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FILE: ■Lavender (*Lavandula angustifolia*)

■Aromatherapy

■Coronary Circulation

HC 110573-352

Date: May 15, 2008

RE: Lavender Shown to have Mild Relaxation Effects and May Benefit Coronary Circulation

Shiina Y, Funabashi N, Lee K, et al. Relaxation effects of lavender aromatherapy improve coronary flow velocity reserve in healthy men evaluated by transthoracic Doppler echocardiography. *Int J Cardiol.* August 7, 2007; epub ahead of print.

Mental stress is reported to impair blood circulation in the heart tissues (coronary circulation) and increase the risk of cardiovascular events such as heart attack and stroke. Stress management techniques appear to improve coronary circulation and clinical outcomes in people with heart disease. Aromatherapy with lavender oil (*Lavandula angustifolia*) promotes mental relaxation and research has demonstrated its sedative, anxiolytic, and antidepressant effects. The purpose of this study was to evaluate the effects of lavender aromatherapy on coronary circulation in healthy men.

This open-label, single-blind, controlled study was conducted by researchers at Chiba University Graduate School of Medicine in Chiba City, Japan. The subjects were healthy male volunteers ranging in age from 24 to 40 years. Subjects were evaluated on 2 separate evenings following a regular day of work. Subjects were instructed to lie down and relax in a quiet, dark room. After 30 minutes, blood samples were collected and coronary circulation was estimated using transthoracic Doppler echocardiography (TTDE). Lavender aromatherapy was then administered, using 4 drops of lavender essential oil diluted with 20 mL hot water. After 30 minutes of aromatherapy, blood collection and TTDE were repeated. All subjects returned on a separate evening and repeated all procedures except aromatherapy. The aromatherapy session was replaced by a second 30-minute rest session. This constituted the control group for the study.

TTDE is a non-invasive method for measuring coronary flow velocity. Coronary flow velocity reserve (CFVR) is an estimate of coronary circulation. CFVR is determined by first measuring the baseline velocity and then giving intravenous ATP to induce hyperemia

(increased blood flow) and measuring the hyperemic velocity. CFVR is calculated as the ratio of hyperemic velocity to baseline velocity. In this study, the TTDE operators were blinded to the study treatment.

Thirty men entered and completed the study. Mean serum cortisol, which is a marker for stress hormones, was significantly lower after aromatherapy than before aromatherapy ($P < 0.05$). Mean serum cortisol levels did not change significantly in the control group. Mean hyperemic velocity was significantly higher after aromatherapy ($P < 0.01$), but there was no significant increase in the control group. As a result, CFVR increased significantly ($P < 0.001$) after aromatherapy. This increase indicates an improvement in coronary circulation with lavender aromatherapy.

The authors state that this is the first study of the acute effects of aromatherapy on coronary circulation in healthy men. The authors conclude that lavender aromatherapy has mild relaxation effects and may have beneficial effects on coronary circulation.

The authors caution that this study evaluates only the acute effects of a single aromatherapy session and that long-term effects are unknown. Only healthy young men were evaluated in this study. Additional trials are needed to evaluate lavender aromatherapy in other populations, including people with ischemic heart disease.

—*Heather S. Oliff, PhD*

The American Botanical Council has chosen not to reprint the original article.

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