

## Vitamin C (Ascorbic Acid)

Vitamin C (ascorbic acid) is an antioxidant and water soluble vitamin that plays a role in collagen formation and adrenal steroid synthesis in the body. Citrus fruits such as oranges and lemons contain large amounts of this vitamin. Additional sources of vitamin C include foods such as tomatoes, potatoes, strawberries, spinach, and broccoli. Dietary deficiency of vitamin C can lead to a disease called scurvy. Patients with this disease may experience symptoms such as bleeding gums, poor wound healing, bruising, or hemorrhage. Scurvy can be treated by ingesting vitamin C rich foods or by taking vitamin C supplements. In excess, however, vitamin C can cause patients to experience GI irritation including nausea, vomiting, and abdominal cramps. It is recommended that adults consume no more than 2 grams of vitamin C per day. Although unfounded clinically, vitamin C is often indicated to improve wound healing.



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## Mechanism

## Antioxidant

Ant-tie-ox

Vitamin C (ascorbic acid) has antioxidant properties. Antioxidants are believed to be protective against diseases such as heart disease and cancer.

## Collagen Formation

## Cola-gem Formation

Vitamin C (ascorbic acid) is required for the hydroxylation of the amino acids lysine and proline. This crucial step allows these amino acids to be incorporated into the growing collagen strand.

## Steroid Synthesis

## Steroid-stair being Built

Large amounts of vitamin C (ascorbic acid) are stored in the adrenal cortex and are necessary for the synthesis of adrenal hormones.

## Indications

## Dietary Deficiency

### Broken Nutritional-plate

Patients who do not ingest adequate amounts of vitamin C (ascorbic acid), such as older adults, those with chronic disease, patients with chronic use disorder as well as those who smoke cigarettes, are at increased risk. Signs and symptoms of deficiency include bleeding gums and poor wound healing. Taking vitamin C promotes the absorption of dietary iron.

## Scurvy

## Scooby-scurvy

Scurvy is a disease caused by vitamin C (ascorbic acid) deficiency. In the early stages of deficiency, symptoms may include malaise and weakness. Patients with more advanced presentation, may experience symptoms such as bleeding gums, poor wound healing, bruising, or hemorrhage. Scurvy can be treated by ingesting vitamin C rich foods or by taking vitamin C supplements.

## Side Effects

## GI Distress

## GI with Flare-gun

In excess, vitamin C (ascorbic acid) can cause patients to experience GI irritation including nausea, vomiting, and abdominal cramps. It is recommended that adults consume no more than 2 grams/day of vitamin C.

## Considerations

### **Citrus Fruits**

#### [Citrus Fruits](#)

Citrus fruits such as oranges and lemons contain large amounts of this vitamin. Additional sources of vitamin C (ascorbic acid) include foods such as tomatoes, potatoes, strawberries, spinach, and broccoli.

### **May Improve Healing**

#### [Wounds Healed](#)

Although unfounded clinically, vitamin C (ascorbic acid) is often indicated to improve healing.