Phytobites -- Quick Facts on Phytochemicals

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For years chiropractors have recommended the consumption of whole foods to their patients. Our forefathers did not really know why eating a "natural" diet was good; they just knew that patients who ate diets rich in fresh fruits and vegetables, and low in processed and refined foods, needed less treatment. Science is now beginning to unlock the reasons for what our profession has observed for the better part of a century. We now know that fruits, vegetables, legumes, grains, seeds and nuts contain thousands of phytochemicals, many of which are very beneficial to humans. The following are a few more reasons to remind, plead, nag, beg, or demand that our patients improve their diets.

- The average tomato contains 10,000 phytochemicals.¹
- Regular consumption of tomato reduces cancer of the esophagus, oral cavity, stomach, colon, and rectum. This is based on two studies, the first comparing 2,709 cases of digestive tract cancer to 2,879 hospital admitted controls, and the second comparing 1,953 cases of colorectal cancer to 4,154 controls.²
- The National Cancer Institute recommends that Americans consume at least three servings of vegetables and two servings of fruit per day. Currently only one out of 11 Americans are meeting this daily recommendation.¹
- There are over 60 flavonoids in citrus fruits. These flavonoids have anti-inflammatory, antioxidant, antiblood clotting, and antitumor properties.³
- After whole wheat flour has been processed into white flour there is a 200-300% loss of phytochemical content.³
- When I was in chiropractic college I was taught that the definition of enriched white flour was as follows: "Take 15 things out [from whole wheat flour], then put eight things back in." It turns out that refining flour results in losses of many more than seven nutrients. Some of the phytochemical families we have now discovered in grains include various types of plant sterols, phytoestrogens, tocotrienols, ligans, phytases and saponins.³
- Sulfides in garlic and onions, diphiolthiones and isothiocyanates in cabbage and broccoli, curcumins in turmeric and ginger, phthalides in celery seed, and liminoids in citrus all stimulate glutathione
S-transferase activity, which in turn has very powerful anticancer properties.³

- Phytoestrogens are valuable in the prevention and treatment of menopausal symptoms, heart disease, cancer, and osteoporosis.
- There are three major classes (so far) of phytoestrogens: isoflavones, which are soy based; ligans, which are found in grains and seeds; and coumestans, which are found in sprouts.
- Isoflavones are found in soybeans and other soy products like soy flour, soy protein, soy milk, tofu, and tempeh. Soy sauce is not a source of isoflavones.⁴
- In the human gastrointestinal tract, isoflavone precursors are converted to heterocyclic phenols, which are then converted by intestinal bacteria to genistein and diadzein, which are the most estrogenically active isoflavones.⁴
- Ligans are found in grains, seeds (especially flax seeds), fruits, and vegetables.⁴
- In the human gastrointestinal tract ligan precursors are converted to heterocyclic phenols, which are then converted by intestinal bacteria to enterolactone and enterodiol, the most estrogenically active members of the ligan family.⁴
- Ipriflavones are synthetic compounds derived from isoflavones. At 600 mg per day in divided doses they can inhibit bone loss in postmenopausal women.⁵

Finally, as if we still do not need more evidence that consuming fresh fruits and vegetables is good for us, an interesting Italian epidemiological study was published last year. Researchers looked at the vegetable consumption of over 46,000 men and women 15 and older and found that those who consumed the most vegetables had the lowest rates of angina, arthritis, asthma, bronchitis, cirrhosis, gallstones, heart attack, kidney stones, and peptic ulcer.⁶ Please note that these people ate whole vegetables filled with phytochemicals and not processed vegetable pills. If you sell vegetable pills, just make sure you tell your patients the truth. That we have no idea if swallowing a daily handful of vegetable pills will have the same effect as consuming 35 to 70 servings of fruits and vegetables per week; that we have no idea how many undiscovered phytochemicals are lost, altered, denatured, or destroyed during the processing required to make a vegetable into a pill.

If my patients want to consume fruits and vegetables in a processed form, I recommend that they chop their vegetables into salads and blend their fruit into smoothies.
References


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