

The Breath of Fire



The Health Benefits of Apple Cider Vinegar

There are many health benefits of apple cider vinegar which is a traditional folk medicine that should be considered one of the best home remedies. It has various uses that have been proven effective and safe in the management of many health conditions. For over a thousand years, vinegar has been used for a multitude of reasons; as healing elixir for numerous ailments like fever, cough and colds, as antibiotic, natural detox cleansing agent, energizing drink, as preservative and condiment, antiseptic-disinfectant in cleansing wounds and instruments, for polishing armors, and even as a deodorant.

Apple cider vinegar is made from cider or apple must (Apfelmost) that has undergone fermentation, wherein bacteria and yeast convert sugar to alcohol and finally to acetic acid. It has a pale to amber color with a cloudy, cobweb-like substance, called 'mother of vinegar' located at the bottom of the bottle. This mother is reported to contain beneficial enzymes and bacteria.

Apple cider vinegar is rich in minerals, like potassium, sodium, chloride, phosphorus, calcium, and magnesium, and trace minerals, like, copper, fluorine, as well as vitamins A, B1, B2, B6, C, and E, bioflavonoids, and pectin.

Testaments of its use and scientific studies prove its many and varied healing properties. Apple cider vinegar has been reported to:

- Relieve sore throat, colds, and sinus infection
- Lower high cholesterol levels
- Help clear skin conditions and blemishes, like acne and age spots
- Help eliminate toxins
- Prevent allergies
- Increase strength and improve stamina
- Strengthen the immune system
- Improve metabolism which helps reducing weight
- Promote digestion and help promote bowel movement
- Relieve joint pain and stiffness
- Treat bladder infection

The Health Benefits of Lemons

Lemons are acidic to the taste, but are alkaline-forming in the body. In fact they are one of the most alkaline-forming foods; this makes them great for balancing a highly acidic condition in the body.

Lemons are alkalizing for the body: Lemons are acidic to begin with but they are alkaline-forming on body fluids helping to restore balance to the body's pH.

Lemons are rich in vitamin C and flavonoids that work against infections like the flu and colds.

“The lemon is a wonderful stimulant to the liver and is a dissolvent of uric acid and other poisons, liquefies the bile,” says Jethro Kloss in his book *Back to Eden*. Fresh lemon juice added to a large glass of water in the morning is a great liver detoxifier.

Cleans your bowels: Lemons increase peristalsis in the bowels, helping to create a bowel movement thus eliminating waste and helping with regularity. Add the juice of one lemon to warm water and drink first thing in the morning.

Scurvy is treated by giving one to two ounces of lemon juice diluted with water every two to four hours. In 1747, a naval surgeon named James Lind cured scurvy with fresh lemons. To this day, the British Navy requires

ships to carry enough lemons so that every sailor could have one ounce of juice a day. In the past, lemons were replaced with limes; this is where the English got their nickname “limeys.”

The citric acid in lemon juice helps to dissolve gallstones, calcium deposits, and kidney stones.

Vitamin C in lemons helps to neutralize free radicals linked to aging and most types of disease.

The lemon peel contains the potent phytonutrient tangeretin, which has been proven to be effective for brain disorders like Parkinson’s disease.

In India, Ayurveda medicine values the lemon as a fruit and for its properties. It is sour, warm, promoter of gastric fire, light, good for vision, pungent and astringent.

It destroys intestinal worms.

When there is insufficient oxygen and difficulty in breathing (such as when mountain climbing) lemons are very helpful. The first man to reach the top of Mt. Everest, Edmund Hillary, said that his success on Mt. Everest was greatly due to lemons.

Lemons have powerful antibacterial properties; experiments have found the juice of lemons destroy the bacteria of malaria, cholera, diphtheria, typhoid and other deadly diseases.

Blood vessels are strengthened by the vitamin P (bioflavonoids) in lemon thus prevents internal hemorrhage. Also, making it useful in treating high blood pressure.

The symptoms of eye disorders, including diabetic retinopathy have been shown in research to improve due to the rutin, found in lemons.

Lemons contain 22 anti-cancer compounds, including naturally occurring limonene; oil which slows or halts the growth of cancer tumors in animals and flavonol glycosides which stop cell division in cancer cells.

According to The Reams Biological Ionization Theory (RBTI), the lemon is the ONLY food in the world that is anionic (an ion with a negative charge). All other foods are cationic (the ion has a positive charge.) This makes it extremely useful to health as it is the interaction between anions and cations that ultimately provides all cell energy.

The Health Benefits of Ginger

Ginger's culinary qualities are a delight, but its health benefits are simply stunning. It has been shown to be more effective against bacterial staph infections than antibiotics. It can kill cancer cells. Its anti-inflammatory effects are already famous. It can resolve brain inflammations, and ease or cure a variety of gut problems, such as ulcerative colitis and acid reflux. And ginger can even alleviate the effects of gamma radiation. What's not to love about this incredible herb?

Standard in many kitchens and cuisines, ginger is the seasoning that gives life to a host of dishes. It's been used medicinally for more than 2,000 years. Though best known for its gastrointestinal soothing effects, that's just the beginning of its uses. The plant parts used for both culinary and medicinal purposes are the rhizomes, the root-like stems that grow underground. The primary plant used medicinally is *Zingiber officinale*.

Several compounds in ginger may be related to its health benefits, including shogaol, zingerone, and gingerols, which are similar to chili pepper's capsaicin, noted for its pain relieving ability. However, as we've seen with separating aspirin from willow bark, trying to find the active ingredient in a herb and using it alone tends to

both diminish its effects and remove the balancing components that can both increase positive effects and decrease or eliminate adverse effects.

Some information in this article is derived from studies that have isolated single ingredients, generally with the goal of developing drugs. Though this may be accomplished, a history of pharmaceuticals demonstrates that it is both hubristic to believe that nature will be improved and naive to think that isolating a single chemical can possibly be done without removing the balancing elements that mitigate against harmful effects. Nonetheless, such studies do help demonstrate that there is strong medicine in ginger.

Cancer: Several studies have demonstrated ginger's ability to defeat several types of cancer cells, including some of the most aggressive and difficult to treat: lung, ovarian, colon, breast, skin carcinoma, prostate, and pancreatic.

Diabetes Prevention: Studies have shown that diabetes may be both prevented and treated, along with the related abilities to lower blood sugar, cholesterol, and blood fats.

