Memorial Hospital, Miami, FL; (2) Dept. of Public Health Sciences, U of Miami Miller School of Medicine (3) Miami VAHS GRECC; (4) Dept. of Medicine, U of Miami Miller School of Medicine)*

Background: Obstructive sleep apnea (OSA) is common in older patients with diabetes mellitus (DM). Both conditions are highly prevalent in the Veteran population which is predominantly male and often obese. The effects of OSA on individuals' sleep, cardiovascular, cognitive and metabolic function may further amplify the impact of diabetes on accelerated aging which in turn may foster the development of frailty. **Objectives:** The aim was to determine whether obstructive sleep apnea is cross-sectionally associated with frailty in older Veterans with DM. **Methods:** This is a cross-sectional

study of 775 Veterans 65 years and older with DM who were screened for frailty January 2016-August 2017 and followed until October 2018. A 44-item frailty index (FI) was constructed as a proportion of all potential variables (demographics, comorbidities, medications, laboratory tests, and ADLs) at the time of the screening. We compared non-frail (robust, FI=<.10) and prefrail (FI >.10, <.21) and frail (FI>=.21) patients. After adjusting for age, race, ethnicity, median household income, body mass index (BMI), DM complications, duration of diabetes, and comorbidities, we evaluated the association using binomial logistic regression models with frailty status dichotomized as non-frail (robust and prefrail) and frail as the outcome variable and OSA as the independent variable. We repeated the analysis for obese (BMI >= 30) and non-obese (BMI < 30) subgroups. **Results:** Patients were 56% White, 77% non-Hispanic, 98% male, mean age was 72.7 (SD=6.8) years. The proportion of robust, pre-frail and frail patients was 3% (n=23), 46.3% (n=359) and 50.7% (n=393), respectively and 185 had OSA (23.9%). In binomial logistic regression after adjusting for covariates, OSA was associated with a greater risk of frailty (OR=2.058, 95% CI= 1.408-3.009), p<.0005. However, the association was only present in those Veterans who were obese (adjusted OR= 3.639, 95% CI= 2.044-6.476), p<.0005; non-obese (adjusted OR= 1.455, 95% CI= .867-2.443), p= .156. **Conclusion:** The obstructive sleep apnea syndrome significantly increases the risk of frailty in older Veterans with diabetes who are obese, and the increase is independent of other risk factors. The association of OSA with frailty warrants a more active approach in the diagnosis of this condition in older patients with diabetes.

P146- THE ASSOCIATION OF DEPRESSION WITH FRAILTY IN OLDER VETERANS WITH DIABETES.

Yosvan Lam[1], Omid Mirabbas[1], Astrid Pilgrim[1], Mercedes Rodriguez-Suarez[2], Raquel Aparicio-Ugarriza[3,4], Jorge G. Ruiz[4,5] *((1) Jackson Memorial Hospital, Miami, FL; (2) Mental Health Service, Miami VA Healthcare System; (3) Dept. of Public Health Sciences, U of Miami Miller School of Medicine (4) Miami VAHS GRECC; (5) Dept. of Medicine, U of Miami Miller School of Medicine)*

Background: Depression is highly prevalent in older patients with diabetes mellitus (DM) and both are independently associated with frailty, a state of increased vulnerability after a stressor event, which increases the risk of morbidity, mortality and utilization. Depression is associated with poor glycemic control and an increased risk for diabetic complications which may foster the development of frailty in older adults. It is not clear whether depression remains an independent risk factor for frailty in older patients with diabetes mellitus (DM). **Objectives:** The aim was to determine whether depression is cross-sectionally associated with frailty in older Veterans with DM. **Methods:** This is a cross-sectional study of 775 Veterans 65 years and older with DM who were screened for frailty January 2016-August 2017. A 44-item frailty index (FI) was made as a proportion of all potential variables (demographics, comorbidities, medications, laboratory tests, and ADLs) at the time of the screening. We compared non-frail (robust, FI=<.10 and prefrail (FI >.10, <.21) and frail (FI>=.21) patients. After adjusting for age, race, ethnicity, median household income, body mass index (BMI), DM complications, duration of diabetes, and comorbidities, we assessed the association using binomial logistic regression models with frailty status dichotomized as non-frail (robust and prefrail) and frail as the outcome variable and depression diagnosis as the independent variable. **Results:** Patients were 56% White, 77% non-Hispanic, 98% male, mean age was 72.73 (SD=6.83) years. The proportion of robust, pre-frail and frail patients was 3% (n=23), 46.3% (n=359) and 50.7% (n=393), respectively and 203 had a diagnosis of depression (25%). In binomial logistic regression after adjusting for covariates, depression was associated with a greater risk of frailty in older Veterans with DM (OR=1.931, 95% CI= 1.349-2.766), p<.0005. **Conclusion:** This study shows that depression was associated with a greater risk for frailty in older Veterans with DM. Longitudinal studies are needed to identify the mechanisms linking these three conditions.

P147- THE ASSOCIATION OF FRAILTY WITH HOSPITALIZATIONS AND MORTALITY IN OLDER VETERANS WITH DIABETES.

Nadeem Mohammed[1,2], Juliana Ferri-Guerra[1,2], Raquel Aparicio-Ugarriza[1,2], Douglas Salguero[1,2], Hermes Florez[1,2,3], Jorge G. Ruiz[2,3] *((1) Dept. of Public Health Sciences, U of Miami Miller School of Medicine; (2) Miami VAHS GRECC; (3) Dept. of Medicine, U of Miami Miller School of Medicine)*

Background: Diabetes (DM) is associated with an accelerated aging that promotes frailty, a state of vulnerability to stressors resulting in higher morbidity, mortality and healthcare utilization. Frailty is associated with mortality in patients with diabetes, but its prevalence and impact on hospitalizations are not well known. **Objectives:** The aim was to determine whether frailty is associated with a higher risk of hospitalizations and mortality in older Veterans with DM. **Methods:** This is a retrospective cohort study of 775 Veterans 65 years and older with DM who were screened for frailty January 2016-August 2017 and followed until October 2018. A 44-item frailty index (FI) was constructed as a proportion of all potential variables (demographics, comorbidities, medications, laboratory tests, and ADLs) at the time of the screening. At the end of follow up, we aggregated data on hospitalizations and mortality and compared non-frail (robust, FI< .10 and prefrail FI=>.10, <.21) and frail (FI>=.21) patients. After adjusting for age, race, ethnicity, median income, history of hospitalizations, comorbidities, duration of DM and glycemic control, the relationship of frailty with hospitalizations was carried out according to the Andersen-Gill model, accounting for repeated hospitalizations and the association with mortality using a multivariate Cox regression model. **Results:** Patients were 56% White, 77% non-Hispanic, 98% male, mean age was 72.7 (SD=6.8) years. The proportion of robust, pre-frail and frail patients was 3% (n=23), 46.3% (n=359) and 50.7% (n=393) respectively. Over a median follow-up period of 594 days (IQR=166), 686 hospitalizations and 81 deaths occurred. Compared with the non-frail, those with frailty had greater risk for hospitalizations, adjusted hazard ratio (HR) 1.699 (95% CI:1.263-2.287), p=<.0001. After adjusting for covariates, frailty was also associated with a higher risk for mortality, adjusted HR 2.411 (95%CI: 1.417-4.102), p=<.001. **Conclusion:** Older Veterans with diabetes and frailty are at a greater risk for hospitalizations and mortality. As frailty is common and potentially reversible in older diabetics, interventions designed to mitigate the burden of frailty in these patients are warranted.

P148- IS FRAILTY ASSOCIATED WITH TIGHT GLYCEMIC CONTROL IN OLDER VETERANS WITH DIABETES?

Nadeem Mohammed[1,2], Raneem Milyani[3], Aakashi Shah[1,2], Raquel Aparicio-Ugarriza[1,2], Pravallika Bharatula[1,2], Sriravali Potluri[1,2], Hermes Florez[1,2,4], Jorge G. Ruiz[2,4] *((1) Dept. of Public Health Sciences, U of Miami Miller School of Medicine (2) Miami VAHS GRECC; (3) Jackson Memorial Hospital, Miami, FL; (4) Dept. of Medicine, U of Miami Miller School of Medicine)*

Background: Diabetes (DM) is associated with an accelerated aging that promotes frailty, a state of vulnerability to stressors resulting in higher morbidity, mortality and healthcare utilization. Frailty appears to be a critical factor increasing the risk for hypoglycemia. Tight glycemic control (HbA1c =< 7) may also place older diabetics

at increased risk for hypoglycemia. **Objectives:** The aim of this study was to determine whether frailty is associated with tight glycemic control in older Veterans with DM. **Methods:** This is a cross-sectional study of 775 Veterans 65 years and older with DM who were screened for frailty January 2016-August 2017. A 44-item frailty index (FI) was constructed as a proportion of all potential variables (demographics, comorbidities, medications, laboratory tests, and ADLs) at the time of the screening. We compared non-frail (robust, FI=<.10 and prefrail (FI >.10, <.21) and frail (FI>=.21) patients. After adjusting for age >= 75 years, use of insulin or sulfonylureas, DM complications, and renal impairment, odds ratios (ORs) and 95% confidence intervals (CIs) were run by multinomial logistic regression models with tight glycemic control as the outcome variable and frailty status (non-frail and frail) as the independent variable. **Results:** Patients were 56.4% White, 77% non-Hispanic, 98.1% male, mean age was 72.73 (SD=6.83) years. The proportion of robust, pre-frail and frail patients was 3% (n=23), 46.3% (n=359) and 50.7% (n=393) respectively. In multinomial logistic regression, frailty was not associated with tight glycemic control in older Veterans, adjusted OR=.897, 95% CI= .634-1.267, p=.536). **Conclusion:** This study shows that frailty was not associated with tight glycemic control in older Veterans with DM. Factors other than frailty (use of insulin and/or sulfonylureas and age >= 75) may be more important contributors to tight glycemic control in this age group.

FRAILTY IN CLINICAL PRACTICE AND PUBLIC HEALTH

P149- THE POTENTIAL TO PREVENT, IDENTIFY AND TREAT FRAILTY AND ITS CONSEQUENCES IN COMMUNITY-DWELLING OLDER ADULTS USING A DIGITAL PLATFORM AND EXISTING SMARTPHONE CAPABILITIES. Edgar Ramos Vieira[1] Norberto Menendez[2], Benjamin C. Amick III[3] *((1) Department of Physical Therapy, Florida International University, Miami, FL, USA; (2) LifeWallet, Miami, FL, USA; (3) Department of Health Policy and Management, Florida International University, Miami, FL, USA)*

Background: Frailty diagnosis and management occurs in the health care system. For optimum outcomes, efforts need to be expanded to the community. Smartphones allow monitoring frailty indicators, but the lack of integration of the smartphone measurement and reporting capabilities with user-friendly interfaces has limited their use. **Objectives:** To describe a user-friendly platform that integrates smartphone measurement and reporting capabilities, and its potential to help identify, treat and prevent frailty. **Methods:** Fried's five phenotype frailty criteria can be adapted to be assessed using a digital platform: 1) Unintentional weight loss (>=10 lbs in the past year); 2) Exhaustion (>=3 days/week); 3) Low grip strength (<23 lbs for women, <32 lbs for men); 4) Slow gait (<80 cm/s), and 5) Sitting quietly or laying down for the vast majority of the day. People presenting 3 to 5 of the criteria are classified as frail; people with 1 or 2 are pre-frail, and those with none are robust. Home-based care plans to reduce and/or prevent frailty can be developed, implemented and assessed when integrating Fried's frailty criteria into a digital platform. **Results:** Digital platform applications allow for assessments of frailty status, remote monitoring, delivery of care plans and communication. Reports of weight loss and exhaustion can be easily entered into the platform. Gait speed can be calculated by a self-directed gait-speed apps measuring the time it takes to walk 4 meters, for example. Sitting/laying down frequency and duration can be measured by accelerometers in the phones. Grip strength assessment requires additional instrumentation or cross-validation of self-reported difficulty to open jam jars and/or doors, for example. The platform allow providing automated feedback and recommendations and/or suggest a consult with a health care provider depending on the findings. Providers can track patients' function, communicate with them and deliver interventions (e.g. home-based exercise programs) by distance. Additional measures can be integrated (e.g. time to complete 5 chair stands, physical activity levels/step counts, sleep/wake cycles, heart-rate and O2 saturation) to further evaluate function and falls risk. **Conclusion:** Digital platforms have the potential to leverage the current smartphone capabilities to prevent, identify and treat frailty and its consequences in community-dwelling older adults.

P150- ACCELERATED AGING IN OLDER PERSONS WITH HIV INFECTION. Julia Danz, Mary Goodyear, Victor Tran, Amarilis Acevedo, Raymond Ownby *(Department of Psychiatry and Behavioral Medicine, Nova Southeastern University, Fort Lauderdale, FL, USA)*

Background: Frailty is a syndrome of reduced vitality in the elderly associated with increased risk for disability and mortality. With the advent of effective antiretroviral treatment, many persons with HIV infection are experiencing the dual effects of HIV infection and aging. This has led to speculation that aging with HIV may be accelerated, as some researchers have found an increased and earlier incidence of frailty in these individuals. **Objectives:** In an ongoing study of cognition in persons with HIV 50 years of age and older who meet criteria for Mild Neurocognitive Disorder (Frascati criteria), we assessed five frailty markers (Fried et al., 2001) to evaluate their frequency as well their association with measures of daily functioning. **Methods:** The sample comprised 25 HIV-positive participants with an average age of 58.4 years and included 4 women and 21 men. Seven participants were white while the remainder were African-American. Mean CD4 count was 632. Participants completed assessments of grip strength, walking speed, medication management and BMI. Participants also completed self-report of unintentional weight loss, level of physical activity, exhaustion and level of independence concerning instrumental activities of daily living (IADL). **Results:** Participants' number of frailty indicators ranged from 0 to 3 out of a possible 5, with most (n = 12) having two positive indicators. The most common abnormal findings were slow walking speed (n = 18) and exhaustion (n = 13). Pre-frailty was seen in 72% (n = 18) participants while frailty was seen in 16% (n = 4). Baseline prevalence of frailty as observed in general population (Fried et al.) was 3.2% for the youngest cohort studied. Number of indicators was not associated with functional status, although exhaustion was associated with self-report of difficulties with IADLs. **Conclusion:** The high incidence of markers for frailty in this small sample is consistent with others' reports of increased rates of frailty in older persons with HIV infection. Further research on frailty in this population is needed to help improve outcome qualities of life by providing earlier interventions.

P151- POTENTIALLY INAPPROPRIATE MEDICATION IN PEOPLE OVER 75 YEARS IN NEUROSURGERY DEPARTMENTS: DREAM AND REALITY... Mathilde Strumia, Chloé Duran, Yan Hakimi, Khevin Itoua-Gassaye, C. Laborde *(Pharmacy Department, CHU Toulouse, Toulouse, France)*

Background: Patients aged 75 years and over are considered higher risk for drug-related iatrogenic and several lists highlight potentially inappropriate medications (PIM) for older people. Indeed, biological features (age, comorbidity, polypharmacy), psychological function and social factors can be contributed to the degree of frailty. Therefore, in neurosurgery departments, clinical pharmaceutical activities (medication reconciliation, weekly pharmaceutical analysis of prescriptions during hospitalization) are prioritized based on the

age of patient. These activities result in pharmaceutical intervention (IP) traced by computer. **Objectives:** This work aims the comparison of the acceptance rate of PI about MPI and the others PI, concerning people over 75 years in neurosurgery departments. **Methods:** We analyzed PI concerning people over 75, between 01/01/2017 and 09/30/2018. These PI are classified by the validated scale of the "Société Française de Pharmacie Clinique" according to the type of problem and intervention. We separated PI about MPI (according to the EU(7)PIM list) and the others. We used Chi2 test to compare acceptance rate of the two types of PI. **Results:** We have done 806 PI about 411 patients (2.0 PI by patient on average). The middle age was 81.6 years (+/- 5.2). MPI resulted in 86 PI (10.7%) and the acceptance rate of these PI was 18.6%. In the same time, 33.6% of the others PI (n=242) were accepted. As a result, the acceptance rate of PI about MPI was significantly lower than others PI (p = 0.007). **Conclusion:** We showed that the dream of the fight against drug-related iatrogenic, in a target high-risk population, were very difficult in neurosurgery departments. This observation may be due to the acute phase of hospitalisation in neurosurgery where all the cares are concentrated on the surgery and not on chronic treatment. Several doctors can change prescriptions (neurosurgeon, anaesthesiologist), but none of them consider themselves as specialists in geriatric population. The rate of PI about MPI was below rates described in other studies. We can assume that older population in neurosurgery department was less vulnerable than other departments. We show that the reality of PI, based on the patient iatrogenic risk is not the better organisation for clinical pharmacy activities and efficiency.

P152- DOES IMPLICIT AGEISM PREDICT FRAILTY IN OLDER VETERANS?

Douglas Salguero[1,2], Mohammed Nadeem[1,2], Juliana Ferri-Guerra[1,2], Raquel Aparicio[1,2], Zubair Rahaman[2], Jorge G. Ruiz[2,3] *((1) Department of Public Health Sciences, University of Miami Miller School of Medicine; (2) Miami VAHS GRECC Veterans Successful Aging for Frail Elders (VSAFE); (3) Department of Medicine, University of Miami Miller School of Medicin)*

Background: Frailty is a state of vulnerability to stressors resulting in higher morbidity, mortality and healthcare utilization in older adults. Ageism is "a process of systematic stereotyping and discrimination against people because they are old." Explicit biases involve deliberate or conscious controls, while implicit bias involves unconscious processes. Studies show that self-directed ageism is a risk factor for increased morbidity and mortality. **Objectives:** The purpose of this study was to determine whether implicit ageism predicts frailty in older Veterans. **Methods:** This is a cross-sectional study of 340 Veterans 50 years and older who completed the Implicit Association Test (IAT) to evaluate implicit attitudes towards older people from July 2014 through April 2015. We retrospectively constructed a 44-item frailty index as a proportion of all potential variables (demographics, comorbidities, number of medications, laboratory tests, and activities of daily living) present in a given individual at the time of the explicit ageism evaluation. We compared the proportions of implicit ageism among patients who were robust, prefrail and frail using Chi square for categorical variables. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated by Multinomial Logistic Regression Models with frailty status (robust, prefrail and frail) as outcome variables, and with implicit ageism (IAT latencies higher than 0) as the independent variable. Age, race, ethnicity, and comorbidities were considered as covariates. **Results:** Patients were 89.4% male, 46.8% White, 87.9% non-Hispanic and the mean age was 60.22 (SD= 6.73) years. The proportion of robust, pre-frail and frail patients was 9.7% (n=33), 60.4% (n=205) and 30% (n=102) respectively. There was a strong implicit preference for younger people in this sample: 90.9%

(n-309). There were no differences in the proportion of Veterans with implicit ageism between the 3 groups (p=.496): robust (n=31, 93.9%), prefrail (n=188, 91.7%) and frail (n=90, 88.2%) groups. We found no significant correlation between implicit ageist attitudes and frailty: (r =- .017, p >.750). In multinomial logistic regression, implicit ageist attitudes do not predict frailty in Veterans (OR=.465, 95% CI=.091–2.391, p=.359). **Conclusion:** This study shows that implicit ageist attitudes do not predict frailty in community dwelling Veterans. Further longitudinal and larger studies should evaluate the independent value of implicit ageism in older adults with frailty.

P153- TOBACCO USE AND ITS ASSOCIATION WITH FRAILTY.

Authors: Mario Ulises Pérez-Zepeda[1,2,3,4,] Daniela Patino-Hernandez[1,2,5], Miguel Germán Borda[1,2,6] *((1) Ageing Institute, Pontificia Universidad Javeriana. Bogotá, Colombia; (2) Semillero de Neurociencias y Envejecimiento, Pontificia Universidad Javeriana. Bogotá, Colombia; (3) Geriatric Epidemiology Research Unit. Instituto Nacional de Geriatría, México D.F, México; (4) Medical School, Universidad Anáhuac Norte. México D.F, México; (5) Centro de Especialistas, Colsubsidio. Bogota, Colombia; (6) Centre for Age-Related Diseases, Stavanger University Hospital. Stavanger, Norway)*

Background: Tobacco use is a rising global epidemic, which is responsible for around 6.000.000 deaths across the world yearly. Furthermore, when comparing older adults to their younger counterparts, elderly individuals are usually less aware of the potential harms of smoking, and are thus less likely to quit. This becomes a challenge since geriatric syndromes such as frailty have been associated with smoking habits. **Objectives:** Data regarding association among frailty and tobacco use in Latin-American older adults is still lacking. Thus, the aim of this study is to establish whether an association among these factors exists in older adults in the Mexican Health and Aging Study (MHAS). **Methods:** We analyzed data from the MHAS, which is a longitudinal study that examines health dynamics of ageing individuals. We created a case-control design, by defining cases as subjects who presented a negative health-related outcome in the analyzed variables. Outcomes were categorized in: Biochemical (vitamin D and C-reactive-protein), geriatric (Frailty&falls) and Usage of medical services during the last year (Having attended a medical appointment and/or having been hospitalized for at least a night). Exposition was also divided in three categories: Subjects who never smoked (reference group), subjects who used to smoke, and those who currently smoke. We performed a multivariate analysis adjusted by age, sex, marital status, years of schooling, number of comorbidities and pulmonary disease. **Results:** The mean age was 69.62 years(SD7.66). Once the sample was categorized, 674 subjects(61.16%) had never smoked, 305(27.68%) used to smoke, and 123(11.16%) currently smoked. Regarding main outcomes, 42.06% were frail(n=458), C-reactive-protein was elevated in 894 subjects(43.4%) and low vitamin-D serum levels were present in 37% of the sample(n=408). During the previous year, 279 subjects(25.32%) had attended a medical appointment, and 11.52%(n=127) had required inpatient admission. After conducting a multivariate logistic regression, currently smoking was associated with higher probability of presenting low serum levels of vitamin D(Odds ratio 3.01, 95% Confidence Interval 1.55-5.83, p value=0.01). **Conclusion:** Low levels of vitamin D have been associated to frailty, thus supporting our initial hypothesis. It becomes imperative to find strategies for decreasing tobacco consumption in the Mexican population in order to avoid deleterious outcomes.

P154- TESTING THE PICTORIAL FIT-FRAIL SCALE IN CANADA AND MALAYSIA.

