

Zinc is deficient in many countries and many men.

Zinc is a much-needed essential mineral, required in small amounts by all cells in the body, especially during pregnancy and childhood, to support the immune system, heal wounds, grow nails and bones, and to avoid deficiencies.

If your nails are thin, split and corrugated, like mine used to be, or if you bite them, caused by a craving for Zn, you are more likely to need Zn. Note the thickness of my thumb nail. When your nails get to this stage, continue taking Zn at the same rate. Too much can reduce your copper level. See Copper for Humans. Animals low in zinc suffer more hoof problems. See Zinc in Minerals, Soils and Pastures.



Testing your level

Place one drop of Oral Zn sulphate (See Sources below.) on your tongue. If there is no taste, you are very deficient. If the taste is sharp your level is correct, if it is so strong that you want to spit it out, you could already have too much Zn in your body, so reduce its consumption. Oh, if all mineral and element levels could be measured as easily, but muscle testing achieves the same.

Hyperactive children (especially boys) may be deficient in zinc and vitamin B6 and have an excess of lead and copper. Zinc has been employed with success to treat Wilson's disease, achrodermatitis enteropathica, and specific types of schizophrenia, tempers and bad memories, sometimes caused by high Mn levels.

Zinc suppresses manganese toxicity. Low zinc encourages the growth of fat rather than meat. Beef and sheep farmers should not this.

Testosterone

Testosterone is a hormone that plays an essential role in men's health. Men require testosterone for many biological functions including the development of reproductive tissues including the testis and the prostate. Additionally, testosterone promotes hair growth, muscle and bone mass. Low testosterone levels can result from zinc deficiencies in your body. According to "Zinc in Adolescent Growth," doctors commonly prescribe zinc supplements to increase the production of testosterone in both adolescents and adults.

Sperm Count

Zinc deficiencies in men can also affect the quality and quantity of sperm. Testis require zinc to produce sperm, and doctors commonly look for zinc deficiencies when determining the underlying cause of a low sperm count. Additional factors that can affect sperm count include the clothes you wear, the food you eat and the type and amount of exercise you perform.

Prostate Cancer

The prostate is a walnut shaped gland responsible for producing the seminal fluid that feeds and transports sperm. Prostate cancer can manifest in a variety of ways and the specific treatment will depend on the aggressiveness of the cancer. According to "Human Physiology: The Mechanisms of Body Function," zinc may slow or reduce some prostate cancers in certain people. However, further studies are required to confirm the prostate cancer fighting benefits of zinc. Read Prostate.

Deficiencies

Zinc deficiency occurs in many countries. It is widespread in NZ, USA and UK, and it is particularly common in areas where the population eats a large amount of cereals. The USA government estimates that half their people are low in Zn. The following shows the importance of Zn is recognised by some countries. Hungary claims to have saved millions of dollars by providing Zn. Turkey added Zn to all its fertilisers, which doubled the Zn content in wheat and was calculated to benefit their country by one hundred million US dollars a year, due to the human health benefits. In South Africa, Zn is added to maize and oat meals used for making porridge. Unfortunately, it is Zn oxide to which I, and many, are allergic, causing slight nausea and diarrhoea, because oxides are fertilisers, not foods. If possible, avoid taking and using all oxides and chlorides, if handling or spreading them (they are fertilisers), wear a mask. Sulphate is the best form for most minerals.

Since 2013 the NZ government has sponsored Zincaps for people, done because the government had

at last discovered that almost all people in New Zealand are low in zinc, but doctors need to be educated about Zn (and all minerals). In February 2014 an NZ doctor refused to prescribe it for a GrazingInfo member who was so low that he was biting and eating his nails.

Many farmers feed Solmin which has zinc, to their animals, so why do so few farmers take minerals themselves? Partly because doctors know that people with optimum mineral levels in their body are much healthier. Some vets know the same, and some have lobbied to remove complete salt from mineral supplements. I say 'complete salt' because NZ table salt has many minerals removed, making some of it toxic to people. Muscle testing proves this.

Finland legislated that all fertilisers had to have 1% slow release selenium fertiliser added. All countries with deficiencies should legislate that the deficient ones are added to fertilisers. The costs are low and can reduce doctor and hospital costs.

