

Oral Abstract 9 - Raisin Intake, Glycemic Control and other Cardiovascular Risk factors in Type 2 Diabetes Mellitus (James Painter, USA)

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Specific foods and dietary patterns may influence glycaemia and cardiovascular disease risk factors, and thus may have an impact on managing type 2 diabetes mellitus (T2DM) and cardiovascular disease (CVD). Worldwide health agencies recommend individuals increase the intake of fruit for improved health maintenance, including patients with diabetes mellitus. Traditional dried fruit without added sugar, such as raisins, are considered healthful foods and are a preferred snack because of their nutrient profile, which is rich in dietary fiber, potassium and health protective bioactive compounds. Dried fruit, like all commonly consumed fruit, provide sugar (e.g., fructose and glucose) as the only caloric macronutrient. This may raise concern for patients with diabetes mellitus regarding the potential to affect glycemic control. However, raisins have a low glycemic index, resulting in a low potential for insulinemic and glycemic response. While most fruits and vegetables have not undergone the rigors of objective clinical trial evaluation, a 12-week randomized controlled clinical study of 51 participants evaluated routine intake of raisins versus equicaloric, high carbohydrate processed snacks (e.g. crackers, crisps) on cardiometabolic risk factors in patients with T2DM. Those who consumed raisins had a significant ($p < .05$) 23% reduction in postprandial glucose levels, a 19% reduction in fasting blood sugar and a 0.12 % reduction in hemoglobin A1c ($p > .05$) (NS). Also compared to process snacks, raisins produced a significant 8.7mmHg reduction in systolic blood pressure, possibly due to potassium and other vasoactive raisin constituents. Body weight, anthropometric measures, and blood lipid levels did not change. This data was generally consistent with another objective controlled trial of raisins among patients with hyperglycemia, but not diabetes mellitus. Emerging data will be presented supporting the role of raisins and other traditional dried fruits as a healthy component of the daily diet, including patients with T2DM.

Oral Abstract 10 - Systematic Review and Meta-Analysis of Artificially-Sweetened Beverages and Type 2 Diabetes (Douglas Weed, USA)

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Objective. Whether an association exists between artificially sweetened beverages (ASB) and type 2 diabetes (T2D) is unclear. We undertook a systematic literature search and meta-analysis of the existing epidemiological studies of ASB-T2DM.

Materials and Methods. We searched PubMed and Scopus to identify prospective observational studies on ASB and T2DM. Data collected from these studies were combined using random effects meta-analysis. We identified possible confounders, assessed the control of confounding in the prospective studies, and calculated summary relative risks (SRREs) and 95% Confidence Intervals (CIs) including dose-response using actual data from the published studies. Publication bias was assessed using funnel plots and Egger's regression.

Results. Seven studies met inclusion criteria. The pooled estimate for extreme categories of ASB intake for models fully adjusted for confounders was (SRRE = 1.12, 95% CI: 1.03 – 1.22; $I^2 = 36\%$; $N=7$). We did not observe evidence of a dose-response pattern. Statistical assessment of publication bias suggested evidence of selective reporting of positive findings; a tally of cohorts that have reported on diet and T2D ($N=22$) suggests that the ASB-T2D relationship is published in only a subset ($N=7$).

Conclusions. The observed relationship between ASB and T2DM, although more homogeneous than previous estimates, remains a weak association lacking dose-response. Approximately 15 studies exist with unpublished data on diet and T2DM, providing an argument for the need for further research on this controversial topic to address prominent uncertainties.