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## Preventive Medicine

Volume 12, Issue 2, March 1983, Pages 351-357

General article

# Relationship of obesity to diabetes: Influence of obesity level and body fat distribution

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[https://doi.org/10.1016/0091-7435\(83\)90244-X](https://doi.org/10.1016/0091-7435(83)90244-X)

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## Abstract

The relationship of clinical diabetes to body fat distribution and obesity level was examined in 15,532 women. After adjusting for relative weight, all upper body segment girth measurements (neck, bust, and waist) had strong positive associations with diabetes. In contrast, the lower body segment girth measurement (hips) had an equally strong but inverse association with diabetes. Based upon waist-to-hip girth ratio, women were divided into four subgroups. The prevalence of diabetes increased with increasing values of this ratio. Women in the upper quartile had about three times the prevalence of diabetes as women of comparable obesity level in the lowest quartile. Women with both upper body fat predominance and severe obesity had a relative risk of diabetes 10.3 times as great as nonobese subjects with lower body fat predominance. The results suggest that localization of fat in the upper body segment and severe

obesity are two distinct additive risks for diabetes.



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† This work was supported by TOPS Club, Inc., Obesity and Metabolic Research Program, Milwaukee, Wisc., and by Research Grants AM-24087 and AM-10305 and General Clinical Research Center Grant RR-00058 from the National Institutes of Health.

†† Presented in part at the Third International Congress on Obesity, Rome, Italy, October 8–11, 1980.

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