Antibiotic: Ginger's antibiotic effects may be exceptional. At least one study that compares the effects of ginger and antibiotics on *Staphylococcus aureus* and *S. pyreus* infections shows that ginger extract may be superior. The effects on drug-resistant infections are, as yet, unknown. Ginger has been shown to have an antibacterial effect on respiratory and periodontal infections.

Antifungal: Fungal infections are among the most difficult to treat, and drug-resistant fungi have been developing. However, there's no need to despair, as ginger has been found to have antifungal capability, including to drug-resistant forms.

Ulcers: Intestinal ulcers can be prevented with ginger. There is a generally recognized acceptance now that the *Helico pylori* bacterium is associated with ulcers, and at least one study has shown that a derivative of ginger has been shown to inhibit *H. pylori*. One study has demonstrated that ginger can inhibit existing ulcers, too.

Diabetes Complications: Complications of diabetes may be limited by ginger. Studies have shown that it may reduce urine protein levels, decrease water intake and urine output, and reverse proteinuria. It's been shown to aldose reductase inhibitors, which reduce damage done by diabetes. Ginger can protect nerves in diabetes and lower blood fat levels.

Inflammation: Inflammation is a serious problem with many chronic conditions, both in terms of causing them and causing pain, and ginger can be highly effective in managing it. Neurodegenerative diseases may be aided by ginger's ability to inhibit nitrous oxide production and proinflammatory cytokines. Its antiinflammatory ability may be helpful in arthritis, cancer prevention, prostate disease, and general inflammatory processes.

Gastric Distress: Ginger's ability to ease gastric distress is superior, and it does more than simply ease pain. In a double-blind study, ginger capsules were taken orally in people suffering from dyspepsia with slow emptying of the stomach's contents. It stimulated the emptying of the stomach without any negative effects. It has been found to have an antispasmodic agent, which helps explain some of its beneficial effects on the intestinal tract. As previously stated, it inhibits *H. pylori*, which helps prevent ulcers. It also protects gastric mucosa.

Toxicity: Ginger helps prevent the toxic effects of a wide array of substances, including the pesticide lindane, a cancer drug, the chemical bromobenzene, and the excitotoxin monosodium glutamate (MSG). Lindane was shown to modulate oxidative stress in rats exposed to the pesticide lindane, a neurotoxin, simply by adding it to their diet. The cancer drug doxorubicin damages kidneys, but ginger has been shown to help alleviate the harm. Bromobenzene is highly toxic, used in chemical reactions, and can rapidly damage the liver and nervous system. Ginger has been shown to alleviate its liver damage. Ginger extract has been shown to protect against MSG nerve damage.

Nonalcoholic Fatty Liver Disease (Fructose Damage): Nonalcoholic fatty liver disease (NFLD) has a variety of causes, but it's now on the increase because of the prevalence of fructose as a sweetener. Research on ginger's function with regard to NFLD is in the very early stages. However, NFLD is known to be associated with dyslipidemia and excess triglycerides in the liver. Ginger may help this condition by lowering serum cholesterol. Research showing this is very new, published just this year, so it's hardly definitive. However, ginger does appear to hold promise as a treatment for NFLD.

Heartworms in Dogs: *Dirofilaria immitis*, heartworms, are a common canine infection. The standard medical treatments are risky, frequently causing neurological disorders and circulatory collapse. Resistance to them is also developing. It's therefore quite fortunate that ginger has been shown to be effective against heartworms. The treatment that's been tried is injections of the extract, and it does take time. However, after 55 days, an average 83% reduction, up to a maximum of 98%, was found. About half the dogs exhibited lethargy early in the treatment, but it's believed to be a result of their bodies' need to dispose of the worms, as opposed to an adverse effect.

Menstrual Pain: A double blind study of young women suffering from menstrual pain compared with mefenamic acid (a nonsteroidal anti-inflammatory marketed as Ponstel), ibuprofen, ginger powder in capsules, and placebo was performed. Ginger was found to be as effective as both mefenamic acid and ibuprofen.

Radiation: With radiation in the news lately, it's wonderful to learn that ginger has been proven to provide significant benefit against it. One study has demonstrated that it can help prevent vomiting and taste distortion associated with radiation poisoning. Another study administered high doses of ginger extract to mice before their exposure to gamma radiation, and compared them to mice that had received only distilled water before exposure. It reduced the severity of symptoms and mortality. They were protected from gastrointestinal and bone-marrow-related deaths. It's interesting to note that treatment after exposure provided no benefit.

Gout, Rheumatoid Arthritis, Knee Osteoarthritis, and Indomethacin: Indomethacin is an anti-inflammatory drug commonly used to treat the pain from inflammation of gout, rheumatoid arthritis, and osteoarthritis of the knee. Studies comparing the effect of ginger extract with indomethacin consistently show that ginger is, at a minimum, just as effective, and sometimes even more than indomethacin. Since indomethacin's adverse effects include renal insufficiency in 40% of the people who take it, jaundice in 10%, headaches in 12%, and elevations in liver function tests indicating harm to the liver, plus a host of other nasty problems, it's difficult to imagine any legitimate reason for doctors prescribing the drug when they could simply have their patients take ginger extract.

Nausea and Motion Sickness: Ginger has been well studied for its classic ability to ease nausea in all sorts of situations. It has long been used for motion and sea sickness. Studies have been done both to ascertain whether it's effective—which, of course, it is—and also to try to figure out how it works. Morning sickness, nausea, during pregnancy causes misery for a lot of women. Women suffering from morning sickness were given beverages with ginger during the first trimester of pregnancy and compared with women given placebo. Ginger alleviated the nausea in a highly significant percentage of the women. A trial of taking ginger and protein after chemotherapy demonstrated that patients were able to lessen their intake of anti-emetic medications.

Bacterial Diarrhea: The primary cause of death in young children in developing countries is bacterial-induced diarrhea. The bacteria don't cause it directly. The toxins they release do. Zingerone, a compound found in ginger, binds the toxin so that it cannot interact with the gut, thus preventing diarrhea and the resultant death. The standard treatment now is antibiotics coupled with electrolyte replacement, which would indicate that the antibiotics are not particularly effective. Since the long term effects of antibiotics are now known to be disastrous and antibiotics are expensive, it's hard to imagine a legitimate reason for not implementing large-scale trials of ginger on children suffering from bacterial diarrhea.

