

A Review on the Potential Side Effects of Multivitamins and its Uses

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Abstract:

Multivitamin are dietary supplements that offer a suitable way to safeguard the body receives essential vitamins and minerals. They are basically used to fill nutrient gaps and support overall health and well-being. This is especially required when one's diet may be lacking in certain nutrients. Multivitamins are a mix of vitamins and minerals, and their composition may vary depending on the brand's requirement and formulation. Taking multivitamin capsules can provide various health benefits, but it's vital to know their usage, potential side effects, and proper precautions.

Keywords: multivitamins, supplement, nutrigenomics, deficiency diseases, micronutrients, nutrition.

Introduction:

Vitamins are the main building blocks of the body and help you maintain good health. Some believe that multivitamin supplements can also compensate for poor eating habits and even reduce your risk of chronic diseases. We try to eat right, exercise more, and sleep better, but somehow we lack essential nutrients. We strive for a balance to increase wellness to deal with the stress, poor sleep, and dietary deficiencies that come from our body from a busy life. To fill our nutrient gaps, most of us have looked to the once-a-day multivitamin for help.

The World Health Organization has estimated that more than 2 billion people worldwide experience deficiencies in the intake of essential vitamins and minerals [1]. In the United States (US), a number of shortfall nutrients have been identified in the general population as described by the Dietary Guidelines Advisory Committee to the US Departments of Health and Human Services and Agriculture, which include vitamins A, C, D, and E and choline, calcium, magnesium, iron, and potassium [2]. Further, deficiencies in calcium, potassium, dietary fiber, and vitamin D are considered to be of public health concern based on their demonstrated role in health maintenance combined with their known low

intake levels. Indeed, consistent with earlier reports, a recent analysis of National Health and Nutrition Examination Survey (NHANES) data indicates that a substantial number of individuals have intakes of these nutrients from dietary sources that fall below the Estimated Average Requirement (EAR) [3,4,5]. These dietary shortfalls occur despite the wide use of dietary supplements [6,7,8]. However, dietary supplements are often used by individuals who already have nutrient-rich diets. In particular among older women, multiple supplements can be used, which can increase the potential for oversupplementation and excessive nutrient intake [7,9]. Multivitamin/multimineral supplements (MVMS) are the most commonly utilized supplements among US adults, although their use overall has declined in recent years, from 37–40% in 1999–2006 to 31% in 2011–2012 [6].



Benefits

The benefits of multivitamin capsules include:

- Provides essential **vitamins** and **minerals** to support overall health and well-being
- Fills nutrient gaps in the diet
- Supports immune system function
- Promotes energy production and reduces fatigue
- Assists in metabolism and nutrient absorption
- Supports the maintenance of healthy skin, hair, and nails
- Helps support cardiovascular health
- Provides antioxidants to combat oxidative stress
- Supports brain function and cognitive health
- Aids in the maintenance of healthy bones and teeth
- Supports eye health and vision
- Assists in the production of red blood cells
- Helps regulate mood and emotional well-being
- Supports healthy aging and cellular repair

- May provide specific benefits based on individual nutrient deficiencies or health conditions.

Side effects



While multivitamin capsules are generally considered safe, they can sometimes cause side effects:

- Nausea or stomach upset
- Constipation or diarrhoea
- Upset stomach or gastrointestinal discomfort
- Allergic reactions, such as rash or itching
- Interactions with certain medications
- Vitamin toxicity from excessive intake of certain vitamins, such as vitamin A or vitamin D
- The potential risk of kidney stones with high doses of certain minerals, such as calcium
- Upset the balance of certain nutrients in the body if taken in excess
- Risk of vitamin or mineral imbalances if taken without medical supervision
- Potential interference with lab test results, such as blood tests or urine tests
- Individual sensitivity or intolerance to specific ingredients in the multivitamin formulation.