Olga Theou[1], Lisa McGarrigle[1], Sally Suriani Ahip[2], Emma Squires[1], Lindsay Wallace[1], Sazlina Shariff[3], Renuka Visvanathan[4], Kenneth Rockwood[1] *((1) Geriatric Medicine, Dalhousie University and Nova Scotia Health Authority, NS, Canada; (2) Sarawak State Health Department, Ministry of Health, Malaysia; (3) Family Medicine, Universiti Putra, Malaysia; (4) National Health and Medical Research Council Centre of Research Excellence in Frailty and Healthy Ageing, Australia)*

Background: Most of the frailty scales have important limitations and many clinicians are not persuaded with respect to the feasibility of using these assessments in routine care. In response to this challenge, our group undertook the development of a frailty scale based on visual images: the Pictorial Fit-Frail Scale (PFFS). **Objectives:** To examine the feasibility and reliability of the PFFS in clinical settings in Canada and Malaysia. **Methods:** We invited patients in three clinical sites (Geriatric Day Hospital, Memory Clinic, and Primary Care Clinic) in Canada to complete the PFFS. When available, caregivers, nurses, and physicians completed the scale based on the patients' health (inter-rater reliability). Time taken to complete the scale was recorded (feasibility). In the Geriatric Day Hospital, a re-test was administered within 7-14 days (test-retest reliability). In Malaysia, we first translated the PFFS in Malay and then pilot tested the scale in four primary care clinics. **Results:** In Canada, we have collected data for 150 patients (77.87±8.47 years, 54.7% females). Time taken to complete the scale (minutes:seconds) was 4:42±2:16 for patients (n=119), 3:13±1:34 for caregivers (n=80), 1:28±0:57 for nurses (n=139), and 1:32±1:40 for physicians (n=62); completion times significantly lower for nurses and physicians (p<.001). Mean patient score was 14.4±6.8, mean caregiver score was 19.6±9.3, mean nurse score was 14.9±7.9, and mean physician score was 19.1±9.2; patients' scores were significantly lower than caregivers' and doctors' scores (p<.05). Test-retest reliability was good for patients (ICC= 0.78 (0.67-0.86)) and nurses (ICC=0.87 (0.78-0.92)). Inter-rater reliability between patients and caregivers was good (ICC= 0.82 (0.71-0.89)) and was excellent for nurses and physicians (ICC= 0.90 (0.84-0.93)). In Malaysia, pilot testing with 20 patients, 20 caregivers, 16 health care assistants, 17 nurses and 22 physicians showed that the levels of agreement in PFFS scoring was high. Testing of the feasibility and reliability of the scale is ongoing in Malaysia with the aim of recruiting 240 patients. **Conclusion:** Preliminary analysis suggests that overall the PFFS is a feasible and reliable tool for use with patients, caregivers, and health care professionals in Canada and Malaysia.

P155- FRAILTY AND CHANGES IN COGNITIVE FUNCTION AFTER KIDNEY TRANSPLANTATION—FAILURE TO RECOVER TO BASELINE LEVELS.

Nadia M. Chu[1,2], Alden L. Gross[1,3], Ashton A. Shaffer[1,2], Christine E. Haugen[2], Silas P. Norman[4], Qian-Li Xue[1,5], A. Richey Sharrett[1], Michelle Carlson[1,3], Karen Bandeen-Roche[6], Dorry L. Segev[1,2], Mara A. McAdams-DeMarco[1,2] *((1) Department of Epidemiology, Johns Hopkins School of Public Health, Baltimore, MD; (2) Department of Surgery, Johns Hopkins University School of Medicine, Baltimore, MD; (3) Department of Mental Health, Johns Hopkins School of Public Health, Baltimore, MD; (4) Department of Internal Medicine, Division of Nephrology, University of Michigan School of Medicine, Ann Arbor, MI; (5) Division of Geriatric Medicine and Gerontology, Johns Hopkins University School of Medicine, Baltimore, MD; (6) Department of Biostatistics, Johns Hopkins School of Public Health, Baltimore, MD)*

Background: Successful restoration of kidney function improves cognitive function. It remains unclear whether frail recipients, with higher susceptibility to surgical stressors, experience similar post-KT cognitive improvements to KT recipients generally, and possible subsequent decline in cognitive function as they age with a functioning graft. **Objectives:** To better understand post-KT cognitive trajectories among frail and non-frail recipients, we conducted a longitudinal study of 665 adult KT recipients (>=18 years of age). The goals of this study were to: 1) assess the short- (intervals ≤ 1-year) and medium-term (1-4 years) post-KT cognitive trajectories among all adult KT recipients, 2) assess whether cognitive performance levels differed by frailty at KT admission, and 3) test whether short- and medium-term post-KT cognitive trajectories differed by frailty ascertained at KT admission. Understanding the relationship between KT, frailty, and cognitive function could provide evidence for developing strategies to mitigate cognitive impairment as part of clinical practice and the decision-making process for KT candidates. **Methods:** In this two-center cohort study, 665 adults were enrolled and screened for frailty (Fried criteria) and cognitive function (3MS) pre-KT. 3MS was also measured longitudinally up to 4-years post-KT. We used a mixed effects model with a random slope (time) and intercept (person) to characterize post-KT cognitive trajectories by pre-KT frailty, accounting for non-linear trajectories and adjusting for recipient, donor, and transplant factors. **Results:** Of 665 recipients (mean age=52.0 years) followed for a median of 1.5 years (IQR=0.7, 3.4), 15.0% were frail. Frail recipients had lower cognitive scores (89.0) than non-frail (90.8) pre-KT (difference=-1.8 points, 95%CI:-3.3,-0.3) after adjustment. By 3-months post-KT, cognitive performance improved for frail (slope=0.22 points/week, 95%CI:0.05,0.29) and non-frail (slope=0.14 points/week, 95%CI:0.08,0.21) recipients. Between 1-4 years post-KT, improvements plateaued among non-frail (slope=0.005 points/week, 95%CI:-0.01,0.02), while cognitive function declined among frail recipients (slope=-0.04 points/week, 95%CI:-0.06,-0.01). At 4-years post-KT, frail recipients had cognitive scores that were 5.8 points lower than non-frail recipients (difference=-5.5 points, 95%CI:-8.7,-2.4). **Conclusion:** On average, KT recipients experienced short-term cognitive improvement post-KT; however, frailty was associated with medium-term cognitive decline post-KT. Interventions to prevent cognitive decline among frail recipients should be identified.

P156- SENIORS' COMMUNITY HUB (SCH)- A MODEL OF CARE TO SUPPORT PRIMARY CARE PROVIDERS IN CARING FOR OLDER ADULTS WITH FRAILTY.

Marjan Abbasi[1,2], Sheny Khera[1,2,3], Julia Dabravolskaj[3] *((1) Department of Family Medicine, University of Alberta, Edmonton, AB, Canada; (2) Covenant Health, Misericordia Hospital, Edmonton, AB, Canada; (3) Edmonton Oliver PCN, Edmonton, AB, Canada)*

Background: Approximately 1 in 4 older adults presenting to primary care are at risk of being frail, thus at a heightened risk for adverse health outcomes and loss of independence. Timely recognition and proactive intervention of at-risk seniors is essential but presents many challenges to primary care providers. Challenges include medical complexity with multiple comorbidities, dynamic emotional and social needs of patients and caregivers, time constraints of primary care, and fragmentation of health care service delivery. Therefore, a practical evidence-based guide or model of care is required to support primary care providers in caring for older adults with frailty. **Objectives**: To create and implement an integrated model of care with structured process for identification, assessment and management of seniors living with frailty within primary care setting. **Methods**: Guided by the developmental evaluation framework, we designed and implemented a model of care called the Seniors' Community Hub (SCH). Program components: 1. Structured process of care (frailty identification using valid and feasible tools, multi-domain assessment

based on principles of the comprehensive geriatric assessment, and frailty management with tailored person-centred and evidence-informed interventions); 2. Education of the health care workforce; 3. Patient and caregiver empowerment; and 4. Partnerships in care (integrating care with community and social services, embedding health technology). Quasi-experimental pre-post study design with a target group of community dwelling seniors >=65 years of age presenting to an academic center with 6 primary care physicians in Edmonton, Alberta. Data was collected on consented participants receiving this model of care. Descriptive and inferential statistical tests undertaken for analysis. **Results**: Preliminary data collected on 88 consented participants (mean age 81, 60% women). Participants noted to have improvement in gait speed, functional status, and caregiver burden; positive changes in level of frailty and quality of life (EQ-5D), with noted improvement in domains of usual activities, pain/discomfort, anxiety/depression, and mobility, as well as the EQ-VAS score. Patients (n=50) who received pharmacist-led medication review as part of SCH had statistically significant reduction in inappropriate medications. **Conclusion**: A comprehensive model of seniors' care can be implemented into a primary care setting and demonstrated improvement in person-oriented outcomes.

P157- FRAILTY PROFILE OF PATIENTS REFERRED TO A SECONDARY CARE FRAILTY CLINIC BY FAMILY MEDICINE PHYSICIANS.

Karina Pfrimer, Márcio Eloi Colombo Filho, Paulo Fernandes Formighieri, Anderson Marlieri Navarro, Fernanda Pinheiro Amador dos Santos Pessanha, Nereida Kilza da Costa Lima, Julio Cesar Moriguti, Eduardo Ferriolli *(Department of Medicine, Ribeirao Preto Medical School Sao Paulo, Brazil)*

Background: The assessment of frailty in the community is a challenging issue, as older people need to be screened in the primary care setting and family physicians are often not trained to assess patients for frailty. **Objectives:** To verify the characteristics and frailty profile of patients referred to a secondary care Frailty Clinic by Family Care physicians after sensitization by discussions about frailty and the application of the Gérontopôle Frailty Screening Tool (GFST). **Methods:** Older patients referred to a secondary care frailty clinic by Family Care physicians of the Family Care Program of the Ribeirao Preto Medical School, after screening for frailty through the application of the GFST, were assessed by a geriatrician, nutritionists and physical therapists. A structured Comprehensive Geriatric Assessment was applied as well as the assessment of body composition by bioelectrical impedance analysis (BIA). Descriptive statistics were applied. **Results:** Forty-six older patients were assessed. Mean age was 79±6.4 years; 33 (72%) were women, seven (15%) lived alone, 36 (79%) took 5 or more medications. Mean Body Mass Index was 27.2±5.8kg.m-2 and the mean score of the Mini-Nutritional Assessment was 14.7±6.5. Body fat, assessed by Bioelectrical Impedance Analysis was 29±7.3%, phase angle 4.9±1.3. Mean walking speed was 0.67±0.47m/s and mean handgrip strength was 20±6.8kg. Fifty-nine percent of the volunteers were frail according to Fried's criteria. Thirty-three percent of the volunteers had falls during the last year. Forty-six percent had low score at the 10 point Cognitive Screener (10-CS). After the assessment, 43% of the volunteers were referred for tertiary care/rehabilitation. **Conclusion:** Family Physicians sensitized for the detection of frailty in older patients and applying the GFST screening tool were effective in detecting frailty, with appropriate referral to a secondary care Frailty Clinic.

P158- THE TRANSITION OF FRAILTY STATUS AND ITS INFLUENCING FACTORS IN COMMUNITY DWELLING PRE-DIABETIC AND DIABETIC OLDER POPULATION: A PROSPECTIVE COHORT STUDY.

Qianqian Sun, Yanyu Chen, Shang Wang *(The Center of Gerontology and Geriatrics, West China Hospital, Sichuan University, Chengdu, China)*

Background: Frailty renders older individuals more prone to adverse health outcomes. Some studies were reported about the tightly relationship of frailty and diabetes. Little has been reported about the transitions between the different frailty states in pre-diabetic and diabetic community dwelling older population. **Objectives:** To identify risk factors contributed to transition of frailty status in older community dwelling adults with and without diabetes. **Methods:** At baseline, a total of 653 subjects with a mean age of 72.86±6.48 (rang 65-103) were included. Then up to 428 older adults were followed up after three years. Diabetic patients were defined as self-reported medical records of diabetes or on anti-hyperglycemic medicine, or real-time HbA1c>6.5%. Pre-diabetes was diagnosed as HbA1c at 5.7-6.5%. FRAIL scale was used to identify frailty status. Demographic data, social support and geriatric syndromes were recorded. Transition of frailty status were defined as worsening group (from robust to pre-frail or frail, and pre-frail to frail) and improving group (from frail to pre-frail or robust, and pre-frail to robust) respectively. Rates of transitions of frailty and its' associated factors were analysis. **Results:** At baseline, diabetic (19.6%) and pre-diabetic (27.7%) population had much higher prevalence of frailty compared that to non-diabetic older adults ((9.37% and 7.73% vs 4.36%). Among diabetic and pre-diabetic population, frail status worsening occurred in 27 (13.87%) participants, while improving in 68 (34.69%) subjects. No hospitalization history in the past 1 year (OR= 0.32 , 95% CI = 0.11-0.88, P=0.03), no vision loss (OR= 0.33 , 95% CI = 0.12-0.92, P=0.03) abdominal obesity (OR= 8.38 , 95% CI = 1.67-42.03, P=0.01), less daily activity time (OR= 1.62 , 95% CI = 1.03-2.54, P=0.04) were independent risk factors of frail worsening or improving in the group of pre-diabetic and diabetic older adults. **Conclusion:** No hospitalization history in the past 1 year and no vision loss were associated with frail improving, while abdominal obesity and less daily activity time were associated with worsening. Among them, abdominal obesity was a strong risk factor for frailty status worsening.

P159- FRAILTY IN HOSPITALIZED PATIENTS WITH ATRIAL FIBRILLATION.

Shivani Priyadarshni, Ramanakumar Anam, Carmen Cartwright, Miriam Zylberglait Lisigurski *(Aventura Hospital and Medical Center, Aventura, USA)*

Background: Frailty is a multisystem dysfunction syndrome characterized by increased vulnerability to stressors. Frailty carries an increased risk of poor health outcomes such as disability, hospitalization, and mortality. Even though frailty is a well-known predictor of mortality in cardiovascular patients, the specific relation between atrial fibrillation (AF) and frailty is poorly understood. Frailty Index Lab (FI-Lab) is a validated, easy to use tool based on 23 common laboratory tests. It offers practical advantages in frailty screening. **Objectives:** To establish a correlation between atrial fibrillation and frailty in hospitalized patients. **Methods:** In this retrospective cross-sectional study, data was extracted from the HCA corporate database, East Florida division for September 2017. For FI-Lab calculation, values outside of normal range were coded as 1. Sum of these deficits were divided by the total number of available values. The results were then multiplied by 23. FI-Lab was used as a continuous variable, values close to 23 were assumed as higher risk for frailty. Variables were analyzed by multiple linear regression and t-test

using SPSS. **Results:** The study population (n=4,681) had a mean age of 59±21 years and equal gender distribution (50% male). AF was found in 1253 (27%) patients. Between patients with and without AF, significant differences were found in age (67±19 years vs 56±20 years, p <0.001), diabetes mellitus (DM) (34% vs 29%, p <0.001), history of stroke (13% vs 7%, p <0.001), myocardial infarction (MI) (11% vs 6%, p <0.001) and FI-Lab (7.1±4.1 vs 5.87±3.84, p <0.001). No differences were found in gender (Male: 41% vs 40%, p = 0.06) and hypertension (35.4% vs 36.3%, p = 0.557). AF was strongly associated with frailty status independent of age, gender, hypertension, DM, stroke and MI on multiple linear regression analysis (B 0.63, p <0.001, CI [0.37, 0.88]). **Conclusion:** Our study shows that patients with AF were older, had more comorbidities and had higher FI-Lab. We found that AF is associated with an increased risk of frailty, independent of other factors. Further studies need to be done to analyze the clinical implications and future outcomes in patients with both conditions.

P160- STREAMLINING FRAILTY ASSESSMENT IN CLINICAL PRACTICE: THE FIT-FRAILTY "APP".
Courtney C. Kennedy*[1,2], George Ioannidis[1,2], Alexandra Papaioannou[1,2], Jonathan D. Adachi[1,2], Sharon Marr[1,2], Ahmed Negm[2], Patricia Hewston[2], Kenneth Rockwood[3] *((1) McMaster University, Department of Medicine, Hamilton, Canada; (2) GERAS Centre for Aging Research, Hamilton, Canada; (3) Dalhousie University, Department of Medicine, Halifax, Canada)*

Background: Frailty is dynamic in nature and has been demonstrated to be modifiable with intervention. Using technology in clinical settings could improve the efficiency and effectiveness of assessing frailty, tracking change, and ultimately assisting clinicians with providing targeted interventions. **Objectives:** To examine the usability of the Fit-Frailty app (a multi-domain frailty assessment) in a cohort of vulnerable older adults. **Methods:** Adapted from a validated frailty index (Rockwood cumulative deficits method), the Fit-Frailty app is a multi-domain frailty assessment that includes physical, cognitive, emotional, functional, social/environmental and co-morbidity components. The app was designed as a self-reported, user-friendly tool that can be completed by older adults/family alone or in partnership with a healthcare professional. In the first phase of co-design, the prototype was piloted with community-dwelling older adults with early frailty and/or mild cognitive impairment participating in two clinical research studies (Fit Joints and GERAS DANCE). Participants completed the app (without a family caregiver) on a tablet with the assistance of a research assistant as needed. The research assistant examined user navigation and recorded areas of difficulty, questions asked, time to complete the app. **Results:** Participants in Cohort 1 (Fit Joints, n=52, mean age=74.0 years, SD = 7.6) were undergoing joint replacement surgery and had early frailty. In Cohort 2 (GERAS DANCE, n=23, mean age=76.9 years, SD=5.7), 75% of participants had mild cognitive impairment. Overall, 68% were women and 41% had post-secondary education. Mean time to complete the app was 3.9 min (SD = 2.2) in the early frailty group and 4.3 min (SD=2.3) in the group with mild cognitive impairment. Twice as many participant queries were related to the meaning or phrasing of the question rather than problems navigating/interacting with the tablet screens. 70% were able to complete all of the screens without assistance. Based on a 5-point scale, 87% of participants rated the app as "Very Easy" or "Easy" to use. **Conclusion:** This usability study in a research cohort of older adults demonstrated that a self-reported app for assessing multi-domain frailty (Fit-Frailty app) was feasible and acceptable. The app will be further refined with co-design and piloted in clinical sites.

P161- SOCIAL FRAILTY AS AN IMPORTANT RISK FACTOR FOR ADVERSE HEALTH OUTCOMES IN OLDER ADULTS: FINDINGS FROM AN EIGHT-YEAR FOLLOW-UP POPULATION-BASED COHORT STUDY.
Lina Ma, Zhe Tang, Fei Sun, Yun Li, Piu Chan *(Department of Geriatrics, Xuanwu Hospital, Capital Medical University, China National Clinical Research Center for Geriatric Medicine, Beijing, China)*

Background: While social factors are increasingly considered to be associated with frailty trajectories, research in characterization and clinical utility of social frailty among older adults is still limited. **Objectives:** To investigate the association between social frailty and long-term prognosis in a representative Chinese community-dwelling older population. **Methods:** Cross-sectional and longitudinal analyses of Beijing Longitudinal Study of Aging (BLSA). A clustering, stratification, and random selection method was used to conduct the cross-sectional survey in 2004. Social frailty was defined by using responses to 5 questions (HALFT scale: inability to help others, limited social participation, loneliness, financial difficultly, and not having anyone to talk to). A score of >=3 indicated social frailty. 1697 community-dwelling older adults with an eight-year follow-up were included. Cox proportional hazard modeling were used to identify the associations between social frailty and mortality. **Results:** 7.7% of participants were identified as social frail (standard prevalence: 4.5%) at baseline. Participants who were widowed, living alone, or with worse life style, had a high prevalence of social frailty. Social frailty was associated with physical frailty, functional disability, and worse neuropsychological status. Over the 8 years of follow-up, those who survived had a lower prevalence of social frailty at baseline (4.2% vs 15.1%, P <0.01). After adjusted by confounding factors (age and sex), the hazard ratio for 8-year mortality associated with social frailty was 2.5 - 4.3. The components inability to help and limited social participation were the strongest predictors before and after adjustment, respectively. The combination of the five items was better able to identify individuals with increased risk of mortality than each individual component could. **Conclusion:** Our research revealed social frailty was an important risk factor for adverse health outcomes in community-dwelling older adults in China, which highlights the construct of social frailty has clinical utility for identifying older people at risk of worse outcomes.

P162- FRAILTY AND ASSOCIATED RISK FACTORS.
Blanca González García, Daniel Gámez Treviño, Ricardo Salinas Martínez, Fernando Díaz González, Patricia Guerrero Garza, Javier Dávila Olalde, Francisco Barrera-Flores, Patricia Ancer Rodríguez *(Geriatrics Service University Hospital UANL Monterrey NL Mexico)*

Background: Frailty is a very complex geriatric syndrome which can contribute to significant in-hospital and outpatient adverse outcomes, with an increase on the burden of care. **Objectives:** To identify the association among risk factors with frailty syndrome in outpatients of a geriatrics unit. **Methods:** Data from outpatients with complete medical records and comprehensive geriatric assessment from our geriatric clinic was analyzed from 2016 to 2018 in this study. The total population was divided in 2 groups according to the presence or absence of frailty. For the statistical analysis the numerical variables were explored using the Kolmogórov-Smirnov test. They were described using means and standard deviation (SD) or median and interquartile range (IQR), accordingly, the categorical variables were described as frequencies and percentages. The comparison between the groups was analyzed using Student's T or Mann-Whitney's U, for the numerical variables, and X2 test for the categorical ones, a p value <0.05 was considered as statistically significant. Finally, a

logistic regression model was built to evaluate the association between the variables and the diagnosis of frailty, the results are reported as unadjusted and adjusted odds ratios (OR) and 95% Confidence Intervals (95% CI). Analyses were performed with the use of SPSS statistical package version 24. **Results:** A total of 526 individuals (178 males and 348 females) were included in the analysis. The average age of population was 75.3 years (SD ± 7.59). Individuals in the frailty group had an overall poorer nutritional status and showed a higher prevalence of chronic medical conditions and geriatric syndromes. The logistic regression model demonstrated a strong positive association of frailty with dementia (OR: 3.88 [2.12-7.12]) and Parkinson's disease (OR: 2.84 [1.07-7.59]), and a strong negative association with a 5 point increase in BMI (OR: 0.77 [0.60-0.98]), the rest of the information given by the regression model will be summarized in table 1 and 2. **Conclusion:** The poor nutritional status and number of chronic conditions appear to be associated with sarcopenia among individuals evaluated at our geriatric unit.

