

# Vitamins A and D

## FAT SOLUBLE VITAMINS FOR EYES, BONES AND IMMUNE POWER

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### VITAMIN A

Vitamin A is also called retinol. We get it from animal foods such as unskimmed milk. Produce has beta carotene and other carotinoids that the body can turn into vitamin A. It is measured in IU (international units). 3.33 IU are equivalent to 1 microgram of vitamin A, which in turn is equivalent to 6 micrograms of beta carotene.

Vitamin A is important for night vision, healthy mucous membranes, is involved in the production of sex hormones, works against proliferating growth in cancer cells and increases the production of killer cells, antibodies, phagocytizing cells (cells that eat up pathogens and junk in your body) and other immune cells.

Lack of vitamin A leads, amongst other symptoms, to loss of night vision, low iron, proneness to infection, higher risk of certain cancers and atherosclerotic changes, dry and itching skin and fatigue.

The recommended daily average for vitamin A is 3,000 IU or about 1,000 micrograms per day. The upper safe limit for continuous consumption is at 18,000 IU daily. Linus Pauling has used up to 40,000 IU daily for therapeutic purposes for a limited amount of time.

Vitamin A can be found especially in the following foods: beef liver, cod liver oil, eggs, cheddar cheese, butter, full cream milk. Beta carotene and carotinoids can be found in high amounts in: sweet potatoes, carrots, cantaloupes, spinach, apricots and peaches.

Since vitamin A is fat soluble, it can be over dosed. Toxic effects are usually only seen when 50,000 IU or more are taken daily over a prolonged period of time. Higher dosages of vitamin C can compensate for the toxic effects of vitamin A. Beta carotene, taken in very high dosages (for example more than 100mg daily), can lead to a temporary yellow hue of the skin. It is impossible, however, to cause a hypervitaminosis A with beta carotene, as the body turns only as much beta carotene into vitamin A as it needs. Signs of hypervitaminosis A are hypercalcemia (high calcium level in blood), hair loss, head aches and blurred vision, vertigo, vomiting and diarrhea.

### VITAMIN D

Vitamin D is called cholecalciferol. Our skin can make it. Apart from that we get it mostly from animal food sources. Vegetarians especially must watch out not to become deficient in vitamin D. It is measured in IU (international units). 40 IU are equivalent to 1 micrograms of vitamin D.

Vitamin D plays a vital role in calcium metabolism. It regulates calcium absorption in the intestines and prevents excretion of too much calcium. It also supports the activation and reaction of white blood cells in the case of infection. Vitamin D prevents uncontrolled growth of abnormal cells and supports the growth of normal cells.

Lack of vitamin D slows down child development and growth, muscles and bones are under developed. It can lead to irritability and nervousness, low immunity with recurring infections, osteoporosis, tinnitus and hearing loss, muscle weakness and increased risk for certain cancers.

The recommended daily average for vitamin D is 5-15 micrograms, or 200-600 IU daily. The upper safe limit is 2,000 IU daily. Pauling used up to 800 IU daily, other orthomolecular doctors up to 1,600 IU daily for a limited time.

Vitamin D can be found in high quantities in salmon, tuna fish, egg, calf's liver, cheese and butter.

Vitamin D, being fat soluble, can be over dosed. **This is the one vitamin you must be careful with.** Dosages of over 40,000 IU per day can lead to calcification of the kidneys over time. Signs of hypervitaminosis D are hypercalcemia, vertigo, muscle weakness. If you combine different supplements, make sure not to exceed the upper safe limit on a continuous basis.