

## Tea Time

New research uncovers more health benefits associated with the popular beverage.

*A Newsweek* column by Dean Ornish M.D.

[hed] Touting Tea

[dek] A new study finds that drinking tea may reduce the risk of deadly diseases--and that's just one of many health benefits associated with the popular beverage.

I love coffee. I love the way it smells. I love the way it tastes. (Although I'm so sensitive to caffeine, even a cup of coffee makes me talk as fast as Robin Williams might sound if he were on speed--and, hey, do you have to drive so slowly?) But I drink tea now. Most of the time.

Apparently, I'm not alone. Tea is the most widely consumed beverage in the world, other than water. Over 6.6 billion pounds of tea are produced each year.

Why? More and more research is documenting that what we include in our diet is as important as what we exclude. Tea contains a variety--perhaps thousands--of powerful, protective antioxidant substances called polyphenols, especially flavonoids such as catechins, that may help reduce the risk of some of the most common chronic diseases.

For example, a study was published two weeks ago in the Journal of the American Medical Association that followed more than 40,000 Japanese men and women over a seven- to eleven-year period. They found that green tea consumption was associated with a reduced mortality due to all causes except cancer.

The more green tea they drank, the lower their risk of dying early. Researchers found that that the overall risk of premature death due to illness was 26-percent lower among those who consumed five or more cups a day compared those who drank less than one cup per day of green tea after seven years of follow-up.

Interestingly, the effects of tea on reducing the

risk of cardiovascular disease were not caused only by changes in traditional risk factors such as cholesterol levels or blood pressure. The polyphenols in green tea appear to have powerful antioxidant properties and are scavengers for free radicals that otherwise could damage your cells. These polyphenols may directly and beneficially affect coronary artery blockages (atherosclerosis), dilate your arteries, and also help reduce the formation of blood clots. Green tea also has significant anti-inflammatory effects. Black tea and oolong teas were not found to be quite as protective as green tea.

This is not surprising. Teas are categorized by the level of fermentation: green tea is unfermented (and so retains the original color of the tea leaves), oolong tea is partially fermented, and black tea is fermented (which makes it dark in color). The process of fermentation reduces the protective activity of the flavonoids, which are highest in green tea, intermediate in oolong tea, and lowest in black tea. On the other hand, caffeine is highest in black tea, intermediate in oolong, and lowest in green tea. The caffeine in green tea is also lower than in coffee or cola soft drinks.

Unfortunately, about 77 percent of the tea produced and consumed in the world is black tea, only 21

percent is green tea, and less than 2 percent is oolong tea, according to a recent study in the International Journal of Cardiology--even though black tea has the highest amount of caffeine and provides the lowest health benefits. The total concentration of the protective catechins in the blood after drinking green tea is three times higher than after drinking black tea. Still, while green tea is best, all teas have been shown to have health benefits.

While the Japanese researchers did not find that tea reduced the risk of cancer, other studies have. Animal studies have shown that green tea may inhibit cancer formation of the skin, lung, oral cavity, esophagus, stomach, liver, kidney, prostate and other organs. In humans, studies suggest that drinking tea may reduce the risk of digestive cancers. For example, a study of more than 35,000 postmenopausal women in Iowa, published in the American Journal of Epidemiology in 1996, found that those who drank more than two cups per day of tea were 32 percent less likely to have cancers throughout their digestive tract, including reduced cancers of the mouth, esophagus, stomach, colon and rectum. Four or more cups per day of tea lowered the risk of such cancers by 63 percent.

Some (but not all) studies with varying degrees

of rigor suggest that drinking tea may reduce the risk of early-stage breast cancer, prostate cancer, ovarian cancer and lung cancer. In one study, green-tea extract was found to stimulate prostate cancer cell death. The evidence was strong enough to interest the National Cancer Institute in conducting a phase II study of green-tea extract in men with metastatic prostate cancer, which is now in progress. Other studies indicate that certain catechins in tea such as ECGC may reduce your risk of skin cancer. Animal studies have tended to show more value of tea in preventing cancers than in human studies, perhaps because of the differences in diet, environment and genetics in humans.

In earlier studies, researchers from the Harvard Boston Area Health study showed that men and women who consumed one or more cups per day of green tea in the previous year had a 44 percent lower risk of a heart attack than those who drank no tea.

Other studies indicate that regular drinking of green tea or oolong tea may reduce the risk of developing high blood pressure despite the caffeine, especially when the tea is consumed with meals rather than on an empty stomach. Tea increases your body's production of nitric oxide, which dilates arteries and thereby reduces blood

pressure.

Green tea catechins have also been reported to have anti-bacterial, anti-viral and anti-fungal activity, especially in early stages of infection. These include some types of salmonella, helicobacter pylori, influenza virus and herpes simplex. and candida albicans. Also, green tea consumption has been associated with increased bone density and reduced hip fractures.

Some studies suggest that tea may help regulate your blood sugar and may even reduce the risk of diabetes. Flavonoids may have both insulin-like and insulin-enhancing activities. In Chinese medicine, tea helps to control obesity. A Chinese classical pharmaceutical book called the Bencao Shiyi states, "Drinking tea for a long time will make one live long to stay in good shape without becoming too fat and too heavy." Tea may help reduce obesity by increasing metabolism, reducing fat absorption, activating enzymes and reducing appetite.

If that's not enough, drinking green tea may reduce your risk of cavities (especially if you don't add sugar

to your tea) by inhibiting bacterial growth as well as potentially harmful enzymes in your mouth. Also, both green and black teas are natural sources of fluoride, which is why you may find tea as an ingredient in your toothpaste.

While not all studies have proven the health benefits of tea, the preponderance of studies show that tea may have significant health benefits. Clearly, more research needs to be done. However, the potential benefits of tea are so great, the side-effects relatively small (primarily, the effects of drinking caffeine), and the costs so low, I decided not to wait for more conclusive studies to be conducted. Coffee does not have the health benefits of tea. So, about 10 years ago, I switched.

Real men do drink tea, buddy. So do real women. Healthy ones.