



GreenMedInfo's

TOP 6

Evidence-Based

CANCER

Fighting Foods

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The Science of Natural Healing

GREENMEDINFO'S TOP 6 EVIDENCE-BASED CANCER FIGHTING FOODS

BY GREENMEDINFO RESEARCH GROUP

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No one ever wants to hear the words, “I’m sorry but you have cancer,” yet one in three will. In the United States, this dreaded disease is responsible for one in every four deaths. Trillions of dollars have been funneled into cancer research to date, yet it remains an undeterrable foe. Worldwide, the number of newly diagnosed cancer cases per year is expected to rise to 23.6 million by 2030.

A major part of the problem is that cancer remains poorly understood. No one has fully unraveled the mystery of this bizarre, unrestrained cellular proliferation. Many forms of cancer are highly resistant to modern-day chemotherapeutic agents, such as estrogen receptor negative human breast cancer, mesothelioma, acute lymphocytic leukemia, acute myeloid leukemia, Hodgkin lymphoma, hopeless astrocytoma, and many more.

Even when cancers do appear to respond, these conventional treatments often erode away the patient’s own immune defenses and end up doing more damage than good, or serve only as a temporary slowdown, leaving the door open for recurrence down the road.

What we DO understand is that the foods we eat have a real impact on our health, including whether cancer cells are able to gain a foothold. In order to appreciate the power of natural foods, we need a better understanding of cancer’s modus operandi. Winning the cancer war calls for a paradigm shift—seeing cancer with fresh eyes. A relatively new theory of cancer is that it may not be as much a “disease” as a maladaptive evolutionary response to ongoing stress.

Is Cancer An Ancient Survival Program Unmasked?

One individual who has demonstrated some out-of-the-box thinking is Paul Davies, a theoretical physicist at Arizona State University. Davies posits that cancer is not so much a disease but instead a “[safe mode](#)” for cells under stress, an evolutionary throwback to a time before the emergence of complex organisms.^{1,2}

1 Wapner, Jessica. “What We Know about How Cancer Starts Could All Be Wrong.” Newsweek. July 31, 2017. [Accessed September 22, 2018. https://www.newsweek.com/2017/07/28/cancer-evolution-cells-637632.html](https://www.newsweek.com/2017/07/28/cancer-evolution-cells-637632.html).

2 Merali, Zeeya. “Did Cancer Evolve to Protect Us?” Scientific American. October 02, 2014. Accessed September 22, 2018. <https://www.scientificamerican.com/article/did-cancer-evolve-to-protect-us/>.

Davies and his multidisciplinary team suggest that, when a person develops cancer, his or her cells regress from their current evolved state to become more like our single-celled ancestors of a billion years ago. Davies argues that, because the cancer phenomenon occurs in so many species, it must have existed long before humans.

The idea is that cancer cells behave more like single-celled organisms than mammalian cells. Mammalian cells are preprogrammed to die (apoptosis), whereas single-celled organisms such as bacteria and algae rely on unbridled replication for survival. Also, tumors require very little oxygen, which he argues supports the theory that cancer emerged at a time when atmospheric oxygen was extremely low. Indeed, cancer cells have an entirely different metabolism from normal cells—fermentation! Cancer cells rapidly convert sugar into energy and produce lactic acid.

Davies' theory is called the “atavistic” model of cancer. If he is correct and cancer is what the body does to survive decades of cellular stress from environmental toxicity and nutrient deprivation, then it's no wonder conventional treatments have been a colossal failure.

Instead of a monolithic “disease,” it makes more sense to view cancer as a *symptom* of a bodily milieu gone awry whereby cells believe they must undergo profound genetic changes in order to survive. This evolutionary lens puts the focus back on the preventable and treatable causes of the “disease,” rather than on the vague and outdated concept of “defective genes” over which we have no control.

Cancer Stem Cells Are Targeted by Certain Foods

One of the most important discoveries in cancer research is the existence of [cancer stem cells](#). Not all cancer cells can spread and “seed” new tumors—only cancer stem cells are capable of this, paving the way for tumor development, progression, metastasis, and drug resistance. Cancer stem cells are highly resistant to chemotherapy and radiation treatments. In fact, those conventional treatments may actually *increase* cancer stem cell numbers and [invasiveness](#).