The Health Benefits of Raw Honey

Raw Honey is a great addition to this mix. Raw honey has anti-viral, anti-bacterial, and anti-fungal properties. It promotes body and digestive health, is a powerful antioxidant, strengthens the immune system, eliminates allergies, and is an excellent remedy for skin wounds and all types of infections. It stabilizes blood pressure, balance sugar levels, relieve pain, calm nerves, and it has been used to treat ulcers. Raw honey is also an expectorant and anti-inflammatory and has been known to effectively treat respiratory conditions such as bronchitis and asthma.

The Health Benefits of Garlic

You can increase the health benefits you receive from garlic by letting it sit after you've chopped it or crushed it. If you give your chopped/crushed garlic time to sit before changing its temperature (through cooking) or its pH (through the addition of acidic food like lemon juice), it will give the alliinase enzymes in garlic an opportunity to work on behalf of your health. For example, in the absence of chopping or crushing, research has shown that just 60 seconds of immediate microwaving will cause garlic to lose some of its cancer-protective properties. Immediate boiling of whole, intact garlic will also lower these properties, as will immediate addition of a very low-acid ingredient like lemon juice.

Some of garlic's unique components are most durable in food (versus processed extract) form. Allicin—one of garlic's most highly valued sulfur compounds—stays intact for only 2-16 hours at room temperature when it is present in purified (extracted) form. But when it's still inside of crushed garlic, allicin will stay viable for 2-1/2 days.

Garlic may help improve your iron metabolism. That's because the diallyl sulfides in garlic can help increase production of a protein called ferroportin. (Ferroportin is a protein that runs across the cell membrane, and it forms a passageway that allows stored iron to leave the cells and become available where it is needed.)

In addition to being a good source of selenium, garlic may be a more reliable source as well. Garlic is what scientists call a "seleniferous" plant: it can uptake selenium from the soil even when soil concentrations do not favor this uptake.

The cardioprotective benefits of garlic may partly rest on the production of hydrogen sulfide (H₂S) gas. Our red blood cells can take sulfur-containing molecules in garlic (called polysulfides) and use them to produce H₂S. This H₂S in turn can help our blood vessels expand and keep our blood pressure in check. Interestingly, some processed garlic extracts cannot be used by our red blood cells in the same way and do not seem to provide the same level of cardioprotection that is provided by garlic in food form. While still in its very early stages, research suggests that garlic consumption may actually help to regulate the number of fat cells that get formed in our body. 1,2-DT (1,2-vinyldithiin) is one of the unique sulfur compounds in garlic that has long been recognized as having anti-inflammatory properties. But only recently have researchers discovered that some of our fibroblastic cells (called "preadipocytes") only evolve into full-fledged fat cells (called "adipocytes") under certain metabolic circumstances involving inflammatory system activity. 1,2-DT may be able to inhibit this conversion process. Since obesity is increasingly viewed by researchers as a chronic state of low-grade inflammation, the inflammation-related benefits of garlic's 1,2-DT may eventually be extended into the clinical area of obesity.

With their unique combination of flavonoids and sulfur-containing nutrients, allium vegetables—such as garlic—belong in your diet on a regular basis. There's research evidence for including at least one serving of an allium vegetable—such as garlic—in your meal plan every day. If you're choosing garlic as your allium family vegetable, try to include at least 1/2 clove in your individual food portion. If you're preparing a recipe, we recommend at least 1-2 cloves.

Garlic is a wonderful seasoning to add aroma, taste, and added nutrition to your dishes. We often recommend using raw chopped or pressed garlic in many of our dishes to take advantage of the benefits derived from garlic.

However, if you cannot tolerate raw garlic, you can add chopped garlic to foods while they are cooking. It is best to add it towards the end of the cooking process to retain the maximum amount of flavor and nutrition

Whole books have been written about garlic, an herb affectionately called "the stinking rose" in light of its numerous therapeutic benefits. A member of the lily or *Allium* family, which also includes onions and leeks, garlic is rich in a variety of powerful sulfur-containing compounds including thiosulfinates (of which the best known compound is allicin), sulfoxides (among which the best known compound is alliin), and dithiins (in which the most researched compound is ajoene). While these compounds are responsible for garlic's characteristically pungent odor, they are also the source of many of its health-promoting effects.

More recent research has identified additional sulfur-containing compounds that are responsible for garlic's star status as a health-supporting food. These sulfur compounds include 1,2-vinyldithiin, and thiacremonone. The hydrogen sulfide gas (H₂S) that can be made from garlic's sulfides has also been the subject of great research interest. When produced and released from our red blood cells, this H₂S gas can help dilate our blood vessels and help keep our blood pressure under control.

Finally, when thinking about the sulfur compounds in garlic, it is important to remember that sulfur itself is a key part of our health. Several research studies have noted that the average U.S. diet may be deficient in sulfur, and that foods rich in sulfur may be especially important for our health. In addition to all of the sulfur-related compounds listed above, garlic is an excellent source of manganese, a very good source of vitamin B6 and vitamin C and a good source of selenium.

Most of the research on garlic and our cardiovascular system has been conducted on garlic powder, garlic oil, or aged garlic extracts rather than garlic in food form. But despite this research limitation, food studies on garlic show this allium vegetable to have important cardioprotective properties. Garlic is clearly able to lower our blood triglycerides and total cholesterol, even though this reduction can be moderate (5-15%).

But cholesterol and triglyceride reduction are by no means garlic's most compelling benefits when it comes to cardioprotection. Those top-level benefits clearly come in the form of blood cell and blood vessel protection from inflammatory and oxidative stress. Damage to blood vessel linings by highly reactive oxygen molecules is a key factor for increasing our risk of cardiovascular problems, including heart attack and atherosclerosis. Oxidative damage also leads to unwanted inflammation, and it is this combination of unwanted inflammation and oxidative stress that puts our blood vessels at risk of unwanted plaque formation and clogging. Garlic unique set of sulfur-containing compounds helps protect us against both possibilities—oxidative stress and unwanted inflammation.