P163- SUBJECTIVE WEAKNESS AS PREDICTOR OF FRAILTY. Ronald Camilo Gómez[1,2,3], Miguel Germán Borda[1,4], Elkin Garcia-Cifuentes[1], Mario Ulises Pérez-Zepeda[1,5] *((1) Semillero de Neurociencias y envejecimiento, Instituto de Envejecimiento, Facultad de Medicina, Pontificia Universidad Javeriana, Bogotá, Colombia; (2) Hospital Cardiovascular del Niño de Cundinamarca, Soacha, Colombia; (3) Clínica del Country, Bogotá, Colombia; (4) Centre for Age-Related Medicine (SESAM), Stavanger University Hospital, Stavanger, Norway; (5) Geriatric Epidemiology Research Department, Instituto Nacional De Geriatría, México City, México)*

Background: Weakness has been reported as a key component of frailty. However, to measure objective strength is not widely accessible (lack of instruments, time or physical limitations). Subjective weakness could be a useful marker to detect people at risk of frailty. **Objectives:** To determine a relationship between subjective weakness and the 3-year incidence of frailty. **Methods:** A total of 6,087 community-dwelling persons aged 50 years old or older who participated in the Mexican Health and Aging Study where followed over three years. We analyze the association between weakness defined as a low subjective dominant hand strength and incidence of frailty. Frailty was defined using a 39-item frailty index. Multivariate logistic regression models were used to assess the odds of frailty occurring according to the Subjective dominant hand strength. **Results;** At baseline, 55.2% of the subjects were male, the mean age was 62.2 (SD ± 8.5) years old, and the incidence of frailty was 37.8%. 23.39% (3,012) reported having a weakness. The odds of having frailty due weakness is present were OR 3.63 (3.29- 4.00) p < 0.001 before the adjustment. After adjusting for comorbidities, age, sex and cognitive status the odds for having frailty due weakness is present were OR 2.14 (1.47- 3.12) p < 0.001. **Conclusion:** Subjective weakness is a useful marker for detecting patients at risk of frailty. For the aim of this study, we used FI to measure frailty which seems to reflect the biological nature of frailty related to physical parameters such as weakness.

P164- FRAILTY IN OLDER ADULTS WITH MILD DEMENTIA WITH LEWY BODIES AND ALZHEIMER'S DISEASE. Miguel Germán Borda, Hogne Sønnesyn, Claire J. Steves, Audun Osland VikMo, Mario Ulises Pérez-Zepeda, Dag Aarsland *(Centre for Age-Related Medicine (SESAM), Stavanger University Hospital. Stavanger, Norway)*

Background: Frailty is a frequent condition in older adults, which renders them vulnerable and prone to disability. Prevalence of frailty has been shown to be high in people with dementia, but few studies have explored frailty in Dementia with Lewy Bodies (DLB). **Objectives:** The aim of the study is to describe the frequency of frailty in people with newly diagnosis mild dementia due to Alzheimer´s disease (AD) and DLB. **Methods:** This is a secondary analysis of the Dementia Study of Western Norway (Demvest). For this study, we employed a sample of 186 patients, 116 with AD and 70 with DLB. Subjects were included at the time at which mild dementia was diagnosed according to consensus criteria after comprehensive standardized assessment. Frailty was evaluated retrospectively through the collection of variables leading to a frailty index (FI). The cut-off value used to classify an older adult as frail was 0.25. **Results:** The prevalence of frailty was 25.81% (n=48). In the DLB group, 37.14 % (n=26) were frail, and 18.97 % (n=22) of those with AD were frail (p<0.001). The adjusted multivariate analysis revealed an OR of 2.45 (1.15 - 5.23) for being frail in those with DLB when using AD as the reference group. **Conclusion:** The prevalence of frailty was higher in those with DLB compared to AD. Action is needed to prevent or stop the processes leading to frailty, particularly in association with diseases such as DLB where this association has shown to be frequent and is also unexplored.

P165- ROLE OF COMPREHENSIVE GERIATRIC ASSESSMENT IN PREDICTING POST-OPERATIVE DELIRIUM IN MAJOR ORTHOPAEDIC SURGERY IN INDIAN ELDERLY. Karishma De, Sumitabh Singh, Prasun Chatterjee, Aparajit Ballav Dey *(Geriatic medecine department, All Indidai institut medical science, New delhi, India)*

Background: Orthopaedics procedure in elderly is on surge and post-operative delirium is a common entity. But predictors of post-operative delirium are still unclear. This study was aimed to assess the role of comprehensive geriatric assessment in predicting post-operative delirium in major orthopaedic surgery in Indian elderly. **Objectives:** The objective was to assess the role of comprehensive geriatric assessment in predicting post-operative delirium in major orthopaedic surgery in Indian elderly. **Methods:** A prospective cohort study of 100 elderly patients (aged >=60 years) who underwent major elective orthopaedic surgery in a tertiary care hospital of India was conducted. Subjects were assessed via comprehensive geriatric assessment (vision, hearing, urinary incontinence, depression, cognition, frailty and functionality) before surgery to assess for geriatric syndromes. Post-operative delirium was assessed on day 3 after surgery via Confusion Assessment Method (CAM). Chi square/fisher exact test was used for comparison of categorical variables. Result was considered significant at 5% level of significance (p<0.05). **Results:** Mean age of the patients was 67.8 ± 6.75 years. Among them, 45% were male. Frequency of post-operative delirium was 17%. On comprehensive geriatric assessment, impaired cognition (44.4% vs 14.3%; p value = 0.043), frailty (50% vs 4.17%; p value = 0.001) and impaired functionality (25.9% vs 2.4%; p value = 0.006) were associated with higher risk of post-operative delirium as compared to those without these geriatric syndromes. **Conclusion:** Geriatric syndromes are the risk factors for post-operative delirium. All elderly patients undergoing surgery should undergo comprehensive geriatric assessment to identify patients at higher risk of post-operative delirium and should be managed accordingly. Geriatricians should be involved in management of elderly surgical patients.

P166- SARCOPENIA IN ELDERLY PEOPLE IN CARDIOLOGY HOSPITAL. Ana Margaret Nascimento Gomes Farias Soares, Natália Oliveira, Rita de Cássia Aquino, Daniela França Gomes, Maria José dos Santos, Isabela Cardoso Pimentel Mota, fausto Feres, Carlos Daniel Magnoni *(Instituto Dante Pazzanese de Cardiologia, Sao Paulo São Paulo, Brazil)*

Backgrounds: Sarcopenia is the association of decreased muscle mass, strength and muscle function. Age, sedentary lifestyle, hormones, inflammation, protein intake and innervation disorder are factors that influence sarcopenia. **Objectives:** The objective of this study was to correlate sarcopenia with anthropometric, clinical and other variables such as sex, age and race. **Methods:** Methodology: Observational, cross-sectional, quantitative approach study was approved by the institution's Ethics and Research Committee (CEP). The sample of this study was composed of 81 individuals 60 years of age and older, of both sexes, admitted to a hospital specialized in heart disease in the metropolitan region of São Paulo from September to October 2012. Elderly people unable to walk , which contained painful symptoms or edema, amputated and refusal. Nutritional risk assessments - To assess nutritional risk, the NRS 2002 tool was used to identify malnutrition at hospital admission (DAD) or risk of acquiring it during the hospitalization period. Classifying patients according to the nutritional status and severity of the disease.6 , Assessment of anthropometric measurements and palmar pressure strength (PPF) - the LEE7 formula was used. In order to calculate CMB, we measured the CB and PCT measurements with the adipometer. A digital balance was used to calculate BMI. The PPF was performed by the mechanical dynamometer, in which the individuals were positioned in the seated position, standard of the American Society of Hand Therapists: hips and knees are at 90o, shoulder adducted in neutral position, elbow at 90o and forearm in semi -pronation without radial or ulnar deviation. Three measurements were performed alternately, starting with the dominant hand with a 1-minute interval between each attempt, avoiding fatigue during the measurement. The strength was applied for 5 seconds for each trial, being considered the measure of greater value in kg / f.8 The percentiles of the study of BARBOSA et al., 2006 were used as parameters of comparison of study subjects.9, Data analysis - The data were duly tabulated in Microsoft Excel spreadsheets, analyzed and evaluated by the statistical programs R® and SPSS 18.0 Viewer® and the findings with $p < 0.05$ were considered significant. The data were arranged in graphs and tables and then confronted with the scientific literature. **Results:** The survey had the participation of 81 elderly people with a mean age of 69.4 years (SD 11.3 years), the majority of whom were white (75.3%), male (66.6%) and 35, 8% presented nutritional status of eutrophy (Table 1). The data presented in Table 2 show that the elderly men presented a higher frequency of sarcopenia in relation to the women ($p < 0.05$). The nutritional risk was more frequent among the elderly with sarcopenia ($p < 0.05$), but no statistically significant difference was observed in relation to the breed. Table 3 shows the relationship between sarcopenia and anthropometric measures of calf circumference, arm circumference, triceps skinfold thickness and arm muscle circumference, and it was observed that the measurements reduced with the presence and worsening of the degree of sarcopenia ($p < 0.05$). All measurements showed a correlation with negative sarcopenia, that is, the higher the degree of sarcopenia, the smaller the anthropometric measurements. Figure 1 depicted by Box Plot illustrates the decrease in palmar pressure force with increasing age. In the right hand there was a statistically significant correlation ($p < 0.05$), and in the left hand a tendency ($p > 0.05$). As for vitamin D3, it was possible to collect only 66.7% (54) of the elderly, of which 11.1% had sufficient dosage, 22.2% borderline, 46.3% insufficient and 20, 4% deficient. **Conclusion**: Data from the present study indicate that

sarcopenia in elderly patients with heart disease is associated with male gender, presence of nutritional risk and reduction of anthropometric measures, as well as reduction of palmar pressure force. In this sense, it is of utmost importance to identify the risk of sarcopenia in elderly hospitalized patients with heart disease, including screening and full evaluation and focusing on nutritional therapy and multiprofessional care in order to maintain or recover nutritional status.

P167- A SYSTEMATIC APPROACH TO PRESCRIBE POST-HOSPITALIZATION HOME-BASED PHYSICAL ACTIVITY FOR MOBILITY: THE PATH STUDY. M. Aubertin-Leheudre[1,2], L.P. Carvalho[1,2], A. Bolduc[1], M.-J. Kergoat[1,3,4] *((1) Centre de recherche, Institut universitaire de gériatrie de Montréal (IUGM), CIUSSS du Centre-Sud-de-l'Île-de-Montréal, Canada; (2) Département des sciences de l'activité physique, Faculté des sciences, Université du Québec à Montréal (UQAM), Canada; (3) Institut universitaire de gériatrie de Montréal, CIUSSS du Centre-Sud-de-l'Île-de-Montréal; 4 Faculté de médecine, Université de Montréal., Canada)*

Backgrounds: Frailty Older patients experience an accentuated loss of mobility after a hospital stay. Physical disabilities and physical inactivity prior to hospitalizations largely contribute to these mobility impairments, increased risk of falls, injuries, and hospital readmissions. There is however no current recommendation for prescribing physical activity (PA) after hospitalizations. **Objectives:** Develop a decisional tree to systematically prescribe an individualized, adapted and non-supervised home-based PA program for older adults to be performed after hospital discharge (Preventing loss of Autonomy by Treatment Post-Hospitalization: PATH-tool); to investigate its feasibility and acceptability; and to estimate its potential efficacy to improve physical function and mobility. **Methods:** Design: Pragmatic prospective single-arm pilot study. Intervention: Development and implementation of the PATH-tool. The PA program was performed over a 12-week period (1session/day; 5-20 minutes each; 3-4 exercises). Setting and population: Geriatric Assessment Unit (GAU). Inclusion criteria: >=65y, MMSE>=18, hospital length of stay>7days, discharge to home; no contraindications for PA; understand French/English. **Results:** The decisional tree comprises 3 main components (cognitive/cardio-strength/balance) that result in 27 different mobility profiles and adapted PA programs (PATH-tool). Participants successively admitted to this GAU (March-September 2017) were recruited. Among 100 patients, 56 were eligible, 29 agreed to participate (52% prescription rate) and 17 completed the protocol. Most of the participants were satisfied (14/17) and enjoyed (13/17) the PA program prescribed and most of the health professionals found it relevant to the patient (7/8) and reported no extra burden (6/8) associated with its implementation. Adherence to the PA program was 5[CI 4-6] sessions/week. A medium-to-large effect size (Cohen's d) was observed for the Timed Up&Go (d=1.04) and 30-sec sit-to-stand tests (d=0.75). **Conclusion:** This pilot study suggests that the implementation of the PATH-tool may be feasible across GAUs, safe and acceptable from the patients' and healthcare professionals' perspectives, which need to be confirmed in a future larger controlled trial.

P168- LACK OF SOCIAL SUPPORT AS A RISK FACTOR OF PHYSICAL FRAILTY IN OLDER ADULTS LIVING IN RURAL COMMUNITIES OF PERUVIAN ANDES. Jose F. Parodi, Fernando M. Runzer-Colmenares *(Universidad de San Martin de Porres, Facultad de Medicina Humana, Centro de Investigación del Envejecimiento (CIEN). Lima, Peru)*

Backgrounds: Life expectancy is lower in rural areas of Peru, although physical frailty is lower in these areas.(1) In the Andean region, inequalities have deepened in recent years. High-land communities suffer more problems of connectivity and access to infrastructure, with difficulties for access to goods, education and health.(2) We could think that social support factors have a great impact on the functionality and risk of losing it in this population. **Objectives:** The objective was to study if the lack of access to social support was associated with physical frailty. **Methods:** Analytical, cross-sectional study performed in 365 inhabitants from ten communities from Peruvian Andes, all of them located 1500 meters above sea level or more. We evaluated sociodemographic, clinical, functional, mental and social data. A non-probabilistic, census-type sampling was used, registering all participants in the highland communities. We performed the Short Physical Performance Battery (SPPB) to assess physical frailty (PF) and one question from Edmonton test to assess Social support: "When you need help, do you have someone who meets your needs?". To establish association between variables, we performed a Poisson regression analysis, constructing a crude and adjusted model (Table 1). **Results:** We found a PF and lack of social support frequencies of 46.6% and 43.1%, respectively. Additionally, in the crude model, having no social support doubles risk of PF and risk significantly increase in the adjusted model. **Conclusion:** The lack of social support is associated with physical fragility in communities. Therefore, intersectoral action in the long-term care of this region is necessary to improve health and functionality.

P169- PARAMETERS ASSOCIATED WITH THE REFUSAL TO PARTICIPATE IN A PHYSICAL EXERCISE PROGRAM AFTER HOSPITAL DISCHARGE IN OLDER ADULTS. Jon Irazusta[1], Ana Rodriguez-Larrad[1], Iñaki Echeverria[1], Julen Gomez[1], Maria Amasene[2], Cristina Alonso[3], Ariadna Besga[4], Miriam Urquiza[1] *((1) Department of Physiology, University of the Basque Country, Spain; (2) Department of Pharmacy and Food Science, University of the Basque Country, Spain; (3) Department of Rehabilitation and Physiotherapy, Hospital Universitario de Alava, Osakidetza, Spain; (4) Department of Internal Medicine, Hospital Universitario de Alava, Osakidetza Spain)*

Backgrounds: The hospitalization process in older patients usually causes a decline in functional and cognitive status, producing an increased risk of negative outcomes such as dependence or mortality. Physical exercise has demonstrated to be effective in improving physical and cognitive status after hospitalization. However, participation rates of discharged patients in supervised exercise programs have generally been reported as low. **Objectives:** The objective of this study is to identify the physical, clinical and sociological factors associated with refusal to participate in physical exercise programs after hospital discharge. **Methods:** This study was conducted in the Departments of Internal Medicine and Neurology of the University Hospital of Araba (Basque Country, Spain). Participants were older than 70 years, scoring >=20 on the MMSE test and able to stand and walk independently for at least 4 meters. Exclusion criteria were a diagnosis of chronic kidney disease, autoimmune neuromuscular disease or an acute myocardial

infarction/bone fracture in the last three months. It was proposed that patients start an individualized physical exercise program at discharge. Functional status was measured by SPPB (Short Physical Performance Battery), nutritional status by MNA-SF (Mini Nutritional Assessment Short Form), frailty according to Fried phenotype criteria and cognitive status by SPMSQ (Short Portable Mental Status Questionnaire). Sociodemographic and clinical data were retrieved from Health Service's database. Differences between groups were assessed by t-student or Kruskal-Wallis tests for continuous variables and Chi-squared test for categorical variables. **Results:** 509 patients were eligible to initiate the program and 89.2% of them refused to participate in it. Those who declined participation were older (p=0.023), needed walking assistance devices in higher proportion (p=0.036) and had poorer accessibility at home (p=0.014). Regarding nutritional and functional status, they had lower MNA (p<0.001) and SPPB scores (p=0.033), with less strength in lower limbs (p=0.049), poorer balance (p=0.020) and slower walking speed (p=0.012). **Conclusion:** Our study showed that the rate of participation in a physical exercise program after hospital discharge was very low, especially in those with worse nutritional and functional status. Regarding sociodemographic characteristics, a poorer home accessibility and the need for walking assistance devices were associated with non-participation in the program.

P170- USING ADMINISTRATIVE AND LABORATORY DATA FROM THE ELECTRONIC HEALTH RECORD TO EXAMINE FRAILTY INDICATORS FOR HOSPITAL READMISSION. Deborah A. Lekan[1], Thomas P. McCoy[1], Somya Mohanty[2], Prashanti Manda[2], Rohit Gulia[2] *((1) University of North Carolina at Greensboro School of Nursing, Greensboro, NC, USA; (2) University of North Carolina at Greensboro Computer Science Department, Greensboro, NC, USA)*

Backgrounds: Hospital readmissions are associated with negative patient outcomes and high healthcare costs. It is estimated that nearly 20% of Medicare patients are readmitted within 30 days, and 12% are potentially avoidable. Frailty is a syndrome of impaired homoeostasis and decreased physiologic reserve resulting in diminished ability to resist and recover from stressors. Frailty is associated with adverse outcomes including longer LOS, morbidity, and mortality. **Objectives:** To examine frailty in hospitalized adults and assess predictive properties of a frailty risk score (FRS) for 30-day readmission. **Methods:** Retrospective, observational study to investigate the use of administrative and laboratory data and mapping of International Statistical Classification of Disease and Related Health Problems (ICD-10) codes to an existing 20-item FRS derived from the electronic health record (EHR) and estimate the accuracy of the FRS for predicting 30-day readmission in 55,997 adults, 50 years and older. Covariates include demographic data and comorbidity using the Elixhauser Comorbidity Index (ECI). Area under the curve (AUC) of receiver operating characteristic curves from multivariable logistic regression were used to quantify accuracy. **Results:** The sample (55,997, 55 years and older) was mostly female (53%), Caucasian (73%), with a median length of stay of 3.2 days; 26.9% were readmitted within 30 days of discharge. The mean FRS was 1.4 (SD = 1.6; Range, 0-12). In logistic modeling, the FRS was associated with 30% increased odds of 30-day rehospitalization in multivariable logistic regression models (AOR=1.30, 95% CI=[1.28, 1.31], p<.001). The effects of frailty varied after including comorbidity (AOR=1.27, 95% CI=[1.26, 1.28], p<.001), demographics (age, gender, race), or comorbidity and demographics combined (AOR=1.10, 95% CI=[1.08, 1.11], p<.001) but remained statistically significant. The AUC using FRS alone was significantly above 0.50 (AUC=.62, 95% CI=.62,

.63, p<.001). **Conclusion:** Increased frailty is predictive of increased odds of 30-day readmission, above and beyond demographics and comorbidity at first admission. A FRS based on ICD-10 and laboratory data relies on accuracy and completeness of provider documentation to appropriately portray patient health status. The use of nursing flowsheet data for the frailty indicators may improve precision in determining key patient characteristics that contribute to frailty and its severity.

P171- THE RELEVANCE OF PHYSICAL FRAILTY IN GERIATRIC MENTAL HEALTH CARE; AN EXAMPLE OF LATE-LIFE DEPRESSION.

R.C. Oude Voshaar[1], M.H.L. Arts[1], H.C. Comijs[2] *((1) University of Groningen, University Medical Center Groningen, The Netherlands; (2) Free University Amsterdam (VUmc), The Netherlands)*

Backgrounds: Frailty is increasingly used to identify patients at risk of negative health outcomes in primary care as well as the general hospital. In mental health care, however, frailty is largely neglected while the presence of severe mental illness shortens life-expectancy by 10-20 years. **Objectives:** To examine the prevalence and impact of physical frailty among depressed older patients. **Methods:** A cohort study with a six-year follow-up including 378 older (>=60 years) patients suffering from a depressive disorder according to DSM-IV-TR criteria and 132 non-depressed controls. All participants were extensively assessed at baseline, two- and six-year follow-up, including a structured diagnostic interview, self-report questionnaires, physical examination, blood withdrawal to quantify ageing related biomarkers (inflammatory markers (hsCRP, IL-6, NAGL), leucocyte telomere length (LTL) and vitamin D), and cognitive testing. Physical frailty was assessed according to Fried's criteria. Depressive symptom severity was monitored with the Inventory of Depressive Symptoms (IDS) every six months by postal questionnaires. Study dropouts and death were monitored every six months. We applied logistic and cox-regression analyses adjusted for demographics, lifestyle, somatic morbidity and cognition. **Results:** Depressed patients were significantly more often frail compared to their non-depressed comparisons (27.2 versus 9.1%, p<.001). Among depressed patients, the odds ratio for non-remission at 2-year follow was 1.24 [95% CI: 1.01 – 1.25] (p=.040) for each additional frailty component met. During the 6-year follow-up, 27/103 (26.2%) frail depressed patients died compared to 35/275 (12.7%) non-frail depressed patients. The hazard rate of frailty for mortality was 2.43 [95% CI: 1.33 – 4.43] (p=.004). This effect was partly explained by increased inflammatory markers, shortened LTL, and lower vitamin D levels, which all had independent predictive value with respect to mortality in our sample. **Conclusion:** Despite overlapping criteria, physical frailty appears to be a valid and relevant construct for patients with late-life depression. Future studies should examine whether integrated treatment for this specific subgroup, for example prevention of polypharmacy (especially TCAs), increasing physical activity, and protein enriched diets, may improve depression remission rates and overall survival.

OSTEOPOROSIS AND SARCOPENIA

P172- PREVALENCE OF SARCOPENIA AND ITS ASSOCIATION WITH BONE MINERAL DENSITY AMONG HEALTHY ADULT NORTH INDIAN POPULATION: A COMMUNITY SURVEY.

Rimesh Pal, Sanjay Kumar Bhadada, Anil Bhansali *(Department of Endocrinology, Post Graduate Institute of Medical Education and Research, Chandigarh, India)*

Background: Sarcopenia is characterized by progressive loss of skeletal muscle mass and strength that accompanies the process of aging. Cut-offs to define sarcopenia differ from one race to another, being much higher in Caucasians than in Asians. Comprehensive data on sarcopenia from India is lacking. **Objectives:** 1. To establish cut-offs and find out the prevalence of sarcopenia among healthy adult Indian population. 2. To correlate components of sarcopenia with bone mineral density. **Methods:** A cross-sectional community-based survey was conducted in Chandigarh, a Union Territory in Northern part of India. Apparently healthy individuals, aged >20 years, were randomly selected by door-to-door visit. Complete biochemical panel, intact parathyroid hormone, 25-hydroxy vitamin D and testosterone levels were performed. Body composition and bone mineral density was measured using dual-energy X-ray absorptiometry. Low muscle mass (LMM) was defined as relative muscle mass [appendicular lean mass/(height)2] below 20th percentile of sex-specific population. Low muscle strength (LMS) was defined as dominant handgrip strength below 2 standard deviations of sex-specific mean for healthy young adults (20-39 years). Gait speed (GS) of less than 0.8 m/s on 4-m walk test, defined poor physical performance. **Results:** A total of 603 apparently healthy volunteers were recruited. Relative muscle mass (aLM/h2) was lower in both men and women compared to Caucasians. aLM/h2 < 6.91 kg/m2 in men and < 5.26 kg/m2 in women defined LMM, while grip strength of < 27.5 kg in men and < 18 kg in women defined LMS. The prevalence of pre-sarcopenia, sarcopenia and severe sarcopenia was 19.4%, 4.7% and 1.0%, respectively. The prevalence was much higher when Caucasian cut-offs were applied. Osteoporotic and osteopenic patients were more likely to be sarcopenic. aLM/h2, grip strength and GS correlated positively with BMD. Among biochemical parameters, serum testosterone was positively correlated with aLM/BMI, grip strength and GS in men while calcium, albumin and 25(OH)D showed no significant correlation. **Conclusion:** Cut-offs to define sarcopenia for the Indian population are much lower compared to Caucasians. Applying Caucasian cut-offs to Indian population leads to overestimation of sarcopenia.

