

Author's response to reviews

Title: To treat or not to treat: comparison of different criteria used to determine whether weight loss is to be recommended

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ABSTRACT

Background

The need for preventive or therapeutic lifestyle intervention is currently determined by excess body weight, diagnosed on the basis of Body Mass Index ($\text{BMI} \geq 25 \text{ kg/m}^2$). However, the increasing realisation that adiposity constitutes a major health risk has led to the proposal, recently, of various criteria designed to evaluate this factor: total body fat (expressed as percentage body fat, %BF), considered both alone and in relation to metabolic syndrome risk; body fat distribution (as indicated by waist circumference); and the Body Fat Mass Index (BFMI).

We hypothesised that application of the BMI alone results in underestimation of the number of subjects needing lifestyle intervention.

Methods

Anthropometric measurements and body composition assessments were performed in 63 adults (all white; 23 men, 40 women; 20-65 years of age; $\text{BMI} 16.5\text{-}33.5 \text{ kg/m}^2$; %BF 9.3-47.5%). The subjects were then categorised according to their: BMI (A), abdominal fat (B), %BF measured by dual-energy X-ray absorptiometry (C), metabolic syndrome risk (D), and BFMI (E).

Results

The various criteria identified different percentages of subjects as needing to lose weight: (A) 41.3%; (B) 36.5%; (C) 47.6%; (D) 55.3%; and (E) 53.5%. Within these groups, there also emerged different percentages of subjects in whom weight loss would be strongly recommended: (A) 11.1%; (B) 25.4%; (C) 28.6%; (D) 33.9%; and (E) 21.4%.

The BMI, compared both to metabolic syndrome risk and to BFMI, identified a significantly lower percentage of subjects for whom treatment would be recommended. Similarly, the percentage of subjects for whom, on the basis of BMI, treatment would be strongly recommended was significantly lower than the percentages identified by the criteria metabolic syndrome risk, %BF, and waist circumference.

Conclusions

More people are identified as needing to lose weight when adiposity is used as the criterion on which the recommendation is based. A larger database on the relationships between body composition, morbidity and mortality is needed from which to derive the population-specific reference data that are needed to improve the diagnosis and treatment of at-risk individuals.