On the anti-inflammatory side of the equation, garlic's 1,2-vinyldithiin (1,2-DT) and thiacremonone are the compounds that have been of special interest in recent research. Both compounds appear to work by inhibiting the activity of inflammatory messenger molecules. In the case of thiacremonone, it is the inflammatory transcription factor called NFkappaB that gets inhibited. In the case of 1,2-DT, the exact anti-inflammatory mechanisms are not yet clear, even though the release of inflammatory messaging molecules like interleukin 6 (IL-6) and interleukin 8 (IL-8) by macrophage cells has been shown to be reduced in white adipose tissue by 1,2-DT. The combination of anti-inflammatory and anti-oxidative stress compounds in garlic makes it a unique food for cardiovascular support, especially in terms of chronic degenerative cardiovascular conditions like atherosclerosis.

In addition to the ability of garlic to help prevent our blood vessels from becoming blocked, this allium vegetable may also be able to help prevent clots from forming inside of our blood vessels. This cardiovascular protection has been linked to one particular disulfide in garlic called ajoene. Ajoene has repeatedly been shown to have anti-clotting properties. It can help prevent certain cells in our blood (called platelets) from becoming too sticky, and by keeping this stickiness in check, it lowers the risk of our platelets clumping together and forming a clot.

Equally impressive about garlic is its ability to lower blood pressure. Researchers have known for about 10 years that the allicin made from alliin in garlic blocks the activity of angiotensin II. A small piece of protein (peptide), angiotensin II helps our blood vessels contract. (When they contract, our blood is forced to pass through a smaller space, and the pressure is increased.) By blocking the activity of angiotensin II, allicin form garlic is able to help prevent unwanted contraction of our blood vessels and unwanted increases in blood pressure.

More recently, however, researchers have found that garlic supports our blood pressure in a second and totally different way. Garlic is rich in sulfur-containing molecules called polysulfides. It turns out that these polysulfides, once inside our red blood cells (RBCs), can be further converted by our RBCs into a gas called hydrogen sulfide (H₂S). H₂S helps control our blood pressure by triggering dilation of our blood vessels. When the space inside our blood vessels expands, our blood pressure gets reduced. (H₂S is described as a "gasotransmitter" and placed in the same category as nitric oxide (NO) as a messaging molecule that can help expand and relax our blood vessel walls.) Interestingly, our RBCs do not appear to use processed garlic extracts in the same way that they use polysulfides in food-form garlic.

Garlic's numerous beneficial cardiovascular effects are due to not only its sulfur compounds, but also to its vitamin C, vitamin B6, selenium and manganese. Garlic is a very good source of vitamin C, the body's primary antioxidant defender in all aqueous (water-soluble) areas, such as the bloodstream, where it protects LDL cholesterol from oxidation. Since it is the oxidized form of LDL cholesterol that initiates damage to blood vessel walls, reducing levels of oxidizing free radicals in the bloodstream can have a profound effect on preventing cardiovascular disease.

Garlic's vitamin B6 helps prevent heart disease via another mechanism: lowering levels of homocysteine. An intermediate product of an important cellular biochemical process called the methylation cycle, homocysteine can directly damage blood vessel walls.

The selenium in garlic can become an important part of our body's antioxidant system. A cofactor of glutathione peroxidase (one of the body's most important internally produced antioxidant enzymes), selenium also works with vitamin E in a number of vital antioxidant systems. Garlic is rich not only in selenium, but also in another trace mineral, manganese, which also functions as a cofactor in a number of other important antioxidant defense enzymes, for example, superoxide dismutase. Studies have found that in adults deficient in manganese, the level of HDL (the "good form" of cholesterol) is decreased.

Our cardiovascular system is not the only body system that may be able to benefit from garlic's anti-inflammatory properties. There's preliminary evidence (mostly from animal studies, and mostly based on garlic extracts rather than whole food garlic) that our musculoskeletal system and respiratory system can also benefit from anti-inflammatory compounds in garlic. Both the diallyl sulfide (DAS) and thiocremonone in garlic have been shown to have anti-arthritis properties. And in the case of allergic airway inflammation, aged garlic extract has been shown to improve inflammatory conditions (once again in animal studies).

Even more preliminary is research evidence showing that some inflammatory aspects of obesity may be altered by sulfur-containing compounds in garlic. Specifically, there is one stage in development of the body's fat cells (adipocytes) that appears to be closely related to status of our inflammatory system. Fat cells cannot become fully themselves unless they are able to progress from a preliminary stage called "preadipocytes" to a final stage called "adipocytes." One of the sulfur compounds in garlic (1,2,-vinyldithiin, or 1,2-DT) appears able to lessen this conversion of preadipocytes into adipocytes, and the impact of 1,2-DT appears to be inflammation-related. Even though very preliminary, this research on 1,2-DT is exciting because obesity is increasingly being understood as a disease characterized by chronic, low level inflammation and our inflammatory status is precisely where garlic's 1,2-DT has its apparent impact.

From a medical history standpoint, the antibacterial and antiviral properties of garlic are perhaps its most legendary feature. This allium vegetable and its constituents have been studied not only for their benefits in controlling infection by bacteria and viruses, but also infection from other microbes including yeasts/fungi and worms. (One particular disulfide in garlic, called ajoene, has been successfully used to help prevent infections with the yeast *Candida albicans*.) Very recent research has shown the ability of crushed fresh garlic to help prevent infection by the bacterium *Pseudomonas aeruginosa* in burn patients. Also of special interest has been the ability of garlic to help in the treatment of bacterial infections that are difficult to treat due to the presence of bacteria that have become resistant to prescription antibiotics. However, most of the research on garlic as an antibiotic has involved fresh garlic extracts or powdered garlic products rather than fresh garlic in whole food form.

Overgrowth of the bacterium *Helicobacter pylori* in the stomach—a key risk factor for stomach ulcer—has been another key area of interest for researchers wanting to explore garlic's antibacterial benefits. Results in this area, however, have been mixed and inconclusive. While garlic may not be able to alter the course of infection itself, there may still be health benefits from garlic in helping to regulate the body's response to that infection.

While not as strong as the research evidence for cruciferous vegetables, research on the allium vegetables—including garlic—shows that these vegetables have important anti-cancer properties. Interestingly, high intake of garlic (roughly translated as daily intake of this food) has been found to lower risk of virtually all cancer types except cancer of the prostate and breast cancer. However, moderate intake of garlic (roughly translated as several times per week) has been repeatedly found to lower risk of only two cancer types—colorectal and renal cancer. This difference between "high" versus "moderate" garlic intake may be a real difference that suggests we all need to eat more garlic if we want to maximize its cancer-related benefits. Or it may be a difference that is more related to research complications involving the options given to research participants when reporting their food intake. Still, garlic has a consistent track record with respect to general anti-cancer benefits, and there are good research reasons for classifying garlic as an "anti-cancer" food.

