with ≥21% asymmetry had 1.80 (95%CI: 1.26–2.56) greater odds for poor overall HRQOL after adjustment for covariates. In addition, adults with ≥21% HGS asymmetry had 3.29 (95%CI: 1.37–7.91) greater odds for poor mobility.
CONCLUSIONS: We found that HGS asymmetry was associated with poor HRQOL among Canadian adults. Our findings suggest that HGS asymmetry can help with clinical screening, and it could potentially help inform appropriate referrals that may decelerate the loss of physical function. Hand dynamometers are an acceptable and feasible tool to assess bilateral strength asymmetry, which should be included as a standard part of clinical practice and continue to be used in population health surveillance.

306

Obesity By Subjective Physician Identification Can Serve As A Substitute For Anthropometric Calculation

Addisen S. Azevedo[1], Marie R. Jensen[1], Michelle M. Amaral[2], Micheal L. Bruneau, Jr, FACSM[3], Jonathan M. Saxe[4], Lewis E. Jacobson[4], Francisco Guiao[1], Courtney D. Jensen[1]. [1]*University of the Pacific, Stockton, CA.* [2]*California Department of Corrections and Rehabilitation, Sacramento, CA.* [3]*Drexel University, Philadelphia, PA.* [4]*St. Vincent Hospital, Indianapolis, IN.* (Sponsor: Micheal L Bruneau, FACSM)
Email: addisenazevedo@gmail.com
(No relevant relationships reported)

Body mass index (BMI) is widely used to characterize adiposity and indicate disease risk. In trauma and emergency settings, many patients are unable to provide height and weight. In these situations, it is important to understand the effect of subjective assessment on treatment outcomes.
PURPOSE: To compare objective BMI measurement to subjective obesity classification on patient outcomes.
METHODS: We analyzed 1,344 thoracic trauma patients from the registry of a Level 1 trauma center. Independent variables were objective BMI by height-weight assessment and subjective physician-identified obesity. Dependent variables were systolic blood pressure (SBP), diastolic pressure (DBP), duration in the intensive care unit (ICU), and days on mechanical ventilation. Blood pressure was analyzed using linear regressions and duration of care was analyzed with negative binomial regressions. Potential confounding variables were held constant.
RESULTS: Subjective obesity status was documented in all applicable patients. Objective BMI was measured in 61.6% of patients (n=828). Patient age was 55.5 ± 20.3 yr, BMI was 28.3 ± 6.6 kg/m^2, SBP was 132.8 ± 30.4 mmHg, and DBP was 80.7 ± 17.0 mmHg. Mechanical ventilation was used in 320 patients (23.9%) for a duration of 10.0 ± 10.9 days, and 669 patients (49.8%) were admitted to the ICU for a mean duration of 7.2 ± 9.2 days. Holding age and injury severity constant where significant, physician identification of obesity predicted 2.5 mmHg higher SBP (p=0.259; 95% CI of β: -1.9 to 7.0), 1.5 mmHg higher DBP (p=0.264; 95% CI of β: -1.1 to 4.1), 5.5-fold longer duration in the ICU (p=0.018; 95% CI of IRR: 1.4 to 39.9), and 52.9-fold longer duration on ventilation (p=0.045; 95% CI of IRR: 1.1 to 2,562.4). Anthropometric classification of obesity predicted 3.8 mmHg higher SBP (p=0.050; 95% CI of β: -0.0 to 7.7), 2.6 mmHg higher DBP (p=0.034; 95% CI of β: 0.2 to 5.0), 4.4-fold longer duration in the ICU (p=0.044; 95% CI of IRR: 1.0 to 18.4), and 68.1-fold longer duration on ventilation (p=0.024; 95% CI of IRR: 1.8 to 2,635.3).
CONCLUSION: Obesity predicted higher blood pressure and worse outcomes in thoracic trauma patients. If height and weight are inaccessible, a physician's estimation of body composition may serve as a relatively accurate substitute for calculating BMI using anthropometric measurements.

307

When Do We Start Observing A Decline In Muscle Strength And Mass As We Age?

Alejandro Gaytan-Gonzalez[1], Juan Lopez-Taylor[2], Darren E. R. Warburton[1]. [1]*The University of British Columbia, Vancouver, BC, Canada.* [2]*University of Guadalajara, Guadalajara, Mexico.* (Sponsor: Dr. Jack Taunton, FACSM)
(No relevant relationships reported)

Sarcopenia is a common condition in older adults, and it occurs after years of muscle strength and muscle mass loss. However, the age at which these two variables start to decline remains elusive.
PURPOSE: To determine the age when muscle strength and mass reach a peak score and start to decline, as well as their average decline rate by sex in young and middle-aged adults.
METHODS: This was a secondary data analysis from the cross-sectional National Health and Nutrition Examination Survey (NHANES), cycles 2011-2014. We analyzed the registries from 2562 females and 2746 males (ages 20 to 59 y) with data of combined handgrip strength (HGS) as a measure of muscle strength, DXA-derived appendicular lean soft tissue (ALST), and legs and arms lean soft tissue (LST), as indicators of muscle mass. Individual segmented linear regression models were used with age as a predictor (continuous in years) and the HGS (kg force), ALST (kg), legs LST (kg), and arms LST (kg) as outcome variables to determine the age when the outcome variable reached a peak score (age breaking point) and posterior slope.
RESULTS: The mean ± SD for age, HGS, ALST, legs and arms LST was 38.9 ± 11.4 y, 59.2 ± 10.6 kg, 18.5 ± 4.4 kg, 14.0 ± 3.5 kg, and 4.6 ± 1.1 kg, for females, and 38.2 ± 11.5 y, 92.5 ± 16.9 kg, 27.1 ± 5.2 kg, 19.3 ± 3.8 kg, 7.8 ± 1.5 kg, for males, respectively. The HGS decline started at similar ages in males (34.9 y, 95% CI: 32.5 - 37.3) and females (33.0 y, 30.1 - 35.9), with a more pronounced decline in males (-1.03 kg/y) than females (-0.61 kg/y). However, the ALST decline started later in females (48.5 y, 43.5 - 53.4) than in males (35.9 y, 30.8 - 41.0) with similar decline rates (-0.16 kg/y both). The arms LST decline started at similar ages in males (36.1 y, 32.7 - 39.4) and females (33.0 y, 27.5 - 38.5), but males showed a more pronounced decline than females (-0.07 vs -0.03 kg/y, respectively). Finally, the starting decline in legs LST was observed later in females (48.9 y, 44.2 - 53.6) than in males (35.4 y, 28.9 - 42.0), with a greater decline in females than males (-0.13 vs -0.09 kg/y, respectively).
CONCLUSIONS: The age when muscle strength started to decline was similar by sex (about 34 y) but differs in the decline rate. The age when muscle mass started to decline was sex-dependent and occurs later in females mainly because of the later start in legs muscle mass decline.

308

Association Of Trail Use, Physical Activity, And Mental Well-being In A Rural Tennessee County

Ashley Linn[1], Jeremy Steeves[2], Douglas Gregory[1]. [1]*Tennessee Wesleyan University, Athens, TN.* [2]*Xavier University, Cincinnati, OH.*
Email: amlinn2022@tnwesleyan.edu
(No relevant relationships reported)