



Western Pistachio Association

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NEW RESEARCH UNVEILS THAT PISTACHIOS MAY LOWER RISK OF TYPE 2 DIABETES BY IMPROVING BLOOD SUGAR LEVELS

University of Toronto Presents Compelling Findings at Experimental Biology Conference in New Orleans, LA

FRESNO, CA. – April 16, 2009 – The University of Toronto is unveiling new study findings at the Experimental Biology Conference in New Orleans on Sunday, April 19 that shows incorporating pistachios into a meal results in delayed emptying of the stomach and blunting of the blood sugar curve, which may be of benefit to long-term blood sugar control.

The new study, led by researcher Dr. Cyril Kendall from University of Toronto's Department of Nutritional Sciences and funded by the Western Pistachio Association, looked at the effects of pistachios on glucose and insulin responses and on their influence on satiety, or level of fullness. Previous studies have examined pistachios' effect on glucose levels, which showed a dose response effect on blood sugar levels. In order to further assess pistachios' impact on health, Dr. Kendall and his team studied the effect of pistachios on serum glucose, insulin levels and gut satiety hormone responses.

"Our study found that strategies, such as pairing pistachios with meals, decrease blood sugar peaks after a meal, which may result in a lower risk for type 2 diabetes and coronary heart disease (CHD) risk," said Dr. Cyril Kendall, University of Toronto. "Type 2 diabetes is associated with a four-fold increase of cardiovascular disease and an occurrence of kidney disease and blindness of 20 percent after 15 years of diabetes, making it the major cause of renal transplantation. There are currently 17.9 million people in the U.S. that have been diagnosed with type 2 diabetes, affecting a large portion of our population."

Study Design and Highlights

The University of Toronto study included 15 men and women who fasted and then consumed three similar types of test meals in random order. The meals consisted of white bread plus two ounces of pistachios; white bread plus butter and cheese; and the control meal was white bread. Blood samples were taken, and subjective satiety measures were assessed over a three-hour period in each of the test subjects.

The study found that:

- The pistachios meal reduced peak blood sugar levels after the meal relative to white bread, but was not different from the control meal.
- At three hours, serum grehlin was significantly lower following the pistachio and control meals compared with the white bread meal, indicating a greater reduction in hunger.
- Serum GIP was significantly raised by the pistachio and control meals relative to the white bread meal, indicating slower stomach emptying.

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- Pistachios consumed with carbohydrate rich meals may blunt/moderate the blood sugar response after a meal or postprandial glycemic impact and thus may be of benefit in improving long-term glycemic control.

Furthermore, in a study published in September 2008, pistachios were shown to have a dose-response effect on risk factors for heart disease, such as LDL cholesterol. Heart disease remains the leading cause of death among both men and women.

Pistachios and Other Nuts Lower HbA1C in Persons with Type 2 Diabetes

This new pistachio study ties into another study being presented today by Dr. Cyril Kendall, *“Dose Response to Mixed Nut Intake on Blood Lipids and Glycemic Control in Type 2 Diabetes”* and sponsored by the International Tree Nut Council’s (INC) Nutrition Research and Education Foundation. Pistachios were one of the nuts included in the study that showed incorporation of nuts into a diet following American Diabetes Association guidelines helps to improve long-term blood sugar control.

More recently, interest has grown in the potential value of including nuts in the diets of individuals with diabetes. To date, there have been few studies that have assessed the effect of nuts on glycemic control. Dr. Kendall’s aim was to assess the effect of two doses of mixed nuts on serum lipids and glycemic control in type 2 diabetics.

The study showed that nuts improved blood glucose control in people with diabetes and significantly lowered HbA1C (a marker of blood sugar control over the previous three months) and LDL cholesterol levels. The study concluded that mixed nuts may improve serum lipids and glycemic control in individuals with type 2 diabetes.

“Overall, nut consumption is associated with reduced risk of cardiovascular disease and better long-term control of blood sugar in persons with type 2 diabetes,” said Dr. Constance Geiger, RD, nutrition expert for the Western Pistachio Association (WPA). “What these two studies show is that pistachios blunt the blood sugar response after a meal and as one of the nuts in the INC study, further contribute to positive health by providing better long-term sugar control for individuals with type 2 diabetes. Furthermore, pistachios have been shown to reduce the risk factors for heart disease in people with moderately high cholesterol and as one of the nuts in the INC study, in persons with type 2 diabetes reduces LDL cholesterol which is a risk factor for heart disease.”

General Nutrition Facts about Pistachios

Pistachios are a natural cholesterol-free snack that contains just 1.5 grams of saturated fat and 13 grams of total fat – the majority of which comes from monounsaturated fat. A one-ounce serving of pistachios equals 49 nuts – more per serving than any other snack nut. One serving of pistachios has as much potassium as a small banana and three grams of fiber, making it a nutritious snack choice or ingredient to incorporate into your daily diet.

Additionally, in July 2003, the U.S. FDA announced that eating most nuts, such as pistachios, may help reduce the risk of heart disease when eaten as part of a diet low in saturated fat and cholesterol. Since then, the U.S. pistachio industry has committed to learning more about the nutritional benefits of pistachios and their impact on other health issues affecting Americans today.

About the Western Pistachio Association

Based in Fresno, California, the WPA is a voluntary association representing pistachio growers throughout the nation. Founded in 1980, it is the only organization representing all U.S. pistachio growers’ interests. It is governed by an 18-member board elected from a variety of states with the shared goal of increasing national awareness about the nutritional benefits of U.S pistachios. For more information, visit www.westernpistachio.org.