Study shows both a Mediterranean diet and diets low in available carbohydrates protect against type 2 diabetes

August 15 2013

New research shows that a Mediterranean-style diet and diets low in available carbohydrates can offer protection against type 2 diabetes. The study is published in *Diabetologia*, the journal of the European Association for the Study of Diabetes (EASD), and is by Dr Carlo La Vecchia, Mario Negri Institute of Pharmacological Research, Milan, Italy, and colleagues.

The authors studied patients from Greece who are part of the ongoing European Prospective Investigation into Cancer and nutrition (EPIC), led by Dr. Antonia Trichopoulou, from the University of Athens. From a total of 22,295 participants, actively followed up for just over 11 years, 2,330 cases of type 2 diabetes were recorded. To assess dietary habits, all participants completed a questionnaire, and the researchers constructed a 10-point Mediterranean diet score (MDS) and a similar scale to measure the available carbohydrate (or glycaemic load [GL]) of the diet.

People with an MDS of over 6 were 12% less likely to develop diabetes than those with the lowest MDS of 3 or under. Patients with the highest available carbohydrate in their diet were 21% more likely to develop diabetes than those with the lowest. A high MDS combined with low available carbohydrate reduced the chances of developing diabetes by 20% as compared with a diet low in MDS and high in GL.

The authors say: "The role of the Mediterranean diet in weight control is still controversial, and in most studies from Mediterranean countries the adherence to the Mediterranean diet was unrelated to overweight. This suggests that the protection of the Mediterranean diet against diabetes is not through weight control, but through several dietary characteristics of the Mediterranean diet. However, this issue is difficult to address in cohort studies because of the lack of information on weight changes during follow-up that are rarely recorded."

They point out that a particular feature of the Mediterranean diet is the use of extra virgin olive oil which leads to a high ratio of monounsaturated to saturated fatty acids. But again research here has been conflicting. One review of dietary fat and diabetes suggests that replacing saturated and trans fats with unsaturated fats has beneficial effects on insulin sensitivity and is likely to reduce the risk of type 2 diabetes. However, in a randomised trial of high-cardiovascular-risk individuals who were assigned to the Mediterranean diet supplemented with either free extra virgin olive oil or nuts and were compared with individuals on a low-fat diet (comparison group), there was no difference in diabetes occurrence between the two variants of the Mediterranean diet when compared with the comparison group.

Regarding GL, the authors say: "High GL diet leads to rapid rises in blood glucose and insulin levels. The chronically increased insulin demand may eventually result in pancreatic ? cell failure and, as a consequence, impaired glucose tolerance and increased insulin resistance, which is a predictor of diabetes. A high dietary GL has also been unfavourably related to glycaemic control in individuals with diabetes."

They conclude: "A low GL diet that also adequately adheres to the principles of the traditional Mediterranean diet may reduce the incidence of type 2 diabetes."

Provided by Diabetologia