

SOME RECENT RESEARCH ON THE MEDICAL EFFECTS OF TEA REPORTED ON THE INTERNET

Here are a few of the useful sites and the findings they report. In reading these, it should be remembered that unlike most medical journals, web site articles are not usually subject to peer review. The contents therefore has to be treated with more caution.

Japan Tea (<http://www.japantea.com/health>) has a number of useful summaries of research. Under 'Green tea suppresses aging' it refers to the work of Professor Okuda that shows that tea provides a powerful antioxidant that probably influences aging. Under 'Green tea refreshes the body', it describes the way in which tea caffeine refreshes the mind and body through the central nervous system, heart and liver. Under 'Green tea deters food poisoning', it refers to Dr. Hara's work on the anti-bacterial effects of tea, and Professor Shimamura's which suggests that 'green tea is a very strong sterilant of *cholera vibrio*'. Under 'Green tea stops cavities' it refers to work by various authors, which shows how green tea suppresses various teeth destroying bacteria. Under 'Green tea prevents cancer' it describes the famous Shizuoka Prefecture study that suggests the reduction of various cancers among tea drinkers by up to 50%. Under 'Green tea lowers the blood sugar level' it refers to the work of Dr. Hara and others, which shows that diabetes, atherosclerosis and retinal haemorrhages are affected by green tea. Under 'Green tea restricts the increase of blood cholesterol' it refers to several studies which show that this lowers the rise of heart attacks and strokes.

Teahealth (www.teahealth.co.uk) summarizes ten studies between 1992 and 1999 which suggest how the risk of heart diseases and cancer may be reduced through tea drinking. Tea is also alleged to improve nutrition, prevent tooth decay and reduce obesity. The *Alternative Medicine* site (www.altmedicine.com) reports in some detail on a Purdue University study by Dorothy and James Morre 'found that EGCg, a compound in green tea, inhibits an enzyme required for cancer cell growth and can kill cultured cancer cells with no ill effect on healthy cells.' They also found that black tea inhibited this enzyme, though the amount of tea needed to have the same effect is greater. They showed how, in their words, "In the presence of EGCg, the cancer cells literally failed to grow or enlarge after division", Dorothy Morre says. "Then, presumably because they did not reach the minimum size needed to divide, they underwent programmed cell death, or apoptosis."

The Tampa Medical Group, P.A. (www.tampamedicalgroup.com) refers to the study by Dr Michael Gaziano, a heart specialist at the Harvard Medical School-affiliated Brigham and Women's Hospital in Boston, paid for by the U.S. National Heart, Lung and Blood Institute. This study of 340 men and women, who had suffered heart attacks, matched them against 340 who had not, and investigated their coffee and tea-drinking habits over the course of a year. It adjusted for factors such as smoking, exercise, alcohol, and family history of heart trouble. 'Gaziano found that those who drank one or more cups of tea a day slashed their risk of heart attack by 44 percent, compared with those who did not drink tea.' In contrast, the study also found 'that coffee had no effect on heart attacks'.

Another site (www.megamic.com/teafbh.htm) briefly and usefully reviews some of the traditional and recent findings and lists the effects of the catechins, caffeine, flavonoids, fluoride and many other substances in tea. A fairly detailed report by the *Oolong Tea Organization* (www.oolongtea.org/e/health/04.html) reports a study that shows how Oolong (between green and black) tea controls obesity by enhancing the function of fat metabolism.

The *Greentea* site (www.greentea.com/teainformation/latestnews.htm) reports on a number of studies. A study at the Indiana University School of Medicine in Indianapolis showed how drinking green tea reduces the oxidative damage through smoking by 40 to 50% and hence reduced the risk of cancer, emphysema and heart disease. Another study in China, 'revealed that drinking green tea improves pre-cancerous conditions of oral leukoplakia in patients and suggests it may have certain preventive effects in oral cancer.' The same site notes that 'Medical researchers at Case Western Reserve University in Cleveland, published a study in April, 1999 reporting that drinking four or more cups of green tea a day may prevent rheumatoid arthritis and reduce the severity of it in those who are currently battling the disease.' Finally, it reported a study by Japanese scientists at Saitama Cancer Research Institute which 'shows that early stage breast cancer spreads less rapidly in women with a history of drinking five or more cups of green tea a day.'

