

ENZOGENOL®

Brain Function Study



Healthy brain function and a healthy nervous system are the most important body functions for many people. For the older population decline of memory and cognitive abilities with age are important concerns. For the younger population cognitive performance is critical to their careers.

Cognitive Function Study Design

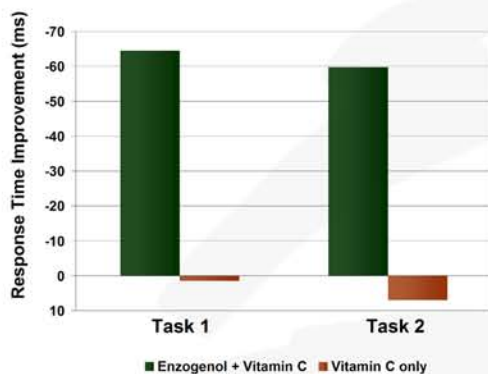
- Randomized, double-blind, controlled
- 42 subjects, aged 50-65
- Treatment: 960 mg Enzogenol + 120 mg Vitamin C daily (n=22)
- Control: 120 mg Vitamin C daily (n=20)
- Testing at baseline and after 5 weeks of supplementation

A specialist group at the Brain Sciences Institute of Swinburne University in Melbourne, Australia, investigated the effects of Enzogenol on cognitive function and brain activities.

Participants were tested with computer-based tasks to assess cognitive functions that involve short to medium term memory, concentration ability and decision making. These are typical cognitive abilities that normally decline when people age.

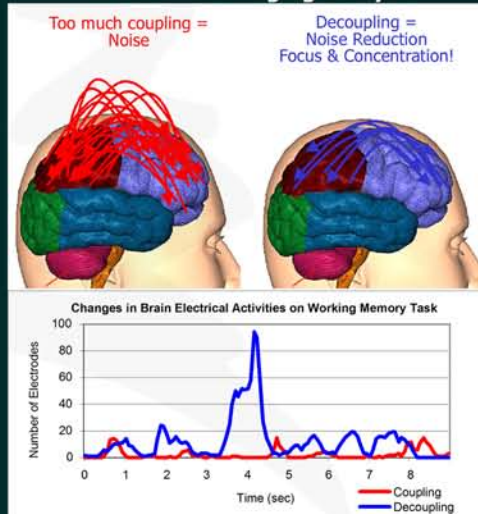
The effect of Enzogenol on brain electrical activities was also investigated. Brain activities were analysed while participants were performing computer-based tasks.

Computer-based Cognitive Testing



The effect of Enzogenol® + Vitamin C supplementation on cognitive performance on two independent working memory tasks controlled against Vitamin C only supplementation (n=42). On computer-based tasks designed to test the working memory of participants the Enzogenol group showed significant improvements in performance in form of faster reaction times after 5 weeks of supplementation over the vitamin C control group ($p < 0.05$). Working memory is the combination of memory and decision making functions in the brain. This is the first clinical study showing improved working memory performance through dietary supplementation with a pine bark extract (Pipingas A *et al.* publication in preparation).

Brain Neuroimaging Analysis



The effects of Enzogenol® + Vitamin C controlled against Vitamin C only supplementation on brain electrical activities upon performance of working memory tasks (n=42). Enzogenol supplementation caused unique changes in brain electrical activities in particular phases of the memory tasks that were not seen in the vitamin C control group. These changes in brain activity correlated with accuracy of performance on the tasks suggesting that the changes indicate enhanced cognitive processing in the Enzogenol group. (Pipingas A *et al.* publication in preparation).

Results:

This study found that taking Enzogenol over 5 weeks significantly improved performance on cognitive tasks. Enzogenol also improved brain electrical activities and stimulated the correct type of interactions in the neural network of the brain leading to the better concentration and performance on cognitive tasks.