

HEALTH BITS & PIECES (HFN 33:3)

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Sugar

For decades we have been warned of the dangers of fat and cholesterol as a cause of cardiovascular disease. But the real enemy of heart and arterial health is not fat but sugar. In fact, sugar is very likely the *worst* enemy of cardiovascular health. A comprehensive 15-year long study, including the data of 31,000 Americans, found that people who consumed 25 percent or more of their daily calories as sugar were more than *twice* as likely to die from heart disease as those who got less than 10 percent of their calories from sugar. A study published in the *Journal of the American Medical Association (JAMA)* concluded that “most US adults consume more added sugar than is recommended for a healthy diet,” and that there’s “a significant relationship between added sugar consumption and increased risk for cardiovascular disease mortality.”

Dhurandhar N, Thomas D, “The Link Between Dietary Sugar Intake and Cardiovascular Disease Mortality; An Unresolved Question,” Journal of the American Medical Association, 2015; 313(9):959-960.

doi:10.1001/jama.2014.18267; Yang Q, Zhang Z, Gregg EW, et al., “Added sugar intake and cardiovascular diseases mortality among US adults,” JAMA Internal Medicine, 2014 Apr;174(4):516-24. doi: 10.1001/jamainternmed.2013.13563.

And Spice

We were taught in school that Columbus set out on a mission to find a new trade route to the spices of the East when he arrived in the New World. As a primary-school student, you may have wondered why that was such a big deal. But spices like black pepper, cinnamon, cloves, and nutmeg were such hot commodities 500 years ago that nations mobilized substantial resources to sail across vast oceans to find new routes to the spice-rich Orient and avoid paying Middle Eastern and North African middlemen who had become extremely wealthy by closely controlling access to them. Spices were important for flavoring food but also for such tasks as making perfume, embalming the dead, medications, and preserving meat. The essential oils in black pepper and cayenne literally turn death into life by preserving raw meat to make sausages, which were rich in probiotics like *Lactobacillus plantarum* and became richer as they “cured.” Now research from the East has confirmed the value of spices for health and longevity.

A study at China Kadoorie Biobank followed 487,375 subjects, aged 30-79, from 10 geographically diverse areas across China that were enrolled between 2004 and 2008. The study found that participants who consumed spicy foods 6 or 7 days a week showed a 14% reduction in relative risk for total mortality, including deaths due to cancer, respiratory diseases, and ischemic heart diseases, compared to those who ate spicy foods less than once per week. The beneficial effect of spicy foods was stronger in non-drinkers of alcohol.

Lv J, Qi L, Yu C, Yang L, et al., “China Kadoorie Biobank Collaborative Group, Consumption of spicy foods and total and cause specific mortality: population based cohort study,” British Medical Journal, 2015 Aug 4;351:h3942. doi: 10.1136/bmj.h3942.

And Everything Nice

Ginger is a well-known flavor in the form of ginger snaps or ginger ale and even ginger beer. The preventive effect of ginger on the nausea, dizziness, and vomiting of motion sickness and for postoperative vomiting and vomiting of pregnancy is well documented in numerous

high-quality clinical studies. It is used in traditional Chinese medicine in dozens of classical formulas for gastrointestinal problems.

Black pepper stimulates the secretion of pancreatic digestive enzymes and promotes peristalsis. Blends of spices that include turmeric, red chili, black pepper, and cumin have been shown to enhance the activity of pancreatic lipase, amylase, and chymotrypsin in rats by 40%, 16%, and 77%, respectively. This combination also stimulated increased production of bile, with a higher concentration of bile acid. Ginger, piperine (from black pepper), capsaicin (from chili peppers), and curcumin (from turmeric) enhanced secretion of bile and pancreatic enzymes in rats fed a high-fat diet. They also prevented the accumulation of triglycerides in the liver. The combination also pointed toward a possible weight-loss effect by reducing the activity of enzymes, which are targets for the treatment and prevention of obesity and diabetes. It also increases the activity of an enzyme that releases fatty acids from fat cells to be used as fuel.

Langner E, Greifenberg S, Gruenwald J, "Ginger: history and use," Advances in Therapy, 1998 Jan-Feb;15(1): 25-44; Srinivasan K, "Black pepper and its pungent principle-piperine: a review of diverse physiological effects," Critical Reviews in Food Science and Nutrition, 2007;47(8):735-48; Platel K, Rao A, Saraswathi G, Srinivasan K, "Digestive stimulant action of three Indian spice mixes in experimental rats," Nahrung, 2002 Dec;46(6):394-8.

