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**FILE: ■Ginkgo (*Ginkgo biloba*)
■Cognitive Performance
■Computers**

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RE: Ginkgo Special Extract EGb 761® May Improve Cognition and Decrease Stress for People who Work on Computers

Kaschel R, Hoerr R, Kresimon J, Rychlik R. The influence of ginkgo special extract EGb 761® on the performance of healthy subjects at computer workstations – open-label clinical study in pre-post design with a control group. *J Pharmakol u Ther.* 1/2007:3-9.

Clinical studies have shown that ginkgo (*Ginkgo biloba*) can improve cognitive performance and stress tolerance in healthy people and in elderly people with dementia. Studies using the special ginkgo extract EGb 761® have demonstrated improvements in brain function, emotional stability, mental capacity, attention, and coping with stress in healthy people. People who work at computer workstations for much of the day may suffer from health disorders such as fatigue, lack of concentration, irritability, and mental stress. The purpose of this study was to investigate the effects of EGb 761 on the performance of healthy people at computer workstations and to identify suitable tests to evaluate those effects.

The study was an open-label pilot study involving healthy people who were 45 years of age or older and who spent at least 50% of their workday in front of a computer. The study was conducted by researchers from the University of Osnabrück in Germany. Following a 2-week run-in period in which the subjects were trained on specific computer tests, the subjects completed baseline measurements of reaction capacity, sustained attention, eyesight sensitivity, stress perception, and quality of life. After the baseline measurements, subjects were allowed to choose if they wanted to be in the control group receiving no ginkgo or in the treatment group receiving 120 mg of ginkgo extract EGb 761 twice daily for 8 weeks (Tebonin®; Dr. Willmar Schwabe GmbH & Co., Karlsruhe, Germany). All subjects repeated the baseline tests after the 8-week treatment period ended, and the tolerability of EGb 761 was assessed.

The study enrolled 104 subjects, 84 of which completed the study according to the protocol. In the sustained attention test (a measure of long-term concentration) the number of errors made by subjects in the ginkgo group decreased significantly after 8 weeks compared to the

control group ($P = 0.035$). Perceived stress scores improved significantly in the ginkgo group ($P = 0.007$), and the "vitality" portion of the quality of life evaluation improved significantly in the ginkgo group ($P = 0.004$) compared to the control group. No significant differences were found between the 2 groups for reaction capacity after the 8-week treatment period. No serious adverse events were reported for either group, and the tolerability of EGb 761 was judged to be good.

The authors conclude that EGb 761 treatment produced clear objective and subjective improvements in concentration, perceived stress, and quality of life in people working at computer workstations much of the day. The authors assess the results to be particularly significant for people over 45 years of age, because that population group is more likely to perceive computer work as more stressful than a younger population. The authors recommend that a more extensive double-blind trial should be conducted using the tests identified in this study.

The results of this study are consistent with previous studies showing improvements in cognitive performance and stress tolerance. However, the authors provide results for only one of the eight "domains" of the quality of life evaluation (the SF-36 Health Survey). It is not known if ginkgo supplementation had any effect on the remaining seven domains, and this would be of interest to other researchers and readers.

The authors state that the results point to improvements relevant to everyday functioning at work may be attained with EGb 761 treatment, in conjunction with an increase in stress reduction and quality of life.

Since the participants could choose which group they wanted to be in, there is a high likelihood that those entering the ginkgo group had a strong bias towards the efficacy of ginkgo. The control group is not only a control for ginkgo but also a control for a placebo effect. There is no way to know if the improvements were due to ginkgo or placebo effect. This study was financed by the ginkgo manufacturer and supported by an insurance association.

—*Heather S. Oliff, PhD*

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