

LEG-TO-LEG BIOIMPEDANCE SYSTEM VALIDITY IN CHILDREN.

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Practical Implications:

- The Tanita leg-to-leg BIA system provides comparable estimates with DXA body composition estimates in children.
- Body composition assessment in children is important because of an increasing trend in childhood obesity.

ABSTRACT

Objective: Body composition assessment in children has been of particular interest because of an increasing trend in childhood obesity. The measurement of total body fat provides important information on health risks and obesity diagnosis. A simple and noninvasive method of quantifying fat mass that is applicable in children is a leg-to-leg contact-electrode BIA system (TBF 305, Tanita Corp. Tokyo, Japan). Prior studies have demonstrated the system's validity in estimating body composition of healthy adults but information in children is lacking.

Design: The present study evaluated the TBF-305 in a group of 96 children (age, 11.9 ± 3.3 , at varied Tanner stages) by comparing respective body composition estimates with dual energy x-ray absorptiometry (DXA)(Lunar DPX-L).

Results: The mean fat free mass estimates by BIA were [X(SD)] 35.7(13.2)kg and by DXA 36.1(13.2) kg ($p=0.84$;NS). Additionally, a linear regression plot of both FFM estimates revealed a high correlation between the two ($r=0.98$, $p<0.001$, $SEE=2.56$ kg). The slope and intercept of the line were not significantly different from 1 and zero, respectively. Similarly, a high correlation was observed between %fat estimates by both methods ($r=0.89$, $p<0.001$, $SEE=4.56$) indicating that the leg-to-leg BIA system provides comparable estimates with DXA body composition estimates in children.

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