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**FILE: ■ Prickly Pear Cactus (*Opuntia ficus-indica*)
■ Metabolic Syndrome
■ NeOpuntia®**

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RE: Prickly Pear Pads Improve Subgroup Parameters of Metabolic Syndrome in Women

Linarès E, Thimonier C, Degre M. The effect of NeOpuntia® on blood lipid parameters-risk factors for the metabolic syndrome (syndrome X). *Adv Ther.* Sep-Oct 2007;24(5):1115-1125.

The fruit and cladodes (pads) of prickly pear cactus (*Opuntia ficus-indica*), commonly known as tunas and nopales, respectively, are important in food and traditional medicine throughout the American Southwest, Latin America, and elsewhere. Pre-clinical studies have indicated that consumption of prickly pear cactus pads may improve cholesterol levels and clinical studies show reductions in blood glucose, but there have been few clinical trials addressing the impact on blood lipids. NeOpuntia® (Bio Serae Laboratories, Bram, France) is a dietary supplement manufactured from dehydrated prickly pear cactus cladodes. This randomized, double-blind, placebo-controlled clinical trial was designed to examine the effects of NeOpuntia on parameters associated with metabolic syndrome, also known as syndrome X.

The study was conducted in Saint-Gregoire, France from May to June 2006 and included women with body mass indices between 25 and 40 kg/m² who had been diagnosed with metabolic syndrome according to the International Diabetes Federation 2005 guidelines based on abdominal obesity and defined excesses in at least 2 of the following 4 criteria: blood pressure and blood levels of glucose, triglycerides, and high density lipoprotein cholesterol (HDL-C). A total of 68 women were included in the intention to treat (ITT) analysis and 59 completed the study. According to the authors, the drop-outs were "mainly due to personal reasons." The subjects were randomized to receive either 1.6 g NeOpuntia capsules (n=35) or a placebo (n=33) 3 times daily 0.5-1 hour following meals for 6 weeks. Subjects were instructed on how to follow an average 2000 Calorie balanced diet with at least 30 minutes of physical activity daily.

Compliance was good in 90% of the subjects in both groups. There were no severe adverse effects associated with NeOpuntia or the placebo. There were 2 cases of gastric disorders leading to non-tolerance in the NeOpuntia group and 2 cases (1 gastric disorder and 1 insomnia) leading to non-tolerance in the placebo group. There were 7 milder adverse events, including digestive problems and constipation described by 7 subjects in the NeOpuntia group and 5 in the placebo group.

From baseline to day 42, decreases in low-density lipoprotein (LDL) cholesterol and total cholesterol were observed in both groups, including a borderline statistically significant decrease in LDL cholesterol in the placebo group ($P=0.05$). The decreases could be due to adherence to the diet and physical activity. Triglycerides decreased and HDL-C increased in the NeOpuntia group also without reaching statistical significance. By the end of the study, 92% of placebo group subjects still had metabolic syndrome, while only 61% of the subjects in the NeOpuntia group were still diagnosed with the disorder. This resulted from improvements in the criteria for metabolic syndrome that no longer met required parameters for HDL cholesterol ($n=1$), triglycerides ($n=2$), blood pressure ($n=10$), and waist circumference ($n=2$) that were achieved in the NeOpuntia group. Blood pressure ($n=14$) and triglyceride levels ($n=1$) were also improved in the placebo group, but levels of fasting glucose ($n=2$) and HDL-C ($n=1$) worsened and fell within the metabolic syndrome parameters. In subjects with total cholesterol ≥ 2.40 g/L ($n=24$), the NeOpuntia group showed a statistically significant greater increase in HDL "good" cholesterol ($P=0.041$) than placebo. In subjects over the age of 45, treatment with NeOpuntia also resulted in a significantly greater increase in HDL cholesterol ($P=0.029$), when compared to the placebo group.

The increases in HDL-C are especially important in postmenopausal women whose risk of cardiovascular disease increases as it typically declines. HDL-C increase could be attributed in part to interference with lipid absorption by prickly pear fiber. Antioxidants found in prickly pear cladodes may also contribute to the effects observed in this study. The authors conclude "the observed effect of NeOpuntia on HDL-C [cholesterol] levels, as well as other blood lipid parameters, shows a clear advantage for this nutritional supplement, compared with placebo, for the management of metabolic syndrome." More research, including a clinical trial with a larger sample size and confirmation of possible mechanisms of action, is needed.

—*Marissa Oppel, MS*

The American Botanical Council has chosen not to reprint the original article due to a lack of response from the publisher.

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