

Adding Up Vitamin A in the Diet

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What do sweet potatoes and beef liver have in common? They are both excellent sources of vitamin A. We need this vitamin for vision, immunity, growth, development, and helping our heart and lungs to work well.

What is Vitamin A?

Vitamin A is a fat-soluble vitamin, which means that fat must be in food and drinks for our body to absorb it. Vitamins do not provide our body energy. Instead, they support specific bodily functions. The term “vitamin A” is used to group similar chemicals known as “retinoids.” Two broad groups of retinoids are **preformed vitamin A** and **provitamin A**.

- **Preformed vitamin A** is in foods that come from animals, like eggs, organ meats, fish, and dairy items. These are often called retinols and retinyl esters.
- **Provitamin A** comes from plants and must be turned into the preformed version of vitamin A so our bodies can use it. A type of provitamin A is beta-carotene. Types of provitamin A give some fruits and vegetables their orange and red colors.

Benefits of Vitamin A

Vitamin A supports the health and function of different tissues and organs in the body:

- Strengthens and regulates the immune system

- Supports normal growth and maintenance of cells and tissues
- Helps our eyes adjust to changes in light
- Helps us see in low light and at night
- Supports skin health
- Slows down cell damage by working as an antioxidant
- Supports reproduction and fetal growth

Researchers are exploring the benefits of vitamin A for cancer prevention but are not quite sure of its role. Different retinoids are also said to reduce the risk of age-related macular degeneration, a type of vision loss, but more research is needed to understand if any forms of vitamin A may be helpful.

Recommendations

The amount of vitamin A recommended each day is determined by age and gender. It also may change during certain life stages such as pregnancy and lactation. Generally, adult females are encouraged to consume 700 micrograms of retinol activity equivalents (RAEs), while recommendations for adult males are 900 micrograms of RAEs each day. RAEs are the type of unit used to measure vitamin A to reflect the different forms of the vitamin that are found in foods. The need for vitamin A increases slightly with pregnancy to 750 to 770 micrograms RAE and is the highest for women who are breastfeeding at 1,200 to 1,300 micrograms RAE each day.

Sources of Vitamin A in the Diet

The body cannot make vitamin A by itself, which is why the body must get vitamin A in various forms from the foods we eat. Luckily, common foods are great sources of vitamin A, ranging from animal foods to brightly colored vegetables. Some foods are fortified with vitamin A, like milk and ready-to-eat cereals, which means the vitamin is added during food processing. If a packaged food has vitamin A, the manufacturer will list the amount on the Nutrition Facts label. See Table 1 below for some foods that serve as a source of vitamin A in the diet.

Tips to Increase Vitamin A Intake

- Make homemade trail mix with dried apricots, pistachios, and unsweetened dry breakfast cereal fortified with vitamin A.
- Use sweet potatoes when making mashed or baked potatoes.
- Add a different red or orange fruit or vegetable to your grocery list each week. Consider frozen, fresh, and canned options.
- Enjoy yogurt and an orange fruit such as diced cantaloupe or mango as a snack.
- Blend carrots or red bell peppers into a pasta sauce.
- Add spinach or another dark leafy green into soups, stews, and casseroles.
- Look for packaged foods with vitamin A listed on the Nutrition Facts label. Keep in mind many foods that have vitamin A, such as fresh fruits and vegetables, do not have a Nutrition Facts label.

Vitamin A Levels

Vitamin A deficiency is rare in the United States, because several foods are good sources and many foods have been fortified with the vitamin. Our bodies can even store vitamin A in small amounts in the liver and fat tissue. To determine vitamin A levels, health-care providers can order a blood test. In the case of a deficiency,

Table 1. Food Sources of Vitamin A.

Food	Micrograms (mcg) of RAEs per serving	Percent DV*
Pan-fried beef liver, 3 ounces	6,582	731%
Medium baked sweet potato, with skin	1,403	156%
½ cup cooked spinach	573	64%
½ cup raw carrots	459	51%
1 cup fortified cow's milk	149	17%
½ cup cantaloupe	135	15%
½ cup red bell pepper	117	13%
½ cup fortified ready-to-eat cereal	90	10%
1 large, hard-boiled egg	75	8%
1 cup black-eyed peas	66	7%

Abbreviations: RAE, retinol activity equivalents; DV, daily value

*Percent DV based on 900 micrograms

Source: National Institutes of Health, Office of Dietary Supplements

they may suggest a vitamin A supplement in addition to getting more from foods.

Too much vitamin A can be a concern because of the potential buildup in body tissues, if consuming high amounts each day from supplements and food sources. It is difficult to take in too much vitamin A from foods alone, but prescriptions or dietary supplements can lead to high amounts in the body.

Retinoids are sometimes prescribed for certain health or skin conditions. A common example is the prescribed medication isotretinoin used for acne. This type of medication often provides much higher amounts than the daily recommendations for the vitamin and can quickly increase the amount of vitamin A in the body. This even includes topical prescriptions applied on the skin. In that case, be sure you are not taking in too much vitamin A each day. Too much preformed vitamin A can be toxic and cause headaches, depression, blurred vision, nausea, coordination problems, and even birth defects during pregnancy. Individuals concerned about vitamin A levels should be aware of allergies, pregnancy, and drug interactions and should discuss concerns with their health-care provider.

Summary

Vitamin A has an important function in supporting proper eyesight. It also supports our immune system and helps our lungs and heart to function properly. A deficiency of this vitamin is typically not a concern in the United States for healthy people because of the availability of it in our food sources.

Including a variety of vitamin A sources within an eating pattern can supply the vitamin and support overall health. If you are concerned about vitamin A levels, talk to your health-care team to discuss options before opting for a supplement. There are other factors that may play a role in your vitamin levels including what prescription medications you take, how much vitamin A is in your diet, and if you take other dietary supplements, including multivitamins.

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