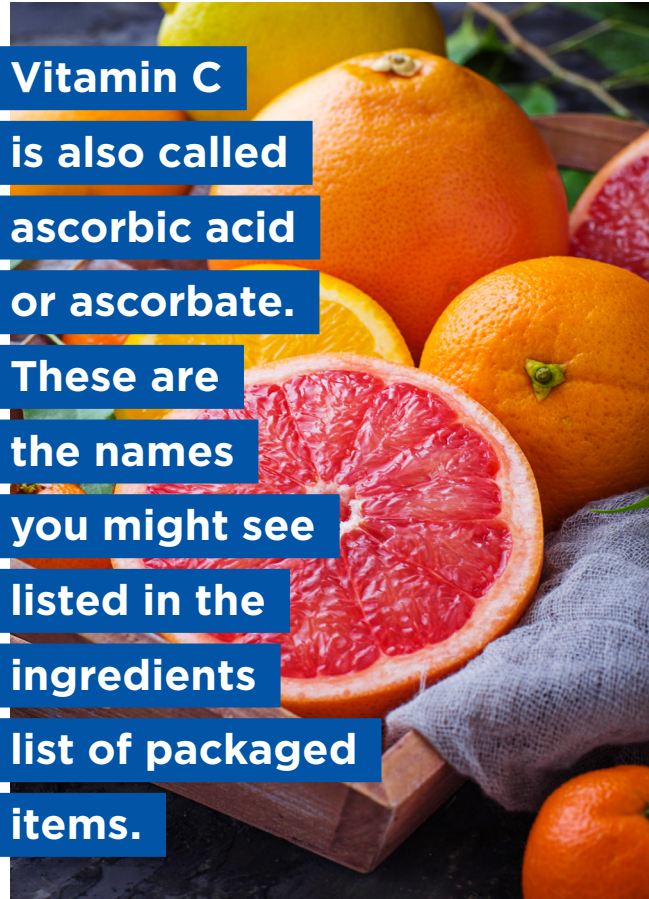


Vitamin C for You and Me

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It is no myth that vitamin C plays a vital role in your overall health. The famous tales of sailors curing scurvy with oranges and lemons are rooted in real history. Although they did not yet understand the science behind it, sailors knew that something in citrus fruits could prevent or treat the disease. Today, we know that scurvy is a lack of vitamin C, an essential nutrient for many bodily functions. So, what exactly is vitamin C, and why is it so important?



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What is Vitamin C?

Vitamin C is a water-soluble vitamin. This means that vitamin C can dissolve in water, is not stored in large amounts in the body, and needs to be taken in on a regular basis. Most animals can make their own vitamin C from glucose, but humans cannot. This is why we need to get vitamin C through the foods and drinks we choose to eat each day.

Vitamin C does not give our body energy. Instead, vitamins support many important bodily functions. Vitamin C is also called ascorbic acid or ascorbate. These are the names you might see listed in the ingredients list of packaged items.

Benefits of Vitamin C

Vitamin C supports the health and function of different tissues and organs in the body. Some of the best understood functions of vitamin C are:

- Forming and keeping the strength and structure of collagen
- Supporting energy production
- Bolstering a strong immune system
- Fighting inflammation
- Supporting wound healing
- Serving as a strong antioxidant

In its role as an antioxidant, vitamin C protects against damaging chemicals called free radicals. Vitamin C can neutralize the damaging ability of these chemicals protecting cells and tissues. When free radical levels are high in the body, they increase the risk of certain conditions like heart disease and some cancers.

Vitamin C has become a popular ingredients in skincare. It is now found in cosmetic and topical products. It naturally exists in the skin, where it helps support collagen, a key protein that keeps skin firm. Vitamin C also protects cells from damage caused by UV rays. Early research suggests that applying vitamin C to the skin may help protect it and reduce redness. However, more studies are needed to understand how much is helpful and who might benefit the most from these products.

Recommendations

The amount of vitamin C you need per day varies depending on age, gender, and whether you are pregnant or breastfeeding. Adults should get from 75 to 120 milligrams each day. It might be hard to know exactly how much you are consuming and whether you are getting enough. A good rule of thumb is that if you are meeting the mark of eating five servings of fruits and vegetables a day, you are likely to get enough vitamin C in your diet.

People who smoke or use other tobacco products should consume an extra 35 milligrams of vitamin C per day, on top of the recommended amount for their age, gender, and life stage. This is because tobacco use speeds up the breakdown and removal of vitamin C from the body, raising the need for this essential nutrient.

