

Assessment of fat-free mass from bioelectrical impedance analysis in men and women with Prader-Willi syndrome: cross-sectional study.

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We have recently shown that population-specific formulae are required to estimate fat-free mass (FFM) from bioelectrical impedance analysis (BIA) in obese women with Prader-Willi syndrome (PWS) matched by age and percent fat mass (FM) to non-PWS women. The present cross-sectional study was aimed at developing generalised BIA equations that could be used in PWS subjects independently of sex and FM. We used dual-energy X-ray absorptiometry to measure FFM and BIA to measure whole-body impedance at 50 kHz (Z_{50}) in 34 women and 21 men with PWS. The impedance index, that is, $\text{height (cm)}^2/Z_{50}$ (Ω), explained 77% (BCa-bootstrapped 95% CI 65 to 85%) of the variance of FFM with a root mean squared error of the estimate of 3.7 kg (BCa-bootstrapped 95% CI 3.2 to 4.5 kg). BIA can be used to estimate FFM in obese and non-obese PWS men and women by means of population specific equations.

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