The *Tea Museum* site (www.isei.or.jp/Tea_Museum/health.html) summarized a number of recent studies and describes how the constituents of tea are supposed to work. This covers the same topics as above, but also adds that 'Catechin is considered effective in inhibiting histamine from being released into the blood and other fluids, thus relieving the various allergic symptoms.' This might affect common allergies including asthma, hay fever and sinus allergies, as well as eczema and allergic headaches.

The *Healthy Advantage* site (www.ahealthyadvantage.com/topic) reports several studies which suggest protection against various liver diseases, including hepatitis, sun damage and sunburn. The *Geocities* site (www.geocities.com/gktea/health.htm) mentions that 'A report from Chicago (Reuter, 1996) revealed that drinking black tea may offer protection against stroke. "Men who drank more than 4.7 cups of tea had 69% reduced risk of stroke, compared to men who drank less than 2.6 cups per day" the report said.'

The *Healthatoz* (www.healthatoz.com/atoz.HealthUpdate/alert10081999.html) site included the following remarks. 'Researchers from the University of Kansas measured the antioxidant content of green tea and found that it is 100 times more effective than vitamin C and 25 times better than vitamin E at protecting cells from damage believed linked to cancer, heart disease, and other illnesses.' Specifically, green tea 'contains an antioxidant, epigallocatechin-3-gallate or EGCg, which is twice as powerful as resveratrol, found in red wine.' Black tea 'also contains powerful antioxidants'. The most direct evidence of the effects 'comes from a Chinese study of 59 people at risk for mouth cancer. The study found that those who were given green tea for six months were slower to actually develop the disease than those who did not drink it.' A 'Harvard study by Dr. Howard Sesso indicated that people who drank one

or more cups of black tea a day were half as likely to suffer a heart attacks as those who did not drink tea, regardless of other risk factors for heart disease.'

Another broad survey of the health effects is to be found on the *Kanchanjangha Tea Estate* web site (www.organickte.com/health.htm). This gives further evidence of the Kansas study by Dr. Mitscher on EGCg and how it works to neutralize free radicals. It also claims that 'green tea catechins have properties showing promising results in treating skin diseases, bed sores and effective on suppressing influenza as well as AIDS viruses.' It also summarizes another study on the way in which EGCg may work, made by Dr. Jerzy Jankun and associates from the Medical College of Ohio and published in the journal *Nature*. It also gives a list of the various harmful bacilli that are inhibited or destroyed by green tea.

The *Worldconsortium* site (www.worldconsortium.com/tea.com) suggests that there is more vitamin C in one cup of green tea than in an orange, as well as many other useful substances. It also cross-refers to the work of Dr Tao Song on how tea drinking can help prevent teeth cavities, bad breath and constipation.

A particularly thorough site is that sponsored by the tea maker *Lipton* (www.teaandhealth.com/research/research.htm). This gives much of the general background and the role of antioxidants, caffeine etc. It synthesizes many of the studies referred to above on the effects of tea on heart disease, strokes, and cancer. For instance, 'Animal studies suggest that both black and green tea may help prevent or delay the formation of tumors - specifically in the skin, lung, oesophagus, stomach and colon.... Human studies are now underway at medical centers in the U.S., Japan and China to verify the animal results and to determine the efficacy of tea flavonoids for cancer prevention.' It usefully contains references to 27 key articles on the subject of tea and its medical benefits.

Finally, the *Dilmah Institute for Tea Research* (www.dilmahtea.com) contains a good deal of overlapping and some supplementary information. The major point it stresses, is that the effects of the tea are not only different depending on whether it is black or green, but on how fresh it is. They argue that the fresher it is, the more powerful the medical effects.