

CALIFORNIA WALNUTS

NUTRITION
FROM **A** TO **Z**
SCIENTIFIC RESEARCH



ALZHEIMER'S DISEASE

- Walnuts may have a beneficial effect in reducing the risk, delaying the onset, or slowing the progression of Alzheimer's disease in an animal model.¹
- Walnut consumption, as part of a Mediterranean diet, is associated with better memory scores and cognitive function.²
- The nutrients found in walnuts, such as polyphenols, tocopherols and polyunsaturated fatty acids, may reduce oxidative stress and inflammation as well as help maintain neural membrane integrity and reduce protein aggregation involved in Alzheimer's disease in an animal model.³

BRAIN AND COGNITIVE HEALTH

- Eating nuts, including walnuts, may be related to better overall cognition at older ages.⁴
- Eating walnuts may improve performance on cognitive function tests, including those for memory, concentration and information processing speed in adults (ages 20-59 and 60 and older).⁵
- Consuming walnuts may be associated with a lower prevalence and frequency of depression symptoms. Researchers found that depression scores were 26 percent lower for walnut consumers and eight percent lower for consumers of other nuts, compared to those who did not consume nuts at all.⁶

CANCER

- Walnuts are a good cancer-preventative food in a healthy diet.⁷
- A cell study published in the European Journal of Nutrition looked at gene expression in prostate cancer cells and found that UA, the main human metabolite of walnut polyphenols, may help to inhibit or reduce the risk of prostate cancer from developing.⁸
- Researchers found that a diet including a modest amount of walnuts (equivalent to 2 ounces per day for humans - was associated with a decreased risk of breast cancer in mice. The study reported a 40% reduction in tumour incidence and a 44% reduction in multiplicity compared to mice not consuming to walnuts.⁹

- An animal study found that eating walnuts could modify gut bacteria in a way that is beneficial to colon health and may be associated with colon tumour suppression.¹⁰
- A small study, which included 10 women with breast cancer aged 45-67, found those who consumed approx. 57g of walnuts per day for 2-3 weeks experienced beneficial genetic changes related to cancer development and growth, including apoptosis (cell death), inflammation, cell proliferation (cell multiplication), and metastasis (spread of cancer).¹¹

DIABETES

- A study suggesting those who consume walnuts may have about half the risk of developing type 2 diabetes, compared to adults who do not eat nuts.¹²
- A study found walnut consumption to be associated with a significantly lower risk of type 2 diabetes in women who regularly consumed walnuts compared with women who never/rarely consumed walnuts.¹³

GUT HEALTH

- A 2017 animal study found that walnut consumption may be beneficial for digestive health by increasing the amount of probiotic type bacteria in the gut.¹⁴
- A 2018 study found that eating walnuts resulted in an increase in gut bacteria thought to be beneficial for health.¹⁵
- Scientists have found that consuming a walnut enriched diet positively impacted the gut microbiome by enhancing good probiotic and butyric acid producing bacteria in healthy individuals. Butyric acid is thought to be useful for digestive health by helping to maintain the health of the colon.¹⁶



HEART HEALTH

- Walnuts are the only nut to contain significant amounts of the plant-based essential omega-3 ALA (2.5g/30g). Research has shown ALA to have a beneficial role in the prevention of heart disease and strokes.
- California Walnuts have the heart-healthy seal of approval from the heart health charity, Heart UK.
- The EU has confirmed that a handful of walnuts a day (30 grams) can have a positive effect on the elasticity of the blood vessels and can thus help with keeping the cardiovascular system healthy.¹⁷
- Walnuts are rich in alpha-linolenic acid, an omega-3 fatty acid, which contributes to the maintenance of normal blood cholesterol levels.¹⁸
- California walnuts are naturally sodium and cholesterol free.
- Consuming walnuts may make LDL cholesterol less detrimental by enhancing its ability to inhibit the production of proinflammatory responses, including TNF alpha, IL-6 and IL-8.¹⁹
- Eating whole walnuts as part of a diet low in saturated fat may help improve central blood pressure in those at risk for heart disease, compared to a low saturated fat diet with omega-3 ALA from vegetable oil.²⁰

MEDITERRANEAN DIET

- A Mediterranean diet supplemented with olive oil or nuts (primarily walnuts) correlated with reduced age-related cognitive decline in an older Spanish population (ages 55-80) at high cardiovascular risk. It also correlated with improvements in memory compared to a low-fat diet.²¹
- A Mediterranean diet including tree nuts, primarily walnuts, was associated with a 30% lower risk of cardiovascular events (heart attack, stroke, or death) and specifically a 46% lower risk of stroke, when compared to a low-fat diet.²²

REPRODUCTIVE HEALTH

- A clinical trial found women who followed a Mediterranean-style diet during pregnancy, including a daily portion of tree nuts (half being walnuts) and extra virgin olive oil, had a 35 percent lower risk of gestational diabetes and on average, gained 2.75 pounds less, compared to women who received standard prenatal care.²³
- A study of healthy young men aged 21-35, who ate 75g of walnuts per day, experienced positive shifts in sperm quality factors including vitality, motility (movement) and morphology (form).²⁴
- Mice that were fed a walnut-rich diet showed a reduction in lipid peroxidation; a process that can damage sperm cells.²⁵

WEIGHT LOSS

- A short-term study found that walnuts may increase satiety and sense of fullness.²⁶
- Researchers found that eating walnuts may activate an area in the brain associated with hunger and cravings. Participants reported feeling fuller when consuming a smoothie with 48g of walnuts, compared to a placebo smoothie with same macronutrient content but with safflower oil instead of walnuts. Researchers saw activity in that brain suggesting participants paid more attention to food choices after eating walnuts.²⁷
- Research from the USDA found that one serving of walnuts (one ounce) may provide 146 calories, which is 39 calories less or 21 percent fewer, than the 185 calories listed in the USDA Nutrient Database.²⁸



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ABOUT THE CALIFORNIA WALNUT COMMISSION

The California Walnut Commission (CWC), established in 1987, represents the California walnut industry **made up of over 4,800 growers** and close to 100 handlers. **The CWC is mainly involved in health research and export market development activities.** More than 99% of the walnuts produced in U.S. are grown in the fertile soils of California. Internationally, California walnuts supply **two-thirds** of the world's walnut trade.

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