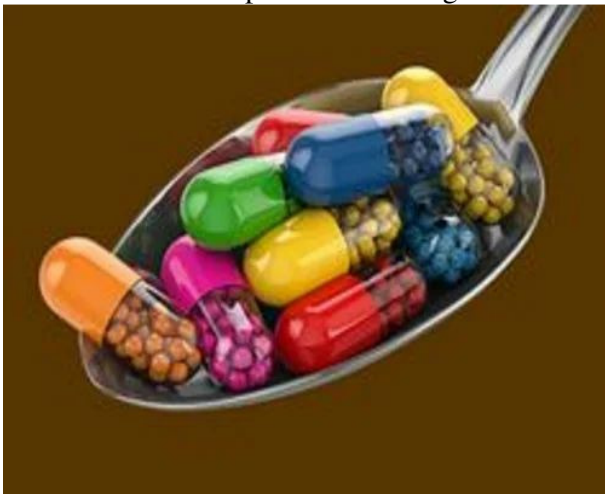
When to take multivitamin capsules?

The timing of taking multivitamin capsules can vary, but they are often taken once daily. It's advisable to take them at the same time each day to establish a routine and avoid forgetting a dose.

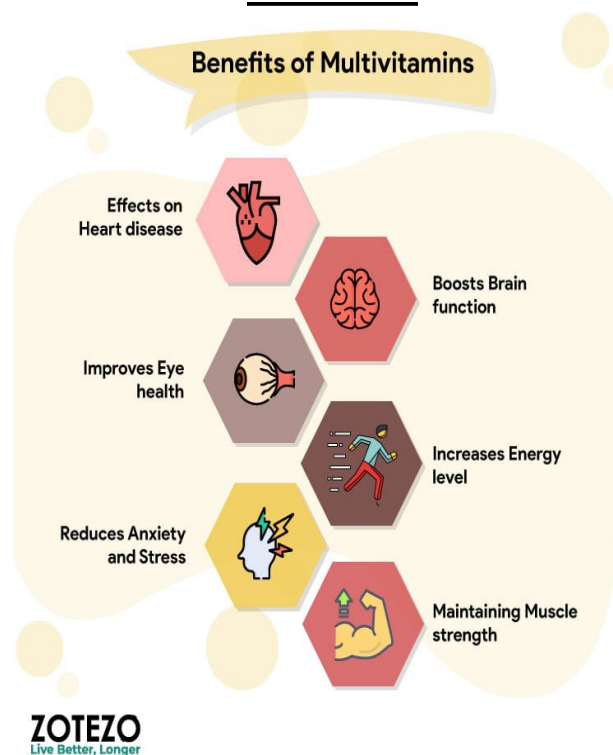
How many multivitamin capsules can we take in a day?

The number of multivitamin capsules to take in a day depends on the specific product and its recommended dosage. It's crucial to follow the

instructions provided on the packaging or consult a healthcare professional for guidance.



Health Benefits of Multivitamin



1. Increases Energy Levels

When our body doesn't meet the nutritional criteria, we may feel weak and lethargic. A regular course of multivitamin capsules as per your doctor's advice can help you regain your energy. Taking multivitamins and keeping a healthy lifestyle can keep you energetic and fit.

2. Boosts the Immune System

The multivitamin tablet uses include strengthening the immune system if it contains vitamin C, vitamin E and vitamin D. Vitamin C and vitamin E are antioxidants that help to reduce allergy symptoms.

3. Keeps Heart Healthy

The heart is a vital organ of the body and keeping it healthy is necessary. Various studies suggest that high-quality multivitamin tablets use may reduce cardiovascular diseases. Vitamins B1, B2, B6, K1, Niacin, and magnesium all play a role in cardiovascular health.

4. Supports Eye Health

Vitamin A is also known as an eye vitamin because of its benefits. It helps to improve your eyesight and reduce age-related macular degeneration that may cause permanent eye damage. One study suggests vitamins, minerals, and antioxidants may slow down the progression of macular degeneration.

5. Maintains Muscle Strength

Free radicals in the body are dangerous as they are mainly responsible for muscle ageing-related problems. These free radicals can be destroyed by antioxidants, which are present in multivitamin capsules. Taking multivitamins can help keep these damaging free radicals in check.

6. Reduces Cancer Risk

Many results suggested that taking a multivitamin daily can reduce the risk of getting all types of cancer. As per your doctor's advice, you can take multivitamins accordingly.

7. Improves Brain Function

Some vitamins and fatty acids are slow or prevent memory loss. Vitamins like vitamin B12, herbal supplements such as Ginkgo Biloba, and omega-3 fatty acids help restore brain function.

