Is percentage body fat differentially related to body mass index in Hispanic Americans, African Americans, and European Americans?

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Abstract

BACKGROUND: Limited research has been done to explore differences between ethnic groups, including Hispanic Americans (HAs), in the association between percentage body fat (PBF) and body mass index (BMI; in kg/m(2)); the numbers of HAs are increasing in the US population.

OBJECTIVE: We investigated whether the relation between PBF and BMI in adult HAs differed from that of African Americans (AAs) and European Americans (EAs).

DESIGN: We used a multiple regression model in which PBF measured with dual energy X-ray absorptiometry was predicted by the reciprocal of BMI (1/BMI; in m(2)/kg) in a sample of 487 men (n(EA) = 192, n(AA) = 148, and n(HA) = 147) and 933 women (n(EA) = 448, n(AA) = 304, and n(HA) = 181).

RESULTS: For men, our results showed no significant differences between HAs and EAs, AAs and EAs, or HAs and AAs in the slope of the line relating 1/BMI to PBF. In women, there were significant differences in PBF as predicted by BMI between HAs and EAs (P < 0.002) and AAs and HAs (P = 0.020), but not between AAs and EAs. When PBF was estimated on the basis of predicting equations, the trend of the predicted PBF value in women differed according to ethnic group and BMI category. At a BMI < 30, HAs
tended to have more body fat than did EAs and AAs, and at a BMI > 35, EAs tended to have more body fat than did the other groups.

**CONCLUSIONS:** Our results show that the relation between PBF and BMI in HA women differs from that of EA and AA women.