Most vets recommend supplementing with minerals they sell (commercial), but few doctors do, because our medical association works on making money out of sick people requiring frequent visits and treatments, so are not trained in prevention.

When Zn is fed to fast growing, thin animals, it helps produce muscle (meat), rather than fat. Zinc may help some very fat humans, which too much salt increases.

Some conventional medicines drain Zn out of the body. Excessive (and often wrong) promotion of taking calcium has caused many people to take too much supplementary calcium which, like too much iron, or copper, inhibits Zn absorption. If needed, take them separately and take no more than needed, which can often mean no calcium at all, as it is in most vegetables and dairy products.

Health benefits

Zinc is essential for the normal, healthy growth and reproduction of plants, animals and humans. It works well with other minerals, helping absorb them into the body. Zinc is a bone-builder and, together with copper supplements, can be used to strengthen bones to resist osteoporosis and fractures. It has also been claimed to reduce the chances of Alzheimer's disease and prostate cancer.

Testosterone

Testosterone is a hormone that plays an essential role in men's health. Men require testosterone for many biological functions including the development of reproductive tissues including the testis and the prostate. Additionally, testosterone promotes hair growth, muscle and bone mass. Low testosterone levels can result from zinc deficiencies in bodies. According to "Zinc in Adolescent Growth," doctors commonly prescribe zinc supplements to increase the production of testosterone in both adolescents and adults.

After taking Zn, some report feeling better within weeks, gums stop bleeding, nails become smoother, thicker and stop splitting, long standing sores heal, and people who have chewed their nails stop doing so.

An Egyptian survey showed that six-month-old children from mothers who ate meat from animals with adequate Zn levels had higher attention scores. If all farmers fertilised with and fed zinc in soluble mineral mixes (Solminix has it), they would benefit and we would get more in our food.

Low levels of Zn cause lower disease resistance, lower healing capability and poor digestive and metabolic processing in the body.

Research has shown that zinc -

- Can optimise the growth of reproductive organs.
- Is essential for fertility and conception.
- Aids protein synthesis (combination of two or more entities).
- Aids the perception of taste and smell.
- Helps protect the liver from chemical damage.
- Is essential for bone formation and strength.
- Decreases the amount of copper absorbed from food.
- Is an antioxidant that helps speed the healing of all types of wounds, is effective against symptoms of various immune system disorders, increases the production of white blood cells that fight infections and helps white cells release antibodies.
- Can slow the growth of cancer.
- Helps prevent Parkinson's disease.
- Can lessen the duration of cold symptoms and soothe sore throats. In one study, subjects who sucked on a Zn lozenge every few hours got over their cold symptoms about three days sooner than

those who took a placebo. Some scientists believe that Zn may kill the cold virus.

- Prevents canker sores and helps speed healing.
- Helps regulate the activity of oil glands and is one of the nutrients your body uses to rebuild damaged skin. Research shows that taking Zn supplements can help heal skin disorders like rosacea, eczema, psoriasis and acne, and can boost the effectiveness of acne medications.
- Contributes to eye health. Zinc is vital in processes in the retina and macula. Zn supplements have been shown to slow vision loss in cases of macular degeneration and reduce the risk of damage in the retina by 20 per cent, helped by vitamins C and E.
- Helps produce healthy sperm in males, as does selenium.
- Seems to boost the effectiveness of vitamin E and vitamin A, which is vital for eye health. In a study in France, 78% of the people who treated seasonal conjunctivitis with a combination of Zn and antihistamines showed considerable improvement in their symptoms.
- Is instrumental in the manufacture of hormones, such as insulin, in the body, which may help control blood sugar in those with type 2 diabetes. In addition, high blood sugar slows the body's ability to heal wounds, and Zn may help offset that problem.
- Reduces autism problems, attention deficit and hyperactivity disorder. A USA report stated that hyperactive children were low in Zn, and that if selenium was also low, the hyperactivity was worse. Researchers found that taking Zn, as well as their normal medication, helped children with these problems.
- Stimulates anti-viral activity in the body and stimulates the actions of over 100 different enzymes. These enzymes are responsible for vital parts of the process of converting food to energy, differentiating cells in a developing foetus, fighting disease, regulating body temperature and more.
- Supplements reduce both the severity and duration of acute or persistent diarrhoea in children, according to researchers from the Medical College of Georgia in Augusta.

