

## **Nutrition News You Can Use: Eating nuts instead of carbohydrates benefits people with type 2 diabetes**

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Research from the team of David Jenkins and Cyril Kendall at the University of Toronto published in the August issue of *Diabetes Care* by the American Diabetes Association (1) shows that a dietary intervention using mixed nuts including roasted peanuts had significant benefits in helping people with type 2 diabetes control blood sugar levels (postprandial glycaemia) and blood lipids (LDL and HDL cholesterol) associated with coronary heart disease.

The move away from recommending a low-fat, high carbohydrate eating pattern for diabetes has developed pace since the 1990s. Recently there has been a growing interest in nuts and peanuts as attractive sources of plant-based unsaturated fats and other nutrients to achieve desired levels of HDL (beneficial) cholesterol and glycaemic (blood sugar) control. The Toronto study sharpens the focus on nuts and points towards future research. This has important implications both for those already diagnosed with diabetes and those with pre-diabetic risk factors.

In the study 117 middle aged men and women living in the community with diagnosed type 2 diabetes already taking antidiabetic medication were allocated to one of three groups for three month parallel studies: a full portion of mixed nuts, a half portion of both nuts and muffins, or a full portion of muffins. The energy and macronutrient content of the interventions was designed to be the same between the nuts and muffins.

The “full nut” supplement was about 75g (roughly 2oz or 475 kcals) of mixed roasted unsalted peanuts, almonds, pistachios, walnuts, pecans, hazelnuts, peanuts, cashews, and macadamias. All participants were told to substitute the supplement foods for carbohydrate foods they would normally include in their diets. How they did this was up to each individual. Blood samples were regularly taken to measure lipid and glucose levels.

Compliance was good in all groups, and particularly high in the “full nut” supplementation group with 39/40 participants completing the three month trial.

The main finding was that the “full dose” nut supplement when substituted for carbohydrates improved glycaemic control (HbA1c glycated haemoglobin was the marker) and lipid risk factors (lower LDL, higher HDL cholesterol) for coronary heart disease. The researchers concluded, “Two ounces of nuts daily as a replacement for carbohydrate foods improved both glycaemic control and serum lipids in type 2 diabetes.”

The reduction in HbA1c is an especially important finding. These participations were already taking anti-diabetic medication to reduce blood glucose levels and had reasonable levels of control. Yet the full dose nut supplementation further improved their level of control by two-thirds of the reduction recognised as clinically meaningful by the U.S. Food and Drug Administration. The researchers stated that this additional glycaemic control could translate into an additional 7-8% reduction in microvascular diabetic complications. The reduction in LDL cholesterol and improvement in HDL cholesterol was also important as most of these individuals were also taking statins to improve their blood lipid ratios. So the “nut effect” was additional to the benefits already being received from drug therapy.



This research does not mean that drug interventions are not required for most people with type 2 diabetes. But it does add to our understanding of how nuts substituted for carbohydrate in the diet can exert a powerful additional effect to achieve better glycaemic and blood lipid control. The important issue now is to determine whether peanuts alone can achieve this in people with established diabetes and whether the benefit could also be seen in people with pre-diabetes risk factors. Further research is needed to address these questions.

For consumers with diabetes this has many attractions. Peanuts and other nuts are tasty and easy to consume foods and substituting them for carbohydrate foods is not difficult and increases food choices. The nut supplementation group in this study did not gain weight, which is an added benefit in type 2 diabetes where overweight is often a precipitating factor. Anything which gives people with diabetes more control over their condition and wider food choices as well as providing an incentive to achieve better glycaemic and blood lipid control to reduce diabetic complications is very welcome. Peanuts look like they could be part of the solution.

1. Jenkins DJA, Kendall CWC et al. "Nuts as a replacement for carbohydrate in the diabetic diet". *Diabetes Care* 2011; 34:1–6.