P173- FORECASTING LIFE EXPECTANCY IN SARCOPENIC AND NON-SARCOPENIC COMMUNITY-DWELLING OLDER CHILEANS.

Lydia Lera, Cecilia Albala, Bárbara Leyton, Bárbara Angel, Carlos Marquez, Rodrigo Saguez, Ximena Moreno *(Public Health Nutrition Unit, Institute of Nutrition and Food Technology (INTA), University of Chile, Santiago de Chile, Chile)*

Background: Sarcopenia is an important risk factor for disability and dependence, and has serious consequences for the health of the elderly. The Chilean elderly population has a high life expectancy, but the prevalence of sarcopenia is also high. **Objectives:** To estimate life expectancy (LE), disability-free life expectancy (DFLE) and disabled life expectancy (DLE) among sarcopenic and non-sarcopenic older adults from Santiago, Chile, and its relationship with age and gender. **Methods:** Longitudinal study in 2479 community-dwelling subjects aged 60y or older (mean±SD: 69.5±6.9 years; 67.5% females) living in Santiago recruited between 2000-2017 (observed between 5-15 years period). Functional limitation was assessed through self-report of

limitations in activities of daily living. The LE, DFLE and DLE were estimated using the Interpolated Markov Chain method «IMaCh». Mortality data were obtained from death certificates of the National Civil Registry. Total deaths in the period under observation were 477. **Results:** The prevalence of sarcopenia was 21.1%, similar in men and women. After a median follow-up of 5.8y, 132 new cases of sarcopenia were identified with the HTSMayor software (incidence-density-rate=2.08 per 100 person-years). At 60y, the LE estimated for sarcopenic adults was 22.7 years of wich only 17.88 years will live DFLE, and LE estimated for non-sarcopenic adults was 22.24 years of wich 20.62 will be DFLE so the proportion of years to be lived with disability in sarcopenic adults was three times greater than in non-sarcopenic people (21.2% vs 7.3%). Total LE was longer among sarcopenic women than men at all ages (25.93,16.76,9.01,4.08 vs 16.82,10.99,5.92,2.71; respectively), but the proportion of years that women lived with disability is greater compared to men, with a difference of 5% at 60y, 15% at 70y, 11% at 80y and 1.5% at 90y. Similar results were obtained in non-sarcopenic people. **Conclusion:** We obtained that people with sarcopenia expect to live a greater proportion of years with disabilities than non-sarcopenic adults, and in particular, women will live more years with disability than men. Hence the importance of development public health programs for the prevention, delay or reversal of this syndrome. Funded by Fondef Grant IT15I10053 & Fondecyt Grant 1130947

P174- RELATIONSHIP BETWEEN THE CHANGES OVER TIME OF BONE AND MUSCLE HEALTH IN CHILDREN AND ADULTS: A SYSTEMATIC REVIEW AND META-ANALYSIS.

Médéa Locquet[1], Charlotte Beaudart[1], Nancy Durieux[2], Jean-Yves Reginster[1,3], Bruyère Olivier[1,4] *((1) World Health Organization Collaborating Center for Public Health Aspects of Musculoskeletal Health and Aging, Department of Public Health, Epidemiology and Health Economics, University of Liège, Liège, Belgium; (2) ULiège Library, University of Liège, Liège, Belgium; (3) Biochemistry Department, College of Science, King Saud University, Riyadh, Kingdom of Saudi Arabia; (4) Department of Sports and Rehabilitation Sciences, University of Liège, Liège, Belgium)*

Background: Various cross-sectional studies provide an abundance of evidence to show a relationship between bone quantity and muscle health. However, one aspect remains that is less-often studied: is their development - or decline – associated? **Objectives:** The aim of the research was to conduct a systematic review and meta-analysis to summarize the studies exploring the association between changes in bone mineral density (BMD) and changes in muscle parameters (registration CRD42018093813). **Methods:** We searched for prospective studies, both in children and adults, by consulting electronic databases (Ovid-MEDLINE, Ovid-AMED, Scopus). Each review steps were performed by two independent reviewers. For outcomes reported by less of 3 studies, we synthetized the results narratively. In other cases, a meta-analysis was performed, giving an overall r coefficient and its 95% confidence interval (CI). **Results:** Fifteen papers were included. In connection with the evolution of BMD, 10 studies concerned the parallel evolution of muscle mass, 4 were about grip strength, and 1 was about physical performance. Children were the population of interest for 5 studies, while the aging population was the focus of the other studies. The correlation between hip BMD and muscle mass was significant, with an overall coefficient r = 0.37 (95% CI 0.23-0.49). High heterogeneity was observed between studies but the length of follow-up, sex and study quality did not seem to significantly influence results. The systematic review allowed some other highlights: a significant link between changes in BMD and changes in muscle strength was observed (p-value <0.05

in the 4 studies), in addition to changes in performance (1 study, r= 0.21, p-value = 0.004). **Conclusion:** Despite the heterogeneity between studies, we highlighted a significant association between the evolution of BMD and the evolution of various muscle parameters, thus proposing the use of preventive and therapeutic strategies that are based on a single entity: the 'muscle-bone unit'.

P175- AGE-RELATED CHANGE IN APPENDICULAR SKELETAL MUSCLE MASS ADJUSTED FOR HEIGHT OR ARM SPAN IN MIDDLE-AGED AND ELDERLY JAPANESE WOMEN: THE JAPANESE POPULATION-BASED OSTEOPOROSIS (JPOS) STUDY.

Kazuki Kaji[1], Jun Kitagawa[2], Yuki Hoshino[3], Takahiro Tachiki[4], Naonobu Takahira[2], Masayuki Iki[4], Junko Tamaki[5], Etsuko Kajita[6], Yuho Sato[7], JPOS Study Group[4] *((1) Department of Rehabilitation, Kitasato Institute Hospital, Tokyo, Japan; (2) Graduate School of Medical Science, Kitasato University, Kanagawa, Japan; (3) Kamakura Rehabilitation St. Therese's Hospital, Kanagawa, Japan; (4) Department of Public Health, Kinki University Faculty of Medicine, Osaka, Japan; (5) Department of Hygiene and Public Health, Osaka Medical College, Osaka, Japan; (6) Department of Nursing, Chukyo Gakuin University, Gifu, Japan; (7) Department of Human Life, Jin-ai University, Fukui, Japan)*

Background: Sarcopenia is characterized by marked loss of skeletal muscle mass and strength. Appendicular skeletal muscle mass (ASM) adjusted for height squared (ASM/ht2, kg/m2) has been suggested for assessing sarcopenia. However, the age-related change in ASM/ht2 is inconsistent among elderly Japanese women. A decrease in height among women due to age may account for this inconsistency. **Objectives:** As arm span does not change with age, the purpose of this cross-sectional study was to investigate age-related change in ASM after adjusting for the arm span squared (ASM/arm span2: ASM/as2, kg/m2) in Japanese women aged 50 or older. **Methods:** This study was part of the 15/16-year follow-up survey of the Japanese Population-based Osteoporosis (JPOS) cohort study conducted in 2011/2012. The JPOS study was started in 1996. The subjects of the 15/16-year follow-up were 710 women (mean 65.3±10.0 years). None of the subjects had any abnormalities in bone metabolism. The absolute level of ASM was measured by dual X-ray absorptiometry (QDR4500A, Hologic, USA). Then, ASM/ht2 and ASM/as2 were assessed. As arm span was not measured during the 15/16-year follow-up, the arm span measured at baseline (1996) was used. **Results:** The mean change in height during the 15/16-year follow-up was -1.6±1.6 cm. When subjects were divided into 10-year age groups according to baseline age, the mean change in height of those in their thirties (n=134), forties (n=242), fifties (n=197), sixties (n=111), and seventies (n=26) was -0.5±0.7 cm, -1.2±1.2 cm, -2.0±1.3 cm, -3.0±1.9 cm, and -4.0±2.9 cm, respectively. The mean ASM/ht2 and ASM/as2 values were 6.4±0.7 kg/m2 and 6.8±0.7 kg/m2, respectively. A significant decrease was observed in the absolute level of ASM with age (r=-0.34, p<0.01). Although no significant correlation was found between ASM/ht2 and age, ASM/as2 significantly decreased with age (r=-0.22, p<0.01). **Conclusion:** Our study suggests that the height estimated from arm span may be substituted for height as an adjusting index for ASM for women whose height decreased with aging.

P176- PREVALENCE OF PRODROMAL SARCOPENIA, SARCOPENIC-OBESITY, OSTEOPENIA AND OSTEOSARCOPENIA IN EARLY MIDDLE-AGE.

Kim Meredith-Jones, Lara Vlietstra *(University of Otago Department of Medicine, Dunedin, New Zealand)*

Background: There is limited evidence on early onset sarcopenia or sarcopenic obesity (pro-dromal sarcopenia/sarcopenic-obesity) in middle age particularly from birth cohort data. There are also no estimates of the prevalence of the combination of sarcopenia and osteopenia (osteosarcopenia) in a middle-aged cohort. Prado et al developed cut points using dual-energy x-ray absorptiometry (DXA) in a population-based approach, but estimates of the prevalence of sarcopenia in a middle-aged cohort using these cut points to date, has been limited. **Objectives:** Preliminary data analysis to determine the prevalence and sex-differences of prodromal sarcopenia, sarcopenic-obesity, osteopenia and osteosarcopenia in male and females early middle age adults of the birth cohort Dunedin Study. The study cohort has maintained ~95% retention of the original 1000+study members. **Methods:** DXA at age 45 using Prado's sex-specific medians for cut-scores, body mass index wt/ht2 (BMI) normal <24.9 kg/m2, overweight >24.9<29.9 kg/m2 and obese >30 kg/m2, osteopenia based on femoral T-score between -1.0 and -2.5 and osteoporosis T-score -2.5 or below. Crosstabulation was used to determine the percentage of females and males who were sarcopenic, osteopenic and osteosarcopenic within each BMI category (normal weight, overweight and obese). **Results:** Using DXA data from 660 participants at age 45, and sex-specific medians to define prodromal sarcopenia and osteopenia these preliminary analyses revealed prodromal sarcopenia, was most prevalent in normal BMI females (66.1%), and overweight males (57%). Prodromal sarcopenia was present in 30% of overweight females and 35% of the normal BMI males had prodromal sarcopenia. Osteopenia prevalence was 21.8% (18.1% males; 25.2% females) and osteosarcopenia was 15.8% (13.7% males; 17.7% females). In both males and females osteopenia was more prevalent in those with obesity. Osteosarcopenia was only slightly more common in overweight vs normal weight males (51.2% vs 48.8%), but much more prevalent in normal weight (72.1%) females. **Conclusion:** This data suggests that the prevalence of these abnormal body composition phenotypes is high in early middle age and associations between BMI categories and sex suggest the relationship between muscle mass and bone may differ between sexes as adiposity increases.

P177- INFLUENCE OF THE NEW EWGOSP2 CONSENSUS ON RESEARCH WITH PRESARCOPENIC AND SARCOPENIC ELDERLY.

Jolan Dupont[1], Lenore Dedeyne[1], Katrien Koppo[2], Sabine Verschueren[3], Jos Tournoy[1,4], Evelien Gielen[1,4] *((1) Gerontology & Geriatrics, Department of Chronic Diseases, Metabolism and Ageing (CHROMETA), KU Leuven, Leuven, Belgium: (2) Exercise Physiology Research Group, Department of Movement Sciences, KU Leuven, Leuven, Belgium: (3) Research Group for Musculoskeletal Rehabilitation, Department of Movement Sciences, KU Leuven, Leuven, Belgium: (4) Department of Geriatric Medicine, UZ Leuven, Leuven, Belgium)*

Background: In 2010, the European Working Group on Sarcopenia in Older People (EWGSOP) published a consensus on definition and diagnosis of sarcopenia, defining conceptual stages of sarcopenia: 'presarcopenia', 'sarcopenia' and 'severe sarcopenia' (EWGSOP1). To meet the criteria of sarcopenia, low muscle mass was required together with low muscle strength or low physical performance. In October 2018, a revised consensus was published, focusing on muscle strength as key characteristic of sarcopenia (EWGSOP2). Persons with low muscle strength only have 'probable sarcopenia', while those with low muscle strength plus low muscle quantity or quality have 'confirmed sarcopenia'. Persons with also low physical performance have 'severe sarcopenia'. We hypothesize that the revised criteria for sarcopenia have large impact on ongoing research focusing on elderly with presarcopenia. **Objectives:** Determining the effect of the revised EWGSOP2 criteria on the classification of participants included in the Exercise and Nutrition for Healthy AgeiNg (ENHANce) randomized controlled trial (RCT).: **Methods:** ENHANce is an ongoing 5-armed RCT (ClinicalTrials.gov: NCT03649698) that examines the effect of an individualized nutritional intervention (supplementation with proteins and/or omega-3) combined with a physical exercise program in community-dwelling presarcopenic/sarcopenic elderly aged >= 65 years. Participants were eligible for inclusion when having presarcopenia or sarcopenia according to EWGSOP1 criteria. In persons currently enrolled in ENHANce, EWGSOP2 criteria were applied, classifying subjects as 'no sarcopenia', 'probable sarcopenia', 'confirmed sarcopenia', 'severe sarcopenia'. **Results:** As on 26th of October 2018, 25 subjects (mean age 75y) are randomized in ENHANce. Of these, 21 are presarcopenic, three sarcopenic and one severe sarcopenic according to EWGSOP1. According to EWGSOP2, 21 persons have no sarcopenia, 0 probable sarcopenia, three confirmed sarcopenia and one severe sarcopenia. One presarcopenic EWGSOP1 subject became EWGSOP2 sarcopenic. Two persons in the sarcopenia/ severe sarcopenia categories in EWGSOP1, changed category in EWGSOP2. **Conclusion:** By obliterating the concept of presarcopenia, the revised EWGSOP2 definition has major impact on ongoing research in presarcopenic elderly. Although the revision facilitates the diagnosis of sarcopenia in clinical practice, a consensus definition of preclinical or early stages of sarcopenia would be welcomed in order to address the needs of these elderly and to align ongoing and future research in this area.

P178- SKELETAL MUSCLE INDEX AND BONE VARIABLES IN YOUNG ADULT MEN.

Anthony Khawaja[1,2], Jacques Prioux[2], Ghassan Maalouf[3], Rawad El Hage[1] *((1) Department of Physical Education, FASS, University of Balamand, Kelhat El Koura, Lebanon; (2) Movement, Sport, and Health Sciences Laboratory (M2S), UFR-STAPS, University of Rennes 2, Rennes, France; (3) Bellevue University Medical Center, Faculty of Medicine, Saint Joseph University, Mansourieh, Lebanon)*

Background: The pathophysiology and etiology of sarcopenia and osteoporosis, and the relationship between them are complex and multifactorial. **Objectives:** The purpose of this study was to explore the relationships between skeletal muscle index (SMI) and bone variables (bone mineral density (BMD), bone mineral content (BMC), hip geometric indices and TBS) in young adult men. **Methods:** 169 young men (18 - 35) participated voluntarily in this study. Body composition and bone variables were measured by Dual-energy X-ray absorptiometry (DXA; GE Healthcare, Madison, WI). Appendicular skeletal mass (ASM, in Kg) was calculated by summing the muscle masses of the four limbs, assuming that all non-fat and none-bone mass is skeletal muscle. Skeletal muscle index was defined as ASM / height^2. **Results:** SMI was positively correlated to L1-L4 TBS (r = 0.17; p < 0.05) and Z (r = 0.28; p < 0.01). Fat mass (FM) was positively correlated to WB BMC (r = 0.43; p < 0.001), WB BMD (r = 0.38; p < 0.001), L1-L4 BMC (r = 0.20; p < 0.05), TH BMC (r = 0.39; p < 0.001), TH BMD (r = 0.30; p < 0.001), FN BMC (r = 0.33; p < 0.001), FN BMD (r = 0.23; p < 0.01), CSA (r = 0.32; p < 0.001), CSMI (r = 0.31; p < 0.001) and Z (r = 0.27; p < 0.01). FM was negatively correlated to L1-L4 TBS (r = -0.23; p < 0.01) and SI (r = -0.42; p < 0.001). Lean mass (LM) was positively correlated to WB BMC (r

= 0.71; p < 0.001), WB BMD (r = 0.48; p < 0.001), L1-L4 BMC (r = 0.37; p < 0.001), L1-L4 BMD (r = 0.21; p < 0.01), TH BMC (r = 0.62; p < 0.001), TH BMD (r = 0.39; p < 0.001), FN BMC (r = 0.56; p < 0.001), FN BMD (r = 0.39; p < 0.001), CSA (r = 0.59; p < 0.001), CSMI (r = 0.63; p < 0.001) and Z (r = 0.64; p = 0.001). **Conclusion:** The current study suggests that SMI is a positive determinant of trabecular bone score in young adult men.

P179- PREDICTING THE RISK OF LOW BONE MINERAL DENSITY AT DIAGNOSIS AND COMPLETION OF TREATMENT OF CHILDHOOD ACUTE LYMPHOBLASTIC LEUKEMIA.

Emma J. Verwaaijen[1], Annelies Hartman[2], Mariël L. te Winkel[2], Inge M. van der Sluis[1], Robert de Jonge[3], Hester A. de Groot-Kruseman[1,4], Maarten H. Lequin[5], Marry M. van den Heuvel-Eibrink[1], Saskia M.F. Pluijm[1] *((1) Princess Maxima Center for Pediatric Oncology, Utrecht, The Netherlands; (2) Department of Pediatric Physiotherapy, Erasmus MC-Sophia Children's Hospital, Rotterdam, The Netherlands; (3) Department of Clinical Chemistry, Amsterdam UMC, Amsterdam, The Netherlands; (4) Dutch Childhood Oncology Group, The Hague, The Netherlands; (5) Department of Radiology, University Medical Center, Utrecht, The Netherlands)*

Background: Impaired Bone Mineral Density (BMD) is a known short- and long-term effect of childhood Acute Lymphoblastic Leukemia (ALL) and its medical treatment. It is often associated with adverse events, such as pain and fractures, which may lead to frailty and disability at middle age. **Objectives:** The aim of this study was to develop clinical prediction models to determine the risk of impaired BMD at diagnosis and on completion of treatment of ALL. **Methods:** In this study, we used data of a prospective multicenter longitudinal study on osteogenic toxicity including 336 children, aged 4 years and older, with newly diagnosed ALL (DCOG-ALL9 protocol). The primary outcome was low BMD (Z-score -2.0 SD) of the lumbar spine (BMDLS) at diagnosis and on completion of ALL treatment, assessed with Dual-X-Ray absorptiometry. Candidate predictors at diagnosis, including: age, weight, height, BMDLS at diagnosis, gender and risk group, were selected into the prediction models with multivariable logistic regression analysis. **Results:** At ALL diagnosis, 23% (95% CI 18%-27%) of the children had low BMD (n=76). At completion of ALL treatment, the percentage of children with low BMD increased significantly (p=0.02) to 30% (95% CI 25%-35%). We identified weight, height and the interaction term weight*height as predictors for low BMD at diagnosis. The model had good discriminative ability with an area under the curve (AUC) of 0.76 (95% CI: 0.69-0.82). BMDLS and age at diagnosis were identified as predictors for the risk of low BMD on completion of treatment. With an AUC of 0.90 (95% CI: 0.86-0.93) the ability of the model to distinguish between children with and without risk of low BMD was excellent. When BMDLS at diagnosis is unavailable, a less strong, but still moderate, prediction of low BMD on completion of treatment can be made with: weight and age at diagnosis. The AUC was then 0.72 (95% CI: 0.66-0.78). **Conclusion:** We confirmed that a large part of children with ALL have low BMD at diagnosis and on completion of treatment and developed three prediction models to support pediatric oncologists to easily identify the children at risk of having impaired BMD at diagnosis and on completion of treatment.

P180- THE PROGNOSTIC EFFECT OF SARCOPENIA IN PATIENTS TREATED WITH GEMCITABINE BASED CHEMOTHERAPY FOR METASTATIC/UNRESECTABLE PANCREATIC ADENOCARCINOMA.

In Ho Kim, Myung Ah Lee *(División of Medical Oncology, Seoul St. Mary's Hospital, The Catholic University of Korea)*

Background: Cancer cachexia has been shown to cause worsened prognosis and has also been associated with low quality of life. Sarcopenia is a condition characterized by loss of skeletal muscle mass and function has recently been acknowledged as the major component of cancer cachexia. **Objectives:** The aim of this study is to evaluate the prognostic impact of sarcopenia and pattern of skeletal muscle depletion at 8 weeks of first-line gemcitabine based chemotherapy in metastatic/unresectable pancreatic adenocarcinoma. **Methods:** We retrospectively analysed 280 patients who received first-line palliative gemcitabine based chemotherapy between Jan. 2010 and Dec. 2017. The measurement of the skeletal muscle area was performed by using a commercially available system (Advantage Windows workstation 4.6, GE Healthcare, Milwaukee, Wisconsin, USA). Sarcopenia was defined as a skeletal muscle index (SMI) < 43.1 cm2/m2 (male) and < 35.3 cm2/m2 (female) using ROC curve. **Results:** Among 280 patients, 58 (20.7%) patients were sarcopenic at diagnosis. The mean values of SMI decreased from 45.9 to 44.0 cm2/m2 after 8 weeks of chemotherapy for all patients (P<0.001). Decrease in SMI during 8 weeks of the treatment was observed in 174 (62.1%). Among all patients, the sarcopenia group showed worse overall survival (OS) and progression free survival (PFS) compared to non-sarcopenia group (median OS, 5.1 vs 8.0 months; PFS, 3.1 vs 4.1 months, all P < 0.001). And, patients with decreased SMI above 5% showed poorer OS compared to increased SMI or decreased SMI below 5% (5.5 vs 8.2 months, P = 0.030). Multivariate analysis showed that higher levels of CA 19-9 (P < 0.001), number of metastatic organs (P < 0.001), sarcopenia at diagnosis (P < 0.001), decreased SMI after 8 weeks of chemotherapy (P = 0.012) are poor prognostic factors for OS. **Conclusion:** Sarcopenia at the time of diagnosis was poor prognostic factor in patients with pancreatic adenocarcinoma. And more depletion of skeletal muscle during the first 8 weeks of systemic treatment was associated with worsened prognosis. Assessment of body composition needs to be considered when treating patients with advanced pancreatic cancer.

