

# Zinc supplementation

Zinc is an essential mineral that can be obtained from certain foods and supplements. Zinc is involved in a number of important bodily functions and is necessary for normal growth and development during childhood, adolescence, and pregnancy.

Zinc can be found in varying amounts in the following foods:

- Beans\*
- Certain seafood (e.g., crab, lobster)
- Dairy products
- Fortified cereals\*
- Nuts\*
- Oysters
- Red meat and poultry
- Whole grains\*

\*Phytates present in these foods bind to zinc and may prevent adequate absorption.

## Health benefits of zinc

Zinc is involved in a variety of bodily functions, including:

- Catalytic activity (zinc can increase the rate of certain chemical reactions in the body)
- Cellular metabolism and division
- DNA synthesis
- Immune function
- Protein synthesis
- Taste and smell
- Wound healing
- Acute diarrhea in children who are malnourished and zinc-deficient
- Age-related macular degeneration (eye condition)
- Skin ulcers (in individuals who also have low levels of zinc)
- The common cold

Zinc supplements may be beneficial for certain health conditions, such as:





### Did you know?

The amount of elemental zinc present in a supplement is listed in the supplement facts panel of the bottle and refers to the percentage of zinc present in the product. For example, zinc sulfate contains 23% elemental zinc (220 mg of zinc sulfate contains 50 mg of elemental zinc).

## Types of zinc

Zinc supplements are formulated from salts and include a variety of forms:

- Zinc acetate
- Zinc gluconate
- Zinc sulfate

Zinc is included in most multivitamin/multimineral supplements and may also be included in supplements in combination with other ingredients such as magnesium or calcium. Zinc-containing supplements are available as tablets, capsules, and lozenges, such as for the common cold.

## Zinc in the body

Zinc is absorbed through the small intestine and distributed throughout the body as a part of different proteins and nucleic acids. As a result, an individual's zinc nutritional status is not easily measured. While serum or plasma zinc levels can be measured to help practitioners evaluate a zinc deficiency, they do not reflect accurate zinc status. Practitioners may use other factors in combination with serum or plasma tests to evaluate a zinc deficiency including:

- Alcohol consumption
- Caloric intake
- Digestive health
- Impaired growth and development

## Special considerations

In North America, a zinc deficiency is rare, and most individuals consume enough zinc through their diets. The following individuals have greater zinc need or are at a greater risk of deficiency:

- Individuals who are pregnant or lactating
- Individuals who are vegetarian or vegan
- Individuals who drink alcohol in excess
- Individuals who have had gastrointestinal surgery (e.g., a weight loss surgery)
- Individuals with digestive disorders (e.g., ulcerative colitis, Crohn's disease)
- Individuals with sickle cell disease
- Older infants who are breastfed (breast milk contains less zinc after six months)

## Potential adverse effects

Consuming too much zinc from supplements can be harmful and may lead to nausea, loss of appetite, vomiting, stomach cramps, headaches, and diarrhea. Taking too much zinc for an extended period of time may also lead to low copper levels, low immunity, and low levels of HDL cholesterol ("good" cholesterol).

Zinc supplements may interact with the following medications:

- Certain antibiotics (e.g., quinolone, tetracycline)
- Certain diuretics (e.g., chlorthalidone, hydrochlorothiazide)
- Penicillamine (a pharmaceutical used to treat rheumatoid arthritis)

Always speak with your healthcare practitioner before supplementing with zinc.

## References

1. Maares, M., & Haase, H. (2020). A guide to human zinc absorption: General overview and recent advances of in vitro intestinal models. *Nutrients*, 12(3), 762.
2. Zinc. (2021a). National Institutes of Health. <https://ods.od.nih.gov/factsheets/Zinc-Consumer/>
3. Zinc. (2021b). National Institutes of Health. <https://ods.od.nih.gov/factsheets/Zinc-HealthProfessional/>



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This handout was developed and medically reviewed by Fullscript's Integrative Medical Advisory team.  
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