Dear Alice,

A coworker of mine was drinking a green liquid at the office and told me that it was "chlorophyll water". Neither of us are sure what the health benefits of ingesting chlorophyll are, and it's hard to find reliable info on the internet. Is this fad based in medical fact, or is it just a weird new drink to try?

Answer

Dear Reader,

Now that your coworker has planted the idea of chlorophyll's health benefits in your mind, it's time to dig up some information. Chlorophyll has been used as a supplement since the 1960s, although chlorophyllin, a solution of sodium copper salts made from chlorophyll, is more commonly available and less expensive (this may be what your coworker's drink contained). Although it does have some approved uses and suspected health benefits, no long-term or large-scale studies with humans have been done to conclusively prove chlorophyll's alleged health-boosting properties.

Still, it's interesting to discuss chlorophyll's potential uses. Chlorophyllin-containing papain or urea ointments and sprays are sometimes prescribed to treat inflammation, speed healing, and reduce odor in wounds. Some patients with colostomies and ileostomies may take over-the-counter supplements containing chlorophyllin to reduce fecal odor. Whether this actually helps with the smell may be a matter of personal opinion. Other potential health benefits of chlorophyll and its derivative, chlorophyllin, may include:

- **Antioxidant properties.** Data suggests that chlorophyllin may reduce oxidative stress on the body by reducing free radicals (oxygen containing molecules with an uneven number of electrons). This might be of interest because an imbalance of free radicals to antioxidants may lead to DNA and protein damage. This in turn may increase the risk of diabetes, cancer, atherosclerosis (hardening and decreased elasticity of the blood vessels), other inflammatory diseases, as well as potentially accelerate the aging process.

- **Reducing damage from carcinogens.** Chlorophyll has been shown to bind to carcinogens, such as those in tobacco smoke and cooked meats, thus reducing their ability
to enter the bloodstream and reach tissues.

- **Protecting against liver cancer.** A study in China showed that a biomarker for aflatoxin (a carcinogen found in improperly stored grains shown to lead to liver cancer) was present at lower levels in participants who simultaneously consumed the toxin and chlorophyll. However, because the development of cancer could possibly take years, the long-term effectiveness of chlorophyll is unclear.

- **Treating trimethylaminuria** [2] (or fishy body odor). Chlorophyll reduces the amount of trimethylamines (which cause the associated fishy odor) excreted by people with this hereditary condition.

- **Combating colon cancer.** Chlorophyllin has been shown to inhibit DNA synthesis and repair processes in colon cancer cells, giving it potential for use in cancer therapy.

- **Aiding in wound healing.** Multiple studies have demonstrated that chlorophyll may aid in tissue repair by stopping bacterial reproduction and through its anti-inflammatory properties.

You may want to note that chlorophyll also has potential side effects. Taken by mouth, it could cause urine or feces to appear greenish, the tongue to be discolored either black or yellow, or occasional diarrhea. Used as an ointment or spray, it may cause a slight burning or itching sensation. Despite these mild side effects, no major toxicity in chlorophyll or chlorophyllin has been discovered in more than 50 years of popular use. However, those who are pregnant or breastfeeding may want to avoid this supplement or check with their health care provider before using it, as there is a lack of substantial research into chlorophyllin among this population and its long-term effects.

Lastly, while most supplements are made with chlorophyllin, studies suggest that chlorophyll — naturally available in dark green, leafy vegetables such as spinach — may offer more nutrient-rich health benefits. Getting your chlorophyll this way provides the additional benefits of fiber and iron found in these vegetables compared with just drinking chlorophyll-containing water. Regardless, while the grass may appear greener on the chlorophyll-watered side, there is limited evidence to confirm its health benefits. In the meantime, it may be best to munch on some veggies for the best nutrient bang for your buck. If you're interested in learning more about the dietary needs of your body, you can meet with a registered dietitian to learn more about getting enough nutrients and what sources may suit you.

Hope this helps!

Alice!

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