The allyl sulfides found in garlic may play a key role in its cancer-prevention benefits. These garlic compounds are able to activate a molecule called nuclear erythroid factor (Nrf2) in the main compartment of cells. The Nrf2 molecule then moves from the main compartment of the cell into the cell nucleus, where it triggers a wide variety of metabolic activities. Under some circumstances, this set of events can prepare a cell for engagement in a strong survival response, and in particular, the kind of response that is needed under conditions of oxidative stress. Under other circumstances, this same set of events can prepare the cell to engage in programmed cell death (apoptosis). When a cell recognizes that it has become too compromised to continue functioning in a healthy manner with other cells, it stops proceeding through its own life cycle and essentially starts to dismantle itself and recycle its parts. It's critical for a cell to determine whether it should continue on or shut itself down, because cells that continue on without the ability to properly function or communicate effectively with other cells are at risk of becoming cancerous. The ability of garlic's allyl sulfides to activate Nrf2 suggests that garlic may be able to help modify these all-critical cell responses and prevent potentially cancerous cells from forming.

One especially interesting area of research on garlic and cancer prevention involves meat cooked at high temperatures. Heterocyclic amines (HCAs) are cancer-related substances that can form when meat comes into contact with a high-temperature cooking surface (400°F/204°C or higher). One such HCA is called PhIP (which stands for 2-amino-1-methyl-6-phenylimidazo[pyridine]). PhIP is thought to be one reason for the increased incidence of breast cancer among women who eat large quantities of meat because it is rapidly transformed into DNA-damaging compounds.

Diallyl sulfide (DAS), one of the many sulfur-containing compounds in garlic, has been shown to inhibit the transformation of PhIP into carcinogens. DAS blocks this transformation by decreasing the production of the liver enzymes (the Phase I enzymes CYP1A1, CYP1A2 and CYP1B1) that transform PhIP into activated DNA-damaging compounds. Of course, your best way to prevent formation of PhIP is not to bring your meat

into contact with a 400°F/204°C cooking surface in the first place. But this area of research still bolsters our view of garlic as an allium vegetable with important cancer-preventive properties.

Recent research has shown that garlic may be able to improve our metabolism of iron. When iron is stored up in our cells, one of the key passageways for it to be moved out of the cell and returned into circulation involves a protein called ferroportin. Ferroportin is protein that runs across the cell membrane, and it provides a bridge for iron to cross over and leave the cell. Garlic may be able to increase our body's production of ferroportin, and in this way, help keep iron in circulation as it is needed.

The Health Benefits of Red Onions

The flavonoids in onion tend to be more concentrated in the outer layers of the flesh. To maximize your health benefits, peel off as little of the fleshy, edible portion as possible when removing the onion's outermost paper layer. Even a small amount of "overpeeling" can result in unwanted loss of flavonoids. For example, a red onion can lose about 20% of its quercetin and almost 75% of its anthocyanins if it is "overpeeled."

The total polyphenol content of onions is much higher than many people expect. (Polyphenols are one of the largest categories of phytonutrients in food. This category includes all flavonoids as well as tannins.) The total polyphenol content of onion is not only higher than its fellow allium vegetables, garlic and leeks, but also higher than tomatoes, carrots, and red bell pepper. In the French diet, only six vegetables (artichoke heart, parsley, Brussels sprouts, shallot, broccoli, and celery) have a higher polyphenol content than onion. Since the French diet has been of special interest to researchers in terms of disease prevention, onion's strong polyphenol contribution will very likely lead to follow-up studies that pay closer attention to this unique allium vegetable.

Within the polyphenol category, onions are also surprisingly high in flavonoids. For example, on an ounce-for-ounce basis, onions rank in the top 10 of commonly eaten vegetables in their quercetin content. The flavonoid content of onions can vary widely, depending on the exact variety and growing conditions. Although the average onion is likely to contain less than 100 milligrams of quercetin per 3-1/2 ounces, some onions do provide this amount. And while 100 milligrams may not sound like a lot, in the United States, moderate vegetable eaters average only twice this amount for all flavonoids (not just quercetin) from all vegetables per day.

When onions are simmered to make soup, their quercetin does not get degraded. It simply gets transferred into the water part of the soup. By using a low-heat method for preparing onion soup, you can preserve the health benefits of onion that are associated with this key flavonoid. When we get quercetin by eating an onion—rather than consuming the quercetin in purified, supplement form—we may end up getting better protection from oxidative stress. That's exactly what happened in an animal study where some animals had yellow onion added to their diet in a way that would provide the same amount of quercetin provided to other animals in the form of purified quercetin extracts. The best protection came from the onion version of this flavonoid, rather than the supplement form.

Several servings of onion each week are sufficient to statistically lower your risk of some types of cancer. For colorectal, laryngeal, and ovarian cancer, between 1-7 servings of onion has been shown to provide risk reduction. But for decreased risk of oral and esophageal cancer, you'll need to consume one onion serving per day (approximately 1/2 cup).

With their unique combination of flavonoids and sulfur-containing nutrients, the allium vegetables—such as onions—belong in your diet on a regular basis. There's research evidence for including at least one serving of an allium vegetable—such as onions—in your meal plan every day.

When onion is your allium vegetable of choice, try to consume at least one-half of a medium onion on that day, and use this guideline to adjust your recipes accordingly. For example, if you are following a recipe that yields 4

servings, include at least 2 medium onions in the recipe so that each of your 4 servings will contain at least one half medium onion.

To bring out the sweet flavor of onions we recommend using our Healthy Saute method of cooking onions for just 7 minutes. Cut onions into slices of equal 1/4-inch thickness to help them cook more evenly. The thinner you slice the onions the more quickly they will cook. Let them sit for at least 5 minutes to enhance their health-promoting properties. For more details see the Healthiest Way of Cooking Onions in the How to Enjoy section below.

