What is Vitamin A?

Vitamin A (also known as retinol) is a fat soluble vitamin which was first identified as a vitamin necessary for growth. It was not chemically identified until 1930 by two researchers, McCallum and Davis, at the University of Wisconsin, who associated Vitamin A deficiency with poor growth and immune function. Vitamin A in its pure form is a yellow crystal.

Carotenes such as lycopene, alpha and beta carotene, lutein and zeaxanthin are fat soluble pigments occurring naturally in plants. They can be converted into Vitamin A in the body. Carotenes occur in a widespread group of pigments found in plants. Beta carotene especially plays a role in protecting plants from the free radicals produced when they are exposed to sunlight. Without it the plants would die. Carotene cannot be used directly by the body. In order to be available for use in the body, it must to be converted to retinol in the presence of fat and bile. This conversion depends on nutrient status: the amounts of protein, thyroid hormones, zinc, Vitamin E and Vitamin C in the body.

The liver stores 90% of the body’s Vitamin A reserves. The rest is in fat storage cells where it is bound to fatty acid molecules. We do not need to consume Vitamin A every day but deficiencies are common in individuals with low protein and low fat diets since reduced dietary fat impairs the liver’s storage capacity.

Why is Vitamin A important and what does it do in the body?

Vitamin A performs many purposes in the body including maintenance of good eye health. Poor adaptation to changes in light and diminished night vision may be symptoms of Vitamin A deficiency. Vitamin A is also essential for growth and development and the synthesis of glycoproteins. These are very important for cellular communication and vital for a healthy immune system. Vitamin A also maintains the secretions of our “wet membranes” including those in our gut, lungs, nasal passage and sinuses. It stimulates our immune cells and increases the antibody response against any "bad guys,” like bacteria and viruses that invade us. It has demonstrated significant antiviral activity, especially against measles.

Vitamin A, especially in its form beta carotene, helps in the process of reproduction and the maintenance of the corpus luteum, a gland which produces progesterone (a hormone which is important for menstrual function and pregnancy). Deficiencies in Vitamin A are consequently associated with infertility and irregular menstrual cycles.

Vitamin A, especially the carotenes, have high antioxidant activity. This means that they protect our cells from free radical activity (unstable molecules that cause damage to cells) and may help to prevent premature aging. It has been shown that even
though more beta carotene is converted to vitamin A, alpha carotene has higher antioxidant powers. Lycopene is one of the most powerful antioxidants available. It has double the antioxidant capacity of beta carotene.

Vitamin A is also helps to prevent skin disorders including the overproduction of keratin (hyperkeratosis) which can block pores and produce acne, psoriasis and other skin conditions. In treating skin conditions Vitamin A works well with Vitamin E and Zinc.

Carotenoids also play an important part in the prevention of cancer providing as they do antioxidant support.

What amount of Vitamin A do you need each day?

Vitamin A is a fat soluble vitamin that is stored mainly in the liver and is utilized when the body requires it.

*The DRI (Daily Recommended Intake) /RDA (Recommended Daily Allowance) of dietary vitamin A are listed below:*

Please Note: By definition, the DRI/RDA recommendations apply only to 98% of healthy individuals and are not sufficient for those with higher nutrient requirements based upon their biochemical individuality, genetics, health status, deficiencies, lifestyle, and toxic exposures.

Daily dietary intakes for Vitamin A are:

**Pediatric**
- Infants birth - 6 months: 400 mcg
- Infants 7 - 12 months: 500 mcg
- Children 1 - 3 years: 300 mcg
- Children 4 - 8 years: 400 mcg
- Children 9 - 13 years: 600 mcg
- Boys 14 - 18 years: 900 mcg
- Girls 14 - 18 years: 700 mcg

**Adult**
- Men 19 years and older: 900 mcg
- Women 19 years and older: 700 mcg
- Pregnant women 14 - 18 years: 750 mcg
- Pregnant women 19 years and older: 770 mcg
- Breastfeeding women 14 - 18 years: 1,200 mcg
- Breastfeeding women 19 years and older: 1,300 mcg
What are possible Vitamin A (Retinol or Carotene) deficiency conditions and symptoms?