Cancer stem cells comprise a very small proportion of the overall tumor cell population: about 1 in 1000. They are characterized by stem cell properties such as self-renewal and the ability to differentiate into all cell types found in a particular cancer sample. The failure to eradicate cancer stem cells during the course of therapy is said to be the driving force for tumor recurrence and metastasis.

Now for the good news! Many foods and herbs are natural cancer stem cell killers. A powerful study published in the journal *Anticancer Research* entitled “[Natural Products That Target Cancer Stem Cells](#)” identified the [top 25 foods](#) in this category, along with their associated cytotoxic compounds.

The remainder of this report is devoted to a discussion of six impressive, evidence-based, cancer-fighting foods. One of the things that sets these foods apart from the rest is their ability to kill cancer stem cells. Let’s start with one of the most cherished healing beverages in human history: *green tea*.

1. GREEN TEA

Tea was a medicine before it became a beverage. Made from the dried leaves of the *Camellia sinensis* plant, tea is rich in catechins that animal models have shown [inhibit the growth of a wide number of cancers](#), from gastrointestinal to lung, bladder, skin, breast, cervical, and prostate cancers.



A major tea catechin, epigallocatechin gallate or EGCG, suppresses tumor-feeding blood vessel growth (angiogenesis), promotes cancer cell apoptosis (cellular death), and destroys those all-important cancer stem cells.³

[Green tea](#) is by far the richest source of EGCG of any food. Green tea is produced by steaming or pan-frying fresh tea leaves, which inactivates the enzymes and prevents oxidation of those beneficial compounds. Not only has green tea established itself as a valuable asset in the anticancer arsenal, but it is lauded for its ability to improve cognition and slow aging due to its spectacular [antioxidant](#) content.

It should be noted that black tea is simply baked or oxidized green tea. Black tea retains significant antioxidant properties, although green tea is the most potent.

Caffeine, also present in tea, has been found to be protective against cancers of the skin, lung, and other organs. Cup for cup, green tea contains roughly 25 percent as much caffeine as coffee.

³ Kim, Jiyoung, Xiaowei Zhang, Kimberly M. Rieger-Christ, Ian C. Summerhayes, David E. Wazer, K. Eric Paulson, and Amy S. Yee. “Suppression of Wnt Signaling by the Green Tea Compound (-)-Epigallocatechin 3-Gallate (EGCG) in Invasive Breast Cancer Cells.” *Journal of Biological Chemistry* 281, no. 16 (2006): 10865-0875. doi:10.1074/jbc.m513378200

An article published in the *Asia Pacific Journal of Clinical Nutrition* reviewed the evidence for tea as a chemopreventive dietary substance. Tea was found to reduce the development of lung tumors and gastrointestinal cancer, although the effects on colon cancer were less clear. Tea was found to suppress breast cancer development and strongly deterred liver tumorigenesis.⁴

A study from the National Cancer Institute shows that the biochemicals in green tea change a women's [estrogen metabolism](#), revealing at least one of its mechanisms for reducing breast cancer risk. The news is also good for those with pancreatic cancer. EGCG suppresses a critical enzyme in [pancreatic cancer cells](#), completely disrupting their metabolism.

In a massive literature review, published in *Molecules and Cells* (2018), which examined 30 years of studies about green tea and cancer, researchers concluded that consuming green tea may “delay cancer onset and reduced cancer incidence.”⁵

2. TURMERIC

[Turmeric](#) is another formidable weapon in the cancer war. Voluminous studies show that turmeric, and its most active agent curcumin, inhibit cancer cell proliferation, suppress angiogenesis, and kill cancer stem cells.



A groundbreaking study in the journal *Anticancer Research* revealed that turmeric's primary polyphenol, [curcumin](#), has the ability to [selectively target cancer stem cells](#) while having little to no toxicity for normal stem cells—which are essential for tissue regeneration and longevity. Curcumin performs its magic along eight different molecular pathways.

One of this spice's most notable characteristics is that it is effective against [multi-drug resistant cancer](#), most likely because it neutralizes cancer stem cells.

