

IT WOULD be overly simplistic to say that one food or food component is capable of causing, preventing, or curing cancer. However, it would be completely ignorant to intimate that food and food components are not factors in the development of many forms of cancer. According to Andrew Woodward, MS, RD, CSO, a medical oncology dietitian, diet may influence the cause of 30-50 percent of cancers. Not only does good nutrition have a potentially significant therapeutic role, but it has also been found to improve the quality of life and prevent the recurrence of cancer in cancer survivors. While certain foods or food components have been found to encourage cancer growth, others have been shown to be powerful weapons in the fight against cancer.

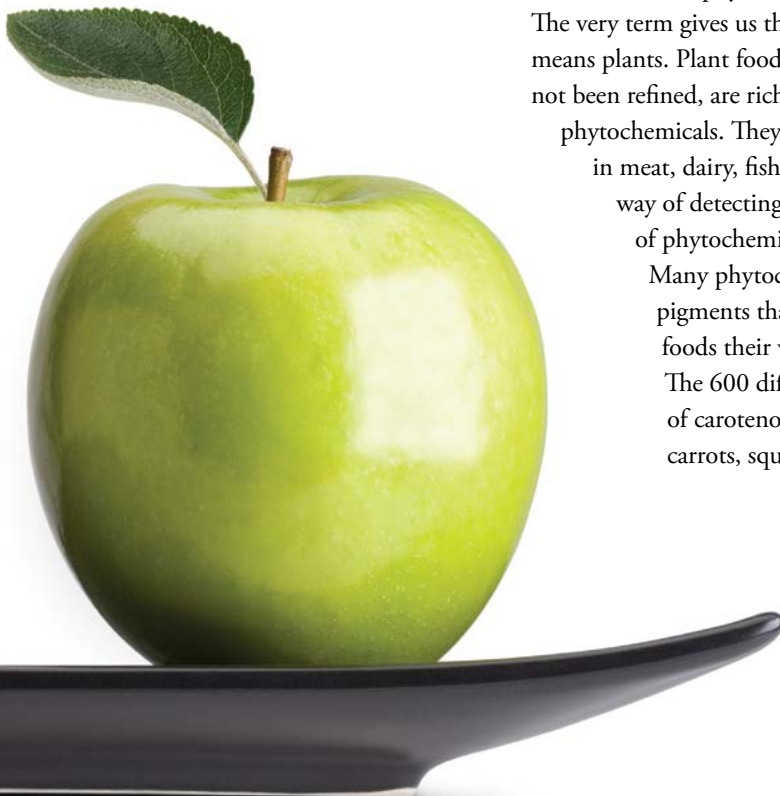
Plant foods are loaded with phytochemicals which are simply plant substances that have the potential to: stimulate the immune system, block substances in foods from becoming carcinogens, reduce inflammation that predisposes to cancer, prevent DNA damage and help with DNA repair, hinder the growth of cancer cells, trigger damaged cells to die before they multiply, and help regulate hormones, limiting overexposure. All of these are very important functions. Thousands of these phytochemicals have been identified, but researchers believe there are perhaps hundreds more yet to be discovered. A single vegetable can contain a multitude of various phytochemicals that, when combined, pack a powerful punch. Seventy different phytochemicals have been found in broccoli alone.

Where are phytochemicals found? The very term gives us the answer. Phyto means plants. Plant foods, that have not been refined, are rich sources of phytochemicals. They are not found in meat, dairy, fish, or fowl. One way of detecting the presence of phytochemicals is by color. Many phytochemicals are pigments that give plant foods their vibrant colors. The 600 different varieties of carotenoids give carrots, squash, peppers,

cantaloupe, and apricots their yellow and orange color. Chlorophyll bestows its hues of green largely in the vegetable kingdom. Anthocyanin's red, blue, and purple, make blueberries, eggplant, black beans, plums, and purple potatoes recognizable. Betalains make beets, chard, and spinach vibrant with color. Two thousand phytochemical pigments have been discovered.

All of these pigments have been found to possess anti-cancer qualities. In the world of modern medicine, anti-cancer is associated with chemotherapy. Chemotherapy is a one-modality attempt to destroy cancer cells. Foods on the other hand, possess multiple modalities and mechanisms that could be used strategically by the body. They have the potential to prevent, hinder, and even terminate the growth of cancer through different mechanisms. One mechanism is found in its anti-angiogenic effect.

Angiogenesis is the growth of new blood vessels. Angiogenesis facilitates wound healing and the reproduction and development of cells. Tumor growth and metastasis depends on angiogenesis. The body has stimulators and inhibitors to keep angiogenesis balanced. In a diseased state however, angiogenesis becomes out of balance. Abnormal angiogenesis, whether excessive or insufficient, has been observed in various disease processes. Cancer cells secrete chemicals that stimulate tiny, structurally abnormal blood vessels to grow around them which branch off from the existing blood vessels. According to William Li, MD, "Angiogenesis is a hallmark of every



kind of cancer.”¹ The reason for this is because in order for cancer cells to grow they must be nourished. It is through the blood that oxygen and nutrition fuel cancer survival and growth.

