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**File: ■French Maritime Pine Bark (*Pinus pinaster*)
■Pycnogenol®
■Antihypertensive Effects**

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RE: Pycnogenol® May Reduce Dose of Antihypertensive, Nifedipine

Liu Ximing, Wei Junping, Tan Fensgen, et al. Pycnogenol®, French maritime pine bark extract, improves endothelial function of hypertensive patients. *Life Sciences* 2004;74:855-862.

Pycnogenol® (Horphag Research, Ltd., Geneva, Switzerland) is a standardized extract of French maritime pine bark (*Pinus pinaster*). It contains a variety of flavonoid compounds with antioxidant and anti-inflammatory properties. Previous animal and human studies suggest that Pycnogenol may also have an impact on blood pressure. The purpose of this study was to determine if Pycnogenol could reduce the dosage of blood pressure medication in people with high blood pressure.

The authors conducted a randomized, double-blind, placebo-controlled trial among 58 people (33 male, 25 female; average age: 57 years) with mild hypertension receiving treatment at 3 hospitals in China. They were randomly assigned to receive 1 of 2 treatments for 12 weeks: 0 mg of nifedipine, an antihypertensive drug, plus 100 mg of Pycnogenol or 20 mg of nifedipine plus a placebo. The individual dosage of nifedipine was adjusted every 2 weeks until each participant achieved a stable blood pressure. The researchers also measured several components in the blood to evaluate a potential mechanism of action for Pycnogenol.

At the end of the 12-week trial, those in the Pycnogenol group needed significantly less medication to control their blood pressure than those in the placebo group ($P < 0.001$). The Pycnogenol group had significantly higher blood levels of a prostaglandin that promotes vasodilation (relaxation of blood vessels) and leads to lower blood pressure ($P < 0.05$ [6-ketoprostaglandin F1]). The Pycnogenol group also had significantly lower blood concentrations of endothelin-1 at 4 weeks ($P < 0.01$) and 8 weeks ($P < 0.05$), but not at 12 weeks, than the placebo group. Endothelin-1 is a very potent compound that triggers vasoconstriction (constriction of the blood vessels) and increases blood pressure. Side

effects reported for both groups were mild and transient, and there was no statistically significant difference in side effects between the two groups.

The researchers believe that Pycnogenol may lower blood pressure by shifting the balance between vasodilation and vasoconstriction in the direction of vasodilation. The clinical significance of lowering the dose of medication is unclear. However, this study demonstrates that Pycnogenol improves the function of the endothelium (lining of the blood vessels). The authors suggest that Pycnogenol offers a broad spectrum of protection for people with high blood pressure.

—*Heather S. Oliff, Ph.D.*

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