Turmeric is extremely safe. Rather than causing more side effects than therapeutic actions—as is the case for most conventional pharmaceutical medications—turmeric has hundreds of potential *side benefits*, having been empirically demonstrated to modulate more than 160 different physiological pathways in the mammalian body. Nothing within our modern-day pharmaceutical armamentarium comes close to turmeric's 6,000-year track record of safe use in Ayurvedic medicine.

4 Yang, Chung S et al. "Cancer Prevention by Tea and Tea Polyphenols." *Asia Pacific journal of clinical nutrition* 17.Suppl 1 (2008): 245–248

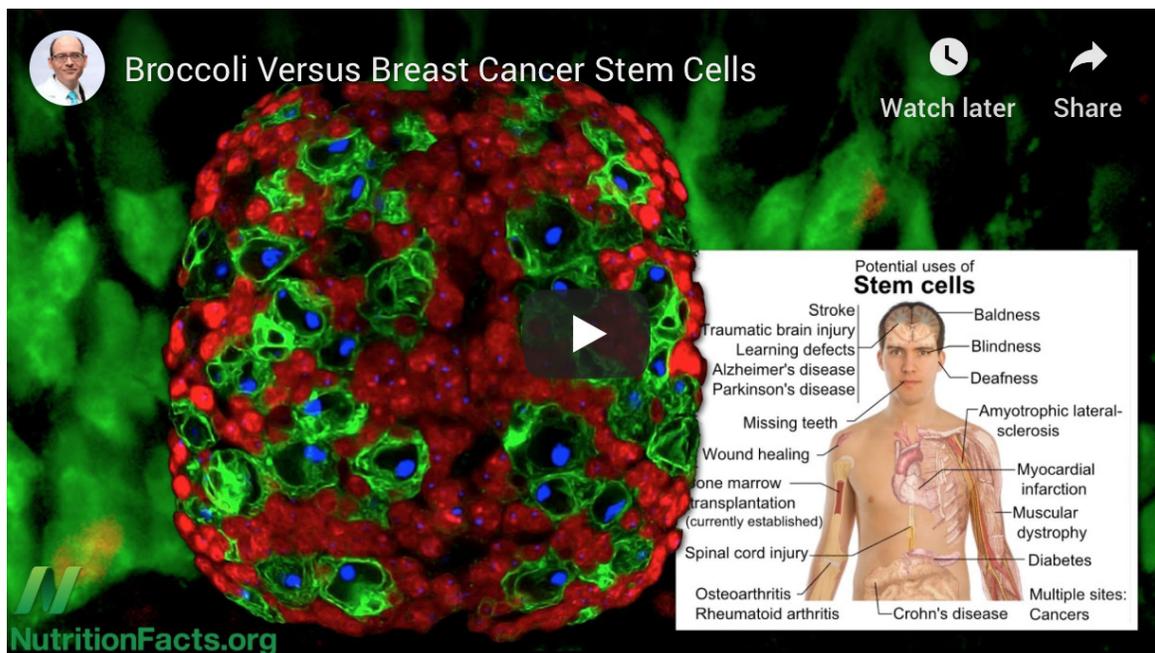
5 Fujiki H, Watanabe T, Sueoka E, Rawangkan A, Sukanuma M. Cancer Prevention with Green Tea and Its Principal Constituent, EGCG: from Early Investigations to Current Focus on Human Cancer Stem Cells. *Molecules and Cells*. 2018;41(2):73-82. doi:10.14348/molcells.2018.2227.

In 2015, researchers from the United Kingdom demonstrated for the first time that [curcumin](#) is not only an effective adjunct to conventional chemotherapy, but that it may be even more effective on its own—and *about a hundred times less toxic than chemotherapy*.

In a 2011 phase II human clinical trial, researchers administered curcumin supplements to 44 individuals diagnosed with a potentially pre-cancerous condition of the colon/rectum called aberrant crypt foci (ACF). After 30 days, individuals receiving the higher curcumin dose showed a significant reduction in the number of ACF, demonstrating curcumin's protective effects.⁶

Strong evidence exists that turmeric confers protection from a vast array of neoplasms—protecting nearly every organ in our bodies—breast, prostate, GI tract, lung, blood, brain and many more. This ancient spice has been [timelessly interwoven with the origins of human culture](#), and its benefits are exhaustively supported by modern scientific inquiry, making it of unparalleled value to human health and well-being.