Dr. Li explains how cancer cells start out as a nest of cells that can only grow to the size of the tip of a ballpoint pen when there is a lack of oxygen and

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nutrients. These microscopic cancers exist in the majority of older adults. Autopsy studies, he says, show that 40 percent of middle age women who do not have breast cancer have microscopic cancer cells in their breasts. Fifty percent of middle age men who do not have prostate cancer have microscopic cancer cells in their prostate. In other words the cells are there without the existence of disease. Cancer cells can lie dormant in the body for decades as a result of lack of blood supply. Once blood vessels invade however, cancer will grow.

“Anti-angiogenesis is an emerging therapeutic strategy in clinical oncology aimed at halting cancer progression by suppressing the tumor’s blood supply. A large body of preclinical animal research and individual case reports of cancer patients support the validity of anti-angiogenic therapy. The FDA has approved of anti-angiogenic agents in breast, lung, colon, brain, and kidney cancer. More than three dozen experimental anti-angiogenic agents are presently in human clinical trials in the United States, Canada, Europe, and Australia aimed at a broad range of solid

tumors, multiple myeloma, leukemia, and lymphoma. To date an estimated \$4 billion has been invested by the public and private sector to develop such agents, making this one of the most heavily invested areas of cancer research in human history.”² This new medical approach has found some success especially in certain cancers, such as

kidney. In essence this mechanism is aimed at starving the cancer cells, therefore starving the tumor.

Amazingly, naturally occurring chemicals in

plants (phytochemicals) possess anti-angiogenic capabilities.

Red grapes, strawberries, blackberries, blueberries, raspberries, soy beans, kale, lemons, and tomatoes, are just a small sample of dietary sources of these substances that will hinder the abnormal growth of blood vessels to feed cancer cells. Quercetin, found in apples, onions, raspberries, red grapes, citrus fruit, cherries, broccoli, and leafy greens, inhibits angiogenesis.³ Lycopene, found in tomatoes, watermelon and papayas has also been found to have anti-angiogenic properties that inhibit cancer growth. “The largest relevant dietary study, a prospective study in male health professionals found that consumption of two to four servings of tomato sauce per week was associated with approximately a 35% risk reduction of total prostate cancer and a 50% reduction of advanced (extra prostatic) prostate cancer. Tomato sauce was by far the strongest predictor of plasma lycopene levels in this study.”⁴ Also, “in a cohort of 14,000 Seventh-day Adventist men, higher consumption of tomatoes was statistically significantly related to lower risk of prostate cancer in a

multivariate analysis. The only other food item related to a lower prostate cancer risk was intake of beans, lentils, and peas.”⁵

Fruits and veggies may initially appear as flimsy weapons when fighting such a formidable foe as cancer. Just the one activity of their ability to prevent angiogenesis, however, bids us to look again. Scripture refers to our need of weapons. These “weapons of our warfare” are specifically designed to bring down the strongholds of the most powerful destructive agencies. The verse intimates that these strongholds are our own imagination and thoughts. Thankfully we have been promised victory. “For the weapons of our warfare are not carnal” but are “mighty through God to the pulling down of strongholds; casting down imaginations, and every high thing that exalteth itself against the knowledge of God and bringing into captivity every thought to the obedience of Christ” (2 Corinthians 10:4-5, KJV).

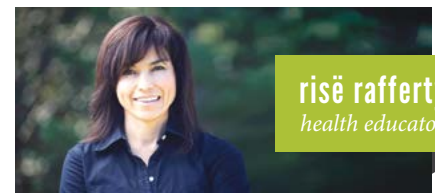
¹ William Li, MD, “Can We Eat to Starve Cancer?” Ted Talks, Feb., 2010, http://www.ted.com/talks/william_li/#t-1083495.

² William W. Li, MD, “Tumor Angiogenesis,” ScienceDirect, Academic Radiology

³ S.M. Sager, MD, D Yance, MH, RK Wong, MD, Current Oncology, Feb., 2006, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1891166/>.

⁴ Edward Giovannucci, “A Review of Epidemiologic Studies of Tomatoes, Lycopene, and Prostate Cancer,” p. 5, http://www.immunehealthscience.com/support-files/lycopene_prostate_review.pdf.

⁵ Ibid.



Risë has been writing on various health subjects for over 20 years. She has inspired many through her research and down-to-earth writing and speaking style. She believes that healthy living is intimately tied to happiness and wholeness.