



# Multivitamins & Minerals



**Multivitamins and Minerals**  
dietary supplement product that contains the highest amount and types of vitamins and minerals



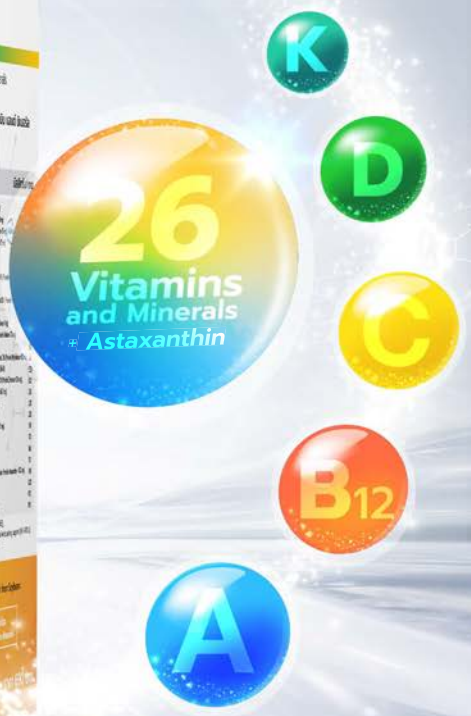
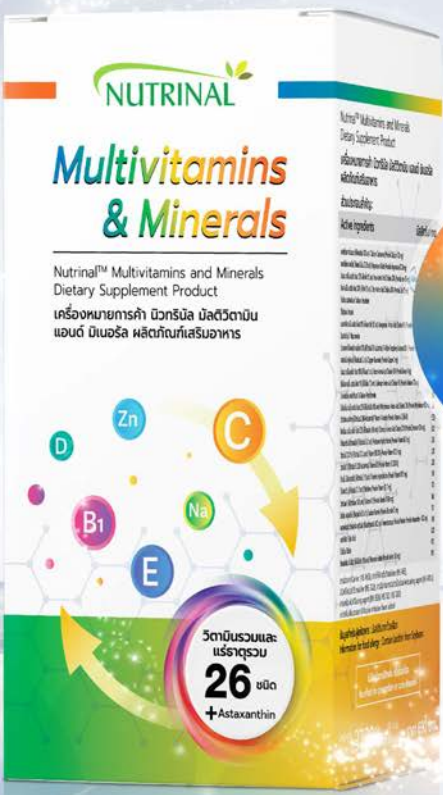
**Mineral innovation from the United States**  
that allows for better absorption of minerals by the body



**Manufacturing innovation "Double Layer"**  
Film Coat Tablet to maintain quality from the beginning of the production process



**Astaxanthin**  
The ultimate antioxidant



# VITAMIN

Vitamins are nutrients that the body needs in small quantities, but it is essential. It functions as both an antioxidant and a stimulant for several metabolic processes. If the body is deficient in vitamins and minerals, it may result to illness or unknowingly develop unwanted symptoms.



The World Health Organization estimates that 17.3% of people in **both developed and developing countries** do not receive enough **zinc** to meet the body's requirement, and iron deficiency is the most common nutritional disease.

According to a study published by the Bangkok Medical Journal, in 211 offices across Bangkok, it was found that 36.5% or **1 out of 3 office workers is deficient in vitamin D**. In addition, some groups of people are at greater risk of vitamin D deficiency than the general population - people of color, the elderly, people with kidney and liver diseases, and people who are overweight. It was also found that although the risk of mineral deficiency is now reduced, **51% of the world's population is still at risk of calcium deficiency**.

According to statistics from the World Health Organization, **every 30 seconds fractures occur to patients with osteoporosis around the world**, and it is common to women aged 30 and above. Osteoporosis is the reason for thinner bones, and it is stated that bones are reduced by 3% annually especially in postmenopausal women due to lack of adequate calcium in take and lack of estrogen, this results to bone degradation. Currently, eating the following types of food such as tea, coffee, soft drinks and meat, as well as not exercising, will lead to poor absorption of calcium. **Osteoporosis is a silent killer usually found in Thai women with rates up to 30%**, 3 times higher than men, and have 30% chance of fracturing their bones after an accident.

