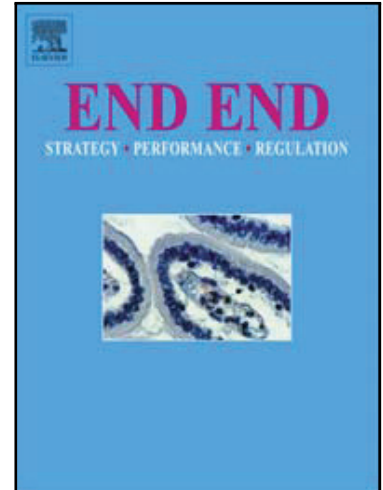


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Development of a bedside applicable ultrasound protocol to estimate fat mass index derived from whole body dual-energy x-ray absorptiometry scans

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## Abstract

**Objective:** Precise measures of adiposity are difficult to obtain in clinical settings due to a lack of access to accurate and reliable techniques. The aim of this study was to develop and internally validate a bedside applicable ultrasound protocol to estimate fat mass index.

**Methods:** We conducted an observational cross-sectional study, which recruited 94 university and community dwelling adults, to attend a single data collection session. Adipose tissue thickness was quantified in a supine or prone position using: 1) the 4-site protocol, which images 2 anterior sites on each thigh, and 2) the 9-site protocol, which images 9 anterior and posterior sites. Adipose tissue thicknesses from the 4-site protocol were compared against fat mass index derived from dual-energy x-ray absorptiometry scans. Subsequently, we optimized the accuracy of the 4-site protocol with the addition of bedside-accessible adipose tissue thicknesses from the 9-site protocol and easily obtained covariates.

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