Relationship between nicotine dependence and fat distribution

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Introduction
- The common belief is that smoking leads to weight loss and decreased BMI.
- An increasing number of studies indicate that smoking is a risk factor for central obesity.
- Obesity is a risk factor for type 2 diabetes, cardiovascular disease, and hypertension.
- Data from Asian populations is still deficient.
- The methods for assessing smoking status and measuring fat distribution in existing population-based studies can be improved.
- Most existing studies rely on anthropometric data such as the waist-to-hip ratio.

Objective of the Study
This study aims to evaluate the association between nicotine dependence and fat distribution among Chinese male adults.

Methods
- 1264 male adults, aged 18-79 years old, were recruited in Lanxi City, Zhejiang Province.
- All the subjects completed a questionnaire on demographics, lifestyle and medical history.
- Nicotine dependence was assessed with the Fagerström Test for Nicotine Dependence (FTND).
- Waist circumference (WC)/height ratio (WHR) and WC/hip circumference ratio (WHtR) were calculated as anthropometric indicators.
- Fat distribution was measured using dual-energy X-ray absorptiometry (DXA).

Analysis
- Subjects were categorized into three groups: nonsmokers, current smokers and former smokers.
- Current smokers were then further categorized into low (FTND score 0-2), moderate (3-5) and high (6-10) nicotine dependence groups.
- Results were adjusted for age, BMI, education, marital status, physical activity, alcohol use and health conditions (i.e. metabolic diseases).

Results
- Current smokers with high nicotine dependence were more likely to have higher WHR, WHtR, trunk fat %, android fat %, and android/gynoid fat ratio (AOI), and lower gynoid fat %, than nonsmokers.
- Among current smokers, WHR and WHtR increased with FTND score.
- Among older current smokers (age ≥60), WHR, WHtR, trunk fat %, android fat % and AOI increased with FTND score, while gynoid fat % decreased.
- Among younger smokers, only WHtR increased with FTND score.

Conclusion
The belief that smoking can protect against weight gain may be overly simplistic and misleading. Smoking is in fact a risk factor for central obesity.

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