

optimising absorption of zinc & magnesium

Why is Zinc so important?

Zinc is required by every one of your cells, and is involved in a myriad of physiological processes. Below are just a few of the many reasons you need it:

- **IMMUNITY:** Zinc is required for the production, activity and healthy functioning of cells that identify and destroy invading disease-causing organisms. This has many implications for human health – for example, it means zinc assists in the defense of colds, and may help reduce their frequency, severity and duration.
- **SKIN, HAIR AND NAILS:** Zinc is essential for the formation and repair of collagen, and consequently for the maintenance of healthy skin, hair and nails. For example, it's required for the healing of cuts, scratches and acne. It may also help address hormone imbalances linked to some types of hair loss.
- **REPRODUCTIVE HEALTH:** Zinc is essential for men's prostate health, the maintenance of normal testosterone levels, and sperm production and function. It also supports the production and balance of women's hormones.
- **VISION, HEARING, TASTE AND SMELL:** Zinc deficiency can interfere with your ability to see, hear, taste and smell properly, causing symptoms such as night blindness and a reduced ability to smell or taste your food. It may be beneficial for age-related hearing loss.
- **DIGESTION AND BLOOD SUGAR BALANCE:** Zinc is required for blood sugar regulation. Due to its role in tissue healing, it may also support the integrity of gastrointestinal mucous membranes and improve gut health.



Naturopath Paul Keogh explains how your choice of mineral supplement affects your body's ability to use and absorb it.

Given that we live in the lucky country with its abundance of fresh produce, you'd be forgiven for assuming that Australians have healthy, nutritious diets. In reality, the diets of many Australian adults are low in some of the nutrients most essential to our health and wellbeing.

For instance, the National Nutrition Survey demonstrated that in many age groups, the average consumption of zinc and magnesium by Australian adults is less than the recommended dietary intakes (RDIs).

People who are at particular risk of these nutritional shortfalls include athletes, adolescents, men and women over 65, women who are pregnant or breastfeeding, and vegetarians and vegans.

On the surface, the solution might seem as simple as popping a pill. Surely taking a mineral supplement will sort out any issues and top up your levels of these critical nutrients?

Unfortunately, it's not that simple,

because your ability to absorb zinc, magnesium and other minerals from supplements is affected by the form they're in. Here's a basic summary of the science involved.

Organic versus inorganic minerals

Broadly speaking, minerals come in two forms: organic and inorganic. (In this context the word 'organic' doesn't refer to pesticide-free farming, but instead is used in the chemical sense, where it refers to compounds that contain organic acids eg. amino acids and citric acid).

In many instances, the minerals found in supplements are inorganic. For example, zinc is often found bound with sulfur to form zinc sulfate, while magnesium may be bound to oxygen to form magnesium oxide.

Inorganic minerals are difficult to absorb

When you consume an inorganic mineral salt, your body starts to break it down very quickly after you ingest it, because the acidic environment of the stomach causes the mineral to dissociate from the compound it's bound to.

In its unbound state, the mineral can readily bond to another compound it encounters during digestion – commonly compounds called phytates, which are

naturally present in whole grains, nuts and some vegetables – and can travel the length of your digestive system trapped in these compounds and unable to be absorbed and utilised.

The freed mineral may also cause unpleasant irritation when it comes into contact with the gastrointestinal mucous membranes, sometimes having a laxative effect or causing diarrhoea.

Organic minerals offer enhanced absorption

In contrast, organic minerals are very well absorbed, and less prone to causing digestive discomfort.

For example, when zinc or magnesium is bound to the amino acid glycine to form zinc glycinate and magnesium glycinate, they are highly bioavailable. This is because glycine binds to the mineral in two places, making it stable enough to pass through the stomach without being split apart.

Once it arrives in the intestines, the zinc or magnesium glycinate can be absorbed into the mucous membranes intact, without competing with other minerals (such as calcium) for access to absorption sites, and without drawing fluid out of the tissues and into the bowel where it can cause digestive problems such as diarrhoea.

All this science might sound a bit mind boggling, but what you really need to

know is that when it comes to choosing a supplement, organic sources of minerals are your best bet. Look for products containing organic minerals such as zinc glycinate, magnesium glycinate, magnesium citrate and magnesium aspartate – these tend to be better absorbed and more usable by your body than inorganic mineral salts such as zinc sulfate, magnesium carbonate and magnesium oxide.

The difference in absorption could be substantial, making it well worth your while choosing your mineral supplements carefully, even if it means spending a little extra money to get a highly bioavailable product. ☑

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Why might you want more magnesium?

Like zinc, magnesium is involved in hundreds of physiological functions – here's an overview of some of the most important:

- **ENERGY PRODUCTION:** Your cells need magnesium in order to generate energy. No wonder it's often used to reduce fatigue and enhance stamina!
- **ELECTROLYTE BALANCE:** Due to its vital role in fluid balance, magnesium is essential for recovery after exercise and other activities associated with perspiration loss.
- **MUSCLE FUNCTION:** Magnesium is required for muscle contraction and relaxation. Taking supplements may relieve deficiency symptoms such as muscle spasms and cramps.
- **HEART HEALTH:** Unsurprisingly, magnesium is essential for the health of the heart – the only muscle in your body that's actively working every moment of the day and night. It's also required for cholesterol and blood pressure regulation.
- **BLOOD SUGAR:** Like zinc, magnesium is involved in the maintenance of healthy blood sugar.
- **NERVOUS SYSTEM:** Magnesium regulates the nervous system to help relieve stress, nervous tension, irritability and mild anxiety. It can be particularly beneficial during times of stress or insomnia, and to relieve certain neurological conditions, such as restless legs.
- **WOMEN'S HEALTH:** Taking magnesium may help relieve period pain and premenstrual symptoms such as mood swings, fluid retention and migraines. Maintaining adequate levels may also help reduce your risk of developing osteoporosis.