- Mouth Ulcers
- Frequent colds or infections especially of the respiratory tract
- Low sperm count
- Red pimples on the back of upper arms
- Xerophthalmia (blindness in children)
- Anorexia
- Hypothyroidism (underactive thyroid gland)
- Growth retardation
- Microcytic anemia (anemia manifest as small red blood cells)
- Night blindness and/or sensitivity to bright lights
- Diarrhea
- Rough or dry skin
- Acne
- Eczema
- Ridged nails
- Dry Hair
- Dry eyes or mucous membranes such as nasal passage, sinuses, vagina
- Poor sense of smell, taste and hearing
- Cleft palate

What are possible symptoms of excess Vitamin A?

- Vitamin A (as retinol) can be toxic if consumed in high dosages.
- Women who are pregnant should not consume more that 1,500 mcg or 5000 ius of Vitamin A as retinol.
- Side effects due to mega dose toxicity may include birth defects, bone loss, Vitamin D deficiency and double vision (diplopia).
- Mega doses in children (30,000 mcg or 100,000 ius to 90,000 mcg or 300,000 ius) as a single large dose have induced raised intracranial pressure with vomiting, nausea, headache, joint pain but no lasting effects were found.
- Avoid in retinal receptor cancer
- Vitamin A toxicity may occur in adults who take, on a daily basis, more than 50,000 ius per day. Beta carotene has no reported toxic effects.

What prevents Vitamin A absorption and storage?

- Low fat low protein diets affects absorption
- Diarrhea
- Alcohol
- Liver, pancreas and kidney disease
- Cystic fibrosis
- Parasitic infestation

The use of the certain drugs can cause depletion of Vitamin A:

- Oral contraceptives
- Anti-Hyperlipidemia drugs - bile acid sequestrants: Cholestyramine (Questran) and Colestipol (Colestid)
- Weight management drugs: Orlistat (Xenical) a- decrease exocrine output and reduces fat absorption

What tests can be used to assess Vitamin A or Retinol levels?

- Vitamin A in serum <30ug/dl indicate deficiency
- Beta carotene in serum
TOP 10 VITAMIN A (RETINOL OR BETA CAROTENE) RICH FOODS ARE:

1. Liver pâté
   22,600mcg or 75,333 ius/100g (retinol)

2. Sweet Potato
   5,765mcg or 19,218 ius/100g (beta Carotene)

3. Carrots
   5,011mcg or 16,706 ius/100g (beta Carotene)

4. Kale
   4,612mcg or 15,376 ius/100g (beta Carotene)

5. Turnip Greens
   3,669mcg or 12,230 ius/100g

6. Butternut squash
   3,346mcg or 11,155 ius/100g (beta Carotene)

7. Dried Parsley
   3,055mcg or 10,184 ius/100g

8. Red and Green leaf lettuce
   2,247mcg or 7,492 ius/100g

9. Dried apricots
   1,081mcg or 3,604 ius/100g

10. Cantaloupe melon
    1,014mcg or 3,382 ius/100g

What are the best Vitamin A products?
Fish oils such as Cod Liver oil with Cis form of retinol. Micellized Vitamin A.

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All the statements, including product labels, supporting literature and/or product manufacturers websites have not been evaluated by FDA. These products are not intended to diagnose, treat, cure or prevent any disease.
What are the very best Vitamin A products to buy?

**Klaire Micellized Vit A**
Highly concentrated liquid micelle form. Vitamin A is an important nutrient for vision, immune system function, bone and cartilage development, and the maintenance and repair of epithelial tissue. This formulation combines …

**Klaire VitaSpectrum**
Powdered multiple vitamin/mineral supplement for children with Autism Spectrum Disorders. Natural berry-pomegranate flavor. This comprehensive multiple vitamin/mineral supplement contains 28 highly bioavailable …

**ProThera MultiThera 3**
Iron- and copper-free multiple formula. Both iron and copper have been eliminated from this version of MultiThera® to address the needs of patients who may have elevated tissue identical in all other respects to MultiThera® 1 …

**Pure Caps Mens Pure Pack**
Regardless of your walk of life, all men need to ensure that they get enough of an array of important nutrients. However, who wants to spend their time picking out supplements for a daily …

**Pure Caps Womens Pure Pack**
Women's Supplement to Support Bone and Heart Health. Now With Metafolin® L-5-MTHF. Sizes Available 30 packets. Each packet contains 6 different supplements, including …