



## **Comparison of body composition analysis methods in clinical routine.**

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**BACKGROUND:** Skinfold thickness (SFT) and bioelectrical impedance (BIA) are readily available and commonly used techniques in patient monitoring for body composition analysis (BCA) in clinical practise. Another one, dual-energy X-ray absorptiometry (DEXA) method became popular in body composition analysis (BCA) in recent years. Its results have been reported to be quite accurate and precise, in comparison with in vivo or in vitro multiple component reference methods. The aim of the present study was to assess the degree of agreement between SFT and DEXA, and BIA and DEXA methods, in obese and nonobese patients. **METHODS:** Body fat mass (FM) was measured in 16 nonobese (mean body mass index; BMI = 22.2 +/- 2.2 kg/m(2)) and in 21 obese (BMI = 34.5 +/- 6.1 kg/m(2)) women with DEXA, SFT, and BIA in the same morning. **RESULTS:** Mean (+/- SD) FM (kg) was 16.3 +/- 5.5, 15.0 +/- 5.1, 14.7 +/- 4.9 in nonobese subjects and 38.8 +/- 10.1, 36.3 +/- 10.0, 37.1 +/- 12.0 in obese patients, by DEXA, SFT and BIA, respectively. Comparison of the DEXA-BIA and DEXA-SFT methods showed high correlation in regression line analysis in nonobese subjects as,  $r(2) = 0.93$  and  $0.89$ , respectively. Regression coefficients were 0.84 and 0.75 in obese patients. However, reanalysis of the data by the Bland and Altman method revealed an obvious lack of agreement between the DEXA-BIA and DEXA-SFT methods in obese patients. In addition, FM was underestimated by BIA and SFT as compared to DEXA in both of the study groups. Besides, better precision was obtained by DEXA method among the others. **CONCLUSION:** The SFT or BIA method would be preferred to monitor BCA in non-obese subjects in clinical routine. However, DEXA should be considered as the method of choice in obese patient monitoring, since reproducibility gains special importance, other than the accuracy in the context.

PMID: 11146331 [PubMed - indexed for MEDLINE]

