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Validation Of The Bodymetrix Ultrasound System For Percent Body Fat

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Abstract:

The Body Metrix (BM) system (IntelaMetrix, CA) is an affordable computer based ultrasound system that provides rapid body composition assessment. We present preliminary data comparing percent body fat (%BF) as measured using the BM system and a DEXA as a reference measurement.

PURPOSE: To establish the validity of the BM computer based ultrasound system for the quantification of %BF.

METHODS: %BF was calculated on 10 university aged participants (5 females, 5 males) using the BM system with the Jackson and Pollock 7 sites equation (1978). A DEXA was also used as a reference to measure %BF on the same subjects. The Bland and Altman (1986) statistical procedure was used to determine de validity of the BM %BF.

RESULTS: The level of agreement between both devices was equal to -0.6% BF. As well, no significant correlation was found between the score difference from both devices and the score average of both devices ($r = -0.17$, $p=0.641$). The regression analysis between the BM system and the DEXA showed a significant correlation ($r=0.71$, $p=0.023$) with a SEE of ± 3.93 %BF.

CONCLUSIONS: Both devices can be used interchangeably within the range of 10 to 30% BF. The data obtained on a limited number of subjects ($n=10$) show good agreement and the BM system underestimates by 0.6% on average when compared to the DEXA.

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