

This is the full length article which was published on this web site in three sections in January 2013.

A link to references is at the end of the article.

COFFEE: Is this the Original Wonder Drug?

The best part of waking up is taking a few minutes to enjoy a cup of coffee before heading out to work. And the additional benefit of this ritual is you're reducing your risk of neurodegeneration. And depression, and cancer, and cardiovascular disease...

It's becoming increasingly clear that coffee is more than just a morning routine. The body of data suggesting that the world's most widely used stimulant is beneficial in a variety of mental and medical conditions is growing at a staggering rate. A recent study published in the *New England Journal of Medicine* found that coffee consumption lowered all-cause mortality by over 10% at 13-year follow-up.¹

Cardiovascular Disease

Although it seems counterintuitive, a substance known to increase blood pressure might actually be good for your cardiovascular system. Caffeine consumption can cause a short-lived increase in blood pressure – a major risk factor for cardiovascular disease (CVD) – and regular use has been linked to a longer-term increase. However, when caffeine is ingested via coffee, enduring blood pressure elevations are small and CVD risks may be balanced by protective properties. Coffee beans contain antioxidant compounds that reduce oxidation of low-density lipoprotein (LDL) cholesterol (the bad cholesterol) and coffee consumption has been associated with reduced concentrations of inflammatory markers.^[2-7] Moderate coffee intake was associated with a lower risk for coronary heart disease as far out as 10 years,^[3] and new data suggest that an average of 2 cups a day provides some protection against heart failure.^[8]

Cerebrovascular Disease and Stroke Risk Reduced by up to 25%

The vascular benefits of coffee are not lost on the brain. According to a 2011 meta-analysis, consuming between 1 and 6 cups a day reportedly cut stroke risk by 17%.^[9] A 22% to 25% risk reduction was seen in a large sample of Swedish women followed for an average of 10 years.^[10] And while coffee's impact on stroke risk in those with CVD is still in question, a meta-analysis presented at the European Meeting on Hypertension 2012 found that 1 to 3 cups a day may protect against ischemic stroke in the general population.^[11]

Diabetes and Weight Loss

Despite coffee's association with increased blood pressure, the steamy brew appears to benefit other aspects of so-called "metabolic syndrome," the dangerous cluster of hypertension, hyperglycemia, abnormal lipid levels, and increased body fat. Numerous studies have linked regular coffee drinking with improved glucose metabolism, insulin secretion, and a significantly

reduced risk for type 2 diabetes.^[12-14] Preliminary data from an ongoing study also suggest that coffee consumption can promote weight loss. Overweight patients treated with unroasted coffee beans in supplement form lost an average of 17 pounds over 22 weeks. The study authors suspect that this effect may be due in part to coffee containing chlorogenic acid, a plant compound with antioxidant properties thought to reduce glucose absorption.^[15]

Cancer

With so many ingestibles thought to increase cancer risk – soda, grilled meat, all things pickled – at least we can rest easy when it comes to coffee (according to recent data, anyway). Evidence suggests that moderate to heavy coffee consumption can reduce the risk for numerous cancers, including endometrial (> 4 cups/day),^[16] prostate (6 cups/day),^[17] head and neck (4 cups/day),^[18,19] basal cell carcinoma (> 3 cups/day),^[20] and estrogen receptor-negative breast cancer (> 5 cups/day).^[21] The benefits are thought to be at least partially due to coffee's antioxidant and antimutagenic properties.^[16,18]

Neurodegeneration

It's clear that coffee temporarily affects cognition – try getting through morning rounds without a cup. But new research also links coffee with more enduring effects on cognitive well-being. A study published in the *Journal of Alzheimer's Disease* showed that patients with mild cognitive impairment and plasma caffeine levels of > 1200 ng/mL – courtesy of ~3 to 5 cups of coffee a day – avoided progression to dementia over the following 2 to 4 years.^[22] Corresponding studies in mice suggest that caffeine suppresses enzymes involved in amyloid-beta production, while coffee consumption boosts G-CSF, interleukin-10, and interleukin-6 levels, cytokines thought to contribute to the reported benefits. Caffeinated coffee has long been thought to be neuroprotective in Parkinson disease (PD), and recent work found that variants in the glutamate-receptor gene *GRIN2A* affect PD risk in coffee drinkers.^[23] Furthermore, data presented at this year's American Academy of Neurology Annual Meeting showed that 3 cups of coffee a day may prevent the formation of Lewy bodies, a signature preclinical pathologic finding in PD.^[24] Despite the encouraging associations in neurodegenerative disease, caffeine intake has also been associated with accelerating age of onset of Huntington disease.^[25]

Depression

A 2011 study suggests that a boost in coffee consumption might also benefit our mental health^[26]: Women who drank 2 to 3 cups of coffee per day had a 15% decreased risk for depression compared with those who drank less than 1 cup per week. A 20% decreased risk was seen in those who drank 4 cups or more per day. The short-term effect of coffee on mood may be due to altered serotonin and dopamine activity, whereas the mechanisms behind its potential long-term effects on mood may relate to its antioxidant and anti-inflammatory properties, factors that are thought to play a role in depressive illnesses.^[26-29]

Liver Disease

The liver might help break down coffee, but coffee might protect the liver (in some cases). Evidence suggests that coffee consumption slows disease progression in patients with alcoholic cirrhosis and hepatitis C and reduces the risk of developing hepatocellular carcinoma.^[30-33] A 2012 study reported that coffee intake is associated with a lower risk for nonalcoholic fatty liver disease (NAFLD),^[34] while other recent work found that coffee protects against liver fibrosis in those with already established NAFLD.^[32]

But That's Not All...

A grab-bag of other research suggests that coffee intake may relieve dry-eye syndrome by increasing tear production,^[35] reduce the risk for gout,^[36] and potentially fight infection.^[37] Coffee and hot tea consumption were found to be protective against one of the medical community's most concerning bugs, methicillin-resistant *Staphylococcus aureus* (MRSA).^[37] While it remains unclear whether the beverages have systemic antimicrobial activity, study participants who reported any consumption of either were approximately half as likely to have MRSA in their nasal passages.

And Finally, the Risks

As is often the case, with the benefits come the risks, and coffee consumption certainly has negative medical and psychiatric effects to consider. Besides the aforementioned potential increase in blood pressure, coffee can incite or worsen anxiety, insomnia, and tremor and potentially elevate glaucoma risk.^[38] Also, given the potential severity of symptoms, caffeine withdrawal syndrome is under consideration for inclusion in the forthcoming DSM-5.^[39]

Additional research is necessary to better assess and balance the potential benefits and drawbacks of coffee consumption. But mounting evidence suggests that going back for a second cup might not necessarily be a bad decision.

[References](#)