## The following are the factors that cause vitamin deficiency:

- **Food consumption** Foods consumed each day may not contain enough vitamins, especially charred foods, this lessens the vitamins and destroys antioxidants. Over cooked meals or foods that undergo heat for a long period of time also lose its vitamins.
- **The body needs more vitamins** pregnant women, lactating mothers, athletes, and those who exercise more than the usual can become a factor that can cause vitamin deficiency. Diseases is also another factor such as people with diarrhea diseases or inflammatory bowel disease absorb less vitamins, and patients with liver disease have poor production of vitamins and antioxidants.
- **People who eat certain foods that interfere with vitamin absorption or vitamin degradation**

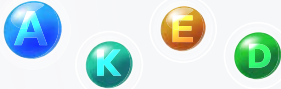
people who like to eat raw freshwater fish, fermented fish, some shellfish, as well as tea, coffee, and alcohol intake on a regular basis. This will cause more vitamin B1 to be excreted from the body. Regular eating habits of the foods mentioned will destroy vitamin B1 which were absorbed from the intestines making patients prone to Beri Beri disease.

The body uses vitamins to increase the efficiency of chemical reactions, systems and functions in the body and also act as an antioxidant. Although vitamins do not provide direct energy to the body, it is still needed in order to convert nutrients into energy. This makes vitamins essential to the body and indispensable. The crucial thing is that a large number of vitamins that we need cannot be synthesized by the body and needs to be obtained through daily consumption.

## Vitamins category

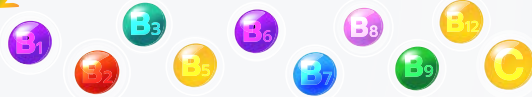
Vitamins are divided into **2** groups:

### 1 Fat-soluble vitamins



Vitamins A, D, E and K can only be dissolved in fat or oil to be absorbed. If too much is taken, it will be stored in the body as it cannot be excreted through urine.

### 2 Water-soluble vitamins



Water-soluble vitamins include vitamins B1, B2, B3, B5, B6, B7, B8, B9, B12, and Vitamin C will stay in the body for 2 - 4 hours. The amounts left behind will be processed by the kidneys and excreted through urine. The chances of accumulating this group of vitamins in the body are small, thus causing few side effects.

# MINERAL

Minerals are nutrients that do not provide energy. The body does not require that much but it can't be missed out as it is a nutrient that is necessary for the body to strengthen and regulate various functions such as help muscles to function normally, help regulate hormones and maintain the balance of fluid circulation in the body, etc. It is also vital to the body's structure, component for cells, tissues and nerves, including enzymes, hormones, and different vitamins.

## Types of minerals

There are about 17 types of minerals. It is present in the body and in the foods we eat, which can be divided into 2 large groups:

### 1 Macro minerals



It is present in the body and is more than 0.01% of body weight. More than 100 mg should be acquired through food intake daily. This group includes Calcium, Phosphorus, Magnesium, Potassium, Sodium, Chloride, and Sulfur

### 2 Trace minerals



A small amount is present in the body. Less than 100 mg should be acquired through food intake daily. This group includes Iron, Selenium, Cobalt, Chromium, Copper, Manganese, Molybdenum, Fluoride, Vanadium, Zinc, and Iodine

## Calcium

**Benefits :** Strengthens bones and teeth, helps in the functioning of the nervous system and muscular system, and makes sure blood clots normally. Calcium works with vitamin D to help strengthen the immune system.

**Deficiency :** Muscle weakness, weak and brittle bones, risk of having osteoporosis, back pain.

**Source :** Whole grains and dairy foods

## Selenium

**Benefits :** Reduces the risk of developing many types of cancer. Strengthens the body's immunity, works as an antioxidant to help prevent aging and makes the skin beautiful. Slows down wrinkle formation, and it also contributes to the stabilization of blood glucose levels.

**Deficiency :** hair loss, discoloration of the skin, fatigue. Abnormal growth. Sexual development slows down.

**Source :** yeast, bread, all fruits and vegetables

## Copper

**Benefits :** A component in enzymes that is involved in the respiratory system. It contributes to bone growth and connective tissue formation and assists the facilitates the body to use the accumulated iron.

**Deficiency :** Children who lack copper have slow growth. In general, lacking copper gives risk to having anemia.

**Source :** Oysters, animal offal, cocoa, hard-shelled fruits, peaches, grapes

## Iodine

**Benefits :** Iodine plays a very important role in thyroid function, which helps regulate metabolism in the body, allowing weight control and contributes to brain development, growth, nourishing the health of the skin, hair and nails.

**Deficiency :** Iodine deficiency during the prenatal development, also known as cretinism, causes slow growth of the body and brain, dwarfism, life long mentally retarded. After birth, lacking iodine will result to slow growth, incompetent intelligence, goiter or enlarged thyroid glands. In adults, it can lead to goiter which results to thyroid hormone deficiency giving rise to the following symptoms: obesity, sluggishness, irregular heartbeat, swollen feet.

**Source :** Seafood and drinking water

## Boron

**Benefits :** Increase bone mass, increases calcium absorption, and reduces the likelihood of bone spurs or osteophytes. Increases the production of male and female sex hormones.

