

WATER - SOLUBLE VITAMINS: VITAMIN C (ASCORBIC ACID)

Patient Resource

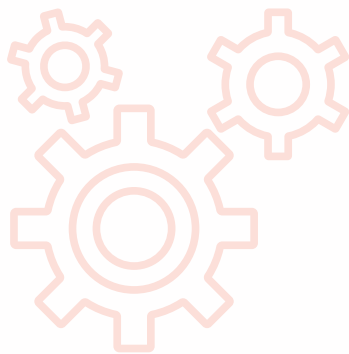


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VITAMIN C (ASCORBIC ACID) &

immunity



Supports cell functions

Keeps the innate and adaptive immune systems up and running



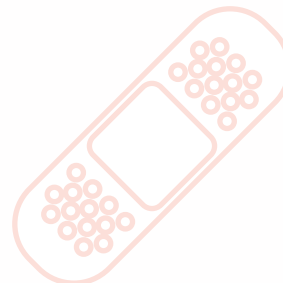
Supports barrier function

Fortifies the skin and protects the inner linings of the body against pathogens and other damage

Helps decrease harmful substances
Assists the body cells the "take out the trash" (i.e. damaged/dying cells, bacteria, foreign objects)



Decreases potential damage
Helps in the "cleanup" process of infection sites, reducing the chance of tissue damage (necrosis)



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Dietary Reference Intakes

The recommended daily intake amount for vitamin C depends on age. Intake is based on the **Adequate Intake (AI)** level for those under one year old. This is the level assumed adequate to meet nutritional needs. An AI is established when there is not enough evidence for a Recommended Dietary Allowance, or RDA.

For children and adults, those one year and older, the recommended daily intake amount is based on the **Recommended Dietary Allowance (RDA)**. This is the amount covering the needs of 97-98% of people in that specific age group or life stage (i.e. pregnancy).

Deficiency

At risk:

- Smokers & those exposed to secondhand smoke
- Infants fed evaporated/boiled milk (breast milk is considered an adequate source)
- Food insecure individuals
- Individuals with a diet that doesn't regularly include fruits and vegetables
- Individuals with chronic, intestinal, or malabsorptive diseases
- People recovering from surgery
- Burn victims

Signs & Symptoms:

General

- Impaired immunity
- Higher susceptibility to infection

Scurvy (Acute deficiency)

- Fatigue
- Weakness
- Inflamed gums

Long-term deficiency

- Weak joints and connective tissues
- Poor wound healing
- Irritated skin, gums, and teeth
- Corkscrew hairs
- Depression
- Iron-deficiency Anemia

Children

- Bone disease

Helpful Terms to Know

- **Recommended Dietary Allowance (RDA)**: covers the needs of 97-98% of individuals in a group; the average amount of a nutrient a healthy person should consume daily. Vary by gender, age, and whether a woman is pregnant or breastfeeding. Developed by the Food and Nutrition Board at the Institutes of Medicine (IOM) of the National Academies.
- **mg** = milligrams
- **Adequate Intake (UL)**: recommended daily intake of a nutrient; established by Institute of Medicine (IOM) to meet or to exceed the needed amount to maintain adequate nutrition for most people in a particular stage of life or gender group; established when not enough evidence is available to determine the RDA



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Dietary Reference Intakes, continued from previous page.

Dietary Reference Intakes (DRIs) for Vitamin C (Ascorbic Acid) in mg/day	
Infants	
0-6 months	40
7-12 months	50
Children & Adolescents	
1-3 years	15
4-8 years	25
9-13 years	45
Males	
14-18 years	75
19-70+ years	90
Females	
14-18 years	65
19-70+ years	75
Pregnancy	
14-18 years	80
19-50 years	85
Lactation	
14-18 years	115
19-50 years	120

NOTE:

It can be helpful to bring in your supplements to a doctor's visit or your next appointment with your healthcare providers. Providing the actual containers of products you take can help your healthcare team to avoid under- or over-dosing you or your family members on supplements. It is also a helpful practice since there are many vitamins and their variants can go by different names.

Image created by ANNI WEEKS. Based on *Dietary Reference Intakes (DRIs): Recommended Dietary Allowances and Adequate Intakes, Vitamins*. Food and Nutrition Board, Institute of Medicine, National Academies.



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Toxicity

Signs & Symptoms

"Mega-doses" are not recommended as they can cause adverse effects and decrease absorption.

- Diarrhea
- Nausea
- Abdominal cramps/bloating
- Gastrointestinal (GI) discomfort/disturbances
- Headache
- Fatigue
- Sleepiness or insomnia
- Skin Flushing

Other Risks

- Reduced B12 and copper levels
- Eroded dental enamel
- Increased uric acid (a risk factor for gout)
- May cause kidney stones
- Allergic response

Helpful Terms to Know

- **Upper Limit (UL):** also known as the Tolerable upper intake level; largest daily intake of a nutrient that is considered safe for most people; exceeding this limit is not recommended and may cause harm to the body; Set by the Food and Nutrition Board at the National Academies of Sciences, Engineering, and Medicine.

Can Vitamin C cure the Common Cold?

Treatment Options

Vitamin C is preventative and therapeutic in nature, meaning **it won't have a significant effect on the cold you currently have**. However, it could increase your ability to fight off infections in the future and even shorten the duration of symptoms. Studies show that the effects seem to be dose dependent.

SUPPLEMENTATION & TREATMENT

Uses

Supplemental vitamin C can be prescribed, **under appropriate medical direction and supervision**, following medical diagnosis and prescription, for the following:

- Infections
- Inflammation
- Cancer (may be contraindicated during chemotherapy)

If you have these conditions, be sure to ask the advice of your doctors and healthcare team before supplementing.

Supplementation

Treatment Options

1. **Oral Supplements:** Capsules, chewable tablets
2. **Intravenous (IV) Administration:** Should be done in medically monitored settings



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Upper Limit (UL) Vitamin C (Ascorbic Acid) in mg/day	
Infants	
0-6 months	Not determined
7-12 months	Not determined
Children & Adolescents	
1-3 years	400
4-8 years	650
9-13 years	1,200
Adults	
14-18 years	1,800
19-70+ years	2,000
Pregnancy & Lactation	
14-18 years	1,800
19-50 years	2,000

Image created by ANNI WEEKS. Based on *Dietary Reference Intakes (DRIs): Recommended Dietary Allowances and Adequate Intakes, Vitamins*. Food and Nutrition Board, Institute of Medicine, National Academies.

Special Populations

Those with the following conditions should especially avoid high-dose or intravenous (IV) vitamin C:

- Kidney disease
- Hereditary conditions (i.e. hemochromatosis, glucose 6-phosphate dehydrogenase deficiency)