8. Reduces Stress & Depression

The multivitamin tablets benefits include the potential to significantly reduce stress and depression symptoms due to the vitamins and minerals included in them. Vitamin B stimulates your nervous system to produce stress hormones to reduce stress. Acquiring enough vitamins and minerals improves the brain functions responsible for your mood.

9. Beneficial for Skin

Vitamins and minerals are always best for skin health. They help keep your skin healthy and shiny by providing essential vitamins such as vitamin E and vitamin C. They help to retain the natural oil inside your skin to prevent dryness of the skin. Antioxidants present in it also play an important role.

10. Good for Healthy Hair

Hair requires the most care, especially in winters. Vitamin B, vitamin C, vitamin E, and some minerals are essential for the healthy growth of hair. They work excellently in hair fall problems.



Warnings

Do not take multivitamins if you are hypersensitive to any of its ingredients

- Do not take multivitamins if you have any of the following conditions:
 - Hemochromatosis, a condition in which excess iron builds up in the body

- Wilson's disease, a rare inherited disorder that causes copper buildup; avoid products containing copper
- Pre-existing hypervitaminosis, a condition with abnormally high vitamin levels
 - Do not administer adult multivitamin preparations to children; may contain iron at amounts not suitable for children and can cause severe iron toxicity
 - Use with caution in patients with severe impairment of kidney or liver function
 - Recommended daily allowance (RDA) values are not required amounts but recommended daily allowances of certain nutrients
 - Some products may contain phenylalanine, an amino acid; avoid these products if you have phenylketonuria, a condition that causes excess phenylalanine buildup

Conclusion

In conclusion, multivitamin capsules can be a beneficial addition to one's daily routine, providing essential nutrients to support overall health and well-being. They can fill nutritional gaps, support immune function, boost energy levels, and assist in maintaining healthy skin, hair, and nails. However, it's important to follow the recommended dosage, be aware of potential side effects, and consult a healthcare professional when necessary. Multivitamins should not replace a balanced diet, but when used appropriately, they can complement it and contribute to a healthy lifestyle. Remember, personalized advice from a healthcare professional is always valuable to ensure the most suitable use of multivitamin capsules for your individual needs.

Which Vitamins Are Most Important?

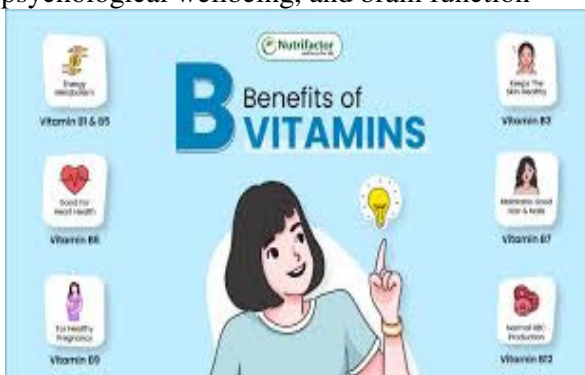
There are more than 50 nutrients needed for thousands of metabolic processes and the maintenance of good health. Here are a few of the key players:

Vitamin A — Good for vision, healthy skin, and proper growth, and development



Also known as retinol, vitamin A is a powerful antioxidant that maintains good skin, strengthens the immune system, and supports vision, particularly in dim light. Good food sources include carrots, sweet potato, and melons.

Vitamin B — Good for energy levels, psychological wellbeing, and brain function



The eight B vitamins help the body turn food into fuel, boost energy levels and promote healthy brain function, concentration and memory. They may also reduce feelings of stress, anxiety and low mood. Good food sources include whole grains, lean meats, and eggs.

Vitamin C — Good for antioxidant protection, skin health, and strengthening blood vessel walls



Vitamin C maintains healthy connective tissues in the joints and skin and may help to

accelerate wound healing and reduce bruising. It also helps to ward off colds. Good food sources include red peppers, kiwis, strawberries, and citrus fruits.

Vitamin D — Good for healthy bones, immune function, and mood



Vitamin D regulates the amount of calcium and phosphorous in the body, and so plays an important role in maintaining normal bone density. It is also essential for the proper functioning of the nervous system and immune system. Nearly two-thirds of the UK population are severely lacking in vitamin D. Most of our vitamin D is sourced from the sun, while certain foods may contain lesser amounts, such as eggs, oily fish, and mushrooms. Vitamin D supplements are particularly popular in the UK during the winter months.