P181- ASSOCIATION OF SARCOPENIA AND MID ARM CIRCUMFERENCE IN OLDER ADULTS.

Gevesh Chand Dewangann, Sunny Singhal, Sumitabh Singh, Avinash Chakraworthy, Aparajit Ballav Dey *(Department of Geriatric Medicine, All India Institute of Medical Sciences, New Delhi)*

Background: With increasing evidence of sarcopenia and its effect on frailty and quality of life in elderly, it is necessary to develop a community based tool to assess sarcopenia. Mid arm circumference measurement is a simple, inexpensive and non-invasive method which can be easily used in community settings. **Objectives:** To assess the association between sarcopenia and mid arm circumference in older adults in outpatient settings. **Methods:** 100 subjects above the age of 65 years were recruited from the outpatient department of Geriatric medicine, AIIMS New Delhi, a tertiary care institute in India between July and October 2017. Skeletal muscle mass was measured by DEXA scan. Grip strength and mid arm circumference were measured by handgrip strength dynamometer and standard measuring tape respectively. Gait speed was also assessed with 4 m walk test. Sarcopenia was assessed using AWGS (Asian Working Group for Sarcopenia) criteria. AUC for mid arm circumference was calculated

using ROC curve and p value <0.05 was taken as significant. **Results:** The mean age of the subjects was 72.5 ± 6.4 years. In this study, sarcopenia was seen in 53% of the subjects. Mean mid arm circumference was 27±3.6 cm. Low mid arm circumference was found to be significantly associated with sarcopenia (p <0.001). AUC for mid arm circumference was 0.7740 (95% CI 0.68-0.86). At cut off of <29 cm, mid arm circumference was found to have sensitivity of 83.02 % and specificity of 52.08 % for screening sarcopenia. **Conclusion:** Low mid arm circumference was found to be significantly associated with sarcopenia and mid arm circumference below 29 cm has a good sensitivity for screening sarcopenia in outpatient settings.

P182- APPLYING THE EWGSOP2: EFFECT OF MUSCLE STRENGTH DEFINITIONS ON SARCOPENIA PREVALENCE AND PREDICTIVE VALIDITY. WS Lim[1,2], J Chew[1,2], JP Lim[1,2], L Tay[3], N Hafizah[4], YY Ding[1,2] *((1) Department of Geriatric Medicine. Tan Tock Seng Hospital. Singapore; (2) Institute of Geriatrics and Active Ageing. Tan Tock Seng Hospital. Singapore; (3) Department of General Medicine (Geriatric Medicine), Sengkang General Hospital. Singapore; (4) Department of Continuing and Community Care. Tan Tock Seng Hospital. Singapore)*

Background: EWGSOP2 differs from its predecessor by elevating muscle strength to the forefront, such that sarcopenia is probable when low muscle strength is detected. Presence of low muscle quantity or quality confirms the diagnosis whilst poor physical performance is indicative of severity. How the two recommended measures of muscle strength (handgrip strength and repeated chair stand) impact on sarcopenia prevalence and predictive validity remains to be elucidated. **Objectives:** To compare the impact of three different muscle strength definitions on sarcopenia prevalence using the EWGSOP2 clinical algorithm, and predictive validity of 2-year outcomes. **Methods:** We studied 200 community-dwelling older adults (mean age=67.9years; frailty prevalence =5.5%) from the GERILABS cohort study. The gold standard of sarcopenia diagnosis was based upon the Asian Working Group for Sarcoepnia (AWGS) criteria. We compared three muscle strength definitions: 1) handgrip strength, using AWGS cutoffs; 2) five-times-sit-to-stand, using standard cutoff (>15s) (RCS-1); and 3) five-times-sit-to-stand, using ROC-derived cutoff (>12.5s) (RCS-2). We determined the prevalence of probable, confirmed and severe sarcopenia. Two-year outcomes include: 1) Short Physical Performance Battery (SPPB) score below 10; 2) incident sarcopenia using AWG criteria; and 3) incident frailty using modified Fried criteria. We performed logistic regression of 2-year outcomes adjusted for age, gender, cognition and mood. **Results:** Sarcopenia prevalence was 25% by the AWGS criteria. The corresponding EWGSOP2 prevalence of probable sarcopenia was 40%, 6.5% and 15.5% for handgrip strength, RCS-1 and RCS-2 respectively. Accounting for low appendicular skeletal muscle mass by dual-energy X-ray absorptiometry, prevalence dropped to 18%, 2.5% and 8% respectively. Severe sarcopenia was 1%, 0.5% and 1.5% using gait speed, and 1%, 1.5% and 1.5% using SPPB. Comparing between muscle strength definitions, handgrip strength significantly predicted incident sarcopenia (OR:8.67, 95%CI:3.68-20.04); RCS-1 predicted SPPB<10(OR:8.83, 95%CI:2.23-34.98); and RCS-2 predicted SPPB<10 (OR:4.36, 95%CI:1.45-13.14), incident frailty (OR:5.74, 95%CI:1.45-22.76), and a trend for incident sarcopenia (OR:3.05, 95%CI:0.97-9.55) at 2 years. **Conclusion:** Sarcopenia prevalence varies with muscle strength definitions, with handgrip strength being significantly higher vis-à-vis chair-stand definitions. Our results support the use of population-specific over standard cutoffs for repeated chair stand to obtain intermediate estimates of sarcopenia prevalence and the best predictive validity for two-year outcomes.

P183- SLEEP DISORDERS AND THEIR ASSOCIATION WITH INCIDENT SARCOPENIA IN COMMUNITY DWELLING OLDER CHILEANS. Myriam Gutiérrez[1], Carlos Márquez[1], Lydia Lera[1], Patricio Peirano[2], Cecilia Albala[1] *((1). Public Health Nutrition Unit, Institute of Nutrition and Food Technology (INTA), University of Chile, Santiago, Chile; (2). Sleep Laboratory, Institute of Nutrition and Food Technology (INTA), University of Chile, Santiago, Chile)*

Background: Age-related muscle mass and function loss, known as sarcopenia, is a high impact geriatric syndrome. Sleep disorders pathogenesis share common pathways that could affect the musculoskeletal system leading to sarcopenia. **Objectives:** To study the association between sleep disorders and incident sarcopenia in older Chileans. **Methods:** Prospective study including 1220 community-dwelling Chileans >=60 years participants in the ALEXANDROS cohorts. After exclusion criteria, the final sample included 1116 subjects, from whom 847 subjects (74.76% women, 37.5% with sleep disorders) were followed. Face-to-face interviews registering sociodemographic data, self-reported chronic diseases, physical activity and sleep characteristics were conducted. Anthropometric measurements and observed five chair-stands test for muscle performance were performed by trained professionals. Hand-grip strength was measured with a hand dynamometer T-18 before 2008 or with JAMAR brand from 2008 to 2015Diagnosis of sarcopenia was made by the Chilean version of EWGSOP algorithm. Chi-square test were performed to compare by sex and sarcopenia. Adjusted logistic regression models for sarcopenia according to sex, chronic diseases and nutritional status were performed. Adjusted Cox regression hazard models for sarcopenia risk according to sleep disorders and covariates were developed. **Results:** The prevalence of sarcopenia at baseline was 24.10% (women; 21.40%, men: 21.90%). The prevalence of self-reported sleep problems was 23.3% (women: 26.46%; men: 17.15%); 40.97% of the sample has trouble to conciliate sleep (women: 45.32%; men: 32.45%); 12.72% has "short-sleep" (<=5 hours) and 16.04% has "long-sleep" (>=9 hours). Sarcopenia was associated with sleep duration (p<0.001), use of sleep medicaments (p<0.001) and difficulty to conciliate sleep (p<0.05). "Short-sleep" was significantly higher in sarcopenic subjects (13.11% versus 11.52%); likewise, "long-sleep" was strongly higher in sarcopenic subjects (22.67% versus 9.47%). Adjusted logistic regression models for sarcopenia showed a strong association between "long-sleep" and the incidence of sarcopenia in older people (OR 2.562, 95% CI 1.1332 – 5.7957, p<0.01). Longitudinal analysis in 8.24 years of follow-up showed an incidence of 2.2 cases of sarcopenia per 100 person-years. **Conclusion:** This study demonstrates the basal and longitudinal association between sleep duration and sarcopenia in Chilean older people.

P184- SARCOPENIA, FUNCTIONAL DEPENDENCE AND PHYSICAL PERFORMANCE. Javier Davila, Daniel Gámez, Sara Yeverino, Ricardo Salinas, Mauricio Nava, Blanca Gonzalez *(Montery, Mexico)*

Background: Sarcopenia, an age-related decline in muscle mass and function, leads to physical performance loss, increased functional dependence, adverse outcomes, as well as, a greater use of health and economic resources. **Objectives:** The aim of this study is to evaluate the functional dependence level among different stages of sarcopenia and its relation to severity level, considering cut off values by the EWG-SOP for the diagnosis of this syndrome in a Mexican population. **Methods:** We used crossed sectional data from a group of individuals from a 2018 study, which included 114 persons older than 60 years of age in whom muscle mass was estimated by

BIA (bioelectrical impedance analysis) and physical performance evaluation by short test of physical performance (SPPB), speed of gait, grip strength and functional dependence level measured by the Barthel Index. Sarcopenia and its stages were taken as the independent variable and the functional dependence level as the dependent variable. Frequencies and proportions were described. Chi square, Anova and Fischer tests were calculated for the analysis between groups. A p <0.05 was consider as being statistically significant. The data was processed with SPSS version X (SPSS INC. CHICACO IL.) statistical package. **Results:** The average age of individuals was 75 years (SD: 7.1), 77% females, 5 years average education (SD: 4.7). A higher functional dependence level was observed in individuals with less education (p <0.002), hypothyroidism (p <0.008), low MMSE (p <0.001) and presence of urinary incontinence (p <0.001). In the analysis by stages of sarcopenia the percentage of healthy individuals was 79%, presarcopenia 2.6%, sarcopenia 3.5%, and severe sarcopenia 14%. Most stages of sarcopenia were not related to greater functional dependence level (p <0.25). The decrease in physical performance was related to greater functional dependence level; grip strength (p <0.02), decrease in gait speed (p <0.001) and lower SPPB (p <0.001). **Conclusion:** The severity of sarcopenia was not related to greater functional dependence level in this study. A stronger relation was found between poor physical performance level ("dynapenia") and greater functional dependence level.

P185- CUT-OFF POINTS OF PHASE ANGLE AND ITS ASSOCIATION WITH SARCOPENIC OBESITY IN COMMUNITY-DWELLING MEXICAN OLDER ADULTS.

MT López- Teros[1], O Rosas-Carrasco[2] *((1) Universidad Iberoamericana, México, City, México; (2) National Geriatric's Institute. México, City, México)*

Backgrounds: The phase angle (AF) is the parameter of the electrical bio-impedance (BIA) mostly established for the diagnosis of malnutrition and clinical prognosis, both associated with changes in the integrity of the cell membrane and alterations in the liquid balance. AF expresses changes in the amount and quality of soft tissue mass (ie, permeability of the cell membrane and hydration). AF can be an important tool to evaluate the clinical outcome or to evaluate the progression of the geriatrics syndromes as sarcopenic obesity. AF has been studied little in older people, but aging has been found negatively correlated. The lack of reference values of AF has limited its use in clinical situations and is unknown the relationship between AF and sarcopenic obesity. **Objectives:** To determine cut-off points of phase angle and analyze their association with osteosarcopenic obesity in Mexican elderly. **Methods:** It is a cohort of community-dwelling adults from Mexico City, all of them able to mobilize with or without assisting devices, and able to answer the study questionnaire for themselves (or with the help of a caregiver if the Mini-Mental State Examination [MMSE] score was <10). Objectives evaluations by the medical staff at the Functional Evaluation Research Laboratory at Instituto Nacional de Geariatría in Mexico City. AF was measured by BIA ®SECA. We propose the percentile 20 as a cut-off point of AF (low and high) adjusted by sex and mean of body mass index. Body composition was measured by dual-energy X-ray absorptiometry (DXA) (Hologic Discovery-WI; Hologic Inc, Bedford-MA). Total fat (in kg and %), total lean mass (kg), appendicular (arms and legs) lean mass (kg), body mass index (kg/m2). The appendicular lean mass index ratio (ALMBMI) was calculated dividing the appendicular skeletal muscle mass by the body mass index. A hand dynamometer (JAMAR Hydraulic Hand Dynamometer, Lafayette, IN) was used to measure grip strength. In our study, sarcopenia was defined in accordance with the Foundation for the National Institutes of Health (FNIH) criteria We decided to use the FNIH definition of sarcopenia because the weight-adjusted muscle index is adequate to show the effects of older age in the prevalence of sarcopenia, and facilitates the identification of sarcopenic obesity. As the definition of obesity based on body fat we chose to use the World Health Organization (WHO) recommendation and the definition proposed by Dufour et al. **Results:** 524 women and men were included. The prevalence of low AF was n = 84 (13.8%), SO was found in 21 (4%). We obtain a final model by multiple regression analysis adjusted by age, gender and weight and was founded association between low angle phase and sarcopenic obesity OR= 1.84. IC95% 1.02-3.4 p<0.045). **Conclusion:** The association between angle phase and sarcopenic obesity was founded, Phase angle (PhA) could be an early and accessible marker to evaluate future changes in body composition in community-dwelling Older Adults.

P186- SARCOPENIA, OSTEOPOROSIS AND FRAILTY - DO PATIENTS UNDERSTAND WHAT WE ARE TALKING ABOUT?

Tim Krappel, Ferdinand Krappel *((1) Student, Hochschule St.Gallen, Switzerland; (2) Spitalzentrum Oberwallis, Brig, Switzerland)*

Backgrounds: Our daily Hospital experience is that patients have little to no knowledge about Frailty, Sarcopenia and Osteoporosis. **Objectives:** To measure awareness and treatment of sarcopenia and osteoporosis within the population of the German half of a Swiss canton. **Methods:** A semistructured questionnaire was handed out to all the patients above 50 years of age attending the local orthopaedic Hospital outpatient clinic within one month. This hospital is the only hospital of the German speaking half of this canton. Even elderly People here do remain Sport and Fitness orientated with climbing, hiking and skiing frequently practised even by octogenarians. Patients were asked what they know about frailty, sarcopenia as well as what osteoporosis and, whether they can describe it and know anything about diagnosis and Treatment as well as its Inter-Connection. **Results:** Within one month, 197 patients answered our questionnaire, only five refused despite informed consent. There were 100 women and 97 men, the average age was 67 and 65 years respectively. Of these women, 19 said they did not know whether they were past menopause, one of them was 48 years, all the others were 60 and older, so that it is highly unlikely that they are not. The majority said they have heard about osteoporosis, however when combining this question with a second, what they think osteoporosis is, only 27% passed the test asthey could reasonably correctly describe it. When asking about DXA scan, 44% of the female and 5.3% of the male patients claimed they had had one and in 32% osteoporosis was diagnosed, of those 30% understood the treatment they received. A measurement of vitamin D level was performed in only 23%, 30% said they had lost height, 22% said they had frequent falls. **Conclusion:** Awareness about osteoporosis, its cause and treatment still is low although information is plenty abound. The result is even worse when combining it with sarcopenia and frailty. Considering the ageing society, significant improvements need to be made in health awareness to avoid the otherwise invariably threatening crisis of human suffering and extra costs.

P187- THE CORRELATION OF MUSCLE THICKNESS AND PENNATION ANGLE ASSESSED BY ULTRASOUND WITH SARCOPENIA IN ELDERLY CHINESE COMMUNITY DWELLERS. Yunlu Sheng, Siping Zhu, Wei Lin, Shu Chen, Guoxian Ding *(Division of Geriatric Endocrinology, the First Affiliated Hospital of Nanjing Medical University, Nanjing, People's Republic of China)*

Background: Sarcopenia is typically defined as the loss of muscle mass, strength and low physical performance with aging. Ultrasound has been used as a safer, easily applicable method for evaluating muscle mass and quality by muscle thickness (MT) and pennation angle (PA), respectively. Although the positive correlations between MT and muscle mass, handgrip strength were observed, whereas the relationship between MT, PA and physical performance remained unclear. **Objectives:** This study aimed to sonographically assess the regional MTs as well as PA, and to investigate the association between these ultrasound parameters with muscle mass, muscle strength, and physical performance in order to explore the utility of ultrasound measurements in predicting sarcopenia. **Methods:** A total of 265 elderly Chinese community dwellers (97 men and 168 women) were included. Muscle thickness of both forearm and lower leg, as well as pennation angle of gastrocnemius were assessed by ultrasound. Muscle mass was assessed by dual-energy X-ray absorptiometry. Muscle strength was measured by a Jamar hand dynamometer. Physical performance was assessed by the Short Physical Performance Battery (SPPB). **Results:** Anterior radial MT in men and all evaluated regional MTs except posterior fibula in women were negatively correlated with the age. No significant correlation was observed between PA and the age in both genders. Posterior tibial MT and posterior fibula MT were positively correlated with the relative appendicular skeletal muscle mass in men and women, respectively. Anterior ulnar MT was positively correlated with grip strength in both genders. Moreover, only gastrocnemius medialis PA showed positive association with gait speed and SPPB in women but not in men. **Conclusion:** A combination of regional MT and gastrocnemius medialis PA assessed by muscle ultrasound would be helpful for the initial diagnosis of sarcopenia in Chinese elderly, especially in women.

P188- SARCOPENIA IN HIP FRACTURE. THE NEGLECTED RISK. Sergio Chávez[1], Héctor Aguado[1], Carmen Cervera Díaz[2], Pilar M. Díez[3], Eva Villanueva[3], Clarisa Simón-Pérez[1], Miguel A Martín-Ferrero[1] *((1) Orthogeriatric Unit, orthopaedic and trauma surgery, Hospital Clínico Universitario Valladolid, Spain; (2) Orthogeriatric Unit, geriatric service, Hospital Clínico Universitario Valladolid, Spain; (3) Medical school, Valladolid University, Spain)*

Background: Hip fracture (HF) represents over 20% of all trauma unit operative load. With current life expectancy trend among population, a huge incidence increase is expected1. Along with other factors, because of a higher incidence of falls, sarcopenia increases HF risk and it's a risk factor which often has never been properly assessed before patients are delivered in the emergency room. **Objectives:** The aim of this study was to determine the difference between the baseline sarcopenia diagnostic parameters in patients presenting with acute HF in order to evaluate the role of sarcopenia in the population. **Methods:** Patients admitted to hospital with HF between February-May 2017, meeting inclusion criteria: over 65 yo, not abed and surgery before 72h. Sarcopenia was assessed with muscle mass estimated by anthropometry using arm and leg circumference, weight, height and sex and by calculating SARC-F. Grip strength was also measured. Mini Nutritional Assessment (MNA), Barthel scale (BS) and blood test (25-OH-D3, calcium, protein lymphocyte levels) were also performed.

Results: 50 patients met the inclusion criteria 66-101yo (85.1±7.4), 62% presenting sarcopenia, according to SARC-F. Sarcopenic patients (SP) showed higher IMC (25.6 vs 22.4, p 0.011). 78% were women with a rate of sarcopenia by SARC-F test of 66%, compared with 45,45% men (p>0.05). Regarding previous mobility, it was manifest that SP limitations were greater representing 100% of those restricted to bed-sofa and 77,8% of those with home ambulation only (p 0.003). Concurrently, BS was lower in SP (65.6±21.7 vs 92.9±6.7, p<0.001) as well as grip strength (12.1±6.3 vs 18±10.1, p 0.032). There was no difference neither 25-OH-D3, nor calcium, nor protein nor lymphocyte levels between both groups. **Conclusion:** Sarcopenia is widely common in patients suffering from HF. Our population already showed deterioration of their mobility and activities of daily living. It is reasonable to think further screening programs development to identify patients suffering from sarcopenia may provide a change in current trends and an improvement in the outcomes of HF.

P189- SARCOPENIA AND FRAGILITY FRACTURES. THEY ARE NOT ALL THE SAME. Sergio Chávez Valladares[1], Héctor Aguado[1], Carmen Cervera Díaz[2], Lucía Piedra Dueñas[3], Clarisa Simón-Pérez[1], Miguel A Martín-Ferrero[1] *((1) Orthogeriatric Unit, orthopaedic and trauma surgery, Hospital Clínico Universitario Valladolid, Spain; (2) Orthogeriatric Unit, geriatric service, Hospital Clínico Universitario Valladolid, Spain; (3) Physiotherapist, Hospital Clínico Universitario Valladolid, Spain)*

Background: Sarcopenia is showing up as an underestimated risk factor for fragility fractures, which has been ignored for years. Among them and from a prognostic point of view, hip fracture (HF) represents the most dangerous one. Furthermore, proximal humerus fractures (PHF), are also fragility fractures, but with a much more benign outcome. Even though, PHF have a potential functionality impairment, which constitutes a burden for orthopedic surgeons in order to give the adequate treatment indication. **Objectives:** The aim of this study was to compare the baseline characteristic in respect to the sarcopenic status between patients with HF and those with PHF. **Methods:** 75 patients admitted to hospital either for HF (n=50) or proximal PHF (n=25), meeting inclusion criteria: Over 60 years and previous ambulation. The presence of sarcopenia was assessed by anthropometry testing using weight, height and sex and by calculating SARC-F. Grip strength was also measured. Mini Nutritional Assessment (MNA), Barthel scale and MEC-LOBO tests were performed. **Results:** HF patients were older (85,12±7,44 vs 73,83±7.38; p<0.01) but regarding their anthropometric results, PHF showed higher weight (69,02±13,12 vs 61,62±11,52; p0,015) and IMC (28,83±4,38 vs 24,39±4,6; p<0,01). HF exhibited higher presence of sarcopenia by SARC-F (62% vs 8%; p<0,01), along with greater functionality impairment (Barthel 75,98±21,97 vs 95±12,5; p<0,01), cognitive deterioration (MEC-LOBO 28% vs 4%; p<0,01) and malnutrition with 74% under risk of malnutrition against 12% of PHF by MNA (p<0,01). There was no difference in grip strength. **Conclusion:** Even though clinicians tend to think most elderly patients presenting with acute fractures share very similar characteristics, their baseline status may differ substantially. Sarcopenia may worsen the outcomes and therefore should be actively seek and treat, especially in those with HF.

P190- EXERCISE AND SARCOPENIA. SHEDDING LIGHT ON ITS EFFECTS.

