

## Medical Murmurs

### The Benefits of Tea

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Listen up fathers, grandmothers, and party-hearty twenty-some-things: imbibing 888 mL per day of green, black, or oolong tea can add years to your life. And while 888 mL may seem like an awful lot of tea, it is the fluid equivalent of just 2.5 cans of beer – or, if be you so disposed, soda water.

After water, tea is the second most consumed beverage worldwide. So what exactly is so great about tea? If great taste, low price, and popularity are not reasons enough for you to drink tea in lieu of your morning coffee, try these on for size.

#### Tea Prevents Heart Disease

Tea protects against atherosclerosis and heart disease by exerting an anti-oxidant effect.<sup>1,5</sup> Particles of oxidized low density lipoprotein (LDL) cholesterol damage vascular structures such as arterial vessel walls. Tea contains (as 35% of dry weight) anti-oxidant polyphenols, which inhibit the oxidation of LDL cholesterol.<sup>1</sup> Green tea catechin polyphenol (-)-epigallocatechin gallate, and black/oolong tea polyphenol theaflavin-3-3'-digallate are the most potent anti-oxidants.<sup>2,4,5</sup> In humans tea has been shown to reduce total and LDL cholesterol concentration by 6.5% and 11% respectively.<sup>6</sup> Furthermore, the anti-oxidant properties of tea polyphenols are not adversely affected by the addition of milk.<sup>5</sup>

#### Tea Prevents Cancer

Tea is chemopreventive against esophageal and gastric cancer.<sup>4</sup> Tea lowers mammary gland carcinogenesis in rats, and green tea inhibits lung tumorigenesis in mice by as much as 80%. Tea polyphenols suppress oxidative damage of DNA. They also lower activation and increase detoxification of carcinogens by inducing higher production of glucuronosyl transferases. Tea inhibits activation of heterocyclic amines, carcinogenic compounds present in grilled meat which have been linked to breast and colon cancer – compounds which are difficult, if not impossible, to avoid. Tea also inactivates nitrosating agents found in smoked meats and food preservatives, which may lower the risk of developing gastric cancer.<sup>5</sup>

#### Tea is Good for Intestinal Flora

Tea has bacteriostatic and bactericidal properties. Through reduction of *Enterobacteriaceae* and increased levels of *Lactobacilli* and *Bifidobacteria*, tea improves the odor of stools and decreases the pH of intestinal contents, which further inhibits the oxidative activation

of carcinogens. Tea also decreases *Helicobacter pylori*, which has been associated with gastric ulcers.<sup>2,5</sup>

#### Tea Helps People Lose Weight

Drinking green tea has been shown to lower body weight by increasing the 24-hour energy expenditure.<sup>6</sup> People who drink green tea have decreased fat storage and accumulation, increased energy expenditures, and increased fat oxidation.<sup>1,2</sup>

#### Like You, Tea Works Better With Caffeine

And now for the bonus: the anti-oxidant, hypocholesterolemic, cancer-preventing, weight-loss-inducing properties of the miracle beverage called tea are more effective when the tea contains caffeine. Tea polyphenols, caffeine, and gastric enzymes work synergistically to deliver tea's benefits. Caffeine-free tea is still good for you; you can compensate for the lack of caffeine by increasing the steeping time of the tea, so as to increase the polyphenol concentration per cup.<sup>3</sup>

#### Summary

Although anecdotal evidence has long favoured green, black, and oolong teas as protective against heart disease and cancer, and promoting general good health, only in recent years has conclusive evidence been presented to support these claims. Tea has been shown to possess significant anti-oxidative properties, both *in vitro* and *in vivo*. It reduces LDL and total cholesterol in mildly hypercholesterolemic adults, is associated with improved metabolism, and positively affects intestinal health. Thus the conclusion is clear:

Tea should be drunk by all people, great and small, with or without milk.

#### References

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