



Title	Bioelectrical Impedance Analysis in Estimation of Body Composition
Agency	MaHTAS, Health Technology Assessment Section, Ministry of Health Malaysia Level 4, Block E1, Parcel E, Presint 1, Federal Government Administrative Center, 62590 Putrajaya, Malaysia; Tel: +60 3 88 83 12 29, Fax: +60 3 88 83 12 30; htamalaysia@moh.gov.my, www.moh.gov.my
Reference	Technology Review Report, 014/07, 2007. http://medicaldev.moh.gov.my/uploads/bioelectrical.pdf

Aim

To assess the safety, effectiveness, and cost effectiveness of bioelectrical impedance analysis (BIA) in estimating body composition.

Conclusions and results

The evidence shows that BIA methods tend to underestimate the percentage of body fat, especially in overweight and obese individuals. Hence, the validity of this method is at stake. Most of the studies used the classical (whole body) BIA method or tetrapolar devices, which measured impedance from foot to hand. Only a few of the studies used a hand-held method. The studies reported that the whole-body BIA method was more accurate in estimating the percentage of body fat compared to hand-held BIA. It was also reported that a subject's change in posture during measurement by hand-held BIA affected the measurement of body fat.

Recommendations

Based on the available evidence, bioelectrical impedance analysis is not recommended as it underestimates the percentage of body fat, especially in the overweight and obese individual.

Methods

The electronic databases searched included PubMed, Ovid, ProQuest, Ebscohost, EBM Reviews for Controlled Trials, HTA websites, and general databases, eg, Google and Yahoo. Keywords used in the search were "body composition" OR "body fat analysis" AND "bioimpedance" or "bioelectrical impedance" OR "hand-held bioimpedance" OR "hand-held bioelectrical impedance", AND "cost effectiveness" OR "cost analysis" AND "side effects" OR safety OR safe, used either alone or in combination.

All relevant literature was critically appraised, and the evidence level was graded according to the modified Catalonian Agency of Health Technology Assessment (CAHTA) scale.

Further research/reviews required

Further research is needed to assess the effectiveness of the device.