Sources of Vitamin C in the Diet

Oranges are often seen as the go-to source for vitamin C, but they are not the only one. In fact, more than 40 common fruits and vegetables are considered high in vitamin C and are available year-round in the produce, freezer, and canned food aisles. Surprisingly, a few foods contain as much or more vitamin C than oranges. For example, just half a cup of raw red bell pepper has slightly more vitamin C than 6 ounces of orange juice.

Other excellent sources of vitamin C include broccoli, cabbage, cantaloupe, cauliflower, kiwi, strawberries, baked potatoes, cooked spinach, and even tomato juice. Someone who enjoys a glass of orange juice with breakfast, a handful of strawberries with a snack, and a medium baked potato with dinner easily meets their daily needs of vitamin C.

Packaged foods, like breakfast cereals, may be fortified with vitamin C. That means the manufacturer added the nutrient to boost the nutritional value. Vitamin C can also be a food additive to preserve freshness, color, and flavor in packaged and processed foods.



Table 1. Food Sources of Vitamin C

Food	Milligrams (mg) per serving	Percent Daily Value*
½ cup fresh red bell pepper.	95	106
1 orange	70	78
¾ cup grapefruit	70	78
1 medium kiwi	64	71
½ cup cooked broccoli	51	57
½ cup strawberries	49	54
½ cup cooked cabbage	28	31
1 medium baked potato	17	19
½ cup cooked green peas	8	9

**Percent DV based on 90mg*

Source: National Institutes of Health, Office of Dietary Supplements

While vitamin C supplements are widely available, health experts generally advise getting this essential nutrient from food sources whenever possible. Because of its role in supporting the immune system, many people turn to supplements during cold and flu season. Studies show that large doses of vitamin C might not keep you from getting sick, but they might shorten the length of a cold. Like most nutrients, vitamin C is best from foods that are a part of a balanced diet. Just adding an extra serving of fruits and vegetables each day can help boost your vitamin C intake along with other valuable nutrients found in plant-based foods, such as fiber and antioxidants.

Tips to Increase Vitamin C Intake

Vitamin C is sensitive to heat, and cooking can easily destroy it. Vitamin C-rich foods are best stored in the refrigerator to help keep their nutrient content. If you cook these foods in water or boil them, they can lose vitamin C. To retain vitamin C in the food, eat food raw or use little water when cooking, such as

roasting or steaming. For example, if you buy fresh broccoli for the week, enjoy it raw with a dip, with a small amount of oil, or steamed. Enjoying a vegetable in a variety of ways will increase the chances your body can absorb the vitamin C from the food. This shows how important it is to not only eat a variety of foods but also to vary how you prepare them to increase nutrient intake overtime.

It is completely normal for nutrients to interact within the body. In some cases, one nutrient can help the absorption of another. This is true for vitamin C and iron. Vitamin C can boost the absorption of iron from plant-based foods and supplements. This is especially important for people with low iron levels, iron-deficiency anemia, or those who choose to eat a vegetarian or vegan diet. For example, drinking a small glass of orange juice with an iron supplement can help the body absorb more iron.

Vitamin C Deficiency and Toxicity

Vitamin C deficiency, also known as scurvy, is rare in the U.S but is sometimes found in small pockets of the population. It is most often seen in people who regularly use tobacco products, older adults, those with little access to fresh fruits and vegetables, and people who are living with alcoholism or substance use disorder. Signs and symptoms can occur in as little as one month in people who take in no or very low levels of vitamin C.

The most common signs of scurvy are generally feeling tired and lack of energy, pinpoint ruptures of small blood vessels, hair loss, swelling and bleeding of the gums, low iron levels, poor wound healing, and even psychological symptoms in severe cases.

Vitamin C toxicity, or consuming too much, is not common in the U.S. either. The kidneys remove excess vitamin C from the body. Those who take in 2,000 milligrams or more per day, most likely through supplements, are at the greatest risk of

toxicity and will most likely have stomach upset, abdominal pain, and diarrhea. More severe side effects are kidney stones and a buildup of toxic levels of iron in the body.

Summary

Vitamin C is an essential, water-soluble vitamin that supports immune health, wound healing, and acts as a powerful antioxidant, among many other functions. It must be consumed on a regular basis through food, as the body doesn't make it or store it in large amounts. It is found in many fruits and vegetables, not just oranges, and can help with iron absorption and potentially with skin health. A balanced diet rich in fruits and veggies is the best way to meet daily needs.

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