



Nuts and Brain Health

Cognitive health is a life-long concern affected by modifiable risk factors, including lifestyle choices, such as dietary patterns.

Nuts, as a key component of healthy dietary patterns, have been linked with improvements in brain health, including better cognitive function, a reduced risk of depression, better mood, and enhanced memory, learning and attention capacity.



Cognitive Function

Well-established evidence shows that nutrition directly impacts the brain, influencing both cognition and the risk of dementia.

Evidence from prospective and randomised controlled trials shows that following plant-based dietary patterns containing antioxidant-rich foods – such as fruits, vegetables, whole grains, legumes, and nuts – is linked to a delay in age-related cognitive decline among older adults^[1].

The Mediterranean dietary pattern has also been studied for its effects on brain health, with research suggesting it may help protect against cognitive decline^[2, 3].

The PREDIMED trial, which examined dietary patterns in elderly people at high cardiovascular risk, found that those who followed a Mediterranean diet (including nuts or extra virgin olive oil) had better cognitive function (based on changes in memory, global cognition, attention and executive function), compared to those on a low-fat diet^[4, 5].

Several studies have reported that nut consumption is associated with better cognitive performance, with greater benefits seen in those with higher, long-term total nut intake^[6, 7], and in those with the highest consumption of nuts.

One study also suggested that eating nuts on a regular basis strengthens brainwave frequencies associated with cognition, healing, learning, memory and other key brain functions^[8], with another study showing benefits when walnuts are consumed^[9].

Depression and Mood

Healthy dietary patterns, which include nuts, have been linked with a lower risk of depression^[10].

The SMILES (Supporting the Modification of Lifestyle in Lowered Emotional States) intervention trial^[11] explored the impact of dietary changes on depression rates over 12 weeks – emphasising improved diet quality.

After following a 'Modified Mediterranean diet' (which included a daily 30g handful of nuts), SMILES study participants had significant reductions in depression symptoms. In fact, one in three, who

changed their diet, no longer had significant symptoms of major depression.

Specifically looking at nuts, a systematic review, of 10 previously-published studies, together involving more than 66,000 people, across five countries, concluded that higher nut consumption is associated with a reduced risk of depression and better mood state in the general population^[12].

In a pooled analysis, looking at the findings from two earlier cohort studies of older adults (>65 years), nut consumption was linked with a lower risk of depression. Among the findings, the odds of depression were 8% lower in those consuming ≥ 3 (30g) servings of nuts/week, compared to <1 serving^[13].

In another study, of 13,504 middle-aged and older UK-based adults, without depression at baseline, who were tracked over an average of 5.3 years – eating nuts daily (up to 30g) was linked with a 17% lower risk of depression, compared with not eating nuts^[14].

Learning and Memory

A Spanish study, of more than 2,200 mothers and their children, found children whose mothers ate more nuts during the first trimester of pregnancy, achieved the best results in tests measuring cognitive function, attention capacity and working memory^[15].

The children's neuropsychological development was assessed at 18 months of age and again at 5 years, and 8 years. Benefits were observed in the group of mothers who reported the highest consumption of nuts – a weekly average of just under three, 30g servings.

A cross-sectional study, involving 846 Spanish adolescents (aged 12-17 years), looked at academic performance data from school records, and used a food frequency questionnaire to estimate nut consumption^[16]. Compared to no consumption, ≥ 3 nut servings (with a serving classed as 20-30g nuts) per week was consistently associated with higher academic performance.

Associations with nuts and memory have also been found in older adults^[17].

How nuts contribute to brain health

The nutrients in nuts all have important roles in aspects of brain health.

And nut consumption has been linked to a wide range of benefits, including reduced oxidative damage, inflammation and platelet aggregation as well as better vascular responsiveness and immune functions ^[12, 18, 19].

The combination of healthy fats, phytochemicals, and nutrients with antioxidant and anti-inflammatory properties, may help protect vital functions of the brain and its blood vessels ^[20].

Components of nuts	Mechanisms of action
B group vitamins (folate, vitamin B2 and vitamin B6)	Necessary to produce specific components of the brain, such as neurotransmitters and cell structure
Polyunsaturated fatty acids	Critical components of neuronal cell membranes, maintaining membrane fluidity and communication between brain cells
Vitamin E	Directly involved in nervous cell membrane protection through its action as an antioxidant
Magnesium and calcium	Regulation of brain cell communication (neurotransmission)
Zinc	Component of enzymes and as a structural component of many proteins, hormones, hormone receptors and molecules involved in brain cell communication (neuropeptides)
Iron	Necessary to ensure oxygenation of the brain, as well as for the synthesis of neurotransmitters and myelin
Trace minerals such as manganese and copper	Participate in enzymatic mechanisms that protect against free radical damage
Phytonutrients (such as carotenoids and flavonoids)	Neuroprotective function through its role as an antioxidant

Based on current available evidence, eating nuts regularly is good for your brain. Enjoy a healthy handful of nuts, every day.



Overall, the evidence suggests a role for nuts in helping to maintain cognitive health and prevent cognitive decline, particularly in older adults.

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