

Health Bits and Pieces (HFN 30:2)

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Drink and Be Merry

Ecclesiastes 31:35: “Wine was created from the beginning to make men joyful.”

Traditional Medicine

Most of us have heard about the “healthy French heart,” also called the “French paradox.” It was observed that the French have a lower rate of heart disease than the U.S. despite levels of dietary fat consumption equal to the U.S. and other developed nations. Consumption of red wine turned out to be an important key to the puzzle. This observation and subsequent research has helped debunk the idea that the cause of heart disease is a high-fat diet and also the idea that wine consumption is harmful to our health. Within even the last few years, research on the powerful health benefits of wine polyphenols, especially the flavonoids (pigments found in numerous fruits and vegetables), has accumulated at an ever-increasing rate. But the tradition of wine as a medicine as well as a food has a long tradition.

The first reference in the medical literature to angina pectoris (deep chest pain) mentions red wine as a remedy. Dr. William Heberden noted in 1786 that red wine provided “considerable relief” for pains in the breast. In 1819, an Irish physician, Dr. Samuel Black observed a high occurrence of heart pain and symptoms in Ireland but noted that his French colleagues seldom reported these types of symptoms. Red wine, in fact, was historically used as a *treatment* for heart disease. St. Benedict, founder of the Benedictine monks, allocated a daily ration of wine to all of the monks; but extra wine was provided to any who were ill. The Puritans drank wine as part of their daily lifestyle and even the Women’s Christian Temperance Union, which agitated for alcohol prohibition in the 1800s, condoned moderate consumption of wine and beer.

Heberden W, “Some account of a disorder of the breast,” *Medical Transactions of the Royal College of Physicians* (London) 1786, 2:59.

What about the Alcohol?

Now that research has shown that wine flavonoids, especially resveratrol, have formidable health benefits, can’t we get them from fruit juices or pills? Of course we can get them from a wide variety of fruits including some the new superstars, like pomegranate, acai, and various other berries. But red wine is exceptional and the alcohol content may be a valuable component. An analysis by Harvard epidemiologists confirmed heart-disease preventive benefits from alcohol derived from any source.

Gaziano J, Hennekens J, Godfried S, *et al.*, “Type of alcoholic beverage and risk of myocardial infarction,” *American Journal of Cardiology*, 1999, 83:52-8357.

The Cover-up

Scientists analyzing data from the Framingham Heart Study, a long-term research project initiated in 1948 and continuing today on the relation of diet, lifestyle and heart disease, found that moderate alcohol consumption resulted in a major reduction in the odds of dying of heart disease. Although this was observed as early as 1974, these observations were censored by the government for several years. A Harvard-based study of over 87,000 nurses in the 1980s came to a similar conclusion. By the 1990s other research made the conclusion unavoidable.

Gordin T, Kannel W, "Drinking habits and cardiovascular disease: The Framingham Study," *American Heart Journal*, 1983, 105:667.

Stampfer M, Colditz G, *et al*, "A prospective study of moderate alcohol consumption and the risk of coronary disease and stroke in women," *New England Journal of Medicine*, 1988, 319(5): 267.

The Benefits

The effects of red wine on health do not stop with cardiovascular protection. Research has shown numerous beneficial effects, general anti-aging effects, stimulating bone growth, cancer prevention, optimization of conventional cancer therapy, and prevention of side effects; it appears to be a COX-2 inhibitor-type anti-inflammatory agent tested in the treatment of arthritis and pancreatitis (cancer prevention, including melanoma and colon cancer), optimizes conventional cancer therapy, protects the skin from sun damage, and prevents cognitive decline including Alzheimer's.

Anti-aging:

Wood J, Rogina B, *et al.*, "Sirtuin activators mimic caloric restriction and delay ageing in metazoans," *Nature*, 2004, 430: 686.

de la Lastra C, Villegas I, "Resveratrol as an anti-inflammatory and anti-aging agent: Mechanisms and clinical implications," *Molecular Nutritional Food Research*, 2005, 49(5): 405.

Bone growth:

Rucinski M, Ziolkowska A. *et al.*, "Estradiol and resveratrol stimulating effect on Osteocalcin, but not osteonectin and collagen-1 alpha gene expression in primary culture of rat calvarial osteoblasts-like cells," *International Journal of Molecular Medicine*, 2006, 18(4): 565.

