

Study summary

Regular intake of Neuravena® improves vasodilator function in healthy older adults

Background

Oats in various preparations have been traditionally known for their physical and psychological fortifying properties, including reduced risk of heart disease, mild anti-depressant effects, increased ability to cope with stress, reduced anxiety. Neuravena® is an extract from a contract cultivated wild-type variety of the green oat herb (*Avena sativa* L.) developed as a cognitive booster using a bioassay-guided approach. The demonstrated extract's ability to inhibit the enzymes monoamine oxidase B (MAO-B) and phosphodiesterase 4 (PDE 4) suggest a wide range of potential functional effects, relevant to cognitive function including cerebral vasodilation. Preclinical and clinical research has shown the efficacy and safety of Neuravena® on cognitive health.

It has been hypothesized that the improvement in human cognition may be mediated by enhanced cerebral vasodilator function. Bioactive constituents in oats might have a role in improving vasodilation. In-vitro studies investigating the effects of Neuravena® on endothelial cells indicate vasodilatory potential. The aim of this study to determine whether Neuravena® results in sustained improvements of vasodilatation in both systemic and cerebral arteries in older adults.

Study design

Forty-two healthy men and women aged over 60 years were randomized to take 1500 mg of Neuravena or placebo daily for 12 weeks each in a double-blind, crossover supplementation trial. Blood pressure, heart rate, flow-mediated dilation (FMD) and cerebrovascular responsiveness (CVR) were assessed at

the end of each 12-week intervention period while fasted and at least 18 h after taking the last dose of supplement. Concomitant medications and supplement intake was monitored throughout the study.

After measurement of height and weight, participants rested comfortably for 10mins before blood pressure was recorded. FMD and CVR were assessed by noninvasive specialized ultrasound techniques in the brachial artery and the middle cerebral artery, resp. FMD of the brachial artery is a common method of assessing systemic vasodilator function.

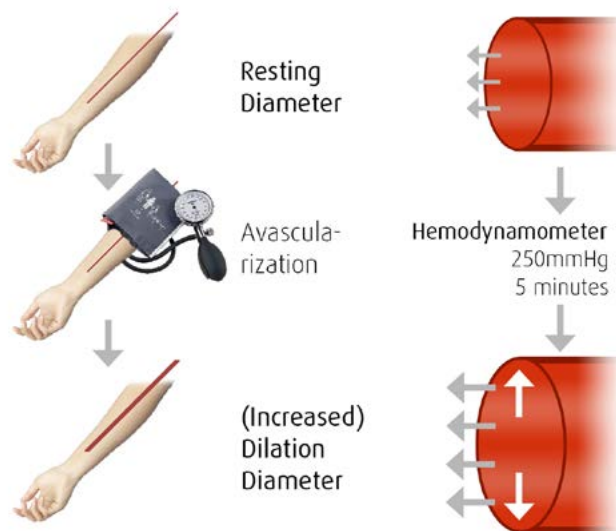


Figure 1: Flow-mediated dilatation (FMD) measurement



Results

Participants in this study were healthy, normotensive but slightly overweight and had a mean age of 67 ± 0.8 years. Of the 42 participants who were enrolled, 37 completed all assessment time points and were included in the data analysis of which 33 and 18 complete datasets were available at end of study for the FMD and CVR data analysis, respectively.

Neuravena® supplementation resulted in independent improvements in FMD and CVR after 12 weeks. These improvements were sustained effects as vascular assessments were obtained following a minimum fast of 4 h and at least 18 h after participants consumed their last supplement dose. This improvement was seen in more than 80% of the study participants (27 of 33 for FMD, 15 of 18 for CVR). The responses were of similar magnitude, ~40% increase in both cases.

Supine BP, heart rate were not affected by either Neuravena® or placebo

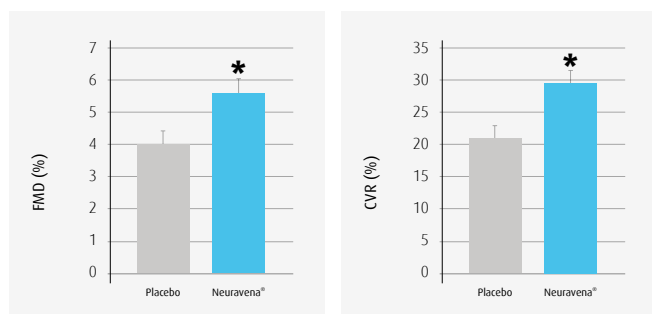


Figure 2: Comparison of Neuravena® with placebo on flow-mediated dilatation (FMD; n = 33) and cerebrovascular responsiveness (CVR; n = 18), following 12 weeks of daily supplementation (* $p < 0.01$, significant difference between Neuravena® and placebo)

To our knowledge, this is the first study to show a sustained improvement in the ability for blood vessels in the brain to dilate following regular use of a nutritional supplement. This improvement can be seen as an enhancement of

blood vessel function in the brain, thus improving blood flow and therefore vascular perfusion. As such, regular supplementation with Neuravena® may be beneficial for overall brain health.

Natural ageing is associated both with declines in cognitive function and with significant reductions in cerebral blood flow as well as impaired nitric oxide mediated vasodilator responses. Causes of a number of neurological disorders associated with cognitive decline, for example Alzheimer's disease, vascular dementia and stroke, also include deficits in cerebral blood flow. Therefore, any nutritional intervention that can boost cerebral blood-flow over an extended period of time, such as that observed with Neuravena® in this study, may contribute to attenuation of long-term cognitive decline.

Impaired FMD is a well-established marker for future cardiovascular disease and cardiac events, therefore, a sustained improvement in FMD as it was observed in this study with Neuravena® could contribute substantially and would be clinically important in reducing cardiovascular disease risk.

Summary

Regular dietary supplementation with Neuravena® resulted in enhanced systemic and cerebral endothelial function in healthy older adults. These vasodilator benefits may have significant implications for the prevention and attenuation of ageing-related health problems such as cardiovascular disease and cognitive decline.

For references please contact:
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