Two Types of Minerals in Food

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Minerals are vital to the structure of all bodily tissues, including teeth, bones, blood, skin and muscles. These essential, non-organic nutrients are present in every cell and account for about 4 percent of your body weight, according to the American Dietetic Association. They also work in synergy with vitamins, enzymes and co-enzymes to regulate energy production, fluid balance and many other critical processes. Minerals belong to two categories, based on how much you need.

Major Minerals

Your body requires relatively large quantities of certain minerals – including calcium, phosphorus, magnesium, chloride, sodium and potassium – to function properly. These nutrients are known as major minerals, or macro-minerals, because you need more than 250 milligrams a day. Most major minerals actually have recommended intake levels above 1,000 milligrams per day. Calcium and phosphorus are the two primary components of bones and teeth. Calcium also promotes normal nerve and muscle function, while phosphorus helps generate energy. Magnesium gives structure to bones and helps control blood sugar levels. Chloride, sodium and potassium are electrolytes that work together to keep fluids and minerals balanced at the cellular level.

Trace Minerals

Trace minerals are just as important to your health as major minerals, but are required in much smaller quantities – fewer than 20 milligrams per day. Your body actually needs less than 1 milligram a day of most trace minerals, including chromium, copper, fluoride, iodine, molybdenum and selenium. Chromium helps regulate blood sugar levels, copper is used to produce red blood cells, fluoride helps harden tooth enamel, iodine is integral to thyroid health, molybdenum helps your body use stored iron and selenium is an important antioxidant. You need larger – but still relatively small – amounts of iron, zinc and manganese. Iron is vital to energy production, zinc supports normal growth and manganese is involved in bone formation.

Common Imbalances

Minerals occur in a wide range of foods, but certain foods – such as dried beans, peas and lentils, nuts and seeds, dried fruit, dark leafy vegetables and whole grains – tend to be particularly rich sources. Because the standard American diet emphasizes processed foods over whole foods, it's not nutritionally balanced. Most people in the United States consume far too much sodium and don't get enough potassium or calcium, according to the U.S. Department of Agriculture. Fruits,

vegetables and certain types of fish are among the best sources of potassium, while milk products and calcium-fortified foods are high in calcium. Processed foods are responsible for most of the sodium in the American diet.

Considerations

Heat doesn't degrade or destroy minerals, it just makes them more concentrated – dried apricots are four times higher in potassium and nearly seven times higher in iron than fresh apricots. Certain minerals are more readily absorbed when consumed with – or without – specific nutrients or phytochemicals. Oxalates, which occur in many plant-based foods, decrease the absorption rate of calcium, magnesium and iron. Caffeine also interferes with calcium, as does a high sodium intake. Phytates, which are prevalent in whole grains, partially inhibit the absorption of calcium, magnesium, iron and zinc. On the other hand, you can significantly boost the amount of iron you're able to absorb from plant sources by consuming them with foods that are high in vitamin C.

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Based just outside Chicago, Meg Campbell has worked in the fitness industry since 1997. She's been writing health-related articles since 2010, focusing primarily on diet and nutrition. Campbell divides her time between her hometown and Buenos Aires, Argentina.

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