Inflammation:

Bertelli A, Falchi M, *et al.*, "Analgesic resveratrol?" *Antioxidants and Redox Signaling*, 2008, 10(3): 403-404.

Elmali N, Bavsol O, Harma A, *et al.*, "Effects of resveratrol in inflammatory arthritis," *Inflammation*, 2007, (1-2): 1-6.

Ma Z, Ma Q, "Resveratrol: a medical drug for acute pancreatitis," *World Journal of Gastroenterology*, 2005, 11(21): 3171.

Cancer prevention and treatment:

Soleas J, Grass L, *et al.*, "A comparison of the anti-carcinogenic properties of four red wine polyphenols," *Clinical Biochemistry*, 2006, 39(5): 492.

Schoonen W, Salinas C, *et al.*, "Alcohol consumption and risk of cancer in middle-aged men," *Epidemiology*, 2005, 1113(1): 133.

Niles R, McFarland M, *et al.*, "Resveratrol is a potent inducer of apoptosis in human melanoma cells," *Cancer Letters*, 2003, 190(2): 157.

Wolter F, Ulrich S, Stein J, "Molecular mechanisms of the chemopreventive effects of resveratrol and its analogs in colorectal cancer: key role of polyamines," *Journal of Nutrition*, 2004, 134: 3219.

Garg A, Buchholtz T, Aggarwal B, "Chemosensitization and radiosensitization of tumors by plant polyphenols," *Antioxidants and Redox Signaling*, 2005, (11-12): 1630.

Baliga M, Katiyar S, "Chemoprevention of photocarcinogenesis by selected dietary botanicals," *Photochemical and Photobiological Sciences*, 2006, 5(2): 243-253. (Resveratrol prevents skin cancer from sun exposure)

Cognitive decline:

Elias P, Elias M, *et al.*, "Alcohol consumption and cognitive performance in the Framingham Heart Study," *American Journal of Epidemiology*, 1999, 150(6): 580.

Marambaud P, Zhao H, Davies P, "Resveratrol promotes clearance of Alzheimer's disease amyloid- β peptides," *Journal of Biological Chemistry*, 2005, 280(45): 373-377.

But what about Breast Cancer?

Breast cancer seemed to be an exception to wine's reputation as a health benefit. By the mid-1990s, dozens of epidemiologic studies had shown that alcohol increases risk of breast cancer. More recent analysis of the data shows that many studies did not sort out factors like tobacco smoking and excessive drinking, for example. A 1999 report on the Framingham Study found no correlation between light-to-moderate alcohol consumption and breast cancer. A study in southern France revealed the lowest risk group to be those who drank small amounts of alcohol, less than 1.5 drinks per day, on a regular basis.

Zhang Y, Kreger B, *et al.*, "Alcohol consumption and risk of breast cancer: the Framingham Study revisited," *American Journal of Epidemiology*, 1999, 149(2): 93.

Bessaoud F, Daures FJ, "Patterns of alcohol (especially wine) consumption and breast cancer risk: a case-control study among a population in southern France," *Annals of Epidemiology*, 2008, 18(6): 467-475.

Abusus non tollit usum

Everyone seems to agree that moderate consumption has decided health benefits. But not everyone agrees on how to define moderation. People with a genetic predisposition toward alcoholism are well advised to abstain completely. A gene related to a receptor that promotes

movement of the neurotransmitter gamma-amino butyric acid (GABA) between nerve cells seems to be consistently associated with alcohol dependence. GABA is the major inhibitory chemical in the central nervous system. Many clinical conditions, including psychiatric disorders, appear to involve an imbalance in excitation and inhibition of GABA.

Some experts say that men should have no more than two servings of alcohol a day; for women, the recommended limit is just one. More than that and you run the risk of addiction and numerous other health hazards even if you don't drive while drinking. But, realistically, the safe dose could be literally as little as a thimbleful or more than two glasses, depending on one's genetic make-up and the alcohol content of the wine. One study at the Catholic University of Rome found that daily consumption of up to a liter for men and a half-liter for women improved cognitive performance.

Dick D, Edenberg H, Xuei X, *et al.*, "Association of GABRG3 with alcohol dependence," *Alcoholism: Clinical and Experimental Research* 28:4–9, 2004. PMID: 14745296

Zuccala G, Onder G, *et al.*, "Dose-related impact of alcohol consumption on cognitive function in advanced age: results of a multi-center survey," *Alcoholism: Clinical & Experimental Research*, 2001, 25(12): 1743.