3. BROCCOLI AND BROCCOLI SPROUTS



Like turmeric, [broccoli](#) and other cruciferous vegetables offer a bounty of antioxidant and anti-inflammatory agents earning them a place on the list of cancer's worst enemies. [Cruciferous vegetables](#) are those in the *Brassica* family, which includes Brussel sprouts, cabbage, cauliflower, kale, radish, rutabaga, turnip, watercress and others.

6 Carroll RE, Benya RV, Turgeon DK, et al. Phase IIA Clinical Trial of Curcumin for the Prevention of Colorectal Neoplasia. *Cancer prevention research (Philadelphia, Pa)*. 2011;4(3):354-364. doi:10.1158/1940-6207.CAPR-10-0098.

One of the bioactive compounds in cruciferous vegetables is [sulforaphane](#), which is increasingly considered an anticancer compound. In fact, one promising preclinical study found that the combination of sulforaphane, aspirin, and curcumin was remarkably effective in preventing the development of pancreatic cancer.⁷ Besides pancreatic cancer, sulforaphane has been studied for the prevention and treatment of stomach, bladder, breast, prostate, lung, colon, and skin cancer.

The authors of a 2015 paper wrote, “Sulforaphane possesses the capacity to intervene in multistage carcinogenesis through the modulation and/or regulation of important cellular mechanisms” and “is selectively toxic to malignant cells.”⁸

What makes sulforaphane such a powerfully protective agent? It acts as a “signaling” molecule. Once inside the cell, sulforaphane switches on more than 200 specific genes that may be “asleep” due to toxicity, poor health, and aging factors. Once these genes are switched back on, they produce special detoxification and antioxidant enzymes. One of the antioxidants increased by sulforaphane is glutathione. Sulforaphane also promotes cancer cell apoptosis and reduces expression of estrogen receptors, which is important for several types of breast cancer.

Broccoli also contains a flavonol called [quercetin](#), which is among the top agents for killing cancer stem cells. Quercetin will be discussed further in the section about onions.

Even more potent than broccoli are [broccoli sprouts](#)! When broccoli sprouts are five to six days old, they contain *100 times* more sulforaphane than the mature plant! Potent doses of broccoli sprout extract are found to activate a “detoxification gene” that may help prevent cancer recurrence in survivors of head and neck cancer. Additionally, a 2015 study showed how broccoli sprouts were able to strengthen the oxidative defense system in colon mucosa, resulting in 57 percent less DNA damage.⁹

7 SUTARIA D, GRANDHI BK, THAKKAR A, WANG J, PRABHU S. Chemoprevention of pancreatic cancer using solid-lipid nanoparticulate delivery of a novel aspirin, curcumin and sulforaphane drug combination regimen. *International Journal of Oncology*. 2012;41(6):2260-2268. doi:10.3892/ijo.2012.1636.

8 Tortorella SM, Royce SG, Licciardi PV, Karagiannis TC. Dietary Sulforaphane in Cancer Chemoprevention: The Role of Epigenetic Regulation and HDAC Inhibition. *Antioxidants & Redox Signaling*. 2015;22(16):1382-1424. doi:10.1089/ars.2014.6097.

9 Rychlik, Joanna, Anna Olejnik, Mariola Olkowicz, Katarzyna Kowalska, Wojciech Juzwa, Kamila Myszka, Radostaw Dembczyński, Mary Pat Moyer, and Włodzimierz Grajek. “Antioxidant Capacity of Broccoli Sprouts Subjected to Gastrointestinal Digestion.” *Journal of the Science of Food and Agriculture* 95, no. 9 (2014): 1892-902. doi:10.1002/jsfa.6895.

4. MUSHROOMS

Mushrooms have been part of the human diet for thousands of years and widely used for medicinal purposes. In terms of cancer, mushrooms' mechanisms of action include reducing free radicals, preventing cell proliferation, inhibiting angiogenesis, and stimulating apoptosis.¹⁰ In addition to this anticancer activity, mushrooms are valued for their antimicrobial, antidiabetic, anti-allergy, lipid-lowering, kidney-protective, and immunomodulatory properties.



