

Vitamins and Minerals



REJUVENATE

These are the nutrients that your body needs in small amounts to function properly and remain healthy. We need them in our diets as our bodies cannot synthesize them fast enough to meet our daily needs. They can be water-soluble or fat-soluble, this is determined by how they are dissolved in our bodies. As for minerals, most of them are considered "essential" and are made up of micronutrients. There are two types: macromineral's (100mg/day or more), and micromineral's (less than 15mg/day).

If we are deficient in our vitamins and minerals it can cause or worsen chronic health conditions.

Vitamins

There are 9 water-soluble vitamins and 4 fat-soluble vitamins, the list of sources is just a few examples of which food these nutrients can be found in and not all deficiencies are listed.

Water-Soluble

Vitamin B1 (Thiamine) can be found in mushrooms, lettuce, asparagus, lentils, tomatoes, tuna, spinach, peas. If you are deficient in this B vitamin then some of the symptoms you may exhibit include a rapid HR, swelling, anorexia, nausea, fatigue, gastrointestinal issues.

Vitamin B2 (Riboflavin) can be found in almonds, mushrooms, spinach, mackerel, eggs, liver. If you have too much of this B vitamin it can increase the risk of your DNA strands breaking. It can also cause your urine to turn bright yellow – don't panic though!! This is harmless! If you are deficient in this some of the symptoms you can exhibit include conjunctivitis, anxiety, loss of appetite, fatigue, dermatitis, cracks and sores at the corner of the mouth.

Vitamin B3 (Niacin) can be found in mushrooms, brown rice, carrots, chicken, tuna, salmon, asparagus, green leafy veg. When obtained from food it does not cause any adverse effects in the body, however, if you take too much in supplement form it could cause itching, flushed skin and impaired glucose tolerance. High doses can cause nausea and liver toxicity. If you become deficient in this B vitamin then some of the symptoms you could exhibit include dermatitis, diarrhoea, stomatitis.

Vitamin B5 (Pantothenic Acid) can be found in broccoli, lentils, mushrooms, liver, eggs, strawberries. If taken in high doses it could cause nausea, heartburn and diarrhoea. It is highly unlikely that you would become deficient in this vitamin.

Vitamin B6 (Pyridoxine) can be found in brown rice, green leafy veg, potato, banana, peppers. If you have too much of this it can cause painful neurological symptoms. If you are deficient in this B vitamin, your symptoms could include sleeplessness, confusion, depression, anaemia.

Vitamin B9 (Folic Acid) can be found in green leafy veg, broccoli, spinach, baked beans, tomato juice. If you are

deficient in this your symptoms could include anaemia, weakness and diarrhoea.

Vitamin B12 (Cobalamin) can be found in fortified cereals, liver, trout, salmon, eggs, tuna, haddock. If you suffer with pernicious anaemia, then you are most likely to be deficient in this vitamin. Vitamin B12 must combine with intrinsic factor (a substance secreted by the stomach which enables the body to absorb vitamin B12. It is a glycoprotein.) before it's absorbed into the bloodstream.

We can store a year's worth of this vitamin – but it should still be consumed regularly. B12 is a product of bacterial fermentation, which is why it's not present in higher order plant foods.

Vitamin H (Biotin) can be found in green leafy veg, avocado, raspberries, carrots and Biotin deficiency is very rare.

Vitamin C (Ascorbic Acid) can be found in peppers, orange, grapefruit, broccoli, kiwi, strawberries. Too much vitamin C can lead to the formation of kidney stones and erosion of dental enamel. If you are deficient in this vitamin your symptoms could include lethargy, dental caries, dry hair and skin, bleeding gums, dry eyes, joint pain.

Fat-soluble

Vitamin A (Retinoids) can be found in carrots, sweet potato, pumpkin, peppers, beef, eggs, peaches. There are two different types: preformed vitamin A (found in meat, poultry, fish & dairy), and provitamin A (found in nuts, vegetables and plant-based products. The most common type of this form of vitamin A is beta-carotene).

If you consume too much preformed vitamin A then hypervitaminosis A can occur leading to nausea, fatigue loss of appetite and dry skin. If you are deficient in this vitamin, you may notice that you have difficulty seeing in dim light and possibly rough/dry skin.

Vitamin D (Calciferol, 1,25-dihydroxy vitamin D) found in sunlight, fortified foods, mushrooms, salmon, eggs. Will become toxic in the body through excessive/chronic supplementation. Will result in calcification of soft tissues, vomiting, excessive thirst, disorientation.