Sergio Chávez[1], Héctor Aguado[1], Carmen Cervera Díaz[2], Blanca Llorente Sanz[3], Paula Ruiz Mesa[3], Clarisa Simón-Pérez[1], Miguel A Martín-Ferrero[1] *((1) Orthogeriatric Unit, orthopaedic and trauma surgery, Hospital Clínico Universitario Valladolid, Spain; (2) Orthogeriatric Unit, geriatric service, Hospital Clínico Universitario Valladolid, Spain; (3) Medical school, Valladolid University, Spain)*

Background: Sarcopenia has burst during the last decade as a neglected condition frailty elderly patients may be suffering from. Current knowledge hasn't already determined common criteria on how to screen or asses it properly. Nevertheless, what physicians know yet is the raised prevalence over orthopaedic patients and its relation with higher rates of falling, fracture, and mortality. **Objectives:** The aim of this study was to determine whether exercise by itself may provide a difference in respect to sarcopenic status in an institutionalized population. **Methods:** Patients were collected from four nursing homes in the surrounding area meeting inclusion criteria: over 70yo, previous ambulation and good cognitive status. They were classified by their amount of activity (WHO criteria). Sarcopenia was assessed by anthropometric measures (weight, height and IMC), SARC-F, SBPP tests and BIA. Barthel scale and MEC-LOBO test were performed. Grip strength was also tested. **Results:** 81 patients were included, 70,3% women and 19% total were active according to WHO. Regarding sarcopenia, there was no difference neither in the anthropometric values (weight, height, IMC) nor the grip strength neither the SARC-F. BIA showed the same percentage for both groups. Hence, there was a difference in their SBPP, with 80% no active vs 11% active (p0,018). Barthel scale and MEC-LOBO tests showed no differences. **Conclusion:** Although there was no difference in most values, SBPP showed exercise improves muscular function despite showing same muscular mass. This could lead to a reduction in falls and therefore a decrease in the number of fractures with their implications for posterior outcomes.

P191- IMPAIRED SENSITIVITY TO THYROID HORMONES IS ASSOCIATED WITH SARCOPENIA IN CHINESE SUBJECTS.

Yunlu Sheng, Shu Chen, Yu Duan, Guoxian Ding *(Division of Geriatric Endocrinology, the First Affiliated Hospital of Nanjing Medical University, Nanjing, People's Republic of China)*

Background: With the increase in aging population worldwide, the incidence of sarcopenia is also increasing. Thyroid hormones are important regulators that can affect body composition and physical function. However, sarcopenia prevalence and incidence increase among individuals with hypothyroidism but also among those with hyperthyroxinemia, which seems contradictory. Both high free thyroxine (fT4) and high thyroid-stimulating hormone (TSH) are present in the resistance to thyroid hormone syndrome. A mild acquired resistance to thyroid hormone may be associated with sarcopenia but remains unclear. **Objectives:** We aimed to investigate the association of resistance to thyroid hormone indices (Parametric Thyroid Feedback Quantile based Index (PTFQI), Thyrotroph T4 Resistance Index (TT4RI) and TSH Index (TSHI)) with muscle mass, muscle strength, and physical performance related to sarcopenia in Chinese subjects. **Methods:** A total of 493 Chinese subjects (399 men and 94 women) were included. Concentrations of fT4 and TSH were determined by immunoassays. We calculated the aforementioned resistance to thyroid hormone indices as follows: PTFQI = NORM.DIST(fT4_cell,10.075,2.155,TRUE)+NORM. DIST(LN(TSH_cell),0.4654,0.7744,TRUE). TT4RI = fT4 (pmol/L)·TSH (mIU/L). TSHI = lnTSH (mIU/L) + 0.1345·fT4 (pmol/L). Appendicular skeletal muscle mass (ASM) was assessed by dual-energy X-ray absorptiometry. Handgrip strength was measured using a Jamar hand dynamometer, and physical performance was assessed by the Short Physical Performance Battery (SPPB). **Results:** ASM, handgrip strength, SPPB and all aforementioned resistance to thyroid hormone indices demonstrated age-dependent decline. Pearson's correlation analysis showed negative associations of all resistance to thyroid hormone indices with ASM, handgrip strength and SPPB. In the multiple linear regression model adjusted for age, gender and BMI, handgrip strength was negatively correlated with both three resistance to thyroid hormone indices, while SPPB was only negatively correlated with TT4RI. Moreover, no significant correlations were found between ASM and resistance to thyroid hormone indices. **Conclusion:** Higher values in resistance to thyroid hormone indices are associated with lower handgrip strength and SPPB. Thus, resistance to thyroid hormone may reflect poorer muscle function in Chinese subjects.

P192- SERUM MYOSTATIN MODFICATIONS IN HIP FRACTURED PATIENTS: A SUB-GROUP ANALYSIS OF A 2 MONTHS MULTIDISCIPLINARY REHABILITATIVE AND NUTRITIONAL RANDOMIZED STUDY.

Marco Invernizzi[1], Alessandro de Sire[1,2], Lippi Lorenzo[1], Filippo Renò[3], Sergio Riso[4], Carlo Cisari[1] *((1) Physical and Rehabilitative Medicine, Department of Health Sciences, University of Eastern Piedmont, Novara, Italy; (2) Rehabilitation Unit, "Mons. L. Novarese" Hospital, Moncrivello, Italy; (3) Innovative Research Laboratory for Wound Healing, Department of Health Sciences, University of Eastern Piedmont, Novara, Italy; (4) Clinical Nutrition Unit, AOU "Maggiore della Carità" Novara, Italy)*

Background: Osteoporotic hip fractures are a major cause of disability in the elderly population as well as one of the largest health care costs and social burden. Previous studies showed a high prevalence of Sarcopenia and Malnutrition in hip-fractured women with important implications on disability and functional recovery. In a recently published study we evaluated the impact of a rehabilitative exercise protocol combined with dietetic counseling with or without essential amino acids supplementation on functional status, handgrip strength (HGS) and health-related quality of life in hip fractured patients, showing a positive impact of this approach on functional outcomes. **Objectives:** Here we investigate in a sub-group analysis on 20 patients the possible role of serum myostatin, a powerful inhibitor of muscular regulating factors and overall muscle differentiation and growth both in vivo and in vitro [6] as a possible biomarker of sarcopenia and skeletal muscle modifications in hip fractured patients. **Methods:** 32 osteoporotic hip fractured patients of both sex aged more than 65 were enrolled in the Rehabilitation Unit of the University Hospital in Novara 3 weeks after hip fracture. The inclusion\exclusion criteria, the whole study design and outcome measures are resumed here [5]. After randomization patients in Group A performed a physical exercise rehabilitative program with a concomitant dietetic counseling plus essential amino acids supplementation (Aminotrofic®, Errekappa Euroterapici, Milano, Italy) 4g twice a day. Patients in Group B performed a physical exercise rehabilitative program and dietetic counseling only. The presence of Sarcopenia, defined according to the European Working Group on Sarcopenia in Older People (EWGSOP) criteria was assessed in both groups. A subgroup of 20 patients performed serum myostatin evaluation (Kit ELISA - Human Myostatin ELISA Kit MyBioSource®) at baseline and after 2 months. **Results:** Serum myostatin concentrations were evaluated in 20 patients. Serum myostatin decreased significantly in both Groups after 2 months but without significative differences between groups. Considering sarcopenic and non-sarcopenic stratification serum myostatin showed a trend of decrease in sarcopenic patients

only (p=0,07). A good correlation was found between serum myostatin and ASMMI (r=0,48) and HGS (r=0,6) in sarcopenic patients only. **Conclusion:** Serum Myostatin showed a statitically significant reduction in hip fractured patients after two months of multidisciplinary treatment. Moreover a good correlation with ASMMI and HGS in sarcopenic hip fracured patients confirmed the positive impact of a multidisciplinary approach on functional outcomes. Taken togheter these results and suggest a possible role of serum myostatin as a biomarker of sarcopenia and skeletal msucle modifications in hip fractured patients. However due to the low numerosity of this sample further investigations are needed to confirm this hypothesis.

P193- EFFECT OF SARCOPENIA DEFINITION ON DIAGNOSIS OF OSTEOSARCOPENIA AND ITS CLINICAL IMPLICATIONS ON FALLS, FUNCTION AND BALANCE IN OLDER PEOPLE. Walter Sepúlveda-Loyola[1,2,3], Steven Phu[2,3], Romy Conzade[2,3,4], Ebrahim Bani Hassan[2,3], Vanessa Probst[1], Gustavo Duque[2,3] *((1) Program of Master and Doctoral degree in Rehabilitation Sciences, Londrina State University (UEL) and University North of Paraná (UNOPAR), Londrina, Brazil; (2) Department of Medicine - Western Health, Melbourne Medical School, The University of Melbourne, St Albans, Victoria, Australia; (3) Australian Institute for Musculoskeletal Science (AIMSS), The University of Melbourne and Western Health, St. Albans, Victoria, Australia; (4) Helmholtz Zentrum München - German Research Center for Environmental Health (GmbH), Institute of Epidemiology, Neuherberg, Germany)*

Background: Osteosarcopenia is a musculoskeletal disease characterised by the presence of osteopenia/osteoporosis and sarcopenia. This combination places individuals at increased risk of adverse outcomes such as falls, fractures, disability and early mortality. Whilst the definition of osteoporosis is well established, a lack of consensus exists regarding diagnostic criteria for sarcopenia which may have clinical implications. **Objectives:** To analyse the prevalence of osteosarcopenia when diagnosed using the following definitions of sarcopenia: European Working Group on Sarcopenia in Older People(EWGSOP1), and its revised criteria(EWGSOP2), the Foundation for the National Institutes for Health(FNIH) and the Asian Working Group of Sarcopenia(AWGS). Differences in falls and fracture history, function and balance between groups was also determined. **Methods:** Cross-sectional study of 241 community-dwelling older adults (75% female) and aged 77.9±0.42 years old who attended a Falls and Fracture Clinic in Melbourne, Australia. Subjects underwent body composition analysis by dual energy X-ray absorptiometry, and assessments for physical function included handgrip strength, gait speed, sit-to-stand test (STS) test, timed up and go (TUG) and Short Physical Performance Battery (SPPB). Static balance was assessed by posturography and dynamic balance by four-square step test (FSST). Falls history in the past year was also considered. Osteosarcopenia was defined as low BMD (T-score≤-1) in addition to sarcopenia diagnosis according to EWGSOP1, EWGSOP2, FNIH and AWGS. Kappa for agreement and logistic regression were used for statistical analysis. **Results**: Lack of agreement among osteosarcopenia definitions was observed (kappa:0.15-0.58; p<0.05). Low physical function (SPPB ≤8 points and TUG >20s) was significantly associated with osteosarcopenia classified with EWGSOP2 (OR=4.5; 95%IC: 2.0-9.9 and OR= 3.7; 95%IC: 1.9-6.9; p< 0.001) and FNIH (OR= 4.3; 95%IC: 1.9-9.5 and OR= 2.2; 95%IC: 1.2-4.1; p< 0.05). Poor static and dynamic balance (limits of stability <120cm2 and FSST >=15s) were significantly associated with osteosarcopenia classified with EWGSOP2 (OR= 3.3; 95%IC: 1.5-7.3 and OR= 7.3 95%IC:1.8-28.9; p<0.05) and FNIH (OR=2.7;

95%IC:1.2-5.8 and OR=8.0; 95%IC:1.3-33.3; p<0.05). No associations were observed among number of falls/fractures with osteosarcopenia. **Conclusion:** Osteosarcopenia diagnosed using low BMD combined with EWGSOP2 or FNIH were characterised by poor function and balance. No significant differences were found between falls/fracture history and osteosarcopenia regardless of definition used.

P194- A META-ANALYSIS ON THE HEALTH RISK OF LOW LEAN MASS IN OLDER ADULTS. Dottington Fullwood, Erta Cenko, Todd Manini *(University of Florida, Gainesville, FL, USA)*

Background: Sarcopenia— defined as having low muscle mass— has been implicated a major driver of health risk in older adults. However, existing research has examined sarcopenia as a syndrome-like condition by combining lean mass estimated by dual-energy x-ray absorptiometry (DXA) with other related measures like muscle strength and physical function (e.g. walking speed). This meta-analysis evaluated the association between DXA-based lean mass and health outcomes among observational studies conducted older adults. **Objectives:** What is the association between DXA-based lean mass and health outcomes (i.e., mortality, disability, physical function)? **Methods:** Using PubMed electronic database and between 1998 – 2019, the literature yielded 2,598 English-language observational studies. After full-text review, 30 studies with a total of 42,894 participants investigated appendicular lean mass or fat-free mass measured by DXA on the following health outcomes: disability (52 observations), physical function (45 observations), and mortality (31 observations) among adults aged 50 and older. Comparisons were made at the extremes of DXA-based lean mass, e.g. lowest vs. highest quintile. **Results:** The pooled odds ratios and 95% confidence intervals for disability (0.847, 0.731-0.964) and physical function (0.913, 0.778-1.048) demonstrated a null association with DXA-based lean mass, but a positive association with mortality (1.154, 1.047-1.262). Heterogeneity was moderate for disability (63.0%), high for physical function (79.1%) and moderate for mortality (67.5%). Results were generally similar between men and women with regard to disability (men: 0.941 (0.693-1.189); women: 0.829 (0.553-1.105) and physical function (men: 0.558 (0.399-0.717); women: 0.789 (0.520-1.058), but was higher in men for mortality (men: 1.211(1.047-1.374); women: 1.005 (0.797- 1.213). **Conclusion:** Meta-analytic results suggest that lean mass measured by DXA was not predictive of common health outcomes in older women, and only slightly predictive of mortality in older men. Future work that uses alternative methods to assess muscle mass are encouraged to evaluate the health implications of sarcopenia in older adults.

P195- OSTEOPOROSIS, SARCOPENIA AND CORRELATION BETWEEN SARC-F AND SKELETAL MUSCLE MASS BY ABSORPTIOMETRY WITH DUAL-ENERGY X RAY ABSORPTIOMETRY (DXA) IN COLOMBIAN POPULATION: PILOT STUDY. M Cadena-Sanabria[1,2,3], MP Castrillon-Rodriguez[1], AM Florez-Gonzalez[1], J Vergara[1], A Roa[4], L Fonseca[1], J Quintero-Cure[3], G Parra-Zuluaga[1], J Garay[1] *((1) Semillero de investigación en Geriatría, Universidad Autónoma de Bucaramanga; (2) Universidad Industrial de Santander (3) Clínica FOSCAL, Bucaramanga, Colombia; (4) Universidad Nacional de Colombia)*

Background: Osteoporosis and Sarcopenia are conditions associated with aging and represents the major risk factors to hip fracture and disability. Recently EWGSOP2 propose the administration of Sarc F questionnaire for case finding for sarcopenia. .Is necessary correlate this autoreport instrument with bone density and skeletal muscle mass to identify patients with highest risk to complications.

Objectives: This research project aims to conduct an observational, cross-sectional type study in order to determine the prevalence of sarcopenia and osteosarcopenia in colombian elderly people, through the measurement of skeletal muscle mass by dual-energy X-ray absorptiometry, and SARC F questionnaire. **Methods:** Prospective, cross sectional study. We included patients sent to perform bone densitometry screening or follow-up en Radiologos Especialiados in Clinica FOSCAL, Colombia between april to november of 2018. Clinical and functional variables were applied. performed the application of the questionnaire SARC F and SPPB test. The presence of Sarcopenia was determined through the criteria EWGSOP2 and osteoporosis by a value T score less than-2.5. In bone density according to the WHO criteria. **Results:** 61 patients were included, the average age was 73.2 (64-89) years, 91% were female sex, Barthel average of 95, average body mass index 27.6 kg/mt2. 26% had previous fractures. 28.5% presented a SARC-F = or > 4. With regard to the evaluation with DXA, 37.5% of the patients presented osteoporosis. The average of the relative skeletal muscle index (leave) was 6.78 kg/m7t2 (min 5.24 max 8.03). 22% of patients had low muscle mass according to EWGSOP2 criteria (< 7kg/m2 in males, < 6kg/m2 in females). The prevalence of Osteosarcopenia was 12.5%, including Osteopenia/osteoporosis plus Sarcopenia (SARC F > 4 and low muscle mass) . Only 15% of the patients with SARC F greater than or equal to 4 had low muscle mass. **Conclusion:** This is the first study evaluating Osteosarcopenia in the Colombian population using DXA and SARC F. The prevalence of osteoporosis and Sarcopenia presents a distribution similar to that described in the literature. In the preliminary analysis the criterion of sarcopenia by SARC-F presents a low correlation with skeletal muscle mass. Although it is recommended according to the EWGSOP2 the screening of Sarcopenia with the questionnaire SARC F is important a complete assessment of body composition and physical performance measures for diagnosis and therapeutic follow-up.

P196- PREDICTIVE MODEL FOR SARCOPENIA IN OLDER ADULTS WITH CHRONIC KIDNEY DISEASE, A STUDY FROM ASIAN POPULATION.

Ekkaphop Morkphorm[1], Chalobol Chalermsri[2], Aksara Kajornkijaroen[3], Prasert Assantachai[2], Varalak Srinonprasert[1] *(1) Division of Geriatric Medicine, Department of Medicine, Siriraj Hospital, Thailand; (2) Division of Geriatric Medicine, Department of Preventive and Social Medicine, Siriraj hospital, Thailand; (3) Department of Medicine, Kratumbaen hospital, Thailand)*

Background: Sarcopenia is an age-related progressive loss of muscle mass and reduced performance which is associated with adverse outcomes including falls, fractures, hospitalization and increased mortality. Chronic kidney disease (CKD) can lead to sarcopenia due to muscle wasting from anorexia, chronic inflammation, decrease physical activity and protein loss from dialysis. However, there is limited study on prevalence and associated factors of sarcopenia in Asian CKD patients using the Asian Working Group on Sarcopenia (AWGS). Moreover, no predictive model for this population has been proposed. **Objectives:** To determine prevalence, associated factors and develop predictive model for sarcopenia in older persons with CKD. **Methods:** This cross-sectional study recruited CKD participants. CKD was defined by estimated glomerular filtration rate less than 60 ml/min/1.73m2 using EPI-CKD formula. Sarcopenia was defined as having low appendicular muscle mass using bioimpedance analysis and low hand grip strength or gait speed. Participants' demographic data, nutritional status, functional status and cognitive function were collected to determine factors associated with sarcopenia. The significant factors were selected for development of the predictive model. **Results:** Among 237 participants enrolled, average age was 75.6 years with female at 53.2%. Prevalence of sarcopenia was 24.5% (95% CI: 19.1-30.5%). Multivariate analysis revealed six associated factors including age >= 75 years (adjusted OR(AOR) = 2.57; 95%CI 1.08-5.81) female sex (AOR = 2.35; 95%CI 1.12-4.95), Charlson comorbidity index >= 5 (AOR = 2.41; 95%CI 1.06-5.45), dialysis-dependent (AOR = 6.07; 95%CI 1.64-22.47) , body mass index (BMI) >= 18.5-23 kg/m2 (adjusted OR = 9.34; 95%CI 4.31-20.27; p<0.001), BMI < 18 kg/m2 (AOR = 15.47; 95%CI 3.38-70.94; p<0.001) and Impairment of indoor ambulation (AOR = 2.35; 95%CI 1.02-5.42; p=0.046). The predictive model using 6 factors had an area under the curve 0.85 [95%CI: 0.79-0.92]. Sensitivity of 86.2% [95%CI: 74.6-93.9%] and specificity of 68.7% [95%CI:61.4-75.4%] using cutoff point of 3 out of 7 scores from the model. **Conclusion:** Sarcopenia is prevalent among older patients with CKD. Age, female, high number of comorbidity, dialysis-dependent, low BMI and impairment of ambulation are risk factors for having sarcopenia. Our predictive model is a potential screening test for sarcopenia in older adults with CKD.

OSTEOPOROSIS AND FRAILTY

P197- THE EFFECT OF BPA ON BONE MINERAL DENSITY(BMD) IN RATS.

Hyuntak Kang, Daejin Nam, Hongje Kang *(Wonkwang university hospital, Iksan, Korea)*

Background: Bisphenol A (BPA), one of the environmental hormones, is plastic material that binds to the estrogen receptor in the body and acts like estrogen, which can cause endocrine and reproductive diseases. However, there are not many studies done regarding the effect of BPA on osteoporosis. **Objectives:** In this study, we investigated the effect of BPA on bone mineral density (BMD) in rats. **Methods:** Six to eight week-old rats were divided into three groups: male, female, and ovariectomized rat (OVX). Nine rats were assigned to each group. Again, according to the dose of BPA, we divided them into 3 groups: control group, low dose group, and high dose group, and each group was assigned 3 rats. They orally administered BPA for 12 weeks. At the time of 6 and 12 weeks after the start of the study, BMD of tibia was measured by q-CT. Percent bone volume, trabecular separation, trabecular thickness] were measured and the changes in BMD between the two groups were compared. In addition, BPA concentration and bone formation marker procollagen type 1 amino-terminal propeptide (PINP) and bone resorption marker C-telopeptide of type 1 collagen (CTX1) were measured in the rats' serum at the time of 12 weeks after the start of the study. **Results:** In the female and ovariectomized rat (OVX) groups, 4 BMD values all showed increasing tendency according to the dose of BPA. On the contrary, there was no correlation between the two in the male group. Serum BPA levels were 0.112ng/ml, 0.4075ng/ml, and 1.1705ng/ml, respectively in the control, low dose, and high dose groups. On the other hand, CTX1 showed significant decrease according to the dose of BPA, whose values were 11.210ng/ml, 8.524ng/ml, and 5.814ng/ml, respectively, in the three groups. **Conclusion:** BPA in rats decreased bone resorption markers in serum and increased BMD in female, ovariectomized rat (OVX). However, there was no difference in bone markers and BMD in males. This is similar to the effect of selective estrogen receptor modulator (SERM), a medication for osteoporosis, and may be due to estrogen-like effects of BPA. As a result of this animal model, the effect of BPA in the human body has more variables and needs further studies.

P198- THE RELATIONSHIP BETWEEN THE FRAX®-BRAZIL AND NOGG PLATFORMS RESULTS AND THE BONE DENSITOMETRY AS A COMPLEMENTARY TOOL IN THE EVALUATION OF FRACTURE RISK IN ONE CITY OF THESOUTH OF BRAZIL.

