## OC14
## PREDICTORS OF 8-YEAR SURVIVAL IN NURSING HOMES: RESULTS FROM THE SENIOR COHORT

C. Demonceau[1], F. Buckinx[1], J.-Y. Reginster[1], O. Bruyère[1]

[1]WHO Collaborating Centre for Public Health Aspects of Musculo-Skeletal Health and Ageing, Division of Public Health, Epidemiology and Health Economics, University of Liège, Liège, Belgium

**Objective:** Although some studies have investigated risk factors for death in nursing homes, they have tended to be limited to short-term observations and focused on a few risk factors. The aim of this study is to identify factors which are predictive of 8-year survival in nursing homes.

**Methods:** The study used the baseline measurements from the SENIOR (Sample of Elderly Nursing home Individuals: An Observational Research) cohort collected in 2013–2014, which included clinical assessments (i.e., body composition, nutritional status, physical performance, level of dependence and cognition, frailty status). Demographic information, number of medications and medical history were collected from the patients' medical records. Mortality data were collected annually for 8 years, with a final collection in 2022. Potential predictive factors for survival were first assessed in univariate analyses and significant variables were then entered into a stepwise proportional hazards regression model.

**Results:** Of the 662 participants enrolled in the cohort, 58 (8.8%) were lost to follow-up due to the withdrawal of 2 nursing homes and 71 (10.7%) had no mortality data available (i.e., relocation, refusal to continue the study). Among the 533 patients included in the study, 422 (79.2%) died and 111 (20.8%) were still alive in 2022. Median survival time from enrolment in the cohort was 4 years (1.93–6.94). Multivariate regression showed that younger age (HR = 1.04 (1.03–1.06)), higher BMI (HR = 0.96 (0.94–0.98)), higher MMSE score (HR = 0.97 (0.94–0.99)) and higher SPPB score (HR = 0.93 (0.90–0.97)) were protective factors against mortality.

**Conclusion:** In addition to age, which is a non-modifiable risk factor, our study shows that certain modifiable factors related to physical or mental health contribute to increased survival in nursing homes. Acting on these factors therefore appears to be a public health priority.
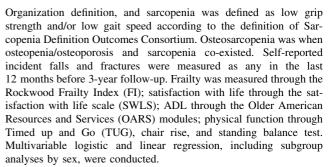
## OC15
## THE ASSOCIATIONS BETWEEN OSTEOSARCOPENIA AND FALLS, FRACTURES, AND FRAILTY IN OLDER ADULTS: RESULTS FROM THE CANADIAN LONGITUDINAL STUDY ON AGING (CLSA)

A. Lee[1], C. Mcarthur[2], G. Ioannidis[1], G. Duque[3], J. D. Adachi[1], L. E. Griffith[1], L. Thabane[1], A. Papaioannou[1]

[1]McMaster University, Department of Health Research Methods, Evidence, and Impact (HEI), Hamilton, Canada, [2]Dalhousie University, School of Physiotherapy, Halifax, Canada, [3]McGill University, Department of Medicine, Montreal, Canada

**Objective:** To explore if older adults with osteosarcopenia are at greater risk for falls, fractures, frailty, and worsening satisfaction with life, activities of daily living (ADL) and physical function compared to those with normal bone mineral density (BMD) and without sarcopenia.

**Material and methods:** Among Caucasian participants aged 65 years or older at the Canadian Longitudinal Study on Aging (CLSA) 2015 baseline comprehensive interview, those who completed the physical measurements at baseline and a 3-year follow-up were included for analysis. Osteopenia/osteoporosis was defined as BMD T-score below − 1 standard deviation (SD) according to the World Health Organization definition, and sarcopenia was defined as low grip strength and/or low gait speed according to the definition of Sarcopenia Definition Outcomes Consortium. Osteosarcopenia was when osteopenia/osteoporosis and sarcopenia co-existed. Self-reported incident falls and fractures were measured as any in the last 12 months before 3-year follow-up. Frailty was measured through the Rockwood Frailty Index (FI); satisfaction with life through the satisfaction with life scale (SWLS); ADL through the Older American Resources and Services (OARS) modules; physical function through Timed up and Go (TUG), chair rise, and standing balance test. Multivariable logistic and linear regression, including subgroup analyses by sex, were conducted.

**Results:** The sample of 8,888 participants (49% females) had a mean age (SD) of 72.7 years (5.6). At baseline, neither osteopenia/osteoporosis nor sarcopenia was present in 30.1%, sarcopenia in 18.4%, osteopenia/osteoporosis in 29.2%, and osteosarcopenia in 22.3%. Osteosarcopenia was not significantly associated with self-reported incident falls and fractures in all participants, while males had a higher adjusted odds of self-reported incident falls and fractures (adjusted OR 1.79, 95% CI 1.08–2.97; adjusted OR 2.77, 95% CI 1.15–6.68, respectively). Participants with osteosarcopenia had worsening in their FI and ADL of 0.133 and 0.153, respectively, per one SD increment after adjustment. In addition, they experienced a decrease in their SWLS score by 0.148 per one SD increment and balance test time by 1.089 s. Results for the TUG and chair rise test were not significant across all four groups.

**Conclusions:** Osteosarcopenia was associated with self-reported incident falls and fractures in males, and worse frailty, ADLs, satisfaction with life and standing balance in all participants.

## OC16
## MUSCLE SIZE AND DENSITY ARE INDEPENDENTLY ASSOCIATED WITH DEATH AFTER HIP FRACTURE: A PROSPECTIVE COHORT STUDY

L. Wang[1], M. Yang[2], X. Cheng[1], X. Wu[2], K. Engelke[3], A. Vlug[4]

[1]Department of Radiology, National Center for Orthopaedics, Beijing Jishuitan Hospital, Beijing, China, [2]Department of Traumatic Orthopedics, National Center for Orthopaedics, Beijing Jishuitan Hospital, Beijing, China, [3]Department of Medicine 3, FAU University Erlangen-Nürnberg and Universitätsklinikum Erlangen, Erlangen, Germany, [4]Center for Bone Quality, Department of Internal Medicine, Leiden University Medical Center, Leiden, Netherlands

**Objective:** Mortality following hip fracture is high and incompletely understood. This study aims to investigate the associations of hip muscle area and density from hip CT with death following hip fracture as well as to assess the dependence of this association on time after hip fracture.

**Materials and methods:** In this secondary analysis of the prospectively collected CT images and data from The Chinese Second Hip Fracture Evaluation, 459 patients were enrolled between May 2015 and June 2016, and followed up for a median time of 4.5 years. Muscle cross-sectional area and density were measured of the gluteus maximus (G.MaxM) and gluteus medius and minimus (G.Med/MinM) and aBMD of the proximal femur. Goutallier classification (GC) was used for qualitatively assessing muscle fat infiltration. Separate Cox models were used to predict mortality risk adjusted for covariates.

**Results:** At the end of the follow-up, 81 patients (64% women) had died and 293 survived (71% women). The mean age of non-surviving patients at death (82.0 ± 8.1 years) was higher than that of the surviving patients (74.4 ± 9.9 years). The cumulative survival was significantly lower for patients with low G.MaxM area and density, and low G.Med/MinM density independent of age and clinical risk