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Vitamin and mineral supplements

Vitamins are organic compounds that our bodies use, in very small amounts, for a variety of metabolic processes. It is best to get vitamins and minerals from eating a variety of healthy unprocessed foods. While taking a general 'broad-spectrum' vitamin and mineral supplement 'just in case' poses little health risk and may benefit a person whose diet is 'less than perfect', taking vitamin and mineral supplements instead of eating a nutritious diet is not recommended.

People who may need vitamin supplements include pregnant and lactating women, some vegetarians, people who drink large quantities of alcohol, drug users and the elderly.

Vitamin and mineral deficiencies
Your body only needs a small amount of vitamins and minerals every day. A varied diet generally provides enough of each vitamin and mineral. However, some people may need supplements to correct deficiencies of particular vitamins or minerals.

People who may benefit from vitamin and mineral supplements include:

- Pregnant women
- Women who are breastfeeding
- People who drink alcohol above the recommended safe amount (two standard drinks per day for women and four for men)
- Cigarette smokers
- Illegal drug users
- Crash dieters or people on chronic low-calorie diets
- The elderly (especially those who are disabled or chronically ill)
- Some vegetarians
- Women with excessive bleeding during menstruation
- People with allergies to particular foods
- People with malabsorption problems such as diarrhoea, coeliac disease or pancreatitis.

Women planning a pregnancy should consider folate supplements or foods fortified with folic acid to reduce the risk of neural tube defects in the baby.

Vitamins from food are best
Research indicates that most of the vitamins you get from the food you eat are better than those contained in pills. Even though the vitamins in supplements are synthesised to the exact chemical composition of naturally occurring vitamins, they still don't seem to work as well. The main exception to this is folate. The synthetic form (in a supplement or fortified food) is actually better absorbed by the body than folate from food sources.

Research has shown that a food component that has a particular effect on the body when present in food may not have the same effect when it is isolated and taken as a supplement. This could be because the vitamins and minerals in foods are also influenced by other components of the food, not just the 'active ingredient'.

Food is a complex source of vitamins, minerals and phytochemicals, which all work together. Supplements tend to work in isolation. Phytochemicals (plant chemicals) are an important component of food. They are thought to reduce the incidence of cancer and heart disease. Supplements do not provide the benefits of phytochemicals and other components found in food. Taking vitamin supplements is no substitute for a varied diet.

Using vitamin and mineral pills like medicine

It is commonly believed that taking mega-doses of certain vitamins will act like medicine to cure or prevent certain ailments. For instance, vitamin C is suggested as a cure for the common cold, and vitamin E is widely promoted as a beneficial antioxidant to help prevent heart disease; however, despite exhaustive research, neither of these claims has been shown to be true. Large-scale studies have consistently shown little benefit, and evidence for some harm, from taking high-dose supplements to prevent or cure major chronic diseases such as heart disease and cancer.

Supplements can become poisons in high doses
Taking higher than recommended doses of some vitamins may cause problems. For example, the vitamins A, D, E and K are fat soluble, which means they are stored in the body. High doses of these vitamins can be toxic. High doses of some water soluble vitamins, like vitamin B6, can also become toxic. Large folate intakes can hide vitamin B12 deficiencies. In extreme cases – for example, where people take 100 times the recommended daily level – this can stop the work of anticonvulsant drugs, such as those used in epilepsy.

Excessive doses of some minerals may also cause problems. At just five times the recommended levels, zinc, iron, chromium and selenium can be raised to toxic levels in the body. For example:

- Large zinc intakes can reduce or prevent iron and copper absorption and can contribute to impaired immunity, heart problems and anaemia.
- Large intakes of fluoride (especially in childhood) may stain, and even weaken, the teeth.
- Very large doses of fish oil can lead to decreased blood clotting.
- Excessive calcium intakes inhibit absorption of iron and possibly other trace elements.
- Iron toxicity is also common. Even a small amount over the recommended dietary intake (RDI) can cause gastrointestinal upset, nausea and black bowel actions (poo). Severe toxicity can lead to coma and even death.
- High levels of vitamin B6 have been linked to some types of nerve damage.
- Doses of vitamin C above one gram can cause diarrhoea.
- High doses of vitamin A may cause birth defects, as well as central nervous system, liver, bone and skin disorders.

For a healthy adult, if supplements are used, they should generally be taken at levels close to the recommended level for the person's age and gender. Dietary recommendations for a range of nutrients are available from the Australian Nutrient Reference Values (NRVs) website. High-dose supplements should not be taken unless recommended under medical advice.

Stress, tiredness and vitamin pills
Vitamin supplements are commonly considered to be an antidote to stress. Feeling under pressure doesn't automatically lead to a vitamin deficiency, so taking a vitamin supplement won't necessarily make the stressful feelings go away. Popping a pill will likely not cure persistent tiredness either. If you are feeling run down, it is more likely to be due to stress, depression, insufficient sleep or other factors, rather than a deficiency of a particular vitamin.

A short-term measure
Taking vitamin supplements should be viewed as a short-term measure. The long-term use of some high-dose supplements can lead to symptoms of toxicity. If you feel that you could be lacking in certain vitamins and minerals, it may be better to look at changing your diet and lifestyle rather than reaching for supplements.

Where to get help

- Your doctor
- An accredited practising dietitian, contact the Dietitians Association of Australia
- Nutrition Australia www.nutritionaustralia.org

Things to remember

- Vitamins are organic compounds used by the body in small amounts for various metabolic processes.
- Vitamin supplements can't replace a healthy diet.
- Those who may need vitamin supplements include pregnant and lactating women, people who consume alcohol in amounts over those recommended as safe, drug users and the elderly.

This page has been produced in consultation with, and approved by:

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