In children vitamin D deficiency can cause rickets, in adults it can cause softened bones or spontaneous fractures. (Cholecalciferol = vitamin D3 = animal version; ergocalciferol = vitamin D2 = plant version)

Vitamin E (Tocopherol) can be found in green leafy veg, almonds, tomatoes, olives. Deficiency of this vitamin is only thought to occur in those with severe malnutrition.

Vitamin K can be found in broccoli, carrots, peas, asparagus. If you have a vitamin K deficiency then you could suffer from anaemia or have the tendency to bleed.

MACROMINERALS

As stated earlier, macromineral's are needed in large quantities by your body, these include the following:

Calcium can be found in dairy products, green leafy veg, tofu, sardines and rhubarb. If you have too much calcium it can lead to kidney stone formation, thirst, and increased need to urinate, nausea and vomiting. If you are deficient in this mineral then you can have low bone density and possibly osteoporosis.

Phosphorus can be found in pulses, nuts, seeds, wholegrains, eggs and fish. Although its rare to have too much phosphorus, it could cause your soft tissues to calcify if you do. Being deficient in this mineral is very rare.

Potassium can be found in bananas, tomatoes, peaches, apricots, melon, raisins and mushrooms. Having too much potassium occurs when your intake of it exceeds how much your kidneys can process and eliminate. Too much can cause your extremities to tingle and could cause nausea and vomiting. Deficiency of potassium happens through protein wasting conditions. If you are taking diuretics be aware that these can also cause an excessive loss of potassium.

Magnesium can be found in nuts, seeds, pulses and avocados. If you consume too much magnesium it could result in diarrhoea (it's a known laxative!), it could also impair your kidney function too. Deficiency in this mineral is very rare.

Salt (sodium chloride) can be found in any processed foods, pulses, nuts, seeds and veg. Too much salt (more than the recommended 6g/day) can result in your body retaining fluid, nausea, and abdominal cramps. Any deficiency in salt does not happen as a result of a low intake from your diet, it typically results from increased water retention, but you may notice symptoms similar to having had too much.

MICROMINERALS

These are the minerals our bodies only need in small amounts, sometimes referred to as trace minerals, they include:

Iron can be found in almonds, green leafy veg, meat, and broccoli. If you consume too much iron through supplementation, then it can be quite serious and require a trip to A&E! Anaemia is associated with an iron deficiency. Consuming food rich in iron alongside foods rich in vitamin C can increase iron absorption in the body.

Zinc can be found in mushrooms, spinach, chicken, baked beans and sesame seeds. If you consume too much then you could have abdominal discomfort, diarrhoea and long term over consumption can end in a copper deficiency. If you are deficient in zinc then your symptoms could include a lowered immune system, poor wound healing, night blindness and hair loss.

Copper can be found in mushrooms, green leafy veg,

tempeh, soya beans, liver and barley. It is uncommon to have a deficiency in copper or to consume too much.

Chromium can be found in lettuce, onions, tomatoes, mushrooms and nuts. Having too much of this in your diet is very rare, but if you take supplemental chromium long term then you risk and increase in damage to your DNA.

If you are deficient in chromium then your symptoms may include impaired glucose tolerance.

Fluoride can be found in water, tea and fish. Having too much fluoride can cause nausea, abdominal pain and vomiting. If you are deficient in fluoride then your teeth have a higher likelihood of cavities.

Iodine can be found in eggs, strawberries, asparagus and green leafy veg. Having too much iodine is very rare. If you are deficient in iodine then you can have thyroid problems.

Selenium can be found in mushrooms, brazil nuts, walnuts and eggs. If you have too much it can cause your nails to become brittle and your gastrointestinal system to be a little off kilter. If you are deficient in selenium you could have limited glutathione activity.

Manganese can be found in berries, pineapple, green leafy veg, oats. Over consumption does not generally happen from typical diets and it is very unlikely for you to have a deficiency of this mineral.

Molybdenum can be found in pulses and wholegrains. Both overconsumption and deficiency are also very rare with this mineral.

DID YOU KNOW?? - SOME RANDOM FACTS:

Vitamin A is present in your tears!

Vitamins necessary for energy releasing processes are Vitamin B1, B2, B3, B5, B6, biotin.

Vitamins necessary for red blood cell synthesis are Vitamin B9, B6, B12.

A plant-based diet generally has a higher content of folic acid, vitamins C and E, potassium, and magnesium. It generally has a lower content of vitamins B-12, D, calcium and iron.

Vitamins and minerals play a role in normalizing bodily functions and cannot be made by the body (except for vitamin D from the sun).

Adequate intake from food and/or supplements is necessary to prevent deficiency, promote optimal health, improve nutrient partitioning and promote fat loss and muscle gain.