

Emerging Health Benefits of Coffee Consumption

Coffee has been brewed and consumed worldwide for centuries. Besides providing a source of caffeine, coffee contains a host of bioactive components—including antioxidant polyphenols such as chlorogenic acids (CGAs) and minerals. Let's explore more about the emerging benefits of drinking coffee—from offering protective effects against heart disease or type 2 diabetes—to potential reductions in cognitive decline with aging.

Coffee and Human Health Connections

While early evidence suggested that drinking coffee might be linked to increased risk of cardiovascular disease, type 2 diabetes and more, current findings suggest potential benefits.

Heart Disease

By combining data* from two large prospective epidemiologic studies including the Nurses' Health Study (>84,000 women followed for 20 years) and the Health Professionals Follow-up Study (>44,000 men followed for 14 years), researchers showed a modest protective benefit and a 16% reduced relative risk of coronary heart disease (CHD) among women consuming 2-3 cups of coffee daily; and a reduced relative risk of CHD for men (28%) and women (13%) drinking 6 cups of coffee or more daily compared to non-drinkers of coffee.¹ Other studies suggest there may be a lower risk of cardiovascular disease mortality among both men and women by as much as 10-15% with the consumption of 3-4 cups of coffee per day.^{2,3}

**[Data was adjusted for age, body mass index, presence of diseases, medications and lifestyle habits (smoking, alcohol use) that could be confounding.]¹*

Type 2 Diabetes

Evidence consistently links coffee consumption with decreased risk of type 2 diabetes.^{4,5} In a meta-analysis reviewing data from 18 studies (>450,000 participants), researchers showed a linear dose-response relationship between increased coffee consumption and reduced risk of type 2 diabetes as follows: drinking 3-4 cups daily (20% reduced risk), 5-6 cups daily (30%



reduced risk), 6+ cups daily reduced risk by 40%.⁵ Similar findings were noted in a previous Dutch study (>17,000 men and women).⁴ Whether reduced glucose uptake is related to the presence of caffeine or to other bioactive components such as CGAs has not yet been discovered.

Reducing Age-related Declines with Coffee

Aging can be characterized by progressive losses in nerve function, decreases in motor and cognitive performance—possibly caused by oxidative stress and inflammation to the brain. Studies with human subjects, animal surrogates and in cell culture suggest that

coffee consumption may offer health benefits to forestall or protect against age-related declines.

Cognition and Alzheimer's Disease

Researchers found that older women (65+ years) who drank more than 3 cups of coffee daily demonstrated a lesser decline in verbal cognition than non-coffee drinkers.⁶ In the Canadian Study of Health and Aging (CSHA), both men and women (65+ years) showed a 30% reduced risk of dementia with coffee, but not tea consumption.⁷ At midlife, long-term coffee drinkers (3-5 cups daily) had a 65% lower risk of dementia and Alzheimer's disease in later life.⁸ New findings among 4,500 CSHA cohorts suggest that long-term coffee consumption may confer benefits not seen in abstainers, possibly due to antioxidants present in coffee.

Memory and Motor Function

Studies with aged rats fed diets rich in anthocyanins (polyphenols from purple grape or plum juice), showed that age-related deficits in learning and memory can be delayed or reversed.^{9,10} Using coffee in a similar research model, scientists confirmed that among aged rats fed various coffee dose-equivalents (0, 3, 5, 10, 15 cups), those fed the 10-cup daily dose-equivalent of coffee exhibited improvement in motor function and working memory. Further study is needed to elucidate whether the polyphenols from coffee (CGAs) are

responsible for curtailing brain aging, or if changes are related to caffeine, independent of coffee.

Neuroprotection

Roasted caffeinated coffee appears to protect mouse neuronal cells in culture from oxidative stress—yet unroasted caffeinated green coffee does not.¹¹ Scientists suggest that pathways activated by stressors (such as inflammation and oxidation) that tend to cause brain cell death—seem to be interrupted by roasted caffeinated coffee and its lipophilic antioxidant activity.¹¹ Through the roasting process, CGAs in coffee are converted to CGA-lactones, more lipophilic substances, which appear to protect brain cells from cognitive decline—findings that lend credibility in support of coffee consumption for brain health.

Bottom Line

Research findings that link coffee consumption (from 3 to 10 cups daily) to heart and diabetes health benefits, as well as protection from age-related brain decline, continue to emerge. Precisely which component(s) in coffee is responsible for conferring these long-term health benefits is still under investigation.

For More Information about Emerging Coffee Benefits

View link at: <http://www.ilsa.org/northamerica/documents/science%20briefs/nutrition%20briefs%20for%20april%202010.pdf>

Information is summarized from *Emerging Health Benefits of Coffee Consumption—a symposium presented at an Institute of Food Technologists meeting on July 20, 2010.*

Sources

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