

The importance of Micronutrients for Good Health

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Micronutrients are known to be a major nutrient group that the human body requires. They include Vitamins –Vitamin A, Vitamin B, Vitamin C, Vitamin D, Vitamin E, and Minerals – Iron, Calcium, Magnesium, Zinc, and Selenium.

While Vitamins are essential for the immune system, blood clotting, and the consistent production of energy in the body, minerals play a vital role in maintaining bone health, growth, and balancing fluids and amongst a number of other processes. Micronutrients are also referred to as 'essential nutrients' as they form an important part of daily food, for the body to better obtain the required vitamins and minerals.

Types and Functions

As micronutrients, vitamins and minerals are broadly classified into four categories that include: water soluble vitamins, fat soluble vitamins, macro minerals, and trace minerals. All of these are absorbed by the body in similar ways and tend to interact amidst processes within.

Water soluble vitamins are known to dissolve easily, and do not remain stored in the body if consumed in excess, as they get flushed out through urination. They include – Vitamin C (ascorbic acid) and the vitamin B complex: thiamin (B1), riboflavin (B2), niacin (B3), pantothenic acid (B5), Vitamin B6, biotin (B7), folic acid (B9), Vitamin B12, and Vitamin A (in its Beta-Carotene form). While each of them has an individual part to play, their functions are all interrelated.

Conversely, fat soluble vitamins include do not dissolve in water and are known to get absorbed when consumed along with a

source of fat, after which they are stored in one's liver and fatty tissues, to contribute to functions in the future.

With respect to essential minerals, Micro minerals are required in huge amounts in order to perform their respective roles in the body. They include – calcium, phosphorus, magnesium, sodium, potassium, chloride and sulphur. Trace minerals, on the other hand, include – iron, manganese, copper, iodine, zinc, cobalt, fluoride and selenium, and are required in small amounts to efficiently perform functions in the body.

Benefits

The prime benefit of a balanced amount of micronutrients in the body is to effectively support functions within. Vitamins and Minerals are essential for combating diseases, thereby improving the immune system, as they form an integral part of almost every internal process, while also maintaining one's metabolism.

Some micronutrients also serve as antioxidants, and aid in preventing oxidative cell damage, as well as lowering the risk of Cancer and Alzheimer's, among others. A number of them also fight ageing.

As they are required in smaller amounts, micronutrients are also commonly known as "magic wands" as behind the scenes, they synthesize DNA, and significantly contribute to the production of enzymes, and other important hormones in the body, which are crucial for the effective growth and development of the human body.

Deficiencies

The deficiency of micronutrients is a global issue, as consuming lesser than their required amounts can create a host of harmful side effects in the body.

While adults are known to consume adequate vitamins and minerals daily through food and fluids, some populations, especially women, children and senior citizens are prone to a deficiency of these essential micronutrients, which include – Vitamin D, Vitamin B12, Vitamin A, Iron, and Calcium. These deficiencies are not only found in developing nations, but also developed ones.

B12 deficiency is commonly observed in people who adhere to a purely vegan diet, are taking certain medications, or suffer from diseases like atrophic gastritis, inflammatory bowel disease, and other endocrinal disorders. Early symptoms of b12 deficiency, however, are usually very mild, such as irritability, lack of concentration, tingling sensation in one's soles, and so on.

As another vital micronutrient, the consumption of iodine through salt is imperative for growing children, and a deficiency of the same can cause severe brain damage. This tends to keep them from ever attaining their intellectual and developmental potential.

There has also been an observed deficiency of iron, especially in women and children, who need it the most. This leads to intellectual and physical impairment in children, a higher risk of maternal mortality, and making a person prone to anaemia, resulting in weariness. Weak immunity is another long-term negative effect of iron deficiency. While the deficiencies of these micronutrients are not always visible or detected promptly, they can have significant adverse effects on the functioning of the body and mind, in the long haul.

Choosing foods to get enough Micronutrients

While supplements are a safe source of availing essential micronutrients, and preventing any kind of deficiency, the most effective way is through the consumption of nutritious food.

Following are some of the foods that can be included in one's daily diet to absorb required micronutrients: Vitamin A –cheese, milk, egg yolk, and orange and yellow fruits and vegetables; Vitamin B –whole grains, nuts, seeds, legumes, and leafy vegetables; Vitamin C and D–broccoli, cabbage, parsley, strawberry, and citrus fruits; Vitamin E –olive oil, wholegrain cereals, and avocado; Iron –leafy vegetables, legumes, and lean meat; Calcium – almonds, leafy vegetables, and dairy products; Magnesium – seeds, whole grains, nuts, and leafy vegetables; Zinc – chicken, fish, pumpkin and sunflower seeds;

Selenium – sunflower seeds, oats, and wheat germ.

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