

The microminerals

What They Do:

- Blood formation and function – Iron
- Strengthens bones/prevents tooth decay – Fluoride
- Body growth and maturation – Zinc
- Bone and cartilage development, - Copper
- Protects against cancer – Selenium
- Formation of thyroid hormones – Iodine
- Maintains blood sugar levels – Chromium
- Heals wounds – Manganese

***Needed in very small amounts

Minerals

The microminerals

- Chromium
- Copper
- Fluoride
- Iodine
- Iron
- Manganese
- Zinc
- Selenium

Chromium

- It is essential for fat, cholesterol and protein synthesis.
- It affects glucose metabolism and keeps blood sugar level constant. Therefore, it is effective in both diabetes and hypoglycemia.
- Absorbed by the body in picolinate salt way. It controls the blood cholesterol level in the form of picolinate salt.
- It provides fat loss and increases muscle tissue.

Chromium sources

- potatoes, corn, raw rice, licorice, nettle, oats, brewer's yeast

Deficiency

- Fatigue and anxiety

Copper (Cu)

Function: should be present in tissues for iron to be properly utilized, hemoglobin formation and synthesis of kerati.

Deficiency signs: anemia

Sources: forages and copper salts.
nuts, legumes, liver, kidney, mussels, shellfish,
mushrooms, radishes

Iron

- Iron deficiency is the most widespread vitamin or mineral deficiency in the world.
 - 70% of your body's iron is in your hemoglobin
 - Too little iron = too little oxygen

Iron

➤ Food sources

- Liver, kidney, heart, meat, egg yolk, dried beans and peas, spinach, dried fruit, whole-grain & enriched breads & cereals, nuts.

➤ Function in the Body:

- Helps make hemoglobin in red blood cells.
- Helps cells used oxygen.

➤ Deficiency (lack) of iron leads to anemia.

Cobalt (Co)

Function: required as a nutrient for synthesis of Vitamin B₁₂

Deficiency signs: lack of appetite, loss of weight, rough hair coat, anemia, death in extreme cases.

Sources: legume forages and salt containing cobalt.

Zinc

- An important mineral, especially for the elderly.
- There is a tendency for zinc deficiency in liver, kidney patients, diuretic users and diabetics.
- It is an important mineral for the function of the prostate gland and the development of the reproductive organs.
- Zinc is also important in wound healing, appetite and taste.

Zinc

- Immunomodulatory
- Antioxidant (supports Vit E effect, improves Vit A absorption)
- Retinoprotective (adaptation to dark vision)
- It prevents acne by regulating the activity of sebum.
- **Sources**
- Seafood, brewer's yeast, egg yolk, mushrooms, lamb, legumes, soy, sunflower, cereals, poultry

Zinc Deficiency

- Loss of smell and taste ability,
- thinning and refraction of nails,
- skin lesions, white spots, acne,
- fatigue, developmental disorder, recurrent infections,
- reproductive and prostate problems,
- hair loss,
- cholesterol increase

Selenium

- Antioxidant
- immunomodulatory
- anticarcinogenic
- antiatherogenetic
- Cardiomyopathy and ischemic heart disease, Keshan's disease
- Along with Vit E and Zinc, it provides relief in prostatic hypertrophy.
- antiinflammatory

Selenium

- Antioxidant
 - It is a vital antioxidant for humans and animals. It has antioxidant effect against reactive oxygen radicals.
- immunomodulatory
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Selenium sources

- The amount of selenium in food depends entirely on the type of soil.
- Tuna, mushroom, brewer's yeast, chicken, milk, broccoli, onion, garlic, cereals and vegetables

Deficiency

- cardiomyopathy, cancer, dysfunction, liver diseases, pancreatic insufficiency, cholesterol increase, infections.
- Selenium and Vitamin E work together for the continuation of heart and liver functions and for the formation of antibodies (anticor) in the body.

Fluoride

- It prevents tooth decay by connecting with Ca in teeth and bones. It strengthens the bones.
- Sea water and seafood.
- The toxicity of supplemental fluorine use (toothpaste, tap water) is controversial.

Deficiency

- cardiomyopathy, cancer, dysfunction, liver diseases, pancreatic insufficiency, cholesterol increase, infections.
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Iodide

- Essential element for thyroid function.
- Preventing goiter and thyroid cancer.
- Protection against radioactive agents.

Deficiency

- thyroid dysfunction, fatigue, obesity, breast cancer, goiter.

- With the use of regular iodised salt, goitre which depends on lack of iodide can be prevented.

