OBESITY

Light-to-moderate alcohol consumption may reduce weight gain in middle-aged or older women

Middle-aged or older women who drink light-to-moderate amounts of alcohol gain less weight and have a lower risk of becoming overweight or obese than nondrinkers, according to a prospective study published in the *Archives of Internal Medicine*.

“An inverse association between alcohol consumption and body weight gain among women has been observed in some previous studies. This inverse relationship is particularly strong and highly consistent in subgroup analysis in our study,” comments lead researcher Lu Wang of Brigham and Women’s Hospital, Boston, USA. “In addition, to our knowledge, our study is the first to examine the relationship between alcohol consumption and the risk of becoming overweight or obese among initially normal-weight women.”

Obesity is a modifiable risk factor for a number of chronic diseases, including hypertension, type 2 diabetes mellitus, cardiovascular disease and cancer. The relatively high energy content of alcohol might be expected to contribute to a positive energy balance and weight gain, but research findings have been inconclusive. The few prospective studies conducted have shown positive or null associations between alcohol consumption and body weight in men

and positive, inverse or null associations in women.

Wang’s team assessed the effect of alcohol intake on body weight in 19,220 female health-care professionals who participated in the Women’s Health Study. At baseline, the women, who were predominantly white, were aged 38.9–89.0 years and had a self-reported normal body weight (BMI 18.5 to <25.0 kg/m²). The investigators calculated each woman’s daily alcohol intake from the information she provided about alcoholic beverage consumption on baseline questionnaires; body weight was self-reported on annual follow-up questionnaires during nearly 13 years of follow-up.

During follow up, 41.3% of the women became overweight or obese (BMI ≥25 kg/m²) and 3.8% became obese (BMI ≥30 kg/m²). About a third of the women were nondrinkers (38.2%), whereas only 3% reported consuming ≥30 g of alcohol per day (2 or 3 drinks per day or more); therefore, only the role of light-to-moderate drinking could be evaluated in the study.

The researchers found an inverse relationship between weight gain and the amount of alcohol consumed. Furthermore, after adjustment for baseline BMI, age, smoking status, nonalcohol-related energy intake, physical activity level and other lifestyle and dietary factors, relative risk of becoming overweight or obese for women with an intake of alcohol of 0 g per day, >0–<5 g per day, 5–<15 g per day, 15–<30 g per day and ≥30 g per day was 1.00, 0.96, 0.86, 0.70 and 0.73, respectively, and the relative risk of becoming obese was 1.00, 0.75, 0.43, 0.39 and 0.29, respectively. The inverse association was maintained in subgroups stratified by age, smoking status, baseline BMI and physical activity level.

In the study, energy intake excluding the calories from alcohol decreased with increasing alcohol intake, which suggests that women substitute alcohol for other calories. This substitution may provide

a possible explanation for the inverse relationship found between weight gain and alcohol consumption. Alternatively, metabolism of alcohol may be inefficient in women. Wang *et al.* now plan to investigate the association between alcohol consumption and body weight change in men and also further investigate the factors that may explain or modify the effect of alcohol on body weight.

Despite the adjustment for a number of confounding factors in the study, Paolo Suter of University Hospital, Zurich, Switzerland points out that determining whether alcohol is a risk factor for weight gain is difficult, as there are so many uncontrollable confounders and bias.

“Probably, it is the whole lifestyle of the individuals (one component being light-to-moderate alcohol intake) which is protective for weight gain, for example, the intermediate alcohol consumers had the highest level of physical activity,” points out Suter. “In addition, the strongest association was found for red wine drinkers. We know from other studies on cardiovascular disease risk that a typical red wine consumer is socioeconomically better off than consumers of other alcoholic beverages. Information on socioeconomic aspects or educational status was not available but would represent an important risk and behavioral modifier.”

Suter concludes that a search for the health-promoting properties of alcohol is probably misplaced. “Societies prefer to consume (eat, drink or swallow a pill) instead of taking self responsibility and not consuming something but instead doing more physical exercise. We have to intensify our educational efforts to promote a healthy lifestyle so that research questions like the one of this article become superfluous.”

Carol Wilson

Original article Wang, L. *et al.* Alcohol consumption, weight gain, and risk of becoming overweight in middle-aged and older women. *Arch. Intern. Med.* **170**, 453–461 (2010)

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