



COLLOIDAL COPPER

The first documented use of copper was published in 1867, when it was reported that during three separate cholera epidemics in Paris in the 1800s, copper workers were found to be immune from cholera. In the same century, the French physician, Luton, reported utilising copper in his practice to treat arthritic patients. Copper treatment for tuberculosis continued well into the 1940s. Recent tests with mice in the US, has proven that the treatment of tumours with various complexes of copper markedly decreased tumour growth and increased survival rate. It is to be noted that the copper complexes did not kill the cancer cells, but caused them to *re-process* to normal cells. Finnish and German medical researchers successfully utilised copper chloride and sodium salicylate to treat patients suffering from rheumatic fever, rheumatoid arthritis, neck, back and sciatica problems.

Copper is an essential trace mineral necessary for survival. It is found in all body tissues and plays a role in making red blood cells and maintaining nerve cells and the immune system.

It also helps the body form collagen and absorbs iron, and plays a role in energy production.

Most copper in the body is found in the liver, brain, heart, kidneys, and skeletal muscle.

Both too much and too little copper can affect how the brain works. Impairments have been linked to Menkes, Wilson's, and Alzheimer's disease

Deficiency is rare, but it can lead to cardiovascular disease and other problems.

Copper is necessary for a range of bodily functions.

Copper deficiency is rare except in specific conditions
Such as Menkes disease.

Copper supplements are not usually necessary and may
lead to an imbalance.

A copper imbalance has been linked Alzheimer's disease.

Anyone who is considering copper supplements
should first speak to a doctor.

Health benefits

Copper supplements are not normally necessary for a healthy person with a balanced diet.

Copper is an essential nutrient for the body.

Together with iron, it enables the body to form red blood cells.

It helps maintain healthy bones, blood vessels, nerves, and immune function, and it contributes to iron absorption.

Sufficient copper in the diet may help prevent cardiovascular disease and osteoporosis, too.

Cardiovascular health

Low copper levels have been linked to high cholesterol and high blood pressure. One group of researchers has suggested that some patients with heart failure may benefit from copper supplements.

Animal studies have linked low copper levels to CVD, but it remains unclear if a deficiency would have the same impact on humans.

Neuron signaling

In 2016, Prof. Chris Chang, a chemist who is part of the Sackler Sabbatical Exchange Program at Berkeley, CA, devised and used a fluorescent probe to track the movement of copper in and out of nerve cells.

Prof. Chang says: "Copper is like a brake or dimmer switch, one for each nerve cell."

His team found that, if high amounts of copper enter a cell, this appears to reduce neuron signaling.

When copper levels in that cell fall, signaling resumes.

Immune function

Too little copper can lead to neutropenia. This is a deficiency of white blood cells, or neutrophils, which fight off infection.

A person with a low level of neutrophils is more likely to get an infectious disease.

Osteoporosis

Severe copper deficiency is associated with lower bone mineral density and a higher risk of osteoporosis.

More research is needed on how marginal copper deficiency may affect bone health, and how copper supplementation might help prevent and manage osteoporosis.

Collagen production

Copper plays an important role in maintaining collagen and elastin, major structural components of our bodies.

Scientists have hypothesized that copper may have antioxidant properties, and that, together with other antioxidants, a healthful intake may help prevent skin aging.

Without sufficient copper, the body cannot replace damaged connective tissue or the collagen that makes up the scaffolding for bone.

This can lead to a range of problems, including joint dysfunction, as bodily tissues begin to break down.

Arthritis

Animal studies have indicated that copper may help prevent or delay arthritis, and people wear copper bracelets for this purpose. However, no human studies have confirmed this.

Antioxidant action

Copper may also have an antioxidant function. It may help reduce the production of free radicals.

Free radicals can damage cells and DNA, leading to cancer and other diseases.

Symptoms of copper deficiencies

These include:

- Genetic defects of copper metabolism
- Absorption problems
- Too high an intake of zinc or vitamin C supplements
- Some conditions, such as central nervous system (CNS) demyelination, polyneuropathy, myelopathy, and inflammation of the optic nerve

Since copper is stored in the liver, deficiencies develop slowly over time.

Zinc and vitamin C

A high intake of zinc (150 mg a day or above) and vitamin C (over 1,500 mg a day) may induce copper

deficiency by competing with copper for absorption in the intestine.

Effects of deficiency

Low levels of copper can lead to:

- Anemia
 - Low body temperature
 - Osteoporosis
 - Bone fracture
 - Loss of skin pigmentation
 - Thyroid problems
- Metabolic diseases can affect the way the body absorbs vitamins and minerals.

Menkes disease

Menkes disease, an X-linked recessive disorder, adversely affects how the brain metabolizes copper. This can result in failure to thrive and neurodevelopmental delays in infants from around 6 to 8 weeks of age. A child with this disease may not survive to the age of 3 years.

Subcutaneous copper injections can help normalize blood copper levels, but whether these help to normalize brain copper levels depends on the type of genetic mutation involved.

One clinical trial has found that treating infants before symptoms begin may help to improve gross motor skills, fine motor and adaptive skills, personal and social skills, and language neurodevelopment in children. It also improved growth.

Other effects of copper deficiency

Copper deficiency has also been linked to:

- An increased risk of infection
- Osteoporosis
- Depigmentation of the hair and skin
- Anemia, as copper contributes to the creation of red blood cells

The brain and the nervous system

Too little or too much copper can damage brain tissue.

In adults, neuro-degeneration has been observed as a result of a copper imbalance. This may be due to a problem with the mechanisms involved in metabolizing copper for use in the brain.

High levels of copper can lead to oxidative damage in the brain. In Wilson's disease, for example, high levels of copper collect in the liver, brain, and other vital organs.

Possible link with Alzheimer's

An excessive accumulation of copper has also been associated with Alzheimer's disease.

Prof. Chang and colleagues have hypothesized that when copper accumulates in unusual ways, this may cause amyloid plaques to build up on a nerve cell.

A build-up of amyloid plaques can lead to Alzheimer's and other neurodegenerative disorders.

Copper however topically has many great benefits if used topically and has healing purposes of the skin and helps make collagen, slows down aging in the skin and helps with thread veins, elasticity, tone and flexibility of the skin.

Colloidal copper is easily absorbed through the skin including 10 other skin benefits:

1. Anti-wrinkle agent
2. Reduces and prevents crows feet.
3. Oxygenates the skin
4. Helps retain moisture
5. Potent antioxidant
6. Stimulates Collagen and Elastin

7. Promotes healthy skin
8. Has a tightening effect on the skin.
9. Firms and prevents sagging
10. Promotes cellular regeneration

Warning

Copper deficiencies are rare but can happen. Do not take copper if you are on any contraceptive device or pill, as a precaution we at Bio Mineral Balance **only recommend Copper for topical purposes only**, if you decide to use orally please consult a doctor or medical professional before taking and /or have a heavy metal test to check your copper levels before ingesting.

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