Sources

- deniz ürünleri, tuzlu su, yosunlar, kuşkonmaz, ıspanak, kabak, sarımsak soya.

Iodide !!!

- Foods such as cabbage, Brussels sprouts, cauliflower and turnips, which are consumed in large quantities and raw, cause iodine deficiency by blocking the iodine intake in the thyroid gland.

Minerals

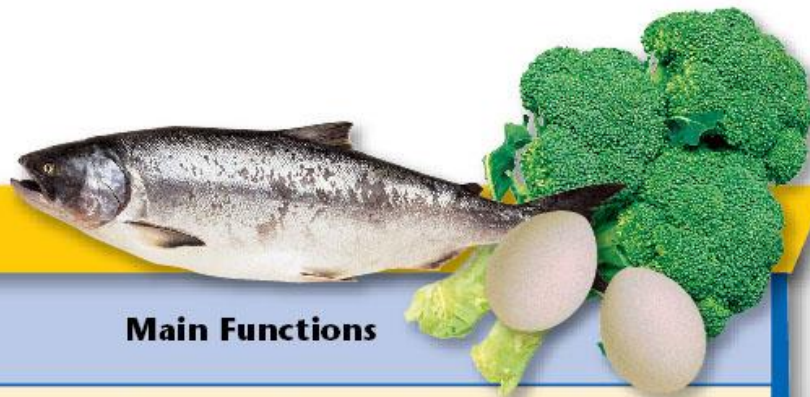
- Food Sources:
 - Meats, beans, nuts, fruits, vegetables, dairy products, and grains.
- Functions in the Body:
 - The body depends on minerals for practically every process necessary for life.
 - Minerals actually become part of the body.
 - The body requires 16 minerals daily.

Minerals

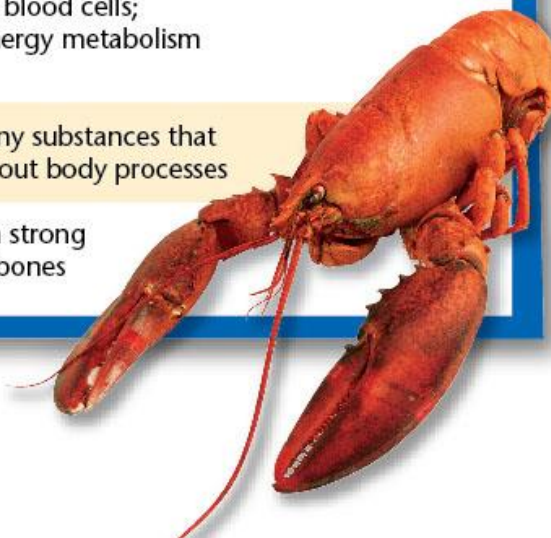


Mineral	Good Sources	Main Functions
Calcium	Milk and milk products; dark green, leafy vegetables; tofu; legumes	Helps build and maintain bones and teeth; nerve and muscle function; blood clotting
Phosphorus	Meat; eggs; poultry; fish; legumes; milk and milk products	Helps build and maintain bones and teeth; energy metabolism
Magnesium	Leafy green vegetables; legumes; nuts; whole-grain food	Helps build bones and protein; energy metabolism; muscle contraction
Sodium	Table salt; processed food; soy sauce	Helps maintain water balance; nerve function
Chlorine	Table salt; soy sauce; processed foods	Helps maintain water balance; digestion
Potassium	Vegetables, fruits, meat, poultry, fish	Helps maintain water balance and make protein; functioning of heart and nervous system

Minerals



Mineral	Good Sources	Main Functions
Sulfur	Milk and milk products; meat; poultry; fish; legumes; nuts	Forms part of some amino acids and B vitamins
Iodine	Seafood; iodized salt	Helps in metabolism as part of thyroid hormone
Selenium	Seafoods; meats; organ meat	Helps break down harmful substances
Iron	Red meats; seafood; legumes; green, leafy vegetables; fortified cereals; dried fruits	Part of red blood cells; helps in energy metabolism
Zinc	Meats; poultry; seafood; milk; whole-grain foods	Part of many substances that help carry out body processes
Fluorine	Fish; fluoridated water	Helps form strong teeth and bones



Minerals

- Percent of Body weight
 - Calcium 2%
 - Phosphorus 1%
 - Potassium 0.3%
 - Sulfur 0.2%
 - Sodium 0.1%
 - Chloride 0.1%
 - Magnesium 0.05%
 - Iron 0.04%

References

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