Onions, like garlic, are members of the Allium family, and both are rich in sulfur-containing compounds that are responsible for their pungent odors and for many of their health-promoting effects. A wide variety of allyl sulfides are found in onion, including the four major diallyl sulfides: DMS (diallyl monosulfide), DDS (diallyl disulfide), DTS (diallyl trisulfide), and DTTS (diallyl tetrasulfide). Also present are a wide variety of sulfoxides, including (+) S-methyl-L-cysteine sulfoxide (MCSO), (+)-S-(1-propenyl)-L-cysteine sulfoxide (PRENCSO), S-methyl-l-cysteine sulfoxide, S-propyl-l-cysteine sulfoxide, and S-propenyl-l-cysteine sulfoxide. Onions are an outstanding source of polyphenols, including the flavonoid polyphenols. Within this flavonoid category, onions are a standout source of quercetin.

Unlike the research on garlic and its cardiovascular benefits, research specifically focused on onion has mostly been conducted on animals rather than humans. In animal studies, there is evidence that onion's sulfur compounds may work in an anti-clotting capacity and help prevent the unwanted clumping together of blood platelet cells. There is also evidence showing that sulfur compounds in onion can lower blood levels of cholesterol and triglycerides, and also improve cell membrane function in red blood cells.

In human studies, most of the cardiovascular benefits have been demonstrated in the form of overall diet. Multiple studies show onion to be a food that provides protection for the heart and blood vessels when consumed in a diet that is rich in other vegetables and fruits—especially flavonoid-containing vegetables and fruits. The benefits of onion in this overall dietary context extend to prevention of heart attack. In virtually all of these diet-based studies, participants with the greatest intake of vegetables (including onions) gain the most protection. The outstanding flavonoid content of onions supports these research findings. It's also interesting to note that onion is most commonly consumed in relatively small amounts along with other foods rather than by itself. For this reason, it can be more difficult to study in large-scale dietary research studies that involve thousands of participants and rely on diet diaries to determine onion consumption.

Human studies have shown that onion can help increase our bone density and may be of special benefit to women of menopausal age who are experiencing loss of bone density. In addition, there is evidence that women who have passed the age of menopause may be able to lower their risk of hip fracture through frequent consumption of onions. "Frequent" in this context means onion consumption on a daily basis! In this research on bone density in older women, very sporadic eating of onion (once a month or less) did not provide much benefit. That finding, of course, was very expected. But less expected was the finding that it took daily consumption of onion to show robust benefits for bone density. Just as in the cancer-related onion research, the take-away message here is clear: you don't want to skimp on onions when you are incorporating them into your meal plan.

In and of itself, the high sulfur content of onions may provide direct benefits to our connective tissue. Many of our connective tissue components require sulfur for their formation. For example, with the exception of hyaluronic acid, all glycosaminoglycans (GAGS) are sulfated. (GAGS are the premiere family of molecules found in the ground substance of our connective tissue.)

While onion is not as well researched as garlic in terms of specific inflammatory health problems like rheumatoid arthritis or allergic airway inflammation, this allium vegetable has nevertheless been shown to provide important anti-inflammatory benefits. Onionin A—a unique sulfur molecule in onion that is found in

the bulb portion of the plant—has been shown to inhibit the activity of macrophages, specialized white blood cells that play a key role in our body's immune defense system, and one of their defense activities involves the triggering of large-scale inflammatory responses. While macrophage activity is typically a good thing, inhibition of their activity can sometimes be critical in getting chronic unwanted inflammation under control.

Onion's antioxidants—including its hallmark flavonoid antioxidant, quercetin—also provide us with anti-inflammatory benefits. These antioxidants help prevent the oxidation of fatty acids in our body. When we have lower levels of oxidized fatty acids, our body produces fewer pro-inflammatory messaging molecules, and our level of inflammation is kept in check.

Onion has repeatedly been shown to lower our risk of several cancers, even when we consume it in only moderate amounts. "Moderate" generally means 1-2 times per week, even though in some studies it has been used to mean up to 5-6 times per week. Colorectal cancer, laryngeal cancer, and ovarian cancer are the cancer types for which risk is reduced along with moderate amounts of dietary onion. For other cancer types, however, moderate intake of onion has not been enough to show significant risk reduction. For these cancer types, including esophageal cancer and cancers of the mouth, daily intake of onion is required before research results show significant risk reduction.

Many factors may play a role in these different research findings for different cancer types. However, the overall take-away from this research seems clear: you do not want to err on the side of small onion servings or infrequent onion intake if you want to obtain the full cancer-related benefits of onion. A few slivers of sliced onion on a tossed salad are a good thing—but probably not enough to provide you with the cancer-related onion benefits that you are seeking. In recipes that already call for onion, try to include at least 1 whole onion (medium size) in the recipe. In recipes that do not already call for onion, consider the addition of 1 medium size onion (if you think onion might fit into the recipe and still provide a tasty outcome). In terms of individual portion sizes when you sit down to eat a meal, try to consume the equivalent of 1/2 onion.

In animal studies, onions have shown potential for improvement of blood sugar balance, even though it is not yet clear about the carry over of these benefits for humans who are seeking better blood sugar balance from their diet. Most of the animal studies have been conducted on rats, and most have used onion juice or onion extract as the form of onion tested. Future research is needed to clarify onion's potential for helping lower blood sugar and improving blood sugar control, especially in persons with blood sugar problems.

While not as well researched as garlic in terms of antibacterial benefits, onion has nevertheless been shown to help prevent bacterial infection. Along with its sulfur-containing compounds, the flavonoid quercetin contained in onion helps provide these antibacterial benefits. We've seen studies showing antibacterial activity of onion in relationship to the bacteria *Streptococcus mutans* and *Streptococcus sobrinus*. (These bacteria are commonly involved in the production of tooth cavities). Antibacterial benefits have also been shown in the area of gum (periodontal) disease bacteria, including *Porphyromonas gingivalis* and *Prevotella intermedia*. Interestingly, in one study, fresh, chopped, uncooked onion had antibacterial effects on these potentially unwanted gum bacteria, but non-fresh, uncooked onion (raw onion that was chopped and then left to sit for 2 days at room temperature) did not demonstrate these same antibacterial properties nor did fresh onion that was grated and then steamed for 10 minutes. While it is not possible to draw broad conclusions from a single lab study, these findings suggest that length of storage (for onion that has been chopped but not cooked) and duration of heat exposure (in this case involving exposure to steam for 10 full minutes) can affect some of onion's health benefits. For these reasons, special care may be needed in the storage, handling, and cooking of this allium vegetable.