Zinc is not affected by iodine or salt. However, low Zn accentuates the bad effects of low iodine.

New Zealand adds iodine to table salt, which has saved thousands of lives, but also adds aluminium, which is very bad for the brain. 'Real' or Himalayan (slightly pink) mine table salt contains many minerals and has health benefits without toxins, as opposed to processed table salt which has some minerals removed. USA mined salt is nearly as good.

Zinc (Zn) This valuable mineral/antioxidant increases the production of white blood cells, which fight infection, and helps them fight more aggressively. It also increases 'killer' cells that fight against cancer, and helps white cells release more antibodies. Zinc supplements have been shown to slow the growth of cancer.

Zn is one of the strongest antioxidants, is a bone builder, and has been claimed to reduce the chances of Alzheimer's disease and prostate cancer. Zinc is essential for enzymes, sperm production and other bodily functions such as the production of testosterone and cell growth stimulation. Foods high in zinc are meats, eggs, and seafood, but they can't supply enough in today's world.

After taking zinc some report feeling better, gums stop bleeding, nails become smooth and thicker and stop splitting, long-standing sores heal and the prostate behaves better. The prostate contains more Zn than any other organ.

Zn is found in most cells in the body and is in about 200 enzymes. Enzymes are molecules involved in speeding up chemical reactions necessary for the body's functions. Zinc is the most needed used of all the essential trace minerals and is required for the healthy functioning of the hormone system - male and female sex hormone production, insulin and growth hormone. Adequate zinc levels are essential to the proper functioning of the immune system, sensory functions, skin health and pregnancy nutrition. NZ farmers feed it to ruminants to prevent facial eczema, a very severe liver damaging problem. 40 years of Ruakura research couldn't find a solution, but Gladys Reid, an ex-dental nurse and farmer did. She knew that dentists use Zn to heal gums.

Excessive promotion of calcium has caused many people to take too much, which inhibits Zn absorption as does iron, so take them separately and no more than necessary. Excess calcium will also inhibit magnesium absorption. Magnesium is better for you than calcium, and is better at protecting against osteoporosis. Zinc and boron are also needed for bones.

A Zn taste test from some health stores and specialists tells you if you are low.

Some conventional medicines drain zinc out of the body. About 50% of people world-wide suffer from Zn deficiency, and in Turkey it is so low that in 1997 their government subsidised adding Zn to fertilisers. It doubled the Zn content in wheat and was calculated to benefit Turkey by a hundred million US dollars. In South Africa Zn is added to oatmeal and flour. Unfortunately it is zinc oxide to which about 10% of people are allergic, causing slight nausea and diarrhoea. Zinc Citrate would be better. An ex-MAF so-called fertiliser and mineral scientist's web site says that zinc is not deficient in New Zealand. If he looked at people's finger nails and cows hooves he'd see how wrong he is.

While looking at your nails, look for straight lines which indicate low vitamin Bs.

When people had galvanised water piping, roofs and water tanks for drinking water they got some, whereas now with plastic piping, most people need more Zn.

If you have copper piping in your home you'll be getting plenty of copper. Too much can suppress zinc. Many crops are sprayed with copper, so we can get an excess of it. Hyperactive children have been found to be high in copper and low in Zn. Zn lowers copper absorption. A USA report stated that hyperactive children were low in Zn, and that if selenium was also low the hyperactivity was worse. Take Zn at cuppa time with a biscuit or similar, not with meals because it lowers absorption of selenium and copper from your food.

The RDA of 15 mg is too low and may be insufficient for athletes because exercise causes a loss of zinc, so you may need to take a supplement. There is some evidence that excess zinc may interfere with the enzymes that protect red blood cells, contributing to mild anaemia and poor clotting ability. Aim for between 5 and 20 milligrams of elemental Zn a day. Some of this will be in your food. It is safe up to 75 milligrams (some say 100) a day, after which it can inhibit the immune function.