**Deficiency :** Osteoporosis, the body will lack inhibitors, thereby accelerating the breakdown of calcium in the bones.

**Source :** leafy vegetables, fruits, peanuts, nuts.

## Molybdenum

**Benefits :** An important component of enzymes that help build DNA and RNA, help prevent anemia, and help in metabolic processes of carbohydrates and fats. It improves overall health and is an important part of the enzymes that help use iron in the body.

**Deficiency :** There is no definitive conclusion, but it can easily cause brain damage and confusion.

**Source :** liver, kidneys, cereals, vegetable oils and leafy vegetables.

## Magnesium

**Benefits :** Helps to detoxify the body, strengthens the functioning of the nervous system and muscles. Contributes to the metabolism of calcium and vitamin D. Reduces menstrual pain. Stabilizes blood sugar levels and helps relieve stress.

**Deficiency :** Sluggish and easily get cramps, muscle spasms, risk of seizures.

## Zinc

**Benefits :** Contributes to growth, the functioning of the reproductive system and the immune system. Do not easily get flu. It helps in the functioning of many enzymes, as well as balances hormones in the body, reducing acne and rashes.

**Deficiency :** Anorexia, weakened immune system, easily get flu, increases the likelihood of acne and rashes. During adolescence, lacking zinc will result to abnormal growth, developmental impairment.

**Source :** Oysters, milk, rice bran, wheat germ, some kinds of vegetable, bread, meat, fish, eggs, cereals, and hard-shelled fruits

## Iron

**Benefits :** Contributes to the formation of red blood cells, an important component of hemoglobin and many enzymes that work in relation to the metabolism.

**Deficiency :** anemia, fatigue, shortness of breath, and susceptible to diseases.

**Source :** liver, kidney, shellfish, egg yolks, cocoa, green leafy vegetables, hard-shelled fruits, flour from whole grains, milk low on iron.

## Manganese

**Benefits :** The body does not require a lot of manganese but indispensable as it's an important part of the bones, liver, pancreas, heart, and pituitary glands, and is an important component in many enzymes that produce energy to help build bones and teeth.

**Deficiency :** The body cannot remove the excess sugar from the blood by oxidation to store it in other parts of the body, this can result to dizziness. It can cause paralysis, blindness, and hearing loss in babies.

**Source :** Hard-shelled fruits, milk, eggs and cereals. Meat, poultry and seafood have less manganese.

## Chromium

**Benefits :** Works with insulin in glucose burning. Reduces cholesterol levels and helps in growth. Brings protein to the lower parts of the body that need it. Prevents high blood pressure, diabetes, and helps prevent brittle bones.

**Deficiency :** Problems in glucose burning, slow stabilization of sugar levels, causing cholesterol to rise. Risk of arteriosclerosis and diabetes

**Source :** egg yolks, offal, cheese, yeast, meat and unrefined grains.

## Fluoride

**Benefits :** Fluoride helps prevent tooth decay.

**Deficiency :** tooth decay and brittle bones.

**Source :** Seafood and Meat

## Vitamin and Mineral Benefits of vitamins and minerals? We have answers for you

**Enhance Brain and memory**  
B1, B3, B5, B8, B9, B12, Iodine & Zinc (In children)

**Digestive system and excretory system**  
A, B1, B3, B6, B7, B12, C, D Chromium Molybdenum

**Skin, hair, nails**  
A, B2, B3, B6, B7, B9, C, zinc, Selenium, Iodine, Astaxanthin

**Stimulates various metabolisms, absorption of minerals and vitamins**  
Zinc, Copper, Chromium, Iron, Manganese, Molybdenum

**Eyesight and vision**  
A, C, E, Zinc, B1, Astaxanthin, Manganese (In children)

**Reproductive system**  
B6, B8, B9, B12, E, Zinc, Magnesium, Selenium

**Sensory transmission of the nervous system**  
B1, B3, B5, B6, B8, D, Calcium, Magnesium, Iodine

**Circulatory System**  
Molybdenum, Iron, B6, B9, B12,

**Heart and blood vessels**  
B complex, D, K, C, Astaxanthin, Copper, Iron, Chromium

**Strengthen Bones and teeth**  
D, K2, Calcium, Magnesium, Fluoride, Copper, Boron, Manganese, Chromium

**pH**  
Maintain the body's pH balance so that the cells can live.  
Magnesium

**Sugar balance**  
Selenium, Magnesium, Manganese, B8

**Muscular system**  
B complex, C, D, E, Calcium, Magnesium, Iron, Copper

**Energy reserve**  
B12, Magnesium

**Regulates mineral liquid balance (Electrolyte) in the body**  
B5

**Hormone balance**  
Boron, Manganese, Iodine, Chromium, Zinc

# 2 innovation of multiminerals

Multivitamins & Minerals

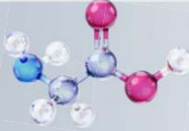


## 1) Albion chelate™

### 1 Get the best in natural form

Nowadays, most of the minerals used in the general brand supplement market are inorganic, such as oxide, carbonate, sulfate, and others. It is poorly absorbed by our bodies due to its large size. All proteins must be digested into amino acids, which are the smallest units of protein. Then it can be absorbed and used by the body through the small intestine.