The Health Benefits of Turmeric

Turmeric is a yellow, culinary spice widely used in Southeast Asia. The health benefits of turmeric are derived from curcumin, the substance in turmeric which also provides its yellow color. Curcumin has very powerful anti-inflammatory and antioxidant properties. The medical ingredients present create many turmeric health

benefits.

Turmeric's anti-inflammatory traits make it as an excellent treatment for arthritis, be it osteoarthritis or just rheumatoid variety. Rheumatoid arthritis sufferers who regularly make use of turmeric noted a greatly reduced level of pain and inflammation around their joints. Further, turmeric's antioxidant nature is also useful for eradicating free radicals within your body.

One of the most vital health benefits of turmeric is that the herb has been successful in preventing a variety of cancer strains. There is also evidence showing that the curcumin within turmeric can halt the advance of cancer cells or even outright destroying cancerous cells. This is likely attributed to the activate components within the substance, chiefly curcumin, which makes it an excellent preventative measure for radiation-based tumors. Further, turmeric has been shown to be quite effective at preventing T-cell leukemia and carcinomas of the breast and colon.

Turmeric has been shown to gauge insulin levels by improving glucose control, as well as augmenting the efficiency of any diabetic medications. Turmeric is also quite capable of reducing developmental resistance to insulin, which can halt the establishment of type 2 diabetes.

Turmeric helps mental health by tearing down levels of plaque around the brain, and by extension of the cleared plaque, increasing the flow of oxygen to the brain. Furthermore, these very same properties can help stunt the process of degeneration in patients already dealing with the disease.

Turmeric is a useful treatment for many kinds of inflammatory bowel troubles, such as ulcerative colitis. However, it is important to note that turmeric should NOT be used for the treatment of individuals coping with gallbladder issues, as turmeric can worsen the problems inherent to such a condition.

Turmeric can detoxify the blood via its enzymes, as well as increasing the body's natural production level of these enzymes. These enzymes work by tearing down and shrinking the levels of toxins within the body. Further, the health benefits of turmeric include reinvigorating and enhancing the circulation of blood. Turmeric's phytochemicals assist the body's production of bile. Bile works in the body by breaking down the fatty components of foods. Individuals seeking to lose weight or fight obesity should simply add a teaspoon of powdered turmeric to each meal. Turmeric should ideally be consumed raw. In addition to its obvious applications in meals to reduce fat, turmeric can also reduce levels of serum cholesterol within a user's body. Lower levels of cholesterol can also stall the development of cardiovascular problems, such as dyspepsia, heart attacks or angina.

Lipopolysaccharide is one of the substances which contribute to the health benefits of turmeric. This particular substance alerts the various antibodies produced by the body's immune system, preventing and speeding up the recovery from viruses, bacteria, and fungal hazards. A strong immune system greatly reduces the risk of catching a cold, cough, flu, or any other sort of health hazard.

Using turmeric supplements is a good way to ensure you get sufficient amounts of the herb everyday. To gain the many health benefits of turmeric, you want to use a turmeric dosage of around 500mg, 3 times daily. You need to take turmeric with some form of fat for it to be properly absorbed by your body. Some supplements are labeled curcumin. This is no different than a supplement labeled turmeric as turmeric is mostly curcumin.

The Health Benefits of Cinnamon

Ayurveda, the ancient healing system of India, often uses cinnamon to stimulate circulation as well as to

increase the bio-availability of other herbs. Ayurvedic healers, prescribe remedies based on an individual's dosha or type. Ayurveda sees cinnamon as an appropriate remedy for people who belong to the kapha type (characterized as sturdy, heavy, calm, slow and moist) and the vata type (thin, cold, prone to nervousness) since cinnamon tends to have a heating and energizing effect. People who belong to the pitta type (fiery, oily, sharp) can partake of cinnamon in moderation.

Herbalists and acupuncturists in the Chinese tradition value cinnamon for its warming qualities. They may prescribe cinnamon, often in combination with another warming substance such as ginger, to ward off colds. TCM healers may prescribe cinnamon for disorders associated with the kidney meridian.

During the 1918 influenza outbreak, workers at cinnamon factories seemed immune to the Spanish flu which decimated the population. A potent new form of cinnamon extract may even protect against HIV. An Israeli researcher, taking a cue from a Biblical reference to high priests using a holy oil containing cinnamon, in 2007 developed a powerful cinnamon extract which may protect against modern viruses like the Avian flu.

There may be a touch of ancient wisdom at work in all the recipes which combine cinnamon with high-carb and high-fat ingredients. Cinnamon can mitigate the impact these foods have on blood sugar levels, slowing the rate at which the stomach empties after meals and thereby reducing the potential spike in blood sugar. Cinnamon can offer aid to people who have type 2 diabetes by preventing insulin resistance and has even been recommended by the American Diabetes Association. Research has shown cinnamon outperforms diabetes drugs. In a study published in *The Journal of Diabetic Medicine*, research subjects given cinnamon supplements experienced greater improvement in blood sugar levels than those who received standard diabetes drugs.

Studies indicate that cinnamon supplements go beyond just improving blood glucose levels; they can also reduce body fat percentage and help increase lean muscle mass.

Cinnamon has the ability to inhibit the growth of harmful bacteria, molds and yeasts, including *Candida* yeast. In a 2003 study, two batches of vegetable broth were refrigerated, one with, and one without cinnamon oil. The broth with the cinnamon oil was resistant to food-borne pathogenic *Bacillus cereus* for at least 60 days. Researchers in this study observed that the cinnamon not only served as an effective preservative but also improved the flavor of the broth. In another study, researchers at Kansas State University discovered that cinnamon eliminates *E. coli* in unpasteurized apple cider.

The Health Benefits of Oregano

Oregano handles pathogenic bacteria without disrupting beneficial bacteria. It is also anti-viral and anti-fungal. This is a rare three in one combination. Imagine destroying fungal colonies while ridding oneself of a bacterial or viral infection and preserving your good bacteria. In addition to being antiviral and antifungal without side effects, Oregano Oil also rids the body of parasites, even giardia.

Many different university studies and other independent research have confirmed Oregano's potent antimicrobial characteristics without side effects. Its antibacterial effectiveness rivals pharmaceuticals while not encouraging antibiotic resistance or killing beneficial bacteria.

