

Usual Dietary Fiber Intake in US Adults with Diabetes: NHANES 2013–2018

Derek Miketinas,¹ Wesley Tucker,¹ Mindy Patterson,¹ and Crystal Douglas²

¹Texas Woman's University and ²The University of Texas Medical Branch

Objectives: The objective of this study was to quantify usual total dietary fiber intake in US adults and to examine whether intake differed by diabetes status (normoglycemic, prediabetic, diabetic).

Methods: Data from the National Health and Nutrition Examination Survey (NHANES) cycles 2013 – 2018 were used to estimate US adults' usual dietary fiber intake. Adults (> 19y) who were not pregnant and provided at least 1 day of dietary intake were included for analysis. Diabetes status was determined using the diabetes section of the personal interview as well as participants' hemoglobin A1c (HbA1c). Adults who reported that they had diabetes or had an HbA1c $\geq 6.5\%$ were classified as having diabetes. Those who indicated they had prediabetes or had a HbA1c between 5.7%–6.4% were classified as having prediabetes. Those who indicated they never had diabetes or had an HbA1c < 5.7% were classified as normoglycemic. Usual dietary intake was calculated using the National Cancer Institute method. Dietary intake of fiber supplements was not included in the

analyses. Independent samples t-tests were used to compare mean intake across sub-populations. A P -value < 0.01 was considered statistically significant.

Results: The eligible sample consisted of 14,640 adults (51.3% female) with 17.4% and 26.4% classified as having diabetes and prediabetes, respectively. Approximately 7.4% of US adults met the adequate intake (AI) for fiber: 14 g/1000 kcal. Females reported greater usual intake of total dietary fiber compared to males (9.9 ± 0.12 vs 8.7 ± 0.12 g/1000 kcal; $P < 0.0001$). Adults with diabetes reported greater dietary fiber intake compared to those without diabetes for men (9.6 ± 0.20 vs 8.6 ± 0.12 g/1000 kcal; $P < 0.0001$) and women (10.3 ± 0.21 vs 9.7 ± 0.14 g/1000 kcal; $P < 0.01$). However, the proportion of adults who met the AI for fiber was low for all men (8.6% with diabetes vs 4.3% without diabetes; $P < 0.001$) and women (11.5% with diabetes vs 8.0% without diabetes; $P = 0.012$).

Conclusions: Usual intake of total dietary fiber was poor overall, and most US adults failed to meet the AI. Although total dietary fiber intake varied across diabetes categories and was highest among participants with diabetes, intake was inadequate among all groups. Inadequate dietary fiber intake may result in increased risk for other chronic diseases in an already at-risk population.

Funding Sources: None.