Our health department and government could save billions of dollars by recommending zinc and other known health-giving items.

Testosterone

A study of 88 men aged 40 to 60 years showed that those with normal testosterone levels had significantly higher zinc levels than those with low testosterone levels. Testosterone is important, especially for elderly men, so if necessary take both it and zinc.

Low testosterone levels put men at a greater risk of male menopause.

Low zinc in men impairs their testosterone production, puts them at risk for developing prostate cancer, and causes infertility. Read Testosterone in Human Health.

Prostate

The cells of the male prostate require a very high concentration of zinc to work optimally. To stay healthy, it requires ten times more zinc than other cells in the body. Adequate zinc level in the prostate protects the cells from damage, inflammation, and cancer development. Once the prostate cells are damaged and become cancerous, they lack the ability to accumulate zinc, leading to greater propagation of cancer cells that can become tumours.

A placebo group had a rapid increase in cancer cell growth and decrease in body weight. There was also a 50 percent increase in DNA damage and inflammation during the study period, indicating a progressively diseased prostate.

Researchers write that zinc is a "promising anti-cancer treatment" and that regular supplementation when men are healthy with no evidence of cancer is the best prevention. They also suggested that zinc can prevent related cancers such as ovarian, breast, and colorectal.

Signs of zinc deficiency

Inadequate zinc has been linked to low libido. The symptoms of Zn deficiency vary greatly from one person to another and can include -

- Allergy sensitivity.
- Anaemia - mild.
- Biting nails which can cause hang nails (small sore or torn piece of skin next to a fingernail or toenail) or inflammation of nail cuticles.
- Hyperactivity.
- Boys that are stroppy and/or naughty. A boy aged 4 and now self employed at 25, remembers biting his sisters and being stroppy. Taking one drop a day of oral Zn sulphate (the amount now in a Good Health Premium capsule) and available in Zincaps a government prescription zinc, changed him to a nice friendly gentle boy within a month. He remembers his bad behaviour and how zinc stopped it.
- Diarrhoea. Obviously there are many other causes.

- Accelerated aging.
- Stress on the body.
- Reduced fertility.
- Reduced sex drive.
- Infertility in both sexes.
- Inflammatory bowel disease.
- Pre-menstrual syndrome or disturbance in the menstrual cycle.
- Prostate deterioration.
- Fingernails have retarded growth, are rough, thin, cracked, with white corrugations and splits. The photograph on page one shows healthy nails.
- Dandruff and hair loss.
- Loss of appetite.
- Loss of taste or smell.
- Muscles weakened.
- Skin dryness and rashes.
- Skin lesions, such as eczema, psoriasis and acne.
- Sleep disturbances.
- Wounds slow to heal.
- Lack of appetite.
- Occasional moodiness.
- Less keen sense of taste or smell.

Zinc

The Prostate cells require more zinc than other cells in the body. Adequate levels protect its cells from damage, inflammation, and cancer. Once the prostate cells become cancerous, they lack the ability to accumulate zinc, leading to greater propagation of cancer cells that can then become tumours. Researchers say that zinc is a “promising anti-cancer treatment” and that with regular supplementation, men are more healthy with less cancer. Finger nails are a good measure of zinc levels in the body. Note how healthy, level and thick my thumb nail is in the Zinc chapter.

Excess zinc

Do not take Zn in high doses. It will lower the copper levels. Too much can harm your immune system and cause other health problems. There is some evidence that an excess may also interfere with the enzymes that protect red blood cells, contributing to mild anaemia and poor clotting ability. Use the testing described above.

In some countries, where soil levels are higher than in New Zealand, too much Zn can aggravate prostate cancer, because prostates can absorb an excess.

Zinc is incredibly powerful in that it can protect livers from eczema. According to NZ AgResearch, there is evidence that excess zinc may interfere with the enzymes that protect red blood cells, contributing to mild anaemia and poor clotting of blood. Animals that have had eczema-damaged livers can be anaemic and their blood may not clot well because of a lack of clotting factors normally made by the liver.