The cell walls of mushrooms are made up of complex polysaccharides (sugars), including beta-glucans, characterized by numerous biologically active properties. The beta-glucans content of edible mushrooms varies, appearing to be more influenced by the life stage of the mushroom than its variety or method of preparation.¹¹

In laboratory studies, beta-glucans have been shown to modulate immune function, suppress the growth of tumor blood vessels (angiogenesis), and inhibit tumor growth. A few preliminary studies involving individuals with advanced cancers suggest beta-glucans may alleviate symptoms and slow disease progression.

Mushrooms also contain specialized lectins that recognize cancer cells and prevent them from growing and dividing.

Some mushrooms act similarly to the breast cancer drugs called aromatase inhibitors, which block the body's estrogen production. Researchers from the University of Western Australia conducted a study involving 2,000 women (in China), at least half having been diagnosed with breast cancer. They found that the women who consumed at least a third of an ounce of fresh mushrooms daily were 64 percent less likely to develop breast tumors. When mushrooms were combined with green tea, their tumor risk was reduced by an astounding *89 percent!*¹²

10 Patel S, Goyal A. Recent developments in mushrooms as anti-cancer therapeutics: a review. *3 Biotech*. 2012;2(1):1-15. doi:10.1007/s13205-011-0036-2.

11 "Eat to Beat Cancer™" Edible Mushrooms Have Antiangiogenic and Tumor-Fighting Properties. Accessed September 22, 2018. <https://www.eattobeat.org/evidence/390/edible-mushrooms-have-antiangiogenic-and-tumor-fighting-properties.html>.

12 "Mushrooms for Cancer: How to Fight & Prevent Cancer with Mushrooms." Food Revolution Network. May 25, 2018. Accessed September 22, 2018. <https://foodrevolution.org/blog/how-to-fight-prevent-cancer-with-mushrooms/>.

The following is a brief rundown of notable cancer-fighting benefits of a few mushroom varieties:

- ◆ [Chaga](#) (*Inonotus obliquus*) may fight lymphoma and cancers of the colon, lung, skin, brain, stomach, breast, and cervix.¹³
- ◆ [Maitake](#) (*Grifola frondosa*) kills cancer cells by enhancing the activity of T-helper cells. Research shows maitake mushrooms are protective against various types of cancer including breast, lung, colon, liver, stomach, bladder, and prostate.
- ◆ [Shiitake](#) (*Lentinus edodes*) is observed to have strong antitumor properties in animals and shows promise against two human breast carcinoma lines and two myeloma cell lines (via apoptosis), as well as reducing adverse effects from chemotherapy.¹⁴
- ◆ [Reishi](#) (*Ganoderma lucidum*, or Lingzhi mushroom) Unlike other mushrooms, only Reishi have potent compounds called triterpenes (ganoderic acid) that give it the unique characteristic of bitter taste. Ganoderic acid has been demonstrated to suppress cell proliferation in various cancers, including breast cancer and osteosarcoma.¹⁵
- ◆ [Cordyceps](#) (*Cordyceps sinensis*) shows potential for slowing progression of breast cancer, bladder cancer, and leukemia.
- ◆ [White Button Mushrooms](#) (*Agaricus bisporus*) have been shown to [suppress aromatase activity](#) and estrogen biosynthesis, which is good news for breast cancer prevention; button mushrooms also lower PSA in men with [prostate cancer](#).
- ◆ [Turkey Tail](#) (*Trametes versicolor*) shows potential anticancer action against breast, leukemia, colorectal, esophageal, lung, nasopharyngeal, stomach, and skin cancers.
- ◆ [Lion's Mane](#) (*Hericium erinaceus*) shows efficacy against colon and liver cancer by activating macrophages and inhibiting angiogenesis.^{16,17}

13 Arata S, Watanabe J, Maeda M, et al. Continuous intake of the Chaga mushroom (*Inonotus obliquus*) aqueous extract suppresses cancer progression and maintains body temperature in mice. *Heliyon*. 2016;2(5):e00111. doi:10.1016/j.heliyon.2016.e00111.