Claudia Cipriano Vidal Heluany[1], Gabriela Keller[1], Luan Pedro Santos Rocha[2], Edson Rodrigues Garcia Filho[2], Isadora Zaniboni[2], Maria Eduarda Scherer Costi[3], Marian Felisberto[3] *((1) Geriatric Department, Medicine School, UNESC Universidade do Extremo Sul Catarinense, Criciuma, SC, Brazil; (2) Medicine's Student, Medicine School, UNESC Universidade do Extremo Sul Catarinense, Criciuma, SC, Brazil; (3) Medicine School, UNESC Universidade do Extremo Sul Catarinense, Criciuma, SC, Brazil)*

Background: Osteoporosis is a metabolic disease related to aging, which generates risk of fractures by altering the bone mineral density. Frax plataform and NOGG is an electronic tool to assess that risk, whit low cost. We aimed to identify the risk of osteoporotic fracture in a group of individuals from the city of Criciúma/SC, calculated by an electronic tool (FRAX-Brazil/NOGG), the relationship between their results and the bone densitometry (BMD). **Objectives:** Osteoporosis is a metabolic disease related to aging, which generates risk of fractures by altering the bone mineral density. Frax plataform and NOGG is an electronic tool to assess that risk, whit low cost. We aimed to identify the risk of osteoporotic fracture in a group of individuals from the city of Criciúma/SC, calculated by an electronic tool (FRAX-Brazil/NOGG), the relationship between their results and the bone densitometry (BMD). **Methods:** This is an observational study that used the data analysis and quantitative sources from a database of 960 patients using the IBM Statistical Package for Social Sciences®, version 22.0., with the approval of the Ethics and Research Committee from UNESC.The quantitative variables were expressed by means of mean values and standard deviation. The qualitative variables were expressed by using frequency and percentage. Statistical tests were done using a significance level p = 0.05. We used the Shapiro-Wilk and Kolmogorov-Smirnov, Kruskal-Wallis H test followed by post hoc test of Dunn and Likelihood ratio test, as indications. **Results:** There was a female predominance (88.8%). In the analysis of FRAX-Brazil, 2.7% presented a major fracture risk and 23.6% a risk of hip fracture. On the other hand, the NOGG analysis presented 87.3% patients with low risk, 12.2% intermediate risk and 0.5% high risk of fracture. Of the individuals who performed BMD (n=539), 67 (12.4%) had osteoporosis, and 14.9% from these presented intermediate risk-NOGG (p> 0.253). **Conclusion:** Although there is correlation between the FRAX®-Brazil and NOGG platforms, their relationship with the densitometric result was not satisfactory, opening the way for the future, with NOGG already focused on the reality of our country (Brazil).

P199- EFFECTS OF A SHORT TERM EXERCISE TRAINING PROTOCOL ON THE PHYSICAL FUNCTION OF INSTITUTIONALIZED FRAIL OLDER ADULTS.

Cristiane Batisti Ferreira[1], Gleiciane Gontijo Avelar[2], Athila Teles Dantas Maya[1], Paula Americano do Brasil[1], Vinícius Carolino Souza[2], Ricardo Moreno Lima[3], Aparecido Pimentel Ferreira[1], Otávio Toledo Nóbrega[2] *((1) Interdisciplinary Center for Research, Integrated Colleges Promove Brasília, Brasília, Brazil; (2) Graduation Program in Sciences, Medical Faculty, University of Brasília (UnB), Brasília, Brazil; (3) Graduation Program in Physical Education, University of Brasília (UnB), Brasília, Brazil)*

Background: Frailty has healthcare implications, and its prevention leads to reduction in public and individual burden. Decrease in physical capacity is related to an abnormal biochemical milieu such as insulin resistance, dyslipidemia, and systemic inflammation. **Objectives:** To verify effects of an exercise training on biochemical, inflammatory, and anthropometric indices as well as on the functional performance of institutionalized frail elderly people. **Methods:** A sample of 37 older adults of both gender, aged 76 years, was randomly allocated into 2 groups: 13 individuals in the exercise group (EG) and 24 in the control group (CG). Anthropometrics, clinical history, functional tests, and biochemical/inflammatory evaluations were measured before and after the physical exercise program, which lasted for 12 weeks. A medical assessment was performed at baseline only and encompassed a cognitive survey (by the mini-mental state examination) along with a screening for depression (by the Yesavage scale) and an evaluation of functionality (by the Katz scale). Frailty was identified based on the Fried criteria. Inflammatory mediators were analyzed by specific enzyme linked immunosorbent assays. Exercises were focused on improving mobility, flexibility, strength, and aerobic resistance. Physical performance was assessed by means of handgrip dynamometry, the "timed up and go" and the "sitting and lift" tests. **Results:** With interventions, EG showed superior left and right handgrip strength measures by 33 and 26%, respectively. Regarding TUG and stand up/sit down tests, EG had lower values than CG (38% and 29%, in this order). Other clinical and anthropometric traits exhibited no differences when baseline and postintervention were compared. Values for glucose, insulin, cholesterol, triglycerides, vitamin D3, and CRP showed differences comparing moments of the EG, while only glucose differed in CG. No other changes in biochemical and inflammatory variables were observed among groups or moments. EG showed a 34% reduction in prevalence of criteria for frailty, while CG showed a reduction of a 6% between moments of evaluations. No effects in anthropometric and inflammatory parameters were noted. **Conclusion:** The exercise program was efficient in improving muscle strength, speed, agility, and biochemical variables, with reversal of the frailty condition in a considerable number.

P200- LOW-INTENSITY EXERCISE SUPPRESSES MYOSTATIN PATHWAY THROUGH ANDROGEN RECEPTOR IN MUSCLE CELLS.

Bo-Kyung Son[1,2], Masato Eto[1], Yuki Ishida[1], Miya Oura[1], Masahiro Akishita[1] *((1) Department of Geriatric Medicine, Graduate School of Medicine; (2) Institute of Gerontology, The University of Tokyo, Tokyo, Japan)*

Background: Androgen production following exercise has been suggested to contribute anabolic actions of muscle. However, the underlying mechanisms of the androgen receptor (AR) in androgen's action are still unclear. **Objectives:** In the present study, we examined androgen/AR-mediated action in exercise, especially for

the suppression of myostatin, a potent negative regulator of muscle mass. **Methods:** To examine the effects of exercise, we employed low-intensity exercise in mice and electric pulse stimulation (EPS) in C2C12 myotubes. Androgen production by C2C12 myotubes was measured by ELISA. To block the action of AR, we pretreated C2C12 myotubes with flutamide. Quantitative real-time polymerase chain reaction was used to determine the expression levels of proteolytic genes including CCAAT/enhancer-binding protein delta (C/EBPdelta), myostatin and muscle E3 ubiquitin ligases, as well as myogenic genes such as myogenin and PGC1alpha. The activation of AMPK and STAT3 was determined by Western blot analysis. **Results:** Both mRNA and protein levels of AR significantly increased in skeletal muscle of low-intensity exercised mice and C2C12 myotubes exposed to EPS. Production of testosterone and DHT from EPS-treated C2C12 myotubes was markedly increased. Of interest, we found that myostatin was clearly inhibited by EPS, and its inhibition was significantly abrogated when AR was blocked by flutamide. To test how AR suppresses myostatin, we examined the effects of EPS on C/EBPdelta because the promoter region of myostatin has several C/EBP recognition sites. C/EBPdelta expression was decreased by EPS, and this decrease was negated by flutamide. IL6 and phospho-STAT3 (pSTAT3) expression, the downstream pathway of myostatin, were decreased by EPS and this was also reversed by flutamide. Similar downregulation of C/EBPdelta, myostatin, and IL6 was seen in skeletal muscle of low-intensity exercised mice. **Conclusion:** Muscle AR expression and androgen production were increased by exercise and EPS treatment. As a mechanistical insight, it is suggested that AR inhibited myostatin expression transcriptionally by C/EBPdelta suppression, which negatively influences IL6/pSTAT3 expression and consequently contributes to the prevention of muscle proteolysis during exercise.

P201- EFFECTS OF A CENTER AND A HOME + CENTER-BASED EXERCISE PROGRAM IN PRE-FRAIL OLDER WOMEN.

Sabrine Nayara Costa[1], Edgar Ramos Vieira[2], Ryelen Nicole Santos de Abreu Garcia[1], Paulo Cesar Barauce Bento[1] *((1) Graduate Program in Physical Education, Federal University of Parana, Curitiba, PR, Brazil; (2) Department of Physical Therapy, Florida International University, Miami, FL, USA)*

Background: Frailty is characterized by decreased energy reserve, vulnerability to stressful events, and physiological decline. Exercise is one of the main interventions to reverse frailty and its adverse consequences. Center-based programs tend to be more effective than home-based programs, but little is known about the combination of both programs. **Objectives:** The aims of this study were to compare the effects of a multi-component exercise program when completed at a center versus when completed part at home and part at a center on the strength and dual-task gait and cognition of pre-frail older women. **Methods:** From the 25 pre-frail older women, 14 were randomly allocated to the center-based program (age = 69±6 years, weight = 72±12 kg) and 11 to the home + center-based program (age = 69±7 years, weight = 71±17 kg). Both groups completed the 12-week exercise program (60 min/session) which included strengthening, balance and gait exercises. Isokinetic knee muscle strength, preferred and fast dual-task walking speeds and cognitive burden were assessed at baseline and after program completion. The dual-task was walking and naming colors displayed in a poster placed 1m away from the end of a 6m walkway containing 20 color names printed in different colors than the written ones. Participants were asked to say only the color in which the words were written. **Results:** Knee flexion/extension peak torque and total work at 60°/s increased in both groups (p< 0.05). The cognitive capacity during the dual-task improved (<color-naming errors) only in CB group (p= 0.036). There were no significant changes in preferred or fast walking speeds in either group. **Conclusion:** The exercise programs increased knee flexion/extension strength in pre-frail older women independently of been delivered at a center or as a combination of home + center-based sessions. However, it improved dual-task cognitive capacity only when fully delivered at a center. There were some small differences between groups, with slightly larger effects when all program sessions were delivered at a center. However, home + center-based exercise programs seem to be a good alternative when fully center-based programs are not feasible due to costs, space and/or transportation limitations.

P202- EFFECTS OF A CONVENTIONAL AND A VIRTUAL-REALITY BASED EXERCISE PROGRAM IN OLDER ADULTS: PRELIMINARY RESULTS.

Larissa Bastos Tavares[1], Idaliana Fagundes de Souza[1], Candice Simões Pimenta de Medeiros[1], Kim Mansur Yano[1], Fabrícia Azevêdo da Costa Cavalcanti[1], Edgar Ramos Vieira[2] *((1) Department of Physical Therapy, Federal University of Rio Grande do Norte, Natal, RN, Brazil; (2) Department of Physical Therapy, Florida International University, Miami, FL, USA)*

Background: Exercises improve physical capacity and help prevent frailty and sarcopenia in older adults. Further studies are needed comparing the effectiveness of conventional and virtual-reality (VR) based exercise programs on physical and cognitive function. **Objectives:** To evaluate the preliminary results of an ongoing study assessing the effects of a conventional and a VR-based exercise program in the physical and cognitive capacities of older adults. **Methods:** Older adults (n=13) were randomized in to a conventional exercise group (n=7, median age = 67 years) or to a virtual reality exercise group (n=6, median age = 69 years). Both exercise programs had 1h-long sessions, with 2 sessions/week for 12 weeks. All participants completed the Short Physical Performance Battery (SPPB) and the Functional Ambulation Test. The latter consists of the time to read a sequence of numbers, and a sequence of alternating letters and numbers (greater cognitive demand). The data were tabulated and analyzed in SPSS 20 using the median values and Wilcoxon test to compare pre vs. post performance. **Results:** Only the conventional exercise group improved on SPPB scores (conventional: 10±1 pre vs. 12±1 post, p = 0.003; VR-based: 10±1 pre vs. 10±1 post, p=0.57). Only the VR-based exercise group significantly reduced the time to read a sequence of numbers (conventional: 141±126s pre vs. 137±139s post, p = 0.40; VR-based: 93±29s pre vs. 74±22s post, p = 0.004). The changes in time to read alternating letters/numbers were not significant (conventional: 283±105 pre vs. 261± 179 post, p = 0.52; 219±100s pre vs. 163±78s post, p=0.07), but there was also a trend of better performance in the VR-based group. **Conclusion:** The preliminary findings indicate that conventional exercise programs may be better to improve physical performance, while VR-based exercise programs may be better to improve cognitive performance in older adults.

P203- A NEW ALGORITHM TO MONITOR PHYSICAL ACTIVITY AND COMPLIANCE TO A HOME-BASED EXERCISE PROGRAM IN (PRE)SARCOPENIC ELDERLY.

Lenore Dedeyne[1], Jorgen Wullems[2], Jolan Dupont[1], Jos Tournoy[1,3], Evelien Gielen[1,3], Sabine Verschueren[2] *((1) Gerontology & Geriatrics, Department of Chronic Diseases, Metabolism and Ageing (CHROMETA), KU Leuven, Leuven, Belgium; (2) Research Group for Musculoskeletal Rehabilitation, Department of Movement Sciences, KU Leuven, Leuven, Belgium; (3) Department of Geriatric Medicine, UZ Leuven, Leuven, Belgium)*

Background: Sarcopenia, the age related loss of muscle strength, mass and function, has a major impact on activities of daily living and results in decreased physical activity (PA). Physical exercise is known to be beneficial for sarcopenia, however, several recent studies emphasize low compliance of older people to (home) exercise programs. Objectively monitoring compliance to exercise programs might give insight into the relationship between compliance to and the effects caused by the exercise program, such as improved muscle strength or functioning. Likewise, simultaneous objective PA monitoring might give insight in the overall (change of) PA due to participation in exercise intervention (e.g., decreased sedentary time). **Objectives:** We aimed to assess the accuracy of wearables to objectively monitor performance of a home exercise program and PA in (pre)sarcopenic older adults. **Methods:** Twenty-five community-dwelling (pre)sarcopenic adults (>= 65 years) performed the Otago exercise program (OEP) and a PA protocol (including standing, sweeping the floor, (stair) walking, sitting, lying,...). Subjects wore an inertial measurement unit consisting of a 3D accelerometer and gyroscope (Dynaport MoveMonitor+, McRoberts). Machine learning-based algorithms were developed based on a Random Forest classifier to identify the OEP and PA protocol within the dataset. The accuracy of the algorithms to detect the performance of OEP and PA was assessed by comparing the output of the algorithms with video recording. **Results:** Two algorithms were developed to extract the OEP program and the PA from the wearable data. The first algorithm aims at extracting different subparts of the OEP, such as strength (90.5% accuracy), dynamic (88.2% accuracy) and static balance exercises (79.7% accuracy). The second algorithm classified several PA's with accuracies ranging from 85.7% (stair walking) to 98.4% (sitting/lying). **Conclusion:** Inertial measurement units with the developed algorithms can be used to objectively classify subparts of the OEP and PA with good to excellent accuracy. This suggests that inertial measurement units can be used to monitor PA and exercise compliance, and to assess dose-response relationships for home-based exercise program in (pre) sarcopenic older adults.

P204- COMPARISON OF THE PHYSICAL WORK CAPACITY AND THE MUSCULAR SKELETAL MASS INDEX BEFORE AND AFTER A SUPERVISED AND CONTROLLED TRAINING PROGRAM ONCE A WEEK FOR SIX MONTHS.

Marcela Echavarría Calderón[1], Luis Alberto Piragauta Ardila[2] *((1) Resident of 3th year Medicine of Physical Activity and Sports, Fundación Universitaria de Ciencias de la Salud, Hospital de San José Bogotá; (2) Medicine of Physical Activity and Sports. Assistant Instructor - Department of Physical Activity and Sports Medicine. Fundación Universitaria de Ciencias de la Salud, Hospital de San José, Bogotá)*

Background: Physical Work Capacity (PWC) is understood as the set of tasks that are used to carry out the activities of daily life compared with healthy individuals and includes handgrip strength, core strength, balance, flexibility, gait speed and aerobic capacity. Likewise, sarcopenia is a progressive and generalized skeletal muscle disorder that is associated with a higher probability of adverse outcomes and is defined as the presence of a decrease in muscle strength associated with a low muscle quantity or quality. This is why it is possible to understand that the PWC and the skeletal muscle mass index (SMMI) are conditions that can be optimized with physical training. **Objectives:** To determine if, a supervised and controlled training program once a week for six months, is effective in changing the PWC and SMMI in subjects over the age of 18. **Methods:** Observational, analytical, retrospective cohort study of 473 patients who attended a supervised and controlled training program once a week for six months. **Results:** There is an improvement in the median of the PWC by 11 points at the end of the intervention (P = 0.000); Nevertheless, there is a decrease of the SMMI by 0.12 points (P = 0.002). **Conclusion:** Our study suggests that an intervention of one hour once a week for six months, benefits in the variables of the PWC without improvement of the SMMI that is explained by changes in the muscle microstructure (improvement in the ability to perform a job per unit of muscle mass).

P205- FEASIBILITY STUDY OF ELECTRONIC LIFESTYLE ACTIVITY TRACKER (ELAT)-BASED INTERVENTION FOR MANAGING GENERAL FATIGUE IN COMMUNITY-DWELLING FRAIL OLDER PEOPLE.

Justina Yat Wa Liu[1], Rick Yiu Cho Kwna[1], Keith D Hill[2], Paul Lee[1], Xue Bai[3], Judy Siu[3] *((1) School of Nursing, The Hong Kong Polytechnic University, Kowloon, Hong Kong; (2) School of Physiotherapy, Faculty of Health Sciences, Curtin University, Perth, WA, Australia; (3) Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong)*

Background: Although empirical evidence shows that general fatigue is prevalent among older people and has a strong association towards frailty and disability, research on how to manage this problem in frail older people is scant. An electronic lifestyle activity tracker (ELAT) shows promise as a medium to deliver exercise training grounded in a behavioural change model to support long-term lifestyle changes. **Objectives:** To evaluate the feasibility and preliminary effects of an Electronic Lifestyle Activity Tracker (ELAT)-based intervention for managing general fatigue in community-dwelling frail older people. **Methods:** A pre- and post-single group design was employed. Eight frail older people with general fatigue were recruited. They were provided a 6-month ELAT-based intervention: 3-month intervention stage plus 3-month maintenance stage. Participants were asked to wear a commercial ELAT during the study. A 12-week centre-based exercise programme plus two face-to-face sessions followed by weekly to monthly 15-minute telephone support on technical issues and BCTs were provided for participants while they were using the ELAT during the programme. This support was gradually withdrawn. Participants were required to use the ELAT continually during the 3-month maintenance stage without any support from the research team. **Results:** Preliminary feasibility was established with an acceptable recruitment rate of 62% (8 out of 13 eligible older people agreed to join) and a high attendance rate of 90% of all exercise sessions and no attrition. Participants' acceptability of using ELAT reflected by the fact that they kept wearing the ELAT over 90% of the 3-month intervention days. Participants' average step count per day statistically significantly increased from 6946 (SD: 1329) to 10722 (SD: 2231) at the end of the interventional phase (maintenance phase is in progress). Their time spent on MVPA (average minutes / day) showed a positive trend from 25.6 minutes (SD: 13.1) to 29.3 (SD: 12.3), their fatigue scores (range from 20 – 100) also reduced from 58.75 (SD 6.47) to 52.75 (SD 9.8) but did not reach statistical significance due to a small sample size. **Conclusion:** Preliminary

evidence shows that ELAT used as a component to deliver BCTs has been found to be feasible and effective for managing fatigue among frail older people. However, more clinical trials with stringent design are still necessary to confirm this evidence, particularly, whether BCTs can be effectively delivered to frail older people to reduce their fatigue by increasing their exercise self-efficacy through the ELAT remains unknown.

P206- HOW IS THE PHYSICAL PERFORMANCE ACCORDING TO FRAILTY GROUPS IN OLDER VETERANS?

Raquel Aparicio-Ugarriza[1,2], Marianne Turner[2], Michael J. Mintzer[2,3], Hermes Florez[1,2], Jorge G. Ruiz[2,4] *((1) Department of Public Health Sciences, Miller School of Medicine, University of Miami, Miami, FL 33136, USA; (2) Geriatrics Research, Education, and Clinical Center (GRECC), Miami Veterans Affairs Healthcare System, Miami, FL, USA; (3) FIU Herbert Wertheim College of Medicine, Miami, FL, USA; (4) Department of Medicine, Miller School of Medicine, University of Miami, Miami, FL 33136, USA)*

Background: Frailty is the result of a loss of physiological reserve through multiple systems which increases older persons' vulnerability to stressors. The characterization of frailty in older military Veterans and the association with their physical performance (PP) remains unclear. **Objectives:** To characterize PP according to frailty groups and to determine the relationship between the frailty index and PP. **Methods:** A cohort of community-dwelling male older veterans aged 55 years and older from the Outpatient Frailty Interventions and Treatments (FIT) Clinic at the Miami VA Healthcare System. Frailty was measured using a 40-item Frailty Index, from which they were categorized into: non-frail (robust, prefrail) and frail. Trained staff evaluated Veterans with a battery of PP tests including the Short Physical Performance Battery (SPPB), the 8-feet up and go test, six-minute walk test, shoulder maximum strength test and handgrip strength test. Comparisons between frailty groups and linear regression were conducted to determine the cross sectional association of PP with frailty. **Results:** Overall, 200 male patients of which 75.8% were frail (75.6±8.5 years, 56.5% White, 83.2% non-Hispanic) and non-frail 24.2% (71.5±8.4 years, 55.8% White, 74.4% non-Hispanic) were included in the analysis. Patients in the frailty group showed significant lower scores in all physical fitness tests (all p<.001), except shoulder strength. The SPPB, 4-meter walk test and chair stand test displayed significant differences between frailty groups (both p<.05) whereas balance tests did not show any significant differences. The six-minute walk test and left handgrip strength were negatively related to the frailty index (β= -.615, p<.001; β= -.274, p<0.05, respectively). The chair stand test also showed a negative relationship with frailty index (β= -.348, p<.05). **Conclusion:** The six-minute walk test, handgrip strength test and chair stand test are better at discriminating between the frailty groups in older Veterans. The shoulder strength and balance tests does not discriminate between frailty groups. Assessing functional testing in outpatient settings may be the starting point for initiating exercise interventions for patients with frailty.

P207- EFFECTS OF A SIMULTANEOUS DUAL-TASK MULTICOMPONENT PROGRAM ON PHYSICAL, COGNITIVE AND DUAL-TASK PERFORMANCE: THE AGING-ONDUAL-TASK STUDY.

