

Dietary Fiber Intake Predicts 10-Yr Weight Change in 7,804 U.S. Adults

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ABSTRACT

Although the relationship between dietary fiber intake and obesity has been examined many times, studies evaluating the association between fiber consumption and long-term weight gain are rare. This is unfortunate because it is weight gain over time that drives the development of obesity. **PURPOSE:** This study was conducted to determine the relationship between dietary fiber intake and weight change over a 10-yr period in 7,804 U.S. men and women, 36-70 years old. **METHODS:** Data from the National Health and Nutrition Examination Survey (NHANES) were used to answer the research question. Because subjects were randomly selected, the results are generalizable to the U.S. adult population within the same age-range. Weight change (kg) over the previous 10 years was measured by subtracting self-reported, baseline body weight 10-yrs earlier from current measured body weight. Percent weight change was calculated by dividing 10-yr weight change (kg) by baseline body weight. Dietary fiber intake was assessed by taking the average of two 24-hr dietary recall interview results (midnight to midnight) administered by trained technicians, the first in-person and the second via telephone. Fiber consumption was expressed as grams consumed per 1000 kcal. Multiple regression was used to determine the linear relationship between fiber intake and percent weight change. Demographic covariates included age, sex, and race/ethnicity. Lifestyle covariates included total physical activity, smoking, alcohol use, and whether the participant was on a special diet. Potential mediating variables were controlled using partial correlation. **RESULTS:** After controlling for the demographic covariates, the association between fiber intake and percent 10-yr weight change was linear and inverse ($F=19.2$, $P<0.0001$). For each gram of fiber eaten per 1000 kcal, weight change was 0.33 percentage point less, on average. For each 3 grams of dietary fiber consumed per 1000 kcal, 10-yr weight change was 1 percentage point less, on average. With all the covariates controlled simultaneously vs the demographic only, the relationship was affected minimally ($F18.8$, $P<0.0001$). **CONCLUSION:** The more dietary fiber U.S. men and women consume, the less weight they tend to gain over 10 years.