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Our November 2017 Newsletter for Healthy Living

Fighting the Common Cold

The common cold is the most common infectious disease in the US and many other areas of the world. Cold symptoms are triggered by hundreds of different viruses — not bacteria — and infection is typically spread by hand-to-hand contact between people, or by touching objects that harbor the pathogens. Since colds are viral in nature, antibiotics are completely useless and should be avoided, unless your physician diagnoses a serious secondary bacterial infection. Using antibiotics when no bacterial pathogen is present simply contributes to antibiotic-resistance.

The key to preventing colds and recovering from them quickly is to maintain a strong immune system, which includes: optimizing your diet, avoiding sugar, optimizing your vitamin D level, getting enough sleep and exercise, managing your stress, and practicing proper hand-washing technique.



Just being exposed to a cold virus does not automatically mean you'll catch a cold. If your immune system is operating at its peak, your body will be able to fend off the virus without ever getting sick, even if you're exposed to it. A number of foods, herbs, and supplements can be particularly helpful for promoting strong immune function. Research published in the Cochrane Database of Systematic Reviews in 2013 found that regular supplementation with

vitamin C had a “modest but consistent effect in reducing the duration of common cold symptoms.” Kiwi fruits are exceptionally high in vitamin C, along with vitamin E, folate, polyphenols, and carotenoids, and research published in the *British Journal of Nutrition* found that a kiwi-packed diet reduced the duration and severity of upper respiratory tract infections symptoms in older indi-

viduals. Other foods high in vitamin C include: citrus fruits, red bell peppers, broccoli, Brussels sprouts, butternut squash, papaya, sweet potatoes, and tomatoes. Vitamin D is another nutrient that tends to play a role in most diseases, especially infectious ones. It's a potent antimicrobial agent, producing 200 to 300 different antimicrobial peptides in your body that kill bacteria, viruses, and fungi. Suboptimal vitamin D levels will significantly impair your immune response and make you far more susceptible to contracting colds, influenza, and other respiratory infections. The research is quite clear on this point: The higher your vitamin D level, the lower your risk of contracting colds, flu, and other respiratory tract infections. In the largest and most nationally representative study of its kind, involving about 19,000 Americans, those with the lowest vitamin D levels reported having significantly more colds

or cases of the flu. At least five additional studies also show an inverse association between lower respiratory tract infections and vitamin D levels. The best source for vitamin D is direct sun (UVB) exposure. If neither natural nor artificial sunlight is an option, then using an oral vitamin D3 supplement is recommended. Remember you also need to increase your vitamin K2 when taking

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high doses of vitamin D3. Based on the latest research from GrassrootsHealth, the average adult dose required to reach vitamin D levels of about 40 ng/ml is around 8,000 IUs of vitamin D3 per day. For children, many experts agree they need about 35 IUs of vitamin D per pound of body weight. These are very general guidelines though. The only way to determine your optimal dose is to get your blood tested. Ideally, you'll want to maintain a vitamin D level of 50 to 70 ng/ml year-round. Poor immune function tends to be rooted in an unbalanced mix of microorganisms in your digestive system, courtesy of an inappropriate and unbalanced diet that is too high in sugars and too low in healthful fats and beneficial bacteria. Homemade bone broth or “stock” is a valuable remedy, as it's easily digestible and contains many valuable nutrients that help heal the lining of

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Vitamin K in Your Diet

While the importance of vitamin D has become more fully appreciated, another vitamin that is just as important as vitamin D, vitamin K2, needs wider recognition. It's a fat-soluble vitamin most well known for its role in blood clotting. However, there are two primary kinds of vitamin K, and they serve very different functions. Vita-

ever, not every strain of bacteria makes K2, so not all fermented foods will contain it. For example, pasteurized dairy and products from confined animal-feeding operations (CAFOs) are NOT high in K2 and should be avoided. Only grass-fed animals (not grain-fed) will develop naturally high K2 levels. Most commercial yogurts are virtually devoid

taken in combination. Unfortunately, most people are deficient in both vitamins D and K, and magnesium insufficiency is also common. At least 50 percent of the general population is at risk of vitamin D deficiency and insufficiency, and as many as 97 percent may be lacking in vitamin K2. This could very well be due to the fact that we stopped eating fermented foods with the advent of refrigeration and other food processing techniques. While you likely get sufficient amounts of vitamin K from your diet to maintain adequate blood clotting, you're probably *not* getting enough to protect you from a variety of other health problems that are more specifically associated with vitamin K2, such as: arterial calcification and cardiovascular disease; osteoporosis; leukemia; cancer of the lung, prostate, and liver; neurological deficiencies, including dementia, and, infectious diseases such as pneumonia.



