

women: $r = -.04$). The strongest associations were inverse correlations between PhA and the ECW/TBW ratio (men: $r = -.89$; women: $r = -.90$). **CONCLUSIONS:** Phase angle is strongly associated with markers of body composition and cellular integrity in active older adults. In general, phase angle is highly and inversely correlated with the ECW/TBW ratio and age. It is moderately positively correlated with variables that make up lean mass (TBW, ICW, ECW, DLM, LBM, and SMM). The relationship to fat mass is close to random.

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The Influence Of Age On Upper Body Power Output In Males Across The Lifespan

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Advancing age associates with a gradual loss of skeletal muscle mass and consequently muscle function. Experiments that control for body composition to isolate the effect of age on isotonic power generation per unit of lean mass are limited. **PURPOSE:** To assess the influence of age on upper body power output in males across the lifespan. **METHODS:** We measured body composition and power output in upper body movements on 68 males. Dual-energy X-ray absorptiometry calculated lean mass in individual body segments: dominant arm, non-dominant arm, and trunk. Following scans, subjects performed a battery of exercise tests using a Proteus device. Exercises included trunk rotation, bilateral biceps curl and triceps extension, and unilateral row, chest press, biceps curl, and triceps extension on the dominant and non-dominant arms. A single 6-repetition set of each exercise was performed at 12 lbs of electromagnetic isotonic resistance; we exported peak power achieved in each set. Linear regression models measured the effect of age on power output in each exercise while holding the involved lean mass constant. All analyses were performed on SPSS version 29.0. **RESULTS:** Subject age was 43.0 ± 8.8 yr (range: 27.8 to 61.7 yr), and lean mass was 65.7 ± 8.7 lbs in the trunk, 9.7 ± 1.7 lbs in the dominant arm, and 9.3 ± 1.8 lbs in the non-dominant arm. Mean power of both arms in unilateral exercises was 175.2 ± 26.6 W in the row, 175.2 ± 29.0 W in the chest press, 134.7 ± 28.8 W in the biceps curl, and 154.6 ± 37.7 W in the triceps extension. In bilateral exercises, power was 154.9 ± 31.0 W in the biceps curl and 179.8 ± 43.8 W in the triceps extension. Mean power across both directions of trunk rotation was 220.8 ± 35.5 W. In regression models, holding lean mass in the involved segments constant, age was not a significant predictor of power in trunk rotation ($\beta = -.0486$; $p = 0.263$), bilateral biceps curl ($\beta = -.0394$; $p = 0.298$) or triceps extension ($\beta = -.0231$; $p = 0.686$). Age was also unrelated to power in dominant arm row ($\beta = 0.104$; $p = 0.769$), press ($\beta = 0.198$; $p = 0.636$), biceps curl ($\beta = -.0115$; $p = 0.777$), and triceps extension ($\beta = -.0239$; $p = 0.647$). All relationships were similar in the non-dominant arm. **CONCLUSIONS:** While advancing age associates with muscle atrophy, the age of the retained muscle does not appear to influence its ability to generate power.

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Physical Activity Indices And The Effects On Aging

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Several performance assessments are conducted to measure functional fitness, in which normative data is used to compare individuals to a baseline of overall functionality. The burden of awareness increases in mid-life adults when the start of physical decline begins. **Purpose:** The purpose of this study was to test and assess a sample of the Greater Portland/Forest Grove, OR metropolitan population, to determine the relationship between physical performance indices and aging and compare these results with standardized norms based on age and gender. **Methods:** Twenty-six male and female volunteer participants, between the ages of 25 and 80 years of age, participated in the study. Health-fitness assessments were comprised of a medical/physical activity questionnaire, resting blood pressure and heart rate, grip strength, "Timed Up-and-Go Test", "Single Leg Balance Test", "Stand from the Floor Test" and body compositional results, and then compared with the results of the current National Health and Nutrition Examination Survey (NHANES) Standardized Normative data, and the American College of Sports Medicine (ACSM) guidelines for adults. Data were analyzed using descriptive statistics and a one-sample t-test for each individual assessment. **Results:** The results showed significant differences in the following variables: participants had higher systolic blood pressures ($P < 0.01$); women decreased % body fat ($P < 0.05$); better single-leg balance with both eyes open and closed ($P < 0.01$), increased time on standing from the floor ($P < 0.01$), better timed up-a-go a ($P < 0.01$); and below norm for grip strength ($P < 0.01$). **Conclusion:** These results indicate that the participants in this study were above average in some variables, but below in others. This was most likely due to the participants largely being active adults and consciously aware of the benefits of maintaining an active lifestyle.

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Lean Mass Symmetry In Senior Athletes: Arm And Leg Balance Across Age Groups

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Purpose: To test whether limb lean body mass (LBM) is symmetrically distributed in senior athletes and whether asymmetry differs by sex or age group. **Methods:** Cross-sectional analysis of 1,028 competitors (607 women, 421 men) from the Huntsman World Senior Games. Age groups were 50-59, 60-69, 70-79, and 80+. Segmental LBM (kg) was obtained by segmental bioelectrical impedance analysis. Outcomes were right/left arm LBM, right/left leg LBM, each limb's relative contribution to total LBM (%), and asymmetry (%) defined as $100 \times | \text{Right} - \text{Left} | / [(\text{Right} + \text{Left})/2]$. Repeated-measures ANOVA used Side (Right, Left) as the within-subject factor for arms and legs; Region (Arms, Legs) was the within-subject factor for asymmetry. Sex and AgeGroup were between-subject factors. LBM was analyzed using a log transformation, and results are presented as estimated marginal means (EMM) in kg. For relative (%) outcomes, inference focused on the within-subject effect. Asymmetry prevalence was summarized as $<5\%$, $5-10\%$, and $\geq 10\%$. **Results:** Log LBM—arms: Right exceeded Left by 0.055 kg (EMMs 2.957 kg vs 2.902 kg; $p < .001$). Men had greater arm LBM than women ($p < .001$), and arm LBM declined across age groups ($p < .001$). Log LBM—legs: Right exceeded Left by 0.046 kg (EMMs 8.192 kg vs 8.146 kg; $p < .001$). Men had greater leg LBM than women ($p < .001$), leg LBM declined across age groups ($p < .001$), and there was a small Sex×AgeGroup interaction ($p = .008$). Relative (%)—arms: Right contributed 5.421% of total LBM and Left 5.315%, $p < .001$. Relative (%)—legs: Right contributed 15.28% and Left 15.19%, $p < .001$. Relative (%) asymmetry—Region: Arms 3.190% vs legs 1.839%, $p < .001$. Asymmetry prevalence: arms $<5\%$ 803/1,028 (78.1%), $5-10\%$ 213 (20.7%), $\geq 10\%$ 12 (1.2%); distribution by sex differed ($p = .008$). Legs $<5\%$ 980 (95.3%), $5-10\%$ 45 (4.4%), $\geq 10\%$ 3 (0.3%); distribution by sex did not differ ($p = .239$). **Conclusions:** Senior Games athletes show small but consistent right-dominant LBM (≈ 0.055 kg in arms; ≈ 0.046 kg in legs) and greater asymmetry in arms than legs ($\approx 3.2\%$ vs 1.8%). Men exhibit higher segmental LBM than women and LBM declined with age (50-59 to 80+: arms -19.0% ; legs -13.8%); a modest Sex×Age effect was present for legs. Most athletes fall below 5% asymmetry, and $\geq 10\%$ asymmetry is rare.