VitaminA\_consumer

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Vitamin A and Carotenoids  
  
This is a general overview. For more in-depth information, see our health professional fact sheet.  
  
What are vitamin A and carotenoids and what do they do?  
Vitamin A is a fat-soluble vitamin that is naturally present in many foods. Vitamin A is important for normal vision, the immune system, reproduction, and growth and development. Vitamin A also helps your heart, lungs, and other organs work properly. Carotenoids are pigments that give yellow, orange, and red fruits and vegetables their color. Your body is able to convert some carotenoids into vitamin A.  
  
There are two different sources for vitamin A:  
  
Preformed vitamin A is found in fish, organ meats (such as liver), dairy products, and eggs.  
Provitamin A carotenoids are turned into vitamin A by your body. They are found in fruits, vegetables, and other plant-based products. The most common provitamin A carotenoid in foods and dietary supplements is beta-carotene.  
How much vitamin A do I need?  
The amount of vitamin A you need depends on your age and sex. Average daily recommended amounts of preformed vitamin A and provitamin A carotenoids are listed below in micrograms (mcg) of retinol activity equivalents (RAE).  
  
Life Stage Recommended Amount  
Birth to 6 months 400 mcg RAE  
Infants 7 12 months 500 mcg RAE  
Children 1 3 years 300 mcg RAE  
Children 4 8 years 400 mcg RAE  
Children 9 13 years 600 mcg RAE  
Teen males 14 18 years 900 mcg RAE  
Teen females 14 18 years 700 mcg RAE  
Adult males 900 mcg RAE  
Adult females 700 mcg RAE  
Pregnant teens 750 mcg RAE  
Pregnant adults 770 mcg RAE  
Breastfeeding teens 1,200 mcg RAE  
Breastfeeding adults 1,300 mcg RAE  
What foods provide vitamin A?  
Vitamin A is found naturally in many foods and is added to some foods, such as milk and cereal. You can get recommended amounts of vitamin A by eating a variety of foods, including the following:  
  
Some types of fish, such as herring and salmon  
Beef liver and other organ meats (which are also high in cholesterol, so limit the amount you eat)  
Green leafy vegetables and other green, orange, and yellow vegetables such as spinach, sweet potatoes, carrots, broccoli, and winter squash  
Fruits, including cantaloupe, mangos, and apricots  
Dairy products, such as milk and cheese  
Fortified breakfast cereals  
Eggs  
What kinds of vitamin A dietary supplements are available?  
Vitamin A is available in dietary supplements, usually in the form of retinyl acetate or retinyl palmitate (preformed vitamin A), beta-carotene (provitamin A), or a combination of preformed and provitamin A. Most multivitamin/mineral supplements contain vitamin A. Dietary supplements that contain only vitamin A are also available.  
  
Am I getting enough vitamin A?  
Vitamin A deficiency is rare in the United States because most people get enough vitamin A from the foods they eat. However, vitamin A deficiency is common in many developing countries, especially in young children.  
  
Certain groups of people are more likely than others to have trouble getting enough vitamin A:  
  
Premature infants  
Infants, young children, pregnant people, and breastfeeding people in developing countries  
People with cystic fibrosis  
People with Crohn s disease, ulcerative colitis, or celiac disease  
What happens if I don t get enough vitamin A?  
The most common sign of vitamin A deficiency is an eye condition called xerophthalmia. Xerophthalmia is the inability to see in low light, and it can lead to blindness if it isn t treated.  
  
A long-term deficiency of vitamin A can also lead to a higher risk of respiratory diseases (such as pneumonia) and infections (such as measles and diarrhea). It can also cause anemia (a condition in which the red blood cells do not supply enough oxygen to the body). In severe cases, not getting enough vitamin A can increase your chances of dying.  
  
What are some effects of vitamin A on health?  
Scientists are studying vitamin A to understand how it affects health. Here are some examples of what this research has shown.  
  
Cancer  
People who eat a lot of foods containing vitamin A or beta-carotene might have a lower risk of certain kinds of cancer. However, studies do not show that vitamin A or beta-carotene supplements help prevent cancer or lower the chances of dying of cancer. In fact, some studies find that in people who smoke or used to smoke, high doses of beta-carotene supplements can increase the risk of lung cancer and death.  
  