Structure modification done by attaching the elements to 2 units of Glycine



#### Why Glycine?

- 1) Glycine is an amino acid with the smallest molecular size.
- 2) The body will consider it as an amino acid, therefore it won't be digested in the stomach.
- 3) The molecules created will be stable (neutral), it will not bind to fibers in the stomach.

**Technologies** that mimic organic molecules in a form that can be absorbed by the body is called amino acid blend or amino chelate, it is classified as organic. It was accepted in the medical field in 1977. Received an award from WHO. It was used by Latin American children who lacked Vitamins and minerals, and found improvement after usage

This allows our body to absorb minerals for optimal use. The pH levels have no effect, which reduces the likelihood of loss of mineral absorption.

## 2 Superior absorption



## 3 Safety and better performance

- Tested with Patients who have their intestines removed. A comparison done through exposure with magnesium oxide (common) and Magnesium bisglycinate chelate (formulated). It was found that magnesium bisglycinate chelate causes the intestines to move less and does not cause diarrhea.
- Tested with healthy subjects. Individuals received 450 mg and 600 mg of magnesium bisglycinate chelates per day. It was found that the physiological response was good as assessed by healthy bowel movement
- Typical adolescents found that when receiving ferrous bisglycinate chelate, risk having stomach gas symptoms less than half compared to taking ferrous sulfate.
- Women of childbearing age found that when receiving ferrous bisglycinate, have Gastroenteritis at moderate severity compared to taking ferrous sulfate found a high degree of severity

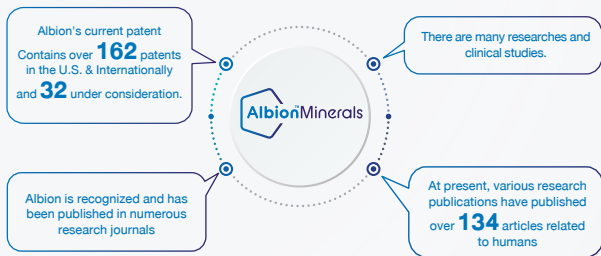
## 4 It is a substance in 100% chelate form.

AlbionMinerals innovation

passed Fast-Fourier Transforming Infrared Spectrometer (FT-IR) inspection and other assessments and was found that it is a

Complete Chelate **100%** can be called "TRAACS ; The Real Amino Acid Chelate System"

## 5 A Patented & Scientifically Proven technology



## 6 Albion has a unique quality that is EFSA certified.

AlbionMinerals has been approved in the EU market with scientific support and high-quality manufacturing processes.



AlbionMinerals quality starts with the selection of high-grade raw materials that are pure of nutritional value by having to **pass tests and 6 certifications**

- Halal (For Muslims)
- Kosher (For Jews)
- Non-GMO
- Hypoallergenic
- Low in heavy metal content
- Vegan and vegetarian friendly



# 2 innovation of multiminerals

Multivitamins  
& Minerals



## 2) Double Layer

### Double-Layer Tablet

Is a manufacturing technology that helps maintain the quality and efficiency of important substances flawlessly, by separating and producing each essential substance with different properties according to their respective process, and then combining them all together in the final stage to forge them into one tablet.



“This helps to preserve the value and effectiveness of vitamins and minerals in their entirety within one tablet.”

### Double layer manufacturing process (SCM pattern tablet)



## The best Antioxidant



### Astaxanthin

A carotenoid substance that cannot be synthesized by the body. It is characterized by a red substance. It can be found in red algae (*Haematococcus pluvialis*), fat soluble. Its unique structure gives it the capability to protect cell membranes inside and, which makes it far superior to other antioxidants. Many people call astaxanthin nature's most powerful antioxidant.

## Astaxanthin

Extracted from *Haematococcus pluvialis* algae in Czech Republic. Produced in an organic closed system, cultured with underground mineral water from the mountains.

Astaxanthin promotes the functioning of vitamins and minerals, and in different systems.

- Sight
- Nervous System
- Cardiovascular system and blood vessels.
- Integumentary system
- Movement system
- Immune system

### Performance comparison graph of antioxidants

