

BENEFITS OF MICRONUTRIENTS

Thomas G. Johnson

Department of food science

Abstract

Micronutrients are one among the main groups of nutrients your body needs. They include vitamins and minerals. Vitamins are necessary for energy production, immune function, blood coagulation and other functions. Minerals play a crucial role in growth, bone health, fluid balance and a number of other processes

- The term micronutrients is employed to explain vitamins and minerals generally .
- Macronutrients, on the opposite hand, include proteins, fats and carbohydrates.
- Your body needs smaller amounts of micronutrients relative to macronutrients. That's why they're labeled "micro."
- Humans must obtain micronutrients from food since your body cannot produce vitamins and minerals for the foremost part. That's why they're also mentioned as essential nutrients.
- Vitamins are organic compounds made by plants and animals which may be weakened by heat, acid or air. On the opposite hand, minerals are inorganic, exist in soil or water and can't be weakened .
- When you eat, you consume the vitamins that plants and animals created or the minerals they absorbed.
- An adequate intake of all micronutrients is important for optimal health, as each vitamin and mineral features a specific role in your body.
- Vitamins and minerals are vital for growth, immune function, brain development and lots of other important functions.
- Depending on their function, certain micronutrients also play a task in preventing and fighting disease

Types and Functions of Micronutrients

Vitamins and minerals are often divided into four categories: water soluble vitamins, fat soluble vitamins, macro minerals and trace minerals.

Water Soluble Vitamins

Most vitamins dissolve in water and are therefore referred to as water-soluble. They're not easily stored in your body and obtain flushed out with urine when consumed in excess.

The water soluble vitamins — with a number of their functions — are:

- Vitamin B1 (thiamine):
- Vitamin B2 (riboflavin):
- Vitamin B3 (niacin):
- Vitamin B5 (pantothenic acid).
- Vitamin B6 (pyridoxine Vitamin)
- B7 (Biotin)

- vitamin B9 (folate)
- vitamin B12 (cobalamin)
- Vitamin C (ascorbic acid)

Fat Soluble Vitamins

Fat soluble vitamins don't dissolve in water.

They're best absorbed when consumed alongside a source of fat. After consumption, fat soluble vitamins are stored in your liver and fatty tissues for future use.

The names and functions of fat soluble vitamins are:

- Vitamin A: Necessary for correct vision and organ function
- Vitamin D: Promotes proper immune function and assists in calcium absorption and bone growth
- Vitamin E: Assists immune function and acts as an antioxidant that protects cells from damage
- Vitamin K: Required for blood coagulation and proper bone development

Macro minerals: Macro minerals are needed in larger amounts than trace minerals so as to perform their specific roles in your body. ex: Calcium, Phosphorus, Magnesium, Sodium, Chloride, Potassium, Sulfur.

Trace Minerals: Trace minerals are needed in smaller amounts than macro minerals but still enable important functions in your body Ex: Iron, manganese, Copper, Zinc, Iodine, Fluoride, Selenium.

Health Benefits of Micronutrients

All micronutrients are extremely important for the right functioning of your body.

Consuming an adequate amount of the various vitamins and minerals is vital to optimal health and should even help fight disease.

This is because micronutrients are a part of nearly every process in your body.

Moreover, certain vitamins and minerals can act as antioxidants. Antioxidants may protect against cell damage that has been related to certain diseases, including cancer, Alzheimer's and heart condition . For example, research has linked an adequate dietary intake of vitamins A and C with a lower risk of some sorts of cancer.

Getting enough of some vitamins can also help prevent Alzheimer's disease.

A review of seven studies found that adequate dietary intake of vitamins E, C and A is related to a 24%, 17% and 12% reduced risk of developing Alzheimer's. Certain minerals can also play a task in preventing and fighting disease.

Research has linked low blood levels of selenium to a better risk of heart condition .

A review of observational studies found that the danger of heart condition decreased by 24% when blood

concentrations of selenium increased by 50% .

Additionally, a review of twenty two studies noticed that adequate calcium intake decreases the danger of death from heart condition and every one other causes .

These studies suggest that consuming enough of all micronutrients — especially those with antioxidant properties — provides ample health benefits. However, it's unclear whether consuming quite the

recommended amounts of certain micronutrients — either from foods or supplements — offers additional benefits.