De-horning yearlings in autumn after having had facial eczema and/or large amounts of zinc to prevent facial eczema, has been fatal. Read Minerals > Calcium and LimeMagPlus to avoid excesses.

Sources of zinc

Some medical recommendations are 15 mg of Zn daily which is not enough in New Zealand, especially for athletes and physical workers, because exercise uses Zn. Thompson’s Organic Zinc is excellent with 86 Compatibility and no toxins. It has 15 mg of zinc, which with the 7 mg in Good Health Premium Vision, is about right for most adults. The Thompson’s Organic Zinc pills can be halved for boys using a cutter from chemists.

Too much and can inhibit the immune function and reduce copper. Too much is nearly as bad as too little. Aim for between 20 and 50 mg of elemental Zn a day, depending on other sources such as home grown, correctly LimeMagPlus fertilised vegetables. The Human Health Premium Vision supplement capsule has 7 mg which is sufficient for some women. Men have a prostate needing more.

Foods containing Zn are meats, poultry, seafood, eggs, nuts and some seeds, but these can’t supply enough in today’s world, or when they are grown in areas or soils low in Zn, or where copper is too high. Vegetarians often become low in Zn because most people get their natural Zn from meats.

When homes had galvanised water piping, roofs and water tanks for water, people got Zn, whereas with plastic piping, most don't get enough. If you have copper piping in your home you'll be getting plenty of copper, too much of which can suppress the absorption of Zn. Run the tap before drinking it. Read Water. Also, some crops are sprayed with copper, which can cause an excess. Wash them well.

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The sulphate forms of minerals are more available, safer and better absorbed than the oxide (a fertiliser) forms, not for consumption, by humans and animals. Sulphate forms are natural, while others are processed, with human error risks which occur frequently around the world. In Germany, in January 2011, dioxin was added to poultry feed by mistake, causing thousands of affected eggs and egg by-products in countries that bought the eggs.

At age 78, I took 8 drops of an oral Zn sulphate twice a day. Now, at age 84, a blood analysis showed that I needed more, so my doctor prescribed Zincaps containing 50 mg of elemental Zn, which in New Zealand is only \$5 for 100 tablets from chemists, but contains toxic metals. Take one capsule with a glass of water every day, immediately after a meal, never on an empty stomach. Copper is in maple syrup. Good Health Premium Vision has 7 mg of Zn and the correct balance of copper.

Some claims about chelated minerals being better absorbed than sulphates are inaccurate because ALL comparisons should be done on an equal cost basis. If not, they are unfair and deceitful. Chelated minerals have been known to be up to 14 times more expensive than sulphate forms. Avoid all chelated products because they are not only expensive, but some have additives, including mercury which is used to chelate (glue, lock, tie), which is very unhealthy, as it is in amalgam teeth fillings. All supplements with the word chelated are allergic to me because of the mercury.

In 2013, I was found to be low in copper, so the high comparatively copper content I discovered in USA and Canadian maple syrup didn't matter. I've been taking copper for a year, which has given my hair its natural light brown colour again, as it does in cattle, and has strengthened my bones, as it has in young lambs, stopping them from breaking leg bones on Poverty Bay hills. Read Copper and Zinc in Minerals in Soils, Pastures and Animals, and read Sheep.

Most minerals are better absorbed when spread over 24 hours. When I got farmers to change from once-a-day-drenching with Solminix minerals that I had developed, to adding it to the drinking water through an online dispenser I developed, they noticed a big improvement in animal health, condition and calmness, because the minerals were more available and better absorbed, and little work. This applies especially to magnesium because bodies have no storage place for magnesium, so it needs to be in pasture and water for a continuous supply.

If more interested in Zinc, read it in Minerals for Soils (and Animals).

Vaughan Jones, ONZM Queen's Honour 2013, for services to the farming industry. NZ M.Mkt.I. Dairying 99% Honours Award 1948. Waikato Most Improved Dairy Farm Award 1959. International Agricultural Consultant & Journalist. Represented NZ in Agricultural Journalist Congresses in USA in 1992 & Austria 1994. Managing Director of the website GrazingInfo Ltd, compiled since 1970.