

'Tis the season for vitamin c?

With cold season upon us and sales for ester-c, emergen-c, and airborne through the roof, the big question around this time of year is whether the extra vitamin-c does any good? We'll try to answer that question with what is available in recent studies and get you up to speed on vitamin c.

Where is Vitamin C used in the body?

Vitamin C is used to create collagen, L-carnitine, protein metabolism, and it helps in wound healing. It is an antioxidant which helps regenerate other anti-oxidants within the body. It also has a role in immune function (which is why everyone thinks it is good for colds and other issues) and improves absorption of iron. Source- NIH Dietary Supplement Fact Sheet on Vitamin C

Do higher levels of vitamin C make a difference in the concentration of vitamin C in my blood?

Since oral vitamin C is tightly controlled by the body- the more you take the less you absorb. Interestingly, while doses up to 180mg daily will have absorption rates as high as 90%, by the time you take 1000mg you absorb less than 50%. Furthermore, studies suggest at 1250mg the concentration of vitamin C in the blood is only about twice as high as when taking 200-300mg. Even when taking 3000mg 4x daily the concentration will not even double the vitamin C concentration in your body when taking 1250mg in a day. Suffice it to say that high doses make minimal extra effects above 1250mg a day.

Source-NIH Dietary Supplement Fact Sheet on Vitamin C

What foods are rich in Vitamin C?

Citrus fruits like oranges, tomatoes, tomato juice, cantaloupe, red and green peppers, kiwi fruit, broccoli, strawberries, brussel sprouts and potatoes are high in Vitamin C. But don't keep your potatoes for too long as storage tends to reduce vitamin-C- levels and cooking also causes significant loss of vitamin C (sorry those french fries wont help much), but microwaving and steaming may cause less loss of vitamin C. Ultimately raw vegetables and fruits are better! Source- NIH Dietary Supplement Fact Sheet on Vitamin C

What kind of vitamin C should I use?

Some studies have suggested that Ester-C (a combination of vitamin C with calcium ascorbate) can help absorption especially into white blood cells, but it appears that vitamin C in ascorbic acid is likely just as effective and likely cheaper. Source- NIH Dietary Supplement Fact Sheet on Vitamin C

What are Symptoms of low Vitamin C and who is at risk?

While incredibly rare in the United States, scurvy was common on long trips on the ocean until they started bringing citrus fruit along. Scurvy symptoms include fatigue, malaise, gum inflammation, depression, tooth loss, bone disease and death. People in the US who are at higher risk of low vitamin C include smokers as they tend to have lower levels due to the stress of smoking on the body, infants fed evaporated or boiled milk, people with a limited variety of foods, and those with intestinal absorption issues. Source- NIH Dietary Supplement Fact Sheet on Vitamin C

Does Vitamin C- help prevent cancer?

The late great Linus Pauling was a strong believer that high levels of Vitamin C- helped to prevent and fight cancer. While studies have supported the idea that more fruits and vegetables reduce the risk of cancer, the studies are not clear if Vitamin C does reduce the risk of cancer. Most studies have not supported this claim and the main problem with most studies is that they did not measure the Vitamin C- levels before or after supplementation with Vitamin C was started. One question that still remains and may have some promise with cancer treatment is whether there could be a difference with IV versus oral Vitamin C for cancer treatment. One thought why IV would be better is because the levels of vitamin C- could be higher with IV administration and thus make the difference but this needs more research. Source- NIH Dietary Supplement Fact Sheet on Vitamin C

Does Vitamin C help prevent heart attack and other heart problems?

Again while studies show diets high in fruit and vegetables with vitamin C help reduce the risk of heart problems, there is no convincing evidence that taking oral vitamin C reduces the risk of heart issues. This may

again be due to not monitoring vitamin C- levels before and after the use of Vitamin C and the fact that oral vitamin C may minimally alter vitamin C levels in the body if you already have a good diet. Source- NIH Dietary Supplement Fact Sheet on Vitamin C

Does Vitamin C help age-related macular degeneration?