Ana Rodriguez-Larrad PhD[1], Haritz Arrieta[1], Jon Irazusta[1], Susana Maria Gil[1], Jose Javier Yanguas[2], Ander Espin[1], Maider Kortajarena[3], Inmaculada Lora[4], Chloe Rezola-Pardo[1] *((1) Department of Physiology, University of the Basque Country, Leioa, Bizkaia, Spain; (2) Fundación Bancaria La Caixa, Programa de Mayores, Palma (Illes Balears), Spain; (3) Department of Nursing II, University of the Basque Country, Donostia-San Sebastian, Gipuzkoa, Spain; (4) DomusVi, Donostia-San Sebastian, Gipuzkoa, Spain)*

Backgrounds: Many activities of daily life require performing of physical and cognitive tasks at the same time; this is known as dual-task. This ability declines throughout the ageing process, and nowadays it is not clear if it could be reverted through specific training. **Objectives:** To determine if the addition of simultaneous cognitive training to a multicomponent exercise program offers further benefits in terms of physical, cognitive and dual-task performance in long-term nursing home (LTNH) residents. **Methods:** 85 participants (69.1% female) met the following criteria: aged 70 years, scored 50 on the Barthel Index, scored 20 on MEC Test (an adapted version of MMSE in Spanish) and capacity to stand up and walk 10m independently. Participants were randomly assigned to a progressive multicomponent group (MC; n=43) or to a dual-task group (DT; n=42). The MC group underwent a 3-month moderate intensity program focused on strength and balance exercises. The DT group added to the MC program simultaneous cognitive training. The Short Physical Performance Battery (SPPB) and Montreal Cognitive Assessment (MoCA) were assessed. The instrumented Timed Up & Go (iTUG) test was assessed through a triaxial accelerometer and gyroscope (BTS Biomedical G-WALK) in single-task fashion and simultaneously with 3 cognitive tasks: backward counting, semantic memory and inhibitory control. The cost of the dual task performances was calculated [1]. ACTRN12618000536268. [1] Plummer-D'Amato P et al. J Aging Res. 2012. **Results:** Both groups have comparable baseline characteristics. In both groups, the SPPB (p<0.01) significantly improved and showed a positive trend on the MoCA and iTUG tests. Dual-task costs were significantly reduced for all 3 cognitive tasks in the DT group and for the backward counting task in the MC group (p<.05). **Conclusion**: Both the MC and DT interventions were effective in improving clinically relevant physical performance and in maintaining cognitive function. A simultaneous DT program was effective in improving DT cost in the 3 assessed cognitive domains, while MC training only showed improvements in the cost with backward counting. Further studies should explore the clinical implications of DT interventions with the aim of designing the best intervention for this population.

P208- EFFECTS OF MUSIC-BASED MULTITASK EXERCISE (JAQUES-DALCROZE EURHYTHMICS) VERSUS MULTICOMPONENT EXERCISE ON PHYSICAL FUNCTION, FALLS AND BRAIN PLASTICITY IN OLDER ADULTS: A RANDOMIZED CONTROLLED TRIAL.

Mélany Hars[1], Natalia Fernandez[2], François Herrmann[3], René Rizzoli[1], Gabriel Gold[3], Patrik Vuilleumier[2], Andrea Trombetti[1,3] *((1) Division of Bone Diseases, Department of Internal Medicine Specialties, Geneva University Hospitals and Faculty of Medicine, Geneva, Switzerland; (2) Laboratory for Behavioural Neurology and Imaging of Cognition, Campus Biotech, University of Geneva, Geneva, Switzerland; (3) Division of Geriatrics, Department of Internal Medicine, Rehabilitation and Geriatrics, Geneva University Hospitals and Faculty of Medicine, Thônex, Switzerland)*

Background: Currently, no robust evidence exists to support one exercise type over another for prevention of physical decline and falls among older adults, primarily because of the lack of comparative trials. The music-based multitask program Jaques-Dalcroze Eurhythmics (JDE) has been shown to increase physical performances and reduce falls [1], but also to improve executive functions, which play a crucial role in falls risk. **Objectives:** In the EPHYCOS study, we aimed to i) determine the effectiveness of a JDE exercise intervention compared with a multicomponent (MULTI) exercise intervention —an evidence-based fall prevention program— on physical function and falls, and ii) explore to which extent these interventions are associated with changes in brain structure and brain activity. **Methods:** We conducted a prospective, randomized, single blind comparative effectiveness trial involving 142 community-dwelling older adults (130 women; 74.3±6.5 years) at high risk for falls. Participants were randomized to i) a JDE exercise program (once weekly, group-based) or ii) a MULTI exercise program (twice weekly, mix of group- and home-based) that included balance, gait, and strength training activities, for 12 months. Physical and falls outcomes were assessed over 12 months. In an exploratory sub-study (n=34), brain structure and function were also assessed through magnetic resonance imaging (MRI). **Results:** At 12 months, physical performances improved in both groups, but the JDE group improved more than the MULTI group in gait and balance tests (e.g.,Timed up & Go and Tinetti tests: p for interaction= 0.013 and 0.030, respectively). The JDE program reduced falls as compared with the MULTI program (adjusted hazard ratio, 0.50 [95%CI, 0.29-0.87]). Exercise-related changes in functional brain MRI showed a decreased activation in the executive network in the JDE group, while an over-recruitment of motor and salience networks was observed in the MULTI group. Finally, an increase of grey matter density across several brain areas was observed in the structural analysis for the JDE group only. **Conclusion:** In conclusion, JDE exercise results in greater benefits compared with MULTI exercise for a variety of physical outcomes and for falls reduction in older adults. The JDE exercise-related improvements are associated with brain plasticity, including both functional and structural changes in regions related to executive functions.

P209- ACCURACY OF TOTAL AND EXERCISE STEPS ON A PEDOMETER COMPARED TO A SMARTPHONE APPLICATION.

Christopher Wu, Kwame Thompson, Rafay Latif, Fortune Oko, Abiola Oke, Donald P. Kotler *(Jacobi Medical Center, Albert Einstein College of Medicine, Coalition on Positive Health Empowerment)*

Background: Advances in the development of low cost physiologic monitoring devices have led to the possibility of applying objective measures of physical activity in clinical practice as well as in clinical research. **Objectives:** We compared measurements of total daily steps and exercise step counts using a pedometer and software available on a smartphone. **Methods:** Six subjects wore both a pedometer (Omron Alvita HJ-327T) and carried a smartphone for a total of 99 days. Total daily step counts, step counts during exercise, defined as walking for >10 minutes with a cadence of >60 steps/min, and non-exercise step counts were compared by paired T-test, linear regression, and by Bland Altman analysis. Inter-individual differences were evaluated by one-way analysis of variance (ANOVA). **Results:** Total daily steps by the pedometer were lower than results obtained by the smartphone with a mean difference 766 steps, 95% CI -664 to 2196 (p<0.001 by paired T test). In contrast, exercise steps by the pedometer and smartphone were similar (mean difference 50 steps, 95% CI -346 to 445) (p=0.12 by paired T test). The differences in total daily steps between the pedometer and smartphone were related almost entirely to non-exercise steps. Inter-individual differences in total step counts were statistically significant by one-way ANOVA (p<0.001) while exercise step counts were similar in all subjects (p=0.991). **Conclusion:** It is uncertain, based on these studies, which is the more accurate value for total daily steps. The reason for the measurement differences in the two devices was not explained in these studies. Others have demonstrated overestimation of daily step counts by wrist-worn activity monitors. Different devices also may vary in sensitivity to specific movements. The narrower confidence interval for exercise steps compared to total steps would facilitate the demonstration of a significant change in response to an intervention. We conclude that pedometers and smartphone activity monitor applications provide equivalent estimations of exercise steps but differing values for non-exercise and total daily steps.

P210- INSULIN RESISTANT OLDER OBESE WOMEN ARE BETTER RESPONDERS TO RESISTANCE TRAINING.

Philippe Noirez[1,2], Sami Berhaiem[1], Anthony D. Karelis[2], Mylène Aubertin-Leheudre[2], Jean-Frédéric Brun[3] *((1) UFR STAPS - IRMES, EA7329, Université Paris Descartes, Paris, France; (2) Département des sciences de l'activité physique, UQAM, Montréal, Canada; (3) CHU, Université de Montpellier, Montpellier, France)*

Background: Obesity has become a serious public health problem at all ages, and even more in the elderly. It induces several metabolic disturbances, most of them being related to insulin resistance. **Objectives:** The purpose of our study is to determine whether the effects of resistance training differ among subjects according to their insulin sensitivity status. **Methods:** Our population consists of 31 sedentary, post-menopausal, obese and healthy women (age: 63.81 ± 3.12 years, BMI: 34.17 ± 3.65 kg.m-2). Nineteen of them (ER Group) performed resistance training for 16 weeks and 12 served as control group (C Group). An Oral Glucose Tolerance Test was performed to measure insulin sensitivity (SI) with the oral minimal model and thus to classify ER subjects into 2 subgroups: insulin resistant [ER-IR, SI <6.3x10-4 min$^{-1}.\mu$U^{-1}.ml) and insulin sensitive (ER-IS, SI > 6.3x10-4 min$^{-1}.\mu$U^{-1}.ml]. Measurements of body composition (lean mass, fat mass, bone mass, visceral fat), metabolic characteristics (blood pressure, blood glucose, insulinemia, HOMA-IR, triglycerides, HDL, LDL, ApoB, CRP, total cholesterol) and physical characteristics (grip strength, muscle strength (1RM) and VO2max) were performed. **Results:** The training protocol had no effect on body composition, blood pressure, blood glucose, serum insulin, triglycerides, HDL, LDL, ApoB, CRP and total cholesterol. After training, the whole ER group showed a decrease in the surrogate index of insulin resistance (HOMA-IR, P <0.05), an increase in VO2max (P <0.01) as well as 1RM muscle strength (P <0.01). When the group was divided according to insulin sensitivity (SI) measured with the minimal model,

an increase in VO2max was evidenced only in ER-IR (P <0.01). A decrease in fasting glucose and fasting insulin was observed in ER-IR (P <0.05) and not in ER-IS. **Conclusion:** Older obese women classified as insulin resistant according to the oral minimal model are better responders to resistance training for VO2max, fasting plasma glucose and fasting insulin. Besides, this resistance training protocol also improves muscle strength in all subjects.

P211- EFFECTS OF BODY MASS-BASED RESISTANCE TRAINING, INCLUDING EXPLOSIVE MOTION ON MUSCLE FUNCTIONS IN COMMUNITY-DWELLING ELDERLY: A RANDOMIZED CONTROLLED TRIAL-QUICK REPORT. Tomoharu Kitada[1], Aiko Inoue[1], Hiroyuki Umegaki[2], Joji Onishi[2], Hiroshi Akima[3], Koji Ishida[3], Masahumi Kuzuya[1,2] *(1) Institute of Innovation for Future Society, Nagoya University, Nagoya, Japan; (2) Department of Community Healthcare & Geriatrics, Nagoya University Graduate School of Medicine, Nagoya, Japan; (3) Research Center of Health, Physical Fitness & Sports, Nagoya University, Nagoya, Japan)*

Background: Physical frailty is associated with loss of muscle functions. We developed the resistance training for preventing frailty. Early exercise intervention may improve muscle functions. **Objectives:** We aimed to evaluate the effect of body mass-based resistance training, including explosive motion on muscle functions in community-dwelling elderly. **Methods:** Sixty non-frailty elderly people were randomly assigned to either a 12-week body mass-based resistance training, including explosive motion (EP) or without explosive motion (TR). Randomization is stratified by age, sex, Kihon Checklist score, exercise habit. Participants performed the resistance training session for 50 minutes in two days a week. The training consisted of squat, good morning, calf raise, bird-dog, push-up, crunch, hip lift, and knee to chest. Muscle functions were evaluated by hand grip strength, toe grip strength, tongue pressure, respiratory muscle strength, knee extension strength, sit-up, before and after the intervention. **Results:** After the intervention, toe grip strength (p<0.05), tongue pressure (p<0.01), inspiratory muscle strength (p<0.001), and sit-up (p<0.01) improved in both the training. Hand grip strength improved with TR, with no effect in the EP. There was no effect of the training on expiratory muscle strength and knee extension strength. **Conclusion:** Body mass-based resistance training, including explosive motion improves several muscle functions in community-dwelling elderly at the same levels as without explosive motion.

P212- BOTH NEUROMOTOR AND RESISTANCE TRAINING IMPROVE FUNCTIONAL MOBILITY AND PHYSICAL FITNESS IN HEALTHY OLDER WOMEN. R Forte[1] , G De Vito[2] *((1) Department of Human Movement and Sports Sciences, University of Rome Foro Italico, Rome, Italy; (2) School of Public Health, Physiotherapy and Sports Science, University College Dublin, Health Sciences Centre Belfield Dublin 4, Ireland)*

Background: A new form of exercise training, the neuromotor (NMT), has been recommended for the older individuals (1). However, this form of exercise, which is intended to improve components of the so-called motor fitness (balance, agility, coordination), has been less investigated in older individuals compared to the more traditional and established aerobic and resistance training modalities. **Objectives:** Therefore, the purpose of the present study was to investigate whether NMT was as effective as the traditional progressive resistance training (PRT) in improving functional mobility and physical fitness components in healthy older women. **Methods:** Thirty-five women (mean age 69.6 ± 3.2 years; BMI 25.6 ± 3.2 kg/m2) were randomly

assigned either to a NMT or a PRT group, both exercising twice a week for one hour for 3 months. Whilst the NMT group performed exercises for static and dynamic balance, agility, speed, reaction time and coordination, the PRT performed strengthening exercises primarily using isotonic machines. All participants were tested before and after the intervention for chair rise time (5 repetitions), walking speed under different conditions, cardiorespiratory fitness (VO2 at ventilatory threshold), muscular strength and power. A 2 x 2 MANOVA was performed on all variables to ascertain the effects of the two trainings with Time and Training as within and between subjects' factors, respectively. **Results:** 24 participants (NMT = 14; PRT = 10) completed the study. Significant main effects were observed for functional mobility (p = 0.001) and for all fitness parameters (p = 0.001) except for the hand-grip strength. On the other hand, no time-training interaction effects were observed. In addition, no correlations were detected between the observed post-training changes in functional mobility and in fitness. **Conclusion:** NMT resulted as effective as PRT to improve different aspect of functional mobility and related physical fitness components in healthy older women. The present results contribute to further our knowledge on the effects of neuromotor exercise for older people and add relevant information on exercise interventions targeting functional mobility in the elderly. 1. Bushman B. Neuromotor Exercise Training. ACSM's Health & Fitness Journal: November/December 2012 - Volume 16 (6) 4–7.

P213- RESISTANCE EXERCISE PROGRAM AND FOOD RE-EDUCATION IN THE CONTROL OF NON TRANSMISSIBLE CHRONIC DISEASES. Joan Faber, Myrian Abecassis Faber, Samara da Silva Feitosa, José David e Silva Gomes, Rildo Figueiredo Pinheiro *(Universidade do Estado do Amazonas, , Manaus, Brazil)*

Background: This cross-sectional study describes the application and follow-up of the self-care actions applied in a white male, 60 years old, 1.80 m tall, a former athlete, currently sedentary, who in January 2018 presented 6% of glycated hemoglobin in medical consultation - between 5.7 and 6.4%: pre-diabetes; fasting glycemia 107 (mg / dL); (mg / dL) and the postprandial dose between 113 and 164 mg / dL. Blood pressure between 140-150 mmHg; characterizing hypertension in stage 1. **Objectives:** Encourage the practice of self-care and resistance exercises as strategies to control diabetes and hypertension. **Methods:** Between January 2018 and January 2019, a program of dietary reeducation was carried out, with a few complex carbohydrates, an increase in proteins of high biological value, associated with a program of resistance exercises. The resisted exercise program was performed 3 times a week under the supervision of a Physical Education professional. The Capillary Glycemia were collected and analyzed by 69 times and Blood Pressure 231 times, respectively. It was carried out a Basic training for 4 weeks aiming to rescue the muscular memory of the elderly, after beginning the adaptive phase of the physical valence training (cardiovascular endurance, localized muscular resistance); for 6 weeks and the specified. The loads corresponded to 80% of 1RM for 8-10 repetitions with three series and 2 to 3 minutes intervals at each stage of the training. We used the IBM SPSS Statistics 22 program to perform descriptive statistics. **Results:** The mean Glycemia was 107 (mg / dL), the 3 glycated hemoglobin analyzes showed 5.5; low risk of diabetes. Systolic blood pressure and diastolic blood pressure presented a mean of 113.95 ± 6.99 mmHg, and 78.32 ± 3.51 mmHg, respectively. We observed a gradual gain every 2 months of resistance training. **Conclusion:** TThis study showed that dietary re-education associated with a well-designed and well-designed strength training program can result in numerous benefits for the elderly; the reduction of diabetes and hypertension, as well as the

muscular system of the elderly.

BIOLOGY

P214- TRANSFORMATION OF MATURE OSTEOBLASTS INTO BONE LINING CELLS AND RNA-SEQ BASED TRANSCRIPTOME PROFILING OF MOUSE BONE DURING MECHANICAL UNLOADING.

S Kim, A Ram Hong, Kwangsoo Kim, Ji Yeon Lee, Jae-Yeon Yang, Jung Hee Kim *(Seoul National University College of Medicine and Boramae Medical Center, Seoul, South Korea)*

Backgrounds: Bone lining cells (BLCs) are inactive osteoblasts lining the bone surface that can be recruited to form bone as one source of active osteoblasts. Mechanical loading experiments with rats revealed that the surface area of BLCs decreased after a single mechanical loading session. Thus, mechanical unloading may activate BLCs, although this has not be directly demonstrated. **Objectives:** We are to investigate transdifferentiation of mature osteoblasts into BLCs during mechanical unloading on bone using osteoblast lineage tracing study. Furthermore, we are to provide a comprehensive database of mechanical unloading-regulated genes through RNA-sequencing (RNA-seq)-based transcriptome profiling. **Methods:** Dmp1-CreERt2(+):Rosa26R mice were injected with 1 mg 4-OH-tamoxifen (4-OHTam) three times a week starting from postnatal week 7, and subjected to a combination of botulinum toxin injection with left hindlimb tenotomy from week 8 to 10. The animals were euthanized at weeks 8, 9, 10, and 12 (2 days, 1 week, 2 weeks, and 4 weeks after the last 4-OHTam injection). We quantified the number and thickness of X-gal(+) cells on the periosteum of femoral bones at each point. We also performed RNA-seq on pairs of femoral diaphyseal bones from wild-type mice using the same experimental protocol. **Results:** At week 2, a significant decrease in the number and a subtle change in the thickness of X-gal(+) cells were observed in left as compared to right hindlimbs (P = 0.038 and P = 0.071, respectively). At week 4, a decrease in the thickness was accelerated in left as compared to right hindlimbs (P =0.030), although the number of labeled cells were comparable (P=0.760). In total, 315 genes were downregulated in left as compared to right hindlimbs at 2 and 4 weeks. Of these, Xirp2, AMPD1, Mettl11b, NEXN, CYP2E1, Bche, Ppp1r3c, Tceal7, and Gadl1 were upregulated during osteoblastogenic (MC3T3-E1) and myogenic (C2C12) differentiation in vitro, as confirmed by real-time PCR. The expression of these genes was also upregulated during osteocyte (Ocy454) differentiation. **Conclusion:** These findings demonstrate that mechanical unloading can accelerate the transformation of mature osteoblasts into BLCs in the early stage of bone loss in vivo. Furthermore, some of the genes involved in this process may have a pleiotropic effect on both bone and muscle.

STEM CELL

P215- EFFECTS OF MESENCHYMAL STEM CELLS TRANSPLANTATION ON COGNITIVE DEFICITS IN ANIMAL MODELS OF ALZHEIMER'S DISEASE.

Meiling Ge[1,2], Birong Dong[1] *((1) The Center of Gerontology and Geriatrics, West China Hospital, Sichuan University, No. 37 Guoxue Lane, Chengdu, China; (2) The Center on Aging and Health, Johns Hopkins University School of Medicine, Baltimore, MD, USA)*

Background: Alzheimer's disease (AD) is a globally prevalent neurodegenerative disease, clinically characterized by progressive memory loss and gradual impairment of cognitive functions. Mesenchymal stem cells (MSCs) transplantation has been considered a possible therapeutic method for Alzheimer's disease (AD). However, no quantitative data synthesis of MSCs therapy for AD exists. **Objectives:** In order to identify the efficacy of mesenchymal stem cell-based therapies on AD. We conducted a systematic review and meta-analysis to study the effects of MSCs on cognitive deficits in animal models of AD. **Methods:** We identified eligible studies published from January 1980 to January 2017 by searching four electronic databases (PubMed, Medline, Embase, CNKI). The endpoint was the effects of MSCs on cognitive performance evaluated by the Morris Water Maze (MWM) test including escape latency, and/or number of platform crossing, and/or time in the target quadrant. **Results:** Nine preclinical studies incorporating 225 animals with AD were included for the meta-analysis. The studies indicated that MSCs based treatment significantly improved the learning function through measurements of the escape latency (SMD = -0.99, 95% CI= -1.33 to –0.64, P < 0.00001). Additionally, we observed that transplantation of MSCs significantly increased the number of platform crossing in six experiments (SMD=0.78, 95% CI =0.43 to 1.13, P<0.0001). What's more, the times in the target quadrant were increased in five studies indicated that transplantation of MSCs could ameliorate the cognitive impairments (SMD=1.06, 95% CI= 0.46 to 1.67, P=0.0005). **Conclusion:** The current study showed that MSCs transplantation could reduce cognitive deficits in AD models. These findings support the further studies to translate MSCs in the treatment of AD in humans

FUNCTIONAL ASSESSMENT

P216- GENDER DIFFERENCES IN TRAJECTORIES OF PHYSICAL PERFORMANCE IN OLDER ADULTS: FINDINGS FROM THE INTERNATIONAL MOBILITY IN AGING STUDY.

Tamer Ahmed[1], Simon French[2], Emmanuelle Belanger[3], Ricardo Guerra[4], Maria Victoria Zunzunegui[5], Mohamed Auais[1] *((1) Queens University, Kingston, ON, Canada; (2) Macquarie University, Sydney, Australia; (3) Brown University, Providence, USA; (4) Universidade Federal do Rio Grande do Norte, Natal, Brazil; (5) University of Montreal, Montreal, QC, Canada)*

Background: The increasing gender gap in the prevalence of functional limitations in older adults calls out for longitudinal research focused on understanding how functional decline emerges and who is most at risk of becoming with reduced physical function among older adult men and women to inform unique prevention strategies targeting men and women. Examining physical performance trajectories in men and women provides one approach to investigating functional limitations over time. To date, little is known about trajectories of physical performance in older adults aged 65 years and older. **Objectives:** The purpose of this study was to examine four years physical performance trajectories of older men and women and determinants of these trajectories in an international longitudinal study. **Methods:** Data were drawn from three waves of the International Mobility in Aging Study (IMIAS) for older adults aged between 65 and 74 years from 2012 to 2016. Group-based trajectory analysis by gender was performed. Multinomial logistic regression was used to derive adjusted relative risk ratios with 95% confidence intervals (CI) between the dependent physical performance trajectories and the potential baseline predictors in men and women separately. **Results:** Three physical performance trajectories were identified in men and women: high stable (32.2 % vs. 35.3 %), high declining (60.4% vs. 54.4%), and low declining (7.4% vs. 10.3%). Common characteristics associated with memberships in the low declining and high declining trajectory groups in men and women were age, single marital status, multiple chronic conditions (>3). Among men, depression was a strong predictor of the membership in the low-declining trajectory.

Women in the low-declining trajectory were more likely to be obese, with feminine and undifferentiated gender roles, and have poor self-rated health at baseline. **Conclusion:** There are gender differences in the physical performance trajectories and related factors among older adults. Programs aiming at preventing or retarding functional decline in old age should be sensitive to gender.