A Discouraging Word

Industrial toxins accumulate in our bodies and can contribute to a variety of health problems. These cumulative effects of chemicals on the human body prompted a taskforce of over 170 scientists from leading research centers in 28 countries to study the connection between these chemicals and the development of cancer. They investigated 85 chemicals not classified as carcinogens and discovered that 50 of them encouraged cancer-promoting mechanisms at levels normally encountered in day-to-day exposure. According to cancer biologist Dr. Hemad Yasaei, "This research backs up the idea that chemicals not considered harmful by themselves are combining and accumulating in our bodies to trigger cancer and might lie behind the global cancer epidemic we are witnessing." In the research study, they estimated that chemicals could be responsible for as many 20% of all cancers.

Goodson W, Lowe L, et al., "Assessing the carcinogenic potential of low-dose exposures to chemical mixtures in the environment: the challenge ahead," Carcinogenesis, 2015; 36 (Suppl 1): S254 DOI:10.1093/carcin/bgv039.

Hormone Derange

A study published in *The Journal of Clinical Endocrinology and Metabolism* in March 2015 estimated that exposure to endocrine-disrupting chemicals (EDCs) will likely cost the European Union \$209 billion a year in health care expenses and lost earning potential. Since a prior report by the Endocrine Society in 2009, which examined the scientific evidence on EDCs and the health risks associated with them, recent research has demonstrated that exposure to EDCs is also associated with an increased risk of diabetes and obesity. Exposure to EDCs is also linked to infertility, hormone-related cancers, neurological issues, and other chronic diseases. EDCs alter the way cells proliferate and develop by imitating, blocking, or otherwise interfering with the body's normal hormones. The report linked EDCs to hormone-related cancers, prostate disorders, thyroid disease, and nervous system problems.

Endocrine-disrupting chemicals include BPA (bisphenol A) (found in food can linings and cash register receipts), phthalates from plastics (PVC products, vinyl shower curtains) and

cosmetics (perfumes, nail polish, lotions), flame retardants, solvents, lubricants (PCBs, PBBs, and PBDEs), pesticides (sprayed on fruits and vegetables), and some insecticides containing heavy metals like cadmium, lead, arsenic, and mercury. Damage to human health from EDCs has been confirmed in hundreds of studies.

Today, these chemicals are ubiquitous and accumulating throughout the World. Over 80,000 chemicals are introduced into the environment each year. We are exposed to all types of industrial chemicals in our food, our water, and in the air.

*Gore A, Chappell V, Fenton S, Flaws J, et al., "Executive Summary to EDC-2: The Endocrine Society's Second Scientific Statement on Endocrine-Disrupting Chemicals," Endocrine Reviews, 2015; er.2015-1093
DOI:10.1210/er.2015-1093.*

Healthcare Costs

According to a new study, certain nutritional supplements may reduce healthcare costs by preventing hospitalization for coronary heart disease (CHD). In a cost-benefit analysis of adults over 55, researchers found a reduction of costly catastrophic medical events from CHD occurring with individuals who take either omega-3 fatty acids or B vitamins daily. The amount of money spent on the treatment of CHD, as opposed to prevention, is a huge burden on individuals and on society. Hospitalization for all U.S. adults over the age of 55 with CHD cost over \$64 billion in 2012. The potential of nutritional supplements with demonstrated benefits to cardiovascular health have a great potential to help decrease total healthcare expenditures.

A cost-savings model was presented in the report, "Smart Prevention - Health Care Cost Savings Resulting from the Targeted Use of Dietary Supplements." Researchers conducted a systematic review of scientific research on the relationship between risk of a CHD event and daily use of Omega-3 supplements and B vitamins. The research team applied a cost-benefit analysis on projected rates of CHD-related medical events in adults over the age of 55 with CHD across the U.S. They found that if every high-risk person took a fish-oil supplement daily, an average of \$2.1 billion in healthcare expenditures per year could be avoided; and if they took B vitamins daily, an average of an additional \$1.5 billion in expenditures per year would be saved.

Widespread official endorsement of the use of nutritional supplements to help reduce healthcare costs would be a desirable outcome of research like this. This would result in a much less expensive approach to treatment of CHD patients not only for patients but for employers, HMOs, and healthcare policymakers.

*Shanahan C, de Lorimier R, "Science to Finance- A tool for Deriving Economic Implications from the Results of Dietary Supplement Clinical Studies," Journal of Dietary Supplements, 08/2014;
OI: 10.3109/19390211.2014.952866
<http://www.supplementforsmartprevention.org>.*