

TACSM Abstract

Lean Body Mass Index for women ages 18-75 years of age

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ABSTRACT

PURPOSE: Lean mass is an important component of health because of its multifaceted role in the body. Of particular concern are the effects of muscle mass loss due to aging. Lean mass index (LMI), calculated as lean mass/height², and fat-free mass index (FFMI) are used to assist in determining a healthy lean mass. The exact FFMI a healthy individual should have to be considered clinically healthy is unclear. Three population-based studies have been done to establish FFMI percentiles, but none were with American subjects. The purpose of this study was to develop LMI percentiles for females of different age groups, to compare the LMI values among these groups, and to compare the FFMI of this cohort to previous studies.

METHODS: Participants included 762 women, 18 to 75 yrs of age, who had DXA body composition testing at the Fitness Institute of Texas. LMI was calculated for each participant. The women were split into age groups of 18-22 (G1), 23-39 (G2), and 40+ (G3) yrs of age. Cumulative relative frequency was used to determine the LMI percentiles for each group and a univariate ANOVA was used to compare the LMI of the three groups. FFMI percentiles were developed to compare with previously published studies using age groupings of 18-34 and 35-59 yrs of age.

RESULTS: The LMI percentiles for each age group are shown in Figure 1. LMI increased significantly between each age group: G1 (15.2 ± 1.8 kg/ m²) < G2 (15.7 ± 1.9 kg/ m²) < G3 (16.1 ± 2.0 kg/ m²) ($P < 0.05$). The FFMI percentiles in both age groups were similar to the previously published studies.

CONCLUSIONS: LMI percentile graphs were produced using a large subject population. Similar to other studies, LMI did not decrease with age.