“Virtually all of the vitamin K2 in fermented foods is readily available to your body.”

min K1 is the primary form of vitamin K responsible for blood clotting, whereas vitamin K2 is essential for bone strength, the health of arteries and blood vessels, and plays a role in other biological processes as well, including tissue renewal and cell growth.

The difference between vitamins K1 and K2 was first established in the Rotterdam Study, published in 2004. A variety of foods were measured for vitamin K content, and vitamin K1 was found to be present in high amounts in green leafy vegetables, such as spinach, kale, broccoli, and cabbage. Vitamin K2, on the other hand, is only present in *fermented foods*. It's produced by certain bacteria during the fermentation process.

Interestingly, while the K1 in vegetables is poorly absorbed, virtually all of the K2 in fermented foods is readily available to your body. Examples of foods high in vitamin K2 include raw dairy products such as certain cheeses, raw butter, and kefir, as well as fermented vegetables like sauerkraut. How-

of vitamin K2, and while certain types of cheeses, such as Gouda, Brie, and Edam are high in K2, others are not. It really depends on the specific bacteria present during the fermentation.

Vitamin K2 is an important adjunct to vitamin D, without which vitamin D cannot work properly. K2's biological action is also impaired by a lack of vitamin D, so you really need to consider these two nutrients *together*. This means that if you take high doses of oral vitamin D, you need to remember to also increase your vitamin K2 intake from either food or a K2 supplement. Failing to do so could cause harm, as without K2 your body will not be able to complete the transport of calcium into the proper areas, and arterial calcification could set in. If you get your vitamin D primarily from sun exposure then this issue is largely circumvented, as your body is then able to regulate its vitamin D production.

Vitamins D and K2 also work synergistically with magnesium and calcium, so this quartet should ideally be

Clearly, you want both vitamin K1 and K2, but you're virtually guaranteed to not get enough K2 from your diet unless you eat the proper fermented foods. Dietary sources of vitamin K1 include kale, spinach, collard greens, broccoli and Brussels sprouts. As for a clinically useful dosage of vitamin K2, some studies — including the Rotterdam study — have shown as little as 45 micrograms (mcg) per day is sufficient.

Reference: *Journal of Nutrition* Nov. 1, 2004;134(11):3100-05. *Newhope* 360 September 22, 2015. *International Journal of Oncology* September 2003. *American Journal of Clinical Nutrition* April 2008;87(4):p85-992. *Alternative Medicine Review* August 2003.

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the intestines. This includes: easily absorbable minerals, including magnesium, phosphorous, silicon, sulfur, and trace minerals; chondroitin sulfates, glucosamine, and other compounds extracted from the boiled down cartilage, which helps reduce joint pain and inflammation; amino acids such as glycine, proline, and arginine — all of which have anti-inflammatory effects. Arginine, for example, has been found to be particularly beneficial for the treatment of sepsis (whole-body inflammation). Glycine also has calming effects, which may help you sleep better.

Chicken soup made with homemade bone broth is excellent for speed-

ing healing and recuperation from illness. You've undoubtedly heard the old adage that chicken soup will help cure a cold, and there's scientific support for such a statement. A study published over a decade ago found that chicken soup indeed has medicinal qualities, significantly mitigating infection. In addition to the anti-inflammatory benefits of bone broth, chicken contains a natural amino acid called cysteine, which can thin the mucus in your lungs and make it less sticky so you can expel it more easily. Keep in mind that processed, canned soups will *not* work as well as the homemade version made from slow-cooked bone broth. If combating a cold, make

the soup hot and spicy with plenty of pepper. The spices will trigger a sudden release of watery fluids in your mouth, throat, and lungs, which will help thin down the respiratory mucus so it's easier to expel. Black peppercorns also contain high amounts of piperine, a compound with fever-reducing and pain-relieving properties. Maintaining a healthy diet and lifestyle year-round is the long-term solution to making it through cold and flu season unscathed.

Reference: *Rodale Wellness* September 8 2015. *Truth or Theory* December 29 2013. *Colin Campbell Center for Nutrition Studies* March 9 2015. *Cochrane Database of Systematic Reviews* 2013 "Vitamin C for Preventing the Common Cold". *British Journal of Nutrition* 2012 Oct;108(7):1235-45. *Archives of Internal Medicine* 2009. *Weston A. Price* January 1, 2000. *Chest* Oct 2000;118(4):1150-7.

Schedule Your Tea Time

When you're thirsty, pure water is always a good choice, but sometimes you may be craving something different – a cool drink on a hot summer day or a warm cup to sip on when temperatures plummet. Green tea

“A green tea-caffeine mixture improves weight maintenance, through thermogenesis and fat oxidation.”

fits the bill in both cases and it provides significant benefits to your health.