Some studies do suggest Vitamin C may help slow progression of the disease but there is no clear role for vitamin C in preventing macular degeneration. Source- NIH Dietary Supplement Fact Sheet on Vitamin C

The million dollar question- does it help to prevent the common cold?

The short answer is maybe- read on! There are some studies that show taking 200mg or more of vitamin C on a regular basis may reduce the severity and the duration of the cold by 8-14%. However, the studies don't suggest it will prevent a cold. Furthermore, taking high dose vitamin C- at the onset of a cold has not shown to be helpful in preventing or shortening the cold. One interesting note however, is that studies have shown that people regularly exposed to extreme cold or significant physical exercise (ie marathon runners, skiers and soldiers) who take 250mg of Vitamin C will decrease the risk of catching a cold by 50%. Source- NIH Dietary Supplement Fact Sheet on Vitamin C

What concerns are there from taking Vitamin C?

Due to the bodies close regulation of Vitamin C- levels it is difficult for anyone taking oral Vitamin C to sustain significant side effects but it could cause diarrhea, nausea, abdomen cramping, flushing, dizziness, faintness, and kidney stone formation. Furthermore, sickle cell disease, anemia, anyone who just had stents or angioplasty of the heart, cirrhosis, gout, and blood in the urine at night should all trigger discussion with your provider before starting vitamin C. Sources-[http://www.mayoclinic.com/health/vitamin-C/NS\\_patient-vitaminc](http://www.mayoclinic.com/health/vitamin-C/NS_patient-vitaminc), NIH Dietary Supplement Fact Sheet on Vitamin C

What interactions are there to medications with Vitamin C?

It may make hdl elevations lower when taking niacin and you should discuss it with your Cancer doctor if you are getting any chemotherapy or radiation. It also could affect your coumadin (warfarin) levels so talk to your provider. If you are on an HIV medication you also need to get the ok before taking Vitamin C. NIH Dietary Supplement Fact Sheet on Vitamin C, [http://www.mayoclinic.com/health/vitamin-C/NS\\_patient-vitaminc](http://www.mayoclinic.com/health/vitamin-C/NS_patient-vitaminc)

Should I take Vitamin C and how much if I do take it?

In this case the answer is maybe. If you have the resources to take it I wouldnt take more than 500mg daily and I wouldn't waste money on the products for the onset of the cold. While up to 2000mg is considered safe for adults, I think moderation is still a good idea. If you are pregnant or breast feeding talk to your OBGYN doctor. For kids, under 100mg would be a good idea but it is thought that vitamin C is safe in levels up to 400mg under 3, 650mg from ages 4-8, 1200mg from ages 9-13 and 1800mg from ages 14-18. Some studies suggest that only 10-20% of people in the US get the recommended 9 servings of fruits and vegetables daily. That gives another reason to consider 250 to 500mg of Vitamin C daily especially in the winter as it could help some for colds (not to prevent but to decrease the severity) and there aren't many clear concerns with that amount of vitamin- C. BUT AS IT HAS BEEN SHOWN TIME AND TIME AGAIN TAKING A SUPPLEMENT DOESN'T REPLACE HEALTHY EATING- THE PILL DOESNT WORK AS GOOD AS THE DIET!!! Source- WebMD- What can Vitamin C do for your health? by Kathleen Zelman, MPH, RD, LD, [http://www.mayoclinic.com/health/vitamin-C/NS\\_patient-vitaminc](http://www.mayoclinic.com/health/vitamin-C/NS_patient-vitaminc)

What about Vitamin C for other uses?

Vitamin C may be helpful for prevention for urinary tract infections while pregnant (talk to your obgyn doctor) but there is little good evidence to date to argue for use for asthma, autism, breast cancer prevention, anemia, alzheimers, colorectal cancer, diabetic retinopathy, H. Pylori infections, high blood pressure, liver disease, lung disease, high cholesterol, and topical vitamin C for wrinkles. Source-[http://www.mayoclinic.com/health/vitamin-C/NS\\_patient-vitaminc](http://www.mayoclinic.com/health/vitamin-C/NS_patient-vitaminc)