ABSTRACT

Thesis: DXA Reference Standards for Percent Body Fat and Lean Body Mass in Adults

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Dual energy x-ray absorptiometry (DXA) provides accurate measurements of percent body fat (%BF) and lean body mass (LBM), however no reference standards currently exist using DXA-derived data. This study's purpose was to develop reference data sets for DXA-derived %BF and LBM, and to characterize the agreement of obesity classifications between BMI ($\geq$30 kg/m^2) and %BF ($\geq$25% for men and $\geq$30% for women). 2,761 subjects were scanned from 2003-2013 using either the GE Medical Systems Lunar Prodigy or Lunar iDXA. Normative reference tables displaying mean values and select percentiles were created for %BF and LBM across defined age groups for both genders. Mean %BF and LBM closely reflected data from the National Health and Nutrition Examination Survey across age groups in both genders. Agreements between BMI and %BF were 97% when identified as obese and 33% when identified as non-obese. Future research should consider creating a national registry for DXA-derived measurements.