14 "Search Results for Mushrooms and Cancer." The Life Extension Blog. Accessed September 22, 2018. <https://blog.lifeextension.com/2017/11/shiitake-mushroom-have-anti-cancer-and.html>

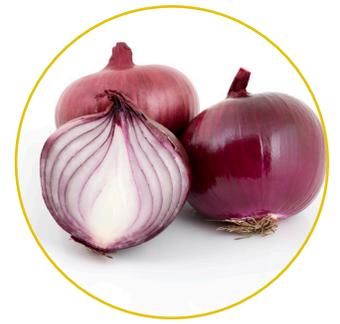
15 Wang X, Sun D, Tai J, Wang L. Ganoderic acid A inhibits proliferation and invasion, and promotes apoptosis in human hepatocellular carcinoma cells. *Molecular Medicine Reports*. 2017;16(4):3894-3900. doi:10.3892/mmr.2017.7048.

16 "Composition and Mechanism of Antitumor Effects of Hericium Erinaceus Mushroom Extracts in Tumor-Bearing Mice." ACS Publications. Accessed September 22, 2018. <http://pubs.acs.org/doi/abs/10.1021/jf201944n>.

17 Lee, Jong Seok, and Eock Kee Hong. "Hericium Erinaceus Enhances Doxorubicin-induced Apoptosis in Human Hepatocellular Carcinoma Cells." *Cancer Letters* 297, no. 2 (2010): 144-54. doi:10.1016/j.canlet.2010.05.006.

5. ONIONS

[Onions](#) may be the most widely cultivated and consumed vegetable in the world. A few epidemiological studies show that people who consume more onions have lower cancer rates. For example, a large [epidemiological study](#) in Europe found that frequent consumption of onions and garlic (more than seven times per week) is associated with reduced risk of a number of cancers. High onion and garlic consumption are also linked to lower risk of intestinal cancer.¹⁸



A recent Canadian [study](#) published in *Food Research International* concluded that onions are proficient at killing cancer cells. Some species of onion contain high levels of cancer-fighting substances called flavonoids, which in preclinical studies inhibit cancer cell proliferation and angiogenesis as well as killing off those nasty cancer stem cells.

Onions—especially red and pink varieties—possess more polyphenols than their allium vegetable cousins, garlic and leeks. Red and pink onions contain substantial amounts quercetin and anthocyanins, two important cancer-fighting flavonols.

Quercetin helps deter many different forms of cancer including liver, pancreatic, prostate, breast, colorectal, esophageal, kidney, lung, melanoma, stomach, and lymphoma. Quercetin also chelates excess iron from the body, which is beneficial because high iron levels can promote cancer cell growth. Quercetin is also a histamine blocker so may be helpful if you have allergies or sinus problems. Quercetin content varies quite a bit by onion variety and growing conditions. For example, in the Canadian study linked above, the cytotoxic effects of onion cultivars “Stanley” and “Fortress” were found to be the strongest.

[Anthocyanins](#) are water-soluble pigments with strong antioxidant properties. These compounds are the force behind blueberries’ abundant health benefits! Anthocyanins offer protection from oral, esophageal, stomach, colorectal, lung, pancreatic, prostate, breast, and ovarian cancers.

Onions contain yet another beneficial flavonoid called [fisetin](#) that is neuroprotective, as well as defending against a large number of cancers.¹⁹

The flavonoids tend to be more concentrated in the outer layers of the onion, so take care to not over peel. You can lose about 20 percent of the quercetin and 75 percent of the anthocyanins by overpeeling!

18 González, Carlos A., Guillem Pera, Antonio Agudo, H. Bas Bueno-De-Mesquita, Marco Ceroti, et al. “Fruit and Vegetable Intake and the Risk of Stomach and Oesophagus Adenocarcinoma in the European Prospective Investigation into Cancer and Nutrition (EPIC–EURGAST).” *International Journal of Cancer* 118, no. 10 (2006): 2559-566. doi:10.1002/ijc.21678.

19 Youns, Mahmoud, and Wael Abdel Halim Hegazy. “The Natural Flavonoid Fisetin Inhibits Cellular Proliferation of Hepatic, Colorectal, and Pancreatic Cancer Cells through Modulation of Multiple Signaling Pathways.” *Plos One* 12, no. 1 (2017). doi:10.1371/journal.pone.0169335.

6. BLACK PEPPER



You might be surprised to see [black pepper](#) on this list, but recent research has unveiled a long list of impressive health benefits from this common spice. Its properties come from a pungent alkaloid called [piperine](#), which is also what gives black pepper its spiciness.