You're probably already aware that green tea is healthy... but you may be surprised to learn just *how* healthy it actually is. Green tea is one beverage you can feel good about enjoying even multiple times a day, because it has been proven to have so many health benefits. Green tea is rich in naturally occurring plant compounds called polyphenols, which can account for up to 30 percent of the dry leaf weight of green tea. Within the group of polyphenols are flavonoids, which contain catechins. One of the most powerful catechins is epigallocatechin-3-gallate (EGCG), which has been shown to impact a number of illnesses and conditions.

Green tea improves brain function because it contains theanine, an amino acid that crosses the blood-brain barrier and has psychoactive properties. Theanine increases levels of gamma-aminobutyric acid (GABA), serotonin, dopamine, and alpha wave activity, and may reduce mental and physical stress and produce feelings of relaxation. Theanine may also help to prevent age-related memory decline and has been shown to affect areas of your brain involved in attention and complex problem-solving.

There is some evidence that long-term consumption of green tea catechins is beneficial for burning fat and may work with other chemicals to increase levels of fat oxidation and thermogenesis. In one recent study, men who took a green tea extract reduced their body fat by 1.63 percent and increased their fat oxidation rates by 25 percent compared to those taking a placebo. And according to research in *Physiology & Behavior*: “Positive effects on body-weight management have been shown using green tea mixtures. Green tea, by containing both tea catechins and caffeine, may act through inhibition of catechol O-methyl-

transferase, and inhibition of phosphodiesterase. Here the mechanisms may also operate synergistically. A green tea-caffeine mixture improves weight maintenance, through thermogenesis and fat oxidation... Taken together, these func-

tional ingredients have the potential to produce significant effects on metabolic targets such as thermogenesis, and fat oxidation.”

Green tea components have been shown to downregulate the expression of proteins involved in inflammation, cell signalization, cell motility, and angiogenesis, while an association between green tea intake and decreased risk of cancers (including ovarian and breast) have been reported. Women who drank more than three cups of green tea a day also had a reduced risk of breast cancer recurrence, and previous research has shown green tea polyphenols act on molecular pathways to shut down the production and spread of tumor cells. They also discourage the growth of the blood vessels that feed the tumors. EGCG even acts as an antiangiogenic and antitumor agent, and helps modulate tumor cell response to chemotherapy.

In a study presented at the 2015 International Conference on Alzheimer's and Parkinson's Diseases, those who drank green tea one to six days a week had less mental decline than those who didn't drink it. In addition, the researchers revealed tea drinkers had a lower risk of dementia than non-tea drinkers. Green tea polyphenols also appear to have an inhibitory affect on mechanisms involved in triggering Parkinson's disease, leading researchers to suggest it may be useful for both prevention and treatment.

Green tea is thought to improve periodontal health by reducing inflammation, preventing bone resorption, and limiting the growth of certain bacteria associated with dental diseases. Researchers noted that “the more frequently subjects drank green tea, [the] better was their periodontal condition.” Green tea may even help prevent bad breath. Researchers concluded, “green tea was very effective in reducing oral malodor temporarily because of its disinfectant and deodorant activities, whereas other foods were ineffective.”

Drinking green tea is associated with reduced mortality due to all causes, as well as reduced mortality due to heart disease. In one study of Japanese women, those who drank five or more cups of green tea daily were 23 percent less likely to die during an 11-year period. Separate research found elderly individuals (aged 65 to 84) who drank the most green tea were 76 percent less

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likely to die during the six-year study period. Research also shows holistic benefits to green tea consumption, including lower blood pressure, oxidative stress, and chronic inflammation. While it may be tempting to purchase pre-made bottled tea, especially the iced variety, be aware that it likely won't contain the same level of health-boosting flavonoids as freshly brewed tea. An analysis of the strength and purity of more than 20 green tea products by Consumer-Lab.com found that EGCG levels in bottled green tea can range from just 4 milligrams (mg) per cup to 47 mg, while brewable green tea (from tea bags, loose tea) contained levels ranging from 25 mg to 86 mg per serving. There are many variables that affect the quality of your green tea. A telltale sign of high-quality green tea is that the tea is in fact *green*. If your green tea looks brown rather than green, it's likely been oxidized, which can damage many of its most valuable compounds.

Reference: Tea Association USA Fact Sheet 2014. *Phytotherapy Research* 2008 Jan; 22(1):66-8. *Journal of Medicine and Food* 2011 April;14(4):334-43. *Carcinogenesis* 2008;29(10):1967-72. *Gynecology and Oncology* 2012 Sept;126(3):491-8. *Breast Cancer Research Treatment* 2010 Jan;119(2):477-84. *Biochemical Pharmacology* 2011 Dec 15;82(12):1807-21. *WebMD* April 3 2015. *Journal of Indian Periodontal Society* 2012 Dec;82(12):161-67. *Journal of Diabetes and Metabolism* 2013 June;37(3):173-75. *Consumer-Lab.com* May 16, 2013.



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