Age-related macular degeneration  
Age-related macular degeneration (AMD) is the loss of central vision as people age. It s the most common cause of vision loss in older people. Studies show that a supplement containing vitamins C and E, zinc, and copper with or without beta-carotene helps slow down the rate of vision loss in people with AMD who are at high risk of developing advanced AMD. The same supplement, containing lutein and zeaxanthin instead of beta-carotene, reduces the risk of progression to advanced AMD even more and eliminates the increased risk of lung cancer from high doses of beta-carotene.  
  
Measles  
In developing countries where vitamin A deficiency is common, children with measles are more likely to have severe symptoms and may die from the disease. In these children, taking supplements with high doses of vitamin A might help prevent new cases of measles and might lower their risk of dying of measles.  
  
Can vitamin A be harmful?  
Yes, high intakes of some forms of vitamin A can be harmful.  
  
Getting too much preformed vitamin A (usually from supplements or certain medicines) can cause severe headache, blurred vision, nausea, dizziness, muscle aches, and problems with coordination. In severe cases, getting too much preformed vitamin A can even lead to coma and death.  
  
If you take too much preformed vitamin A while pregnant, it can cause birth defects in your baby, including abnormal eyes, skull, lungs, and heart. If you are or might be pregnant or breastfeeding, you should not take high-dose supplements of preformed vitamin A.  
  
High intakes of beta-carotene do not cause the same problems as preformed vitamin A. Consuming high amounts of beta-carotene can turn the skin yellow-orange, but this condition is harmless and goes away when you eat less of it. However, several studies have shown that smokers, former smokers, and people exposed to asbestos who take high-dose beta-carotene supplements have a higher risk of lung cancer and death.  
  
The daily upper limits for preformed vitamin A include intakes from all sources food, beverages, and supplements and are listed below. These levels do not apply to people who are taking vitamin A for medical reasons under the care of a doctor. There are no upper limits for beta-carotene and other forms of provitamin A.  
  
Ages Upper Limit  
Birth to 12 months 600 mcg  
Children 1 3 years 600 mcg  
Children 4 8 years 900 mcg  
Children 9 13 years 1,700 mcg  
Teens 14 18 years 2,800 mcg  
Adults 19 years and older 3,000 mcg  
Does vitamin A interact with medications or other dietary supplements?  
Yes, vitamin A supplements can interact or interfere with medicines you take. Here are several examples:  
  
Orlistat (Alli, Xenical), a weight-loss drug, can decrease the absorption of vitamin A. This can cause low blood levels of vitamin A in some people.  
Acitretin (Soriatane), used to treat psoriasis, and bexarotene (Targretin), used to treat the skin effects of T-cell lymphoma, are made from vitamin A. Taking these medicines together with a vitamin A supplement could cause dangerously high levels of vitamin A in the blood.  
Tell your doctor, pharmacist, and other health care providers about any dietary supplements and medicines you take. They can tell you if those dietary supplements might interact or interfere with your prescription or over-the-counter medicines or if the medicines might interfere with how your body absorbs, uses, or breaks down nutrients.  
  
Vitamin A and healthful eating  
People should get most of their nutrients from food and beverages, according to the federal government s Dietary Guidelines for Americans. Foods contain vitamins, minerals, dietary fiber, and other components that benefit health. In some cases, fortified foods and dietary supplements are useful when it is not possible to meet needs for one or more nutrients (for example, during specific life stages such as pregnancy). For more information about building a healthy dietary pattern, see the Dietary Guidelines for Americansexternal link disclaimer and the U.S. Department of Agriculture s (USDA s) MyPlateexternal link disclaimer.  
  
Where can I find out more about vitamin A?  
For more information on vitamin A  
Office of Dietary Supplements (ODS) Health Professional Fact Sheet on Vitamin A  
Vitamin Aexternal link disclaimer, MedlinePlus  
For more information on food sources of vitamin A  
USDA s FoodData Centralexternal link disclaimer  
Nutrient List for vitamin A (listed by food or by vitamin A content), USDA  
Nutrient List for beta-carotene (listed by food or by beta-carotene content), USDA  
For more advice on choosing dietary supplements  
ODS Frequently Asked Questions: Where can I purchase dietary supplements?  
For information about building a healthy dietary pattern  
MyPlateexternal link disclaimer  
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