

Title	Journal	Year	Population	Summary	Devices	Parameters	Category
Bioelectrical Impedance Analysis in a Mathematical Model for Estimating Fat-free Mass in Multiple Segments in Elderly Taiwanese Males	International Journal of Gerontology	2012	Elderly Taiwanese Males (n=33)	New multiple segment FFM equations provided high correlation with DXA Whole Body ($r=.94$), Lower Limbs ($r=.86$), Upper Limbs ($r=.92$), Trunk ($r=.88$)	BIA, DXA	FFM	Algorithm
Comparison of Different Measurement Equations for Body Composition Estimation in Male Athletes	International Journal of Sport and Exercise Science	2010	Taiwanese soccer players (n=27)	Specialized prediction equation showed higher correlation, suggesting athletes should use specific equations	DXA, Tanita BC-418	FFM	Exploration of technology
Comparison of Standing Posture Bioelectrical Impedance Analysis with DXA for Body Composition in a Large, Healthy Chinese Population	PLOS One	2016	Healthy Taiwanese 18-82 years (n=711)	BIA may underestimate BF%, when BF% is higher	DXA, Tanita BC-418	BF%	Device Validation
Cross-mode bioelectrical impedance analysis in a standing position for estimating fat-free mass validated against dual-energy x-ray absorptiometry	ScienceDirect	2015	Men (32y)=264, Women (34y)=232	No significant differences in BIA between hand-to-foot and cross-mode in Chinese populations Hand-to-foot FFM vs DXA: Women ($r=.85$, 2.96kg), Men ($r=.91$, 3.34kg) Cross-mode FFM vs DXA: Women ($r=.86$, 2.92kg), Men ($r=.91$, 3.48kg)	BIA, DXA	FFM	Exploration of technology
Discrepancies between leg-to-leg bioelectrical Impedance analysis and computerized tomography in abdominal visceral fat measurement	Scientific Reports	2017	Healthy Taiwanese (n=381)	Leg-to-leg BIA has limited potential to accurately estimate visceral fat (large margin of error)	CT, Tanita BC-305	VFA	Device Validation
Estimation of segmental fat free mass in Taiwanese elderly females by bioelectrical impedance analysis with new mathematical model	African Journal of Biotechnology	2011	Elderly Taiwanese Females (n=30)	Higher correlation with DXA than Tanita BC-418 for FFM in upper limbs, lower limbs, and trunk Whole Body ($r=.89$), Lower Limbs ($r=.64$), Upper Limbs ($r=.60$), Trunk ($r=.81$)	DXA, Tanita BC-418, Modified QuadScan 4000	FFM	Algorithm
Evaluation of a Leg-to-Leg Bioimpedance Device in the Estimation of Abdominal Visceral Fat for the Elderly - Comparison with CT	International Journal of Gerontology	2017	Elderly Taiwanese (n=100)	Obese group has large LOA compared to CT. LBIA accuracy for VFA is limited in this population	CT, BC-305	VFA	Device Validation
Hand-to-Hand Model for Bioelectrical Impedance Analysis to Estimate Fat Free Mass in a Healthy Population	Nutrients	2016	Healthy Taiwanese 17-82 years (n=704)	Hand-to-hand and hand-to-foot BIA demonstrated similar reliability	DXA, Quadscan 4000, Omron HBF-361	FFM	Exploration of technology
New Application of Bioelectrical Impedance Analysis by the Back Propagation Artificial Neural Network Mathematically Predictive Model of Tissue Composition in the Lower Limbs of Elderly People	International Journal of Gerontology	2012	Elderly Taiwanese (n=38)	ANN was superior to linear regression model in estimating FM and FFM in lower limbs of elderly Lower Limbs ($r^2=.962$)	DXA, Modified QuadScan 4000	FM, FFM, AN	Algorithm
Predicting body composition using foot-to-foot bioelectrical impedance analysis in healthy Asian individuals	Nutrition Journal	2015	Healthy Taiwanese 16-75 years (n=554)	LBIA developed in study accurately predicted FFM in healthy Asian individuals with different BF%	DXA, Modified QuadScan 4000	FFM	Algorithm
