# A Guide to Micronutrients

All you need to know about vitamins and mineralsMicronutrients vs Macronutrients

Vitamins and minerals are collectively known as  Micronutrients and are smaller than the macronutrients that compose our diet.  Macronutrients like fat, carbohydrate, protein and alcohol give us energy and calories to burn.  Micronutrients have other essential functions.  The following list will provide you with a break down of these essential vitamins and minerals and the food in which they can be found .Vitamins

There are two types of vitamin: fat soluble and water soluble. Vitamins A, D, E and K are the fat soluble vitamins. They are circulated in the blood, with the  excess stored in fatty tissue until needed.  These vitamins are essential for the bodies survival and health, but due to the way they are stored, it is possible to consume too much of them.

The B vitamins and vitamin C need to dissolve in water before your body can absorb them. Your body can't store these vitamins, so they are less likely to reach toxic levels and any excess is excreted safely in your urine.  As a result, these vitamins need to be consumed regularly to maintain appropriate levels within the body.  They can be lost in the water used for cooking.  This means that by cooking food, especially boiling, we lose lots of these vitamins from the food we eat. The best way to keep as much of the water-soluble vitamins as possible is to steam or grill, rather than boil.

Vitamins are organic substances (made by plants or animals).  Your body needs larger amounts of some minerals, such as calcium, to grow and stay healthy. Other minerals like chromium, copper, iodine, iron, selenium, and zinc are called trace minerals because you only need very small amounts of them each day.

Vitamin A: Our eyes, skin and immune system all benefit from vitamin A. It exists in two forms: in meat, as retinol; and in plants, in compounds called carotenoids.  Pregnant women should avoid retinol-rich foods such as pâté and liver.
Sources: Meat, dairy products, cod liver oil, and orange coloured vegetables such as sweet potato, apricots and carrots.

Vitamins B: A group of eight vitamins (thiamin, riboflavin, niacin, vitamin B6, vitamin B12, folate, biotin and pantothenic acid) that help release energy and maintain the nervous system. Vitamin B12 is only found in animal products – so vegans may want to consider B12 supplements.
Sources: Milk and milk products, green leafy vegetables, yeast extract, whole grains and meat.

Vitamin C: Probably the best known of all vitamins – vitamin C boosts the immune system, helps with wound healing and contributes to brain function.
Sources: Fruits and vegetables such as red berries, kiwi, red and green bell peppers, tomatoes, broccoli, spinach, and juices made from guava, grapefruit, and orange

Vitamin D: An unusual vitamin, as the majority of vitamin D in the body comes not from food, but from sunlight. Vitamin D is made when UV rays hit the skin and is then used to help absorb calcium and maintain bone. This isn’t an excuse to start sun-worshipping though! It only takes around ten minutes of sun on your face, arms and hands three times a week to get all the vitamin D you need.
Sources: Eggs, fish and fortified milk and spreads.

Vitamin E: An antioxidant, protecting the body’s cells from the toxic effects of oxidation. It also has a part to play in immunity and the health of red blood cells.
Sources: Green vegetables, whole grains, eggs, nuts, seeds and plant oils.

Vitamin K: Crucial for blood clotting. It is found in some foods such as cabbage and milk, but is also made by gut bacteria. Newborns (who have a sterile gut) are given vitamin K at birth as common practice.
Sources: Cabbage and milk
Minerals

Minerals are inorganic elements – they can’t be changed or destroyed. Unlike vitamins, not all minerals are essential to life. But here are some of the most important.

Calcium: Around 99% of the calcium in the human body is in the teeth and bones, however It also has a role in muscle contraction. Weak bones are susceptible to a condition called osteoporosis, which causes bones to break easily.
Sources: Low-fat dairy products are a good source, but it can also be found in green leafy vegetables, legumes and Soy foods.

Iron: Helps carry oxygen around the body and is involved in releasing energy. Symptoms of iron-deficiency anemia include weakness and fatigue, lightheadedness, and shortness of breath.
Sources: Red meat, pork, fish and shellfish, poultry, lentils, beans and soy foods, green leafy vegetables, and raisins. Some flours, cereals, and grain products are also fortified with iron.

Sodium: Plentiful in the UK diet. In fact, most of us could do with cutting our sodium intake. Sodium is mostly consumed as sodium chloride – a compound also known as ‘salt’. It’s recommended that we aim for less than 6g of salt a day.
Sources: Salt

Zinc: Used in thousands of processes in the body.  Zinc is important for normal growth, sexual development, strong immunity, and wound healing.
Sources: Red meat, poultry, oysters and other seafood, nuts, dried beans, soy foods, milk and other dairy products, whole grains.

Potassium: Potassium helps with muscle and nervous system function. It also helps the body maintain the balance of water in the blood and body tissues.
Sources: Broccoli, potatoes (with skins), green leafy vegetables, citrus fruits, bananas, dried fruits, and legumes.

Selenium: A trace mineral that acts as an antioxidant. It is found in the soil and is passed through the food chain.
Sources: Seafood, meat, grains and Brazil nuts.

Magnesium: Magnesium helps muscles and nerves function, steadies the heart rhythm, and keeps bones strong. It also helps the body create energy and make proteins.
Sources: Whole grains and whole-grain breads, nuts and seeds, green leafy vegetables, potatoes, beans, avocados, bananas, kiwi, broccoli, shrimp, and chocolate (yes, chocolate!).Always seek advice before making significant changes to your diet.