

POWER-UP!

Neumentix is a water-extracted natural dietary ingredient derived from spearmint that was selectively bred to be high in polyphenols and targeted to support cognitive & physical performance



**REDUCE
OXIDATIVE STRESS**



**INCREASE
NEUROTRANSMITTER LEVELS**



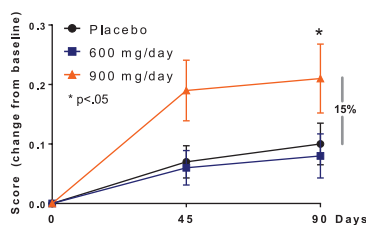
**PROMOTE
NEW NEURONAL GROWTH**



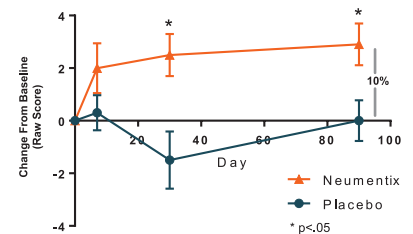
**PROTECT
NEURONS IN THE BRAIN**

How do Neumentix Polyphenols Work?

Neumentix Naturally Supports Working Memory and Attention

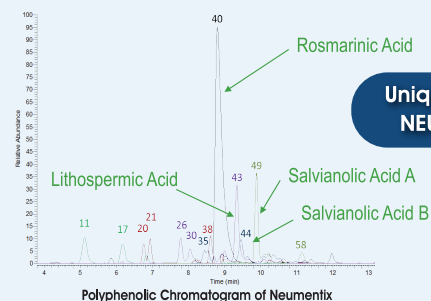
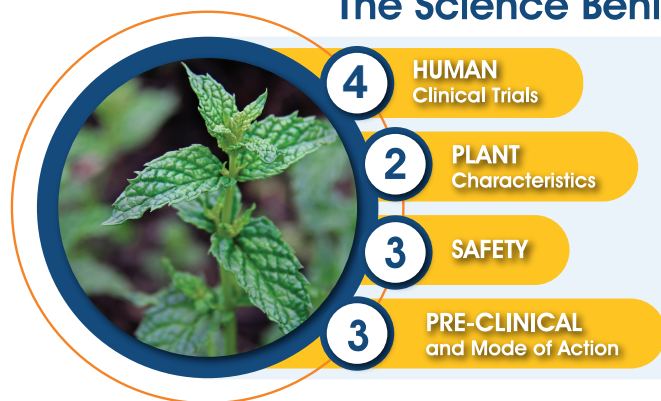


Quality of Working Memory in Age Associated Memory Impairment Population

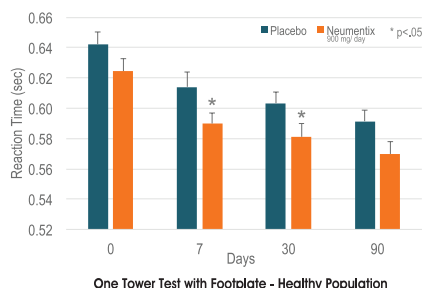


Sustained Attention Composite in Healthy Population

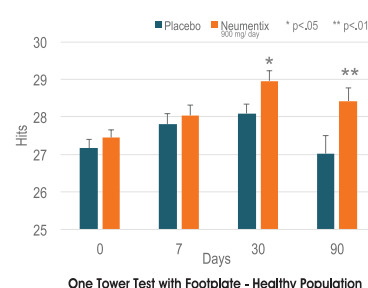
The Science Behind Neumentix Clinical Studies†



Neumentix Promotes Physical Performance



One Tower Test with Footplate - Healthy Population



One Tower Test with Footplate - Healthy Population



† Neumentix led to an 11% increase in sustained attention from baseline, significant compared to placebo. ‡ Calculated as a change from pre-supplementation within the Neumentix group minus the change from pre-supplementation with the placebo group. †† HUMAN CLINICAL TRIALS: Nieman et al., (2015, *Funct Foods Health Disease*), Herrlinger et al., (2018 *J Altern. Compl. Med.*), Makoto Study (2017, *ISSN and SFN*). PRECLINICAL & MOA STUDIES: Farr et al., (2016, *SAMP8, Physiology and Behavior*), Fonseca et al., (2016, *Neurogenesis, Soc Neuroscience*), Fonseca et al., (2017, *Anti-inflammatory, Exp Biology*). SAFETY STUDIES: Lasrado et al., (2015, *Regul Toxicol Pharmacol*), Nieman et al., (2015, *Funct Foods Health Disease*), Lasrado et al., (2017, *Regul Toxicol Pharmacol*). PLANT CHARACTERISTICS: Narasimhamoorthy et al., (2015, *Ind Crops and Products*), Cirilini et al., (2016, *Molecules*)

What is Neumentix?