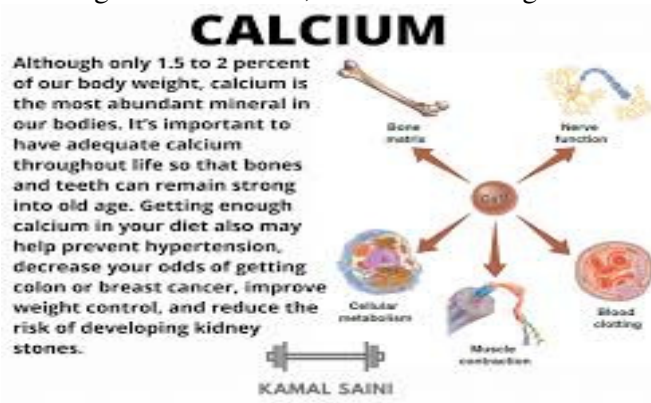
Vitamin E — Good for antioxidant protection, skin health, and circulation



Vitamin E strengthens cell membranes and protects cells against oxidative damage from free radicals. It plays an important role in the maintenance of healthy vision, skin, and immune function. Good food sources include almonds and sunflower seeds.

Folic acid — Good for cell renewal, heart function, and prevention of neural tube birth defect. Folic acid, also known as vitamin B9, is crucial for the production of healthy cells and hemoglobin. It also helps to maintain normal

homocysteine levels, which supports heart and cognitive function. Folic acid is so important that it is often fortified in cereals and flours. Other food sources include dark leafy greens, asparagus, and broccoli. Calcium — Good for strong teeth and bones, and blood clotting



Healthy calcium levels are essential for the development and maintenance of bones and teeth. It also regulates muscle contractions (including the heartbeat), blood pressure and hormone secretion. The best foods sources are dairy products such as milk, yoghurt, and cheese.

Iron — Good for maintaining healthy blood and muscle function

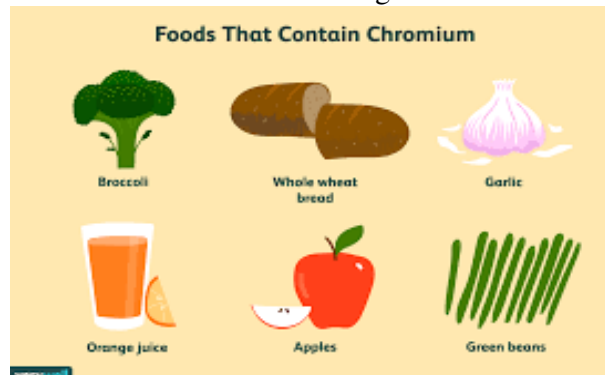


Iron is needed to produce healthy red blood cells and hemoglobin and helps to deliver oxygen and nutrients to all cells in the body. It also supports the production of neurotransmitters, hormones and collagen. It is estimated that 32% of women of childbearing age (19-64) don't consume enough iron. Good food sources include shellfish, beans, and lentils.

Zinc — Good for immunity, fertility, and skin. Zinc is an essential building block for enzymes, proteins and cells. It plays a vital role in the maintenance of a strong immune system and

supports skin health and wound healing. Zinc is also important for proper taste and smell. Good food sources include oysters, spinach, and dark chocolate.

Chromium — Good for blood glucose levels



Chromium helps to determine the amount of energy we release from food and enhances insulin sensitivity. Because of this, it may be beneficial for those with diabetes. Good food sources of chromium include whole grains, broccoli, and oats.

Before taking this medicine

Many vitamins can cause serious or life-threatening side effects if taken in large doses. Do not take more of this medicine than directed on the label or prescribed by your doctor. Before you use multivitamins, tell your doctor about all your medical conditions and allergies. Ask a doctor before using this medicine if you are pregnant or breastfeeding. Your dose needs may be different during pregnancy. Some vitamins and minerals can harm an unborn baby if taken in large doses. You may need to use a prenatal vitamin specially formulated for pregnant women.

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