The bioelectrical impedance analysis with newly predictive equations for measuring segments body composition of elite male football players in Taiwan	Scientific Research and Essays	2011	Taiwanese soccer players (n=26)	Measurement of fat mass in limb, trunk, and whole body using new equation had higher correlation with DXA than Tanita BC-418 Whole Body ($r=.95$), Upper Limbs ($r=.75$), Lower Limbs ($r=.76$), Trunk ($r=.89$)	DXA, Tanita BC-418	FM	Algorithm

The novel application of artificial neural network on bioelectrical impedance analysis to assess the body composition in elderly	Nutrition Journal	2013	Healthy Elderly Taiwanese (n=62 develop) (n=26 validation)	ANN had higher correlation and lower SD than linear model Whole Body ($r^2=.987$)	DXA, Modified QuadScan 4000	FFM, ANN	Algorithm
The study of anthropometric estimates in the visceral fat of healthy individuals	Nutrition Journal	2014	Taiwanese adults (n=227)	VFA can be accurately estimated using age, waist circumference, and abdominal skinfold	CT, waist circumference, abdominal skinfold	VFA	Exploration of technology
The validity and accuracy in foot-to-foot bioelectrical impedance analysis measuring models referenced by dual-energy X-ray absorptiometry in body composition in standing position	African Journal of Biotechnology	2011	Taiwanese Males (n=105), Females (n=108)	High correlation between hand-to-foot and foot-to-foot. However, correlations between hand-to-foot and foot-to-foot with DXA were higher for males. Foot-to-foot BIA is feasible. DXA vs Foot-to-foot (FFM): Male ($r=.93$), Female ($r=.85$) DXA vs Hand-to-foot (FFM): Male ($r=.96$), Female ($r=.87$)	BIA, DXA	FFM	Exploration of technology
Total body composition estimated by standing-posture 8-electrode bioelectrical impedance analysis in male wrestlers	Biology of Sport	2016	Taiwanese male wrestlers 17-22 years (n=48)	Standing-posture 8-electrode BIA can be used to derive reference measures of LST and BF% in Taiwanese male wrestlers (lower limbs and total body). Upper limbs was not accurate enough ($r=0.55$)	DXA, Tanita BC-418	LST, BF%	Device Validation
Validation of two portable bioelectrical impedance analyses for the assessment of body composition in school age children	PLOS One	2017	Healthy Taiwanese children 7-12 years (n=150)	Both devices underestimated FM and BF%. InBody higher correlation than Tanita for LBM	DXA, InBody 230, Tanita BC-418	FM, BF%, LBI	Device Validation
Validity of Standing Posture Eight-electrode Bioelectrical Impedance to Estimate Body Composition in Taiwanese Elderly	International Journal of Gerontology	2014	Elderly Taiwanese 55-76 years (n=77)	Standing BIA can be used to estimate LST and whole body BF%. However, there was overestimation of LST and underestimation of BF% within certain range, thus accuracy reduced in Appendicular LST and total BF%	DXA, Tanita BC-418	LST, BF%	Device Validation
The Establishment of BIA system with Neural Network Model to Estimate Segmental Body Compositions in Collegiate Wrestlers	International Conference on Affective Computing and Intelligent Interaction	2012	Taiwanese male wrestlers (n=24)	ANN was superior to standard BIA for estimation of FFM in comparison with DXA. ANN: Whole Body ($r2=0.996$), Upper Limbs ($r2=0.853$), Lower Limbs ($r2=0.954$), Trunk ($r2=0.945$)	DXA, BC-418, Modified Quadscan 4000	FFM	Algorithm
The Novel Application of Bioelectrical Impedance Analysis with Back Propagation Artificial Neural Network to Assess the Body Compositions of Lower Limbs in Elite Male Wrestler	International Conference on Affective Computing and Intelligent Interaction	2012	Taiwanese male wrestlers (n=24)	ANN was superior than Linear Regression BIA for estimation of Lower Limb FFM in Male Wrestlers. ANN: Lower Limbs ($r2=0.965$)	DXA, Modified QuadScan 4000	FFM	Algorithm