Neumentix is a water-extracted natural ingredient sourced from spearmint selectively bred to be high in polyphenols such as rosmarinic acid.^{1,2} This exciting cognitive ingredient is targeted to support cognitive performance specifically, focus and working memory, without disrupting sleep at night.^{3,4} Neumentix benefits are clinically supported for healthy young adults as well as older individuals with age-related memory issues.

Kemin's Technology & Quality: Kemin developed Neumentix from patented, non-GMO, spearmint plant lines, identified through the screening of over 5000 plants. These plants are grown on family farms in the USA in accordance with good agricultural and sustainable farming practices. In fact, Kemin's spearmint lines are the first spearmint to be certified sustainably grown in the USA. These special plants serve as the source for this innovative dietary ingredient. The native polyphenolic profile of the leaves is harnessed through a patented polyphenol drying technology followed by a gentle water-extraction method which preserves and maintains the natural phenolic constituents, which are greater than 50 in number. The resulting extract is dried and undergoes rigorous quality testing prior to release.

Science Behind Neumentix

Working Memory: One of the unique benefits of Neumentix is that this extract has been shown to improve working memory. Working memory is part of short-term memory that allows for the storage and manipulation of information while working on another task. It is controlled by the prefrontal cortex and hippocampus.

This working memory benefit was shown in a randomized, double-blind, placebo-controlled clinical trial where healthy participants (age 50 to 70 years old) with age-related memory issues took either placebo or **900 mg of Neumentix** for 90 days.³ A 15% improvement in overall quality of working memory and a 9% improvement in accuracy in spatial working memory over placebo were detected.[#] The clinical relevance of these findings is noteworthy since research suggests that as we age cognitive performance can begin to decline by about 10% per decade starting as early as in our 20s.⁵

Sleep: Also, noteworthy and interesting, was that the participants taking 900 mg of Neumentix reported that they got to **sleep easier** and faster at night compared to subjects who took placebo.³

Neumentix Research Links Mental to Physical Performance

The beneficial effects of Neumentix in supporting both cognitive and physical performance improvements in young, healthy adults was investigated in a recent randomized, double-blind, placebo-controlled trial.^{4,6} The study included 142 healthy, recreationally active men and women around 27 years of age who were supplemented with either 900 mg of Neumentix or placebo for 90 days

with testing on days 0, 7, 30 and 90. Physical performance was assessed with a novel 360-degree mobility testing device called the Makoto Arena II while cognitive performance was measured using a computerized cognitive test battery. Researchers found that participants taking Neumentix not only had significantly higher scores than placebo in **sustained attention after 30 days of supplementation**, but that these significant improvements were still present after 90 days of supplementation. In addition, the individuals taking Neumentix displayed significantly **improved physical choice reaction performance as early as day 7** for reaction time, and improvements in the number of hits at day 30 maintained throughout the duration of the 90-day study. These findings build on earlier work showing benefits in working memory, and further emphasize the uniqueness of this special ingredient. Unlike most other cognitive ingredients on the market today, Neumentix works over time, even for focus and improved physical performance.

How do Neumentix polyphenols Work?

Neumentix contains more than 50 phenolic constituents including salvianolic, lithospermic and caftaric acids, in addition to the higher levels of rosmarinic acid than what are typically found in the commercial mint sold in the grocery store.^{1,2} The synergy between these bioactive constituents is likely key to understanding the clinical benefits of Neumentix. Research suggests that **these polyphenols can improve cognitive performance** in humans through at least four potential mechanisms of action:⁷

- 1 Reduction in oxidative stress;
- 2 Increase in acetylcholine, a neurotransmitter actively involved in learning and memory processes;
- 3 Neurogenesis, promoting the healthy growth of new neurons;
- 4 Neuroprotection, the ability to help keep neural cells healthy.

Neumentix is safe and well-tolerated

Consumers today expect safe and quality ingredients. Neumentix (standardized to 14.5% Rosmarinic acid) is **recommended for healthy adults at a dose of 900 mg taken once daily, preferably with meals in the morning**. Neumentix has been affirmed as Generally Recognized As Safe (GRAS). There have also been no reported product related adverse events in the three clinical trials lasting between 30 and 90 days.⁸⁻¹¹

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