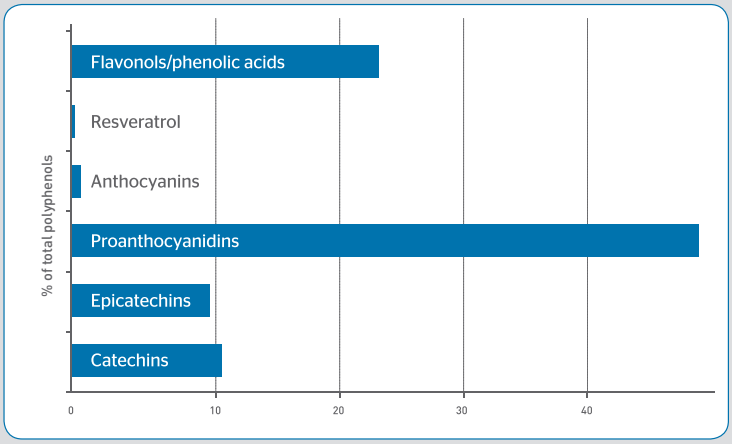
# The Research: Neurophenol®

## Neurophenol® typical content




Neurophenol® is a standardized blend of polyphenols obtained from Canadian wild blueberries and French grapes. Blueberries are a source of proanthocyanidins and phenolic acids, while grapes are a source of stilbenes and flavonols. The organic molecules are concentrated according to a proprietary manufacturing process in order to achieve highly purified extracts.

These extracts contain a blend of polyphenols, including monomers, oligomers, flavonols, anthocyanidins and phenolic acids.

Neurophenol® supports cognitive function, as demonstrated in several recent studies. In a recent randomized, double-blind study of 200 healthy individuals between the ages of 60-70, Neurophenol® provided significant support for episodic memory and verbal recognition memory. Animal research suggests that Neurophenol® may also support spatial memory. Spatial memory is essential for recording information about orientation in the environment, while recognition memory is a key factor in the ability to recognize previous events. In a multi-national study of 200 older adults, Neurophenol® provided significant support for cognitive performance and memory at a dose of 600 mg per day over a six-month period. The supplement supported episodic memory or the ability to remember a past event **(Figure 1)**. Neurophenol® also promoted the ability to encode and retrieve verbal information **(Figure 2)**. For both outcomes, significant support was evident in the lowest quartiles of initial performance **(Figures 1-3)**. These actions may be explained, in part, by modulation of the expression of genes involved in neuronal plasticity **(Figure 4)**.‡

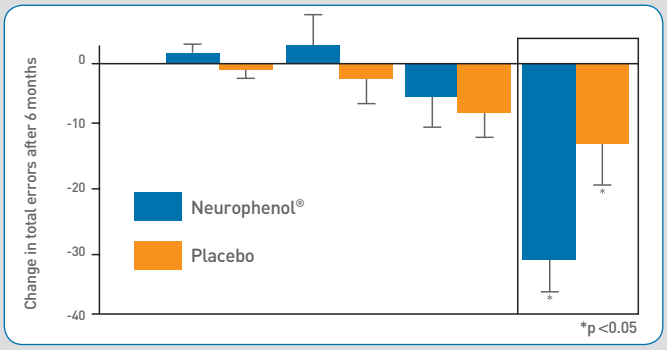



**Figure 1:** Neurophenol® supplementation supported episodic memory in older adults, as determined by paired associate learning test. Significant support was evident in the lowest quartile of initial performance ($p < 0.05$). (box, far right)‡

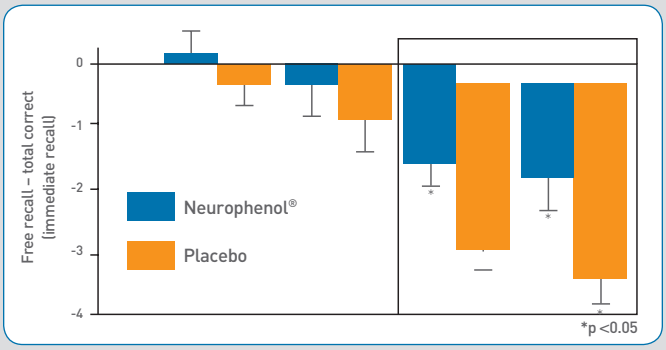



**Figure 2:** Neurophenol® supplementation supported recognition memory in older adults, as determined by verbal recognition memory test. Significant support was evident in the lowest quartiles of initial performance ($p < 0.05$). (box, far right)‡

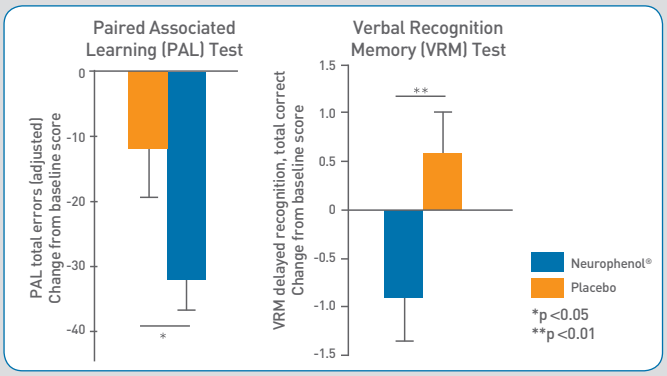



**Figure 3:** Neurophenol® provided significant cognitive benefit to individuals whose scores were lowest at baseline. Results from this group only are shown above. Neurophenol® supported episodic memory (left), indicated by the reduction of total errors in the Paired Associates Learning (PAL) test. Neurophenol® also provided significant support for verbal recognition memory (right).‡

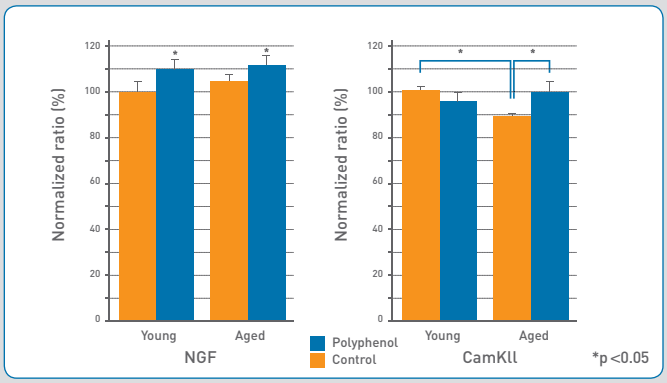



**Figure 4:** Neurophenol® supplementation promoted nerve growth factor (NGF) gene expression in both young and aged mice, and $Ca^{+2}$ / calmodulin-dependent protein kinase (CamKII) in aged mice. NGF promotes cholinergic nerve function to support spatial memory, while CamKII is involved in signaling cascades related to learning and memory.‡

Figures 1-4: Bensalem J, etc. *J Gerontol A Biol Sci Med Sci.* 2019 Jun 18;74(7):996-1007.