

New PREDIMED Data: Mediterranean Diet Halves Incidence of New-Onset Diabetes

October 15, 2010 (Reus, Spain) — Use of the Mediterranean diet among nondiabetics at high cardiovascular risk halved the incidence of new-onset diabetes over four years compared with a low-fat diet, new research shows [1]. This is the first randomized clinical trial to look specifically at use of the Mediterranean diet for the prevention of diabetes, say **Dr Jordi Salas-Salvadó** (Human Nutrition Unit, Universitat Rovira I Virgili, Reus, Spain) and colleagues in their paper published online October 7, 2010 in *Diabetes Care*.

And of note, "the diabetes risk reduction occurred in the absence of significant changes in body weight or physical activity, so the reduction can be attributed only to the diet, not to weight loss," Salas-Salvadó told *heartwire* ; he added that energy restriction was not advised in the trial, nor was physical activity promoted. "The findings indicate that a non-energy-restricted traditional Mediterranean diet high in unsaturated fat could be a useful tool for preventing diabetes," he says.

Asked to comment on the new study, dietician **Stephanie A Dunbar** (**American Diabetes Association** [ADA], Alexandria, VA) told *heartwire* : "I think these results are very exciting. Previously, a randomized controlled trial, the **Diabetes Prevention Program**, showed that it was more the weight loss that helped to prevent diabetes, but in this study they are showing that by changing the foods you eat, you can reduce your risk without weight loss. Since weight loss is so difficult for people, I think this deserves some attention and hopefully further research."

Free Oil, Nuts, Cookbooks, and Aprons Given To Promote Compliance

The new paper by Salas-Salvadó and colleagues is a nested substudy of **Prevención con Dieta Mediterránea** (PREDIMED), which is a multicenter, randomized, parallel-group primary-prevention trial that is ongoing in Spain to assess the effects of two Mediterranean diets--supplemented with either extra virgin olive oil or mixed nuts--vs a low-fat diet as a control group on cardiovascular and other chronic-disease outcomes in persons at high cardiovascular risk.

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The investigators have previously reported a number of findings, including the fact that adherence to a Mediterranean diet appears to provide benefit to individuals with the metabolic syndrome. Completion of the overall PREDIMED trial is now expected at the end of 2011, Salas-Salvadó told *heartwire* .

This substudy, **PREDIMED-Reus**, was conducted in the only one of the Spanish centers of the overall trial to require a yearly oral glucose tolerance test in nondiabetic individuals as part of the protocol. In this study, 418 nondiabetic subjects aged 55 to 80 years were randomized to the low-fat diet (control group), or one of two Mediterranean diets supplemented with either free virgin olive oil (1 L/week) or nuts (30 g/day). Diets were without limits, and no advice on physical activity was given. The main outcome was diabetes incidence as diagnosed by the 2009 ADA criteria.

The principal components defining a traditional Mediterranean diet, which were recommended in the present study, are:

- Abundant use of olive oil for cooking and dressing.
- Increased consumption of fruit, vegetables, legumes, and fish.
- Reduction in total meat consumption, recommending white meat instead of red or processed meat.
- Preparation of homemade sauce with tomato, garlic, onion, and spices with olive oil to dress vegetables, pasta, rice, and other dishes.
- Avoidance of butter, cream, fast-food, sweets, pastries, and sugar-sweetened beverages.
- In alcohol drinkers, moderate consumption of red wine.

In addition, those assigned to the Mediterranean diet were given a free allotment of one liter of virgin olive oil per week or 30 g of mixed nuts per day. Participants allocated to the low-fat diet received recommendations to reduce all types of fat, from both animal and vegetable sources, but no free foods. Instead, to encourage adherence, at quarterly visits they were given small gifts, such as oil dispensers, aprons, shopping bags, or cookbooks.

Salas-Salvadó said that, in general, the diets were well tolerated, although compliance with the low-fat diet content, "as has been seen in other studies conducted in other countries, was difficult for our participants."

"Good News": A 52% Reduction in Diabetes Incidence Without Weight Loss

After a median follow-up of four years, diabetes incidence was 10.1%, 11.0%, and 17.9% in the Mediterranean-diet-with-olive-oil group, the Mediterranean-diet-with-nuts group, and the control group, respectively.

Multivariable-adjusted hazard ratios of diabetes were 0.49 and 0.48 in the Mediterranean-diet groups supplemented with olive oil and nuts, respectively, compared with the control group. When pooling the two Mediterranean-diet groups compared with the control group, diabetes incidence was reduced by 52%. In all study

arms, increased adherence to the Mediterranean diet was inversely associated with diabetes incidence.

Asked to explain the findings, given that there was no weight loss among participants, Salas-Salvadó said it has been observed that monounsaturated fats (from olive oil and nuts) are less oxidized and contribute to reduced insulin resistance. "Also, some of the components of the Mediterranean diet are very rich in antioxidant compounds, with important anti-inflammatory effects. It is now well recognized that a chronic low-grade inflammation and a pro-oxidation status are pathogenic factors in diabetes," he says.

This is further evidence that this is a really healthful eating pattern.

"These results extend those of prior studies showing that lifestyle interventions can substantially reduce the incidence of diabetes," he adds. "Education of the population on the Mediterranean diet might be a safe public-health approach to delay or prevent development of diabetes, as well as that of other prevalent chronic diseases."

Dunbar said these new findings "are good news. Studies have certainly been pointing to the Mediterranean diet for weight loss by itself, even in people who don't have diabetes. This is further evidence that this is a really healthful eating pattern."

*Salas-Salvadó has received research funding from the **International Nut Council**, Reus, Spain. He is a nonpaid member of the scientific advisory board of the International Nut Council. Coauthor **Dr Emilio Ros** (Instituto de Salud Carlos III, Madrid, Spain) has received a research funding from the **California Walnut Commission** and is also a nonpaid member of its scientific advisory committee. The other authors declare no conflicts of interest.*

References