Black pepper has been used medicinally for generations. It is the cultivated fruit from the flowering vine *Piper nigrum*. The black peppercorns with which you fill up your pepper grinder are the whole, partially ripened and dried fruit. Green peppercorns are the unripe fruit, whereas white pepper is the peeled seed.

Piperine bestows an impressive array of health benefits, including antitumor, antioxidant, anti-inflammatory, immunomodulatory, antihypertensive, antiplatelet, anti-infective, and more. Anticancer activity has been demonstrated for breast, prostate, cervical, bone, lung, colon, liver, and oral cancers. Piperine also helps prevent glutathione depletion.

In a study published in *Food and Chemical Toxicology*, piperine was shown to inhibit the proliferation of prostate cancer cells by inducing cell cycle arrest and autophagy.²⁰ Piperine also kills cancer cells by inducing apoptosis.²¹

Even more impressively, a study conducted in Michigan's cancer institute concluded that black pepper in combination with turmeric can prevent the growth of breast cancer stem

20 Ouyang, Dong-Yun, Long-Hui Zeng, Hao Pan, Li-Hui Xu, Yao Wang, Kun-Peng Liu, and Xian-Hui He. "Piperine Inhibits the Proliferation of Human Prostate Cancer Cells via Induction of Cell Cycle Arrest and Autophagy." *Food and Chemical Toxicology*60 (2013): 424-30. doi:10.1016/j.fct.2013.08.007.

21 Tawani, Arpita, Ayeman Amanullah, Amit Mishra, and Amit Kumar. "Evidences for Piperine Inhibiting Cancer by Targeting Human G-quadruplex DNA Sequences." *Scientific Reports*6, no. 1 (2016). doi:10.1038/srep39239.

cells.²² Piperine makes the list as one of the top 25 cancer stem cell killing compounds!

Black pepper is also valued for its capacity to enhance bioavailability of a wide variety of nutrients including many vitamins, minerals, amino acids—even curcumin. It does this by inhibiting certain metabolic enzymes.²³

In Asia, black pepper is used as a primary detoxifier and anti-aging herb. At least among rats, black pepper was shown to increase the clearing of carcinogens by the liver, thereby reducing cancer risk. An older study found piperine almost as hepatoprotective as milk thistle.²⁴ Black pepper is used in the treatment of digestive issues, sinus congestion, poor circulation, hypertension, and osteoporosis.

You might want to consider peppering your steak before tossing it on the grill. Black pepper was recently shown to *nearly eliminate* the formation of HCAs (heterocyclic amines)—carcinogenic agents that form on the surface of meat during cooking.²⁵

Final Thoughts

This report is just the tip of the iceberg when it comes to cancer-fighting foods. There are many more, as you can see from the almost 7,000 research abstracts on the [Cancer](#) page at Greenmedinfo.com.

Cancer is a complex biological process that we are just beginning to understand. Conventional treatments have been an abysmal failure, weakening the body and tearing down any remaining immune defenses. In order to turn the tides in the war against cancer, our progress may be enhanced by viewing it differently—as a misguided stress response rather than a genetically predetermined disease over which we have no control. Whether you have received a cancer diagnosis or you're merely trying to avert one, this report is a launching point for incorporating more natural cancer-preventative foods into your diet.

22 Kakarala M, Brenner DE, Khorkaya H, et al. Targeting Breast Stem Cells with the Cancer Preventive Compounds Curcumin and Piperine. *Breast cancer research and treatment*. 2010;122(3):777-785. doi:10.1007/s10549-009-0612-x.

23 Damanhour, Zoheir A. "A Review on Therapeutic Potential of Piper Nigrum L. (Black Pepper): The King of Spices." *Medicinal & Aromatic Plants* 03, no. 03 (2014). doi:10.4172/2167-0412.1000161.

24 Koul, Indu, and Aruna Kapil. "Evaluation of the Liver Protective Potential of Piperine, an Active Principle of Black and Long Peppers." *Planta Medica* 59, no. 05 (1993): 413-17. doi:10.1055/s-2006-959721.

25 Kansas State University. "Good news for grilling: Black pepper helps limit cancerous compounds in meat, study shows." ScienceDaily. www.sciencedaily.com/releases/2017/05/170516105047.htm (accessed September 22, 2018).

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