

New BMI Cut-Off Points for Obesity in Middle-Aged and Older Adults in Nutrition Settings in Italy

Laura Di Renzo¹, Leila Itani², Paola Gualtieri¹, Massimo Pellegrini³, Marwan El Ghoch³, and Antonino De Lorenzo¹

¹ Section of Clinical Nutrition and Nutrigenomic, Department of Biomedicine and Prevention, University of Tor Vergata, Via Montpellier 1, 00133 Rome, Italy

² Department of Nutrition and Dietetics, Faculty of Health Sciences, Beirut Arab University, Riad El Solh, Beirut 1107 2809, Lebanon

³ Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, 41125 Modena, Italy

Introduction

Obesity is a major health problem defined as an excess accumulation of body fat (BF). The World Health Organization (WHO) usually relies on a body mass index (BMI) ≥ 30 kg/m² as an indicator of obesity. Due to changes in body composition that occur across the lifespan, with an increase in BF and a decrease in lean mass, we aimed to test the validity of this BMI cut-off point for adiposity in middle-aged and older adults.

Objectives

We aimed to determine the validity of this BMI cut-off point (i.e. ≥ 30 kg/m²) for adiposity in middle-aged and older adults.

Methods

This cross-sectional study, composed of 4800 adults of mixed gender aged between 40 and 80 years, included (according to the WHO BMI classification) 1087 in normal-weight, 1826 with overweight, and 1887 with obesity who were referred to the Department of Biomedicine and Prevention, University of Rome “Tor Vergata”, Italy. The sample was then categorized by adiposity status based on the total BF% as measured by dual-energy X-ray absorptiometry (DXA), and the best sensitivity and specificity were attained for predicting obesity according to the receiver operating characteristic curve (ROC) analysis.

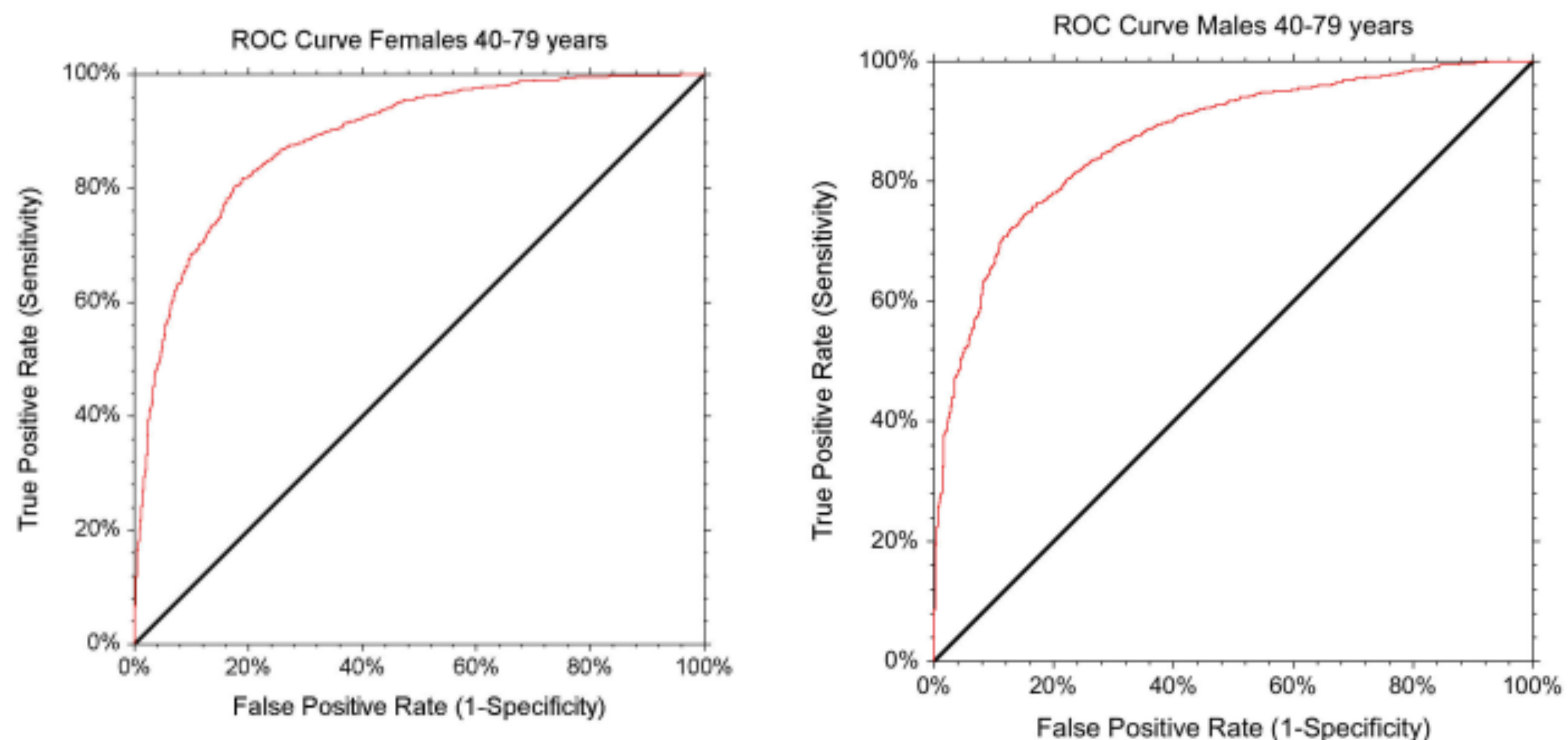
Results

The ROC analysis showed that the most appropriate BMI cut-off point for identifying obesity based on BF% was 27.08 kg/m² in females and 27.36 kg/m² in males, and area under the curve (AUC) of 0.89 and 0.88 respectively indicating the excellent discriminating ability of BMI of nearly 90% chance of detecting obesity. Finally these cut-off points showed a high sensitivity (80.69%) and specificity (83.63%), indicating a low chance of false negatives and false positives.

Conclusions

Conclusions: In our study, we provide evidence that the optimal BMI cut-off point (i.e., ≥ 27 kg/m²) corresponding to obesity in a middle-aged and older mixed-gender clinical population in Italy varies from the widely used one (i.e., ≥ 30 kg/m²). Therefore, we recommend that this new cut-off point be applied in clinical settings when screening individuals for obesity in Italy.

Figure 1. ROC curves in females and males for BMI cut-off point to detect obesity based on BF%



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References

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