The chief antimicrobial ingredient is carvacrol. Another antibacterial ingredient is terpenes. Oregano's antifungal properties come from thymol. Other nutrients include the powerful antioxidant rosmarinic, minerals including magnesium, and vitamins E and K.

This is the type of flu solution one should have on hand. You can use it, along with eliminating sugar and taking probiotics, to cure *Candida*.

Carvacrol has been proven in studies to be a powerful antimicrobial, so powerful that it can be used to preserve food and render it self-stable. Research has shown it to be effective against candida albicans, the aspergillus mold, staphylococcus, campylobacter, klebsiella, e.coli, giardia, pseudomonas, salmonella, and listeria. Carvacrol provides many of the health benefits of oil of oregano.

Thymol is a natural fungicide with antiseptic properties. It is the active ingredient in Listerine mouthwash. Thymol is also an immune system booster and a shield against toxins. It is capable of preventing tissue damage and encouraging healing.

Terpenes is the source of the word turpentine. Terpenes give off a pine scent and are also produced by pine trees. Terpenes have potent antibacterial properties.

Rosmarinic acid is a stronger antioxidant than vitamin E. It prevents free radical damage and is instrumental in preventing atherosclerosis and cancer. Rosmarinic acid has shown to be effective in the treatment of allergic asthma. It reduces fluid build up and swelling during an allergy attack, and is an effective natural antihistamine.

Naringin is the substance that gives grapefruit its bitter taste. It has been shown to inhibit the growth of cancer cells and helps boost the effect of antioxidants.

Oil of oregano also contains a good amount of the vitamin E complex, as well as calcium, magnesium, zinc, iron, potassium, copper, boron, manganese, vitamins A and C, and niacin. Recent research shows oil of oregano beneficial to the colon and liver. Oil of oregano is a powerful and versatile medicine

In his book, *The Cure is in the Cupboard*, Dr. Cass Ingram tells of how oil of oregano saved his life after he contacted a blood borne fungus from an IV needle. He claims that oil of oregano holds supremacy as nature's most powerful and versatile antiseptic. It is a preservative that can be used to halt the growth of microbes and reduce the risk for food poisoning in meats, eggs, milk and other foods. In his book he lists more than 170 conditions for which the oil may be useful, including treatment for athlete's foot, psoriasis, eczema, worms, amoebae, and protozoa. It is helpful in combating diarrhea, intestinal gas, sore throat, sinusitis, breathing difficulties, dandruff, diaper rash, bee stings and venomous bites. It can help reduce fever, relieve cramps, and reduce the effects of measles and mumps.

Herbal authority Steven Foster credits oregano as having been used successfully to treat indigestion, diarrhea, nervous tension, insect bites, toothache, earache, rheumatism, and coughs due to whopping cough and bronchitis.

The Health Benefits of Cayenne Pepper

The purported cayenne health benefits are almost too unbelievable, but its reputation keeps growing among medical researchers as well as alternative health aficionados and deservedly so. It can do everything from kill cancer cells in the prostate, lungs, and pancreas to immediately stop a heart attack within 30 seconds.

Let's get into some of the specifics of cayenne pepper benefits. Cayenne pepper (or cayenne pepper as it's sometimes spelled as) increases metabolism by immediately influencing the venous structure. It is nothing short of amazing with its effects on the circulatory system as it feeds the vital elements into the cell structure of capillaries, veins, arteries and helps adjust blood pressure to normal levels.

Yes, cayenne pepper for high blood pressure is certainly one of its core uses, but cayenne cleans the arteries as well, helping to rid the body of the bad LDL cholesterol and triglycerides. Considering that heart disease is the number one killer in America, this is significant.

Cayenne is also great for the stomach and the intestinal tract. It stimulates the peristaltic motion of the intestines

and aids in assimilation and elimination. When taken internally, it warms the body and has even been used by some herbalist doctors to help heal and rebuild flesh due to frostbite.

Notwithstanding its hot taste, paradoxically it is actually superb for rebuilding the tissue in the stomach, facilitating healing with stomach and intestinal ulcers. Cayenne pepper for ulcers is not something most would have considered but I can testify to that remarkability capability of cayenne.

Yes, the effect of cayenne pepper on your body is dramatic, even literally instant and no more so than with the heart. Cayenne pepper's benefits is one of the things that brought you to this article so now let's discuss the phenomenal healing properties of cayenne pepper with the human heart.

Dr. John Christopher, the famed natural herbalist, was persecuted health benefits of cayenne pepper relentlessly by the government for his practice of herbal medicine all the while assisting patients in curing heart disease, cancer, tuberculosis, infertility, rheumatism, leukemia, and every other incurable under the sun.

One of his greatest stories in his long career was how he could instantly stop a heart attack if he could get the patient to drink a glass of warm cayenne water. He said, "A teaspoon of cayenne should bring the patient out of the heart attack."

While this is not directly related to cayenne pepper and heart health, with internal hemorrhaging, if the patient can drink a glass of extra warm cayenne water, Dr. Christopher wrote, "...by the count of ten the bleeding will stop. Instead of all the pressure being centralized, it is equalized and the clotting becomes more rapid."

Another benefit of cayenne peppers is its antifungal properties. Cayenne pepper antifungal properties are significant although this is not its primary health benefit. Cayenne has been shown in some studies to be active against phomopsis and collectotrichum -- both are fungal pathogens.

- This herb is a great food for the circulatory system in that it feeds the necessary elements into the cell structure of the arteries, veins and capillaries so that these regain the elasticity of youth again, and the blood pressure adjusts itself to normal. It rebuilds the tissue in the stomach and heals the stomach and intestinal ulcers; in equalizing the blood circulation, Cayenne produces natural warmth in your body; and in stimulating the peristaltic motion of the intestines, it aids in assimilation and elimination.

- Cayenne regulates the flow of blood from the head to the feet so that the pressure is equalized; it influences the heart immediately, then gradually extends its effects to the arteries, capillaries, and nerves (the frequency of the pulse is not increased, but is given more vigor).

- Circulation; it is warming; dilating; specific for varicose veins; equalizes the blood pressure in the arterial and venous system; equalizes blood pressure instantly actually.

- Cayenne is useful in alleviating allergies, muscle cramp, improving digestion, gives more pep and energy, and helps wound healing with minimal scar tissue.

- Cayenne is a counter-irritant; it brings blood to the surface and allows the toxins to be taken away.