



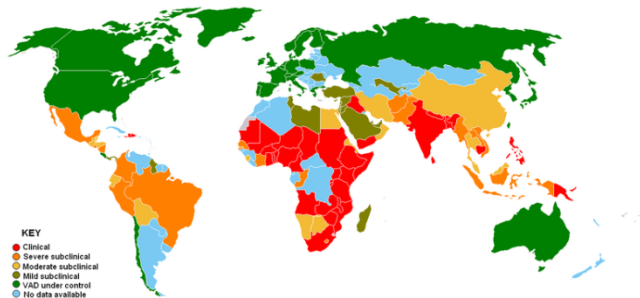
# Vitamin A



Vitamin A is a fat soluble vitamin that is necessary for fertility, immune system, regulation of gene, mucous membranes and growth. Severe lack of vitamin A can lead to infection, night blindness, blindness and ultimately death. Vitamin A is deposited in liver and fat tissue for later use. The vitamin is stored relatively long in the body. Vitamin A functions at two levels in the body. The first is in the visual cycle in the retina of the eye, the second is in all body tissues where it systematically maintains the growth and soundness of cells.

In 1995, WHO estimated Vitamin A deficiency in south-east Asia at 69%. The Vietnamese government has been working to reduce incidence of Vitamin A deficiency, which has so far been successful. In Vietnam, vitamin A status in women and pre-school children has improved considerable over the last 30 years and is now comparable with that in the UK and USA. Vitamin A status has virtually normalized over the last 30 years in Vietnam. However, there may still be 10-15% of women and children who are at risk of Vitamin A deficiency. Vitamin A deficiency damages immune systems so that illness is more common and more severe, increasing the under 5 years old death rates by up to one third. It is estimated that 10% of Vietnamese children have a lowered immunity, leading to frequent ill health and poor growth from vitamin A deficiency.

Vietnam is in the 'severe subclinical' category for Vitamin A deficiency, which means that while people have a severe Vitamin A deficiency, they do not display symptoms.



## Sources of Vitamin A:

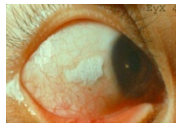
There are two forms of dietary vitamin A available in the human diet. The first is found in foods from animal sources, including dairy products, fish and meat. Concentrations of vitamin A are highest in fish oils and liver. The second form is found in plants including tomatoes, cantaloupes, watermelon, peaches, kiwi, oranges, blackberries, sweet potato, kale, carrots, spinach, avocado, broccoli, peas, and green pepper. Sweet potato has a very high amount of Vitamin A, and any other orange vegetables including pumpkin and carrot are good sources as well.



### Symptoms of Vitamin A deficiency:

Vitamin A deficiency can occur in individuals of any age. It is a disabling and potentially life-threatening public health problem for children under 6 years of age. This period of life is characterized by high requirements for Vitamin A to support rapid growth and the transition from breastfeeding to other dietary sources of the vitamin

1. Night blindness – where you cannot see in the dim light or twilight. Night blindness is also found in pregnant women in some instances, especially during the last trimester of pregnancy.
2. Bitot spots – these are foamy and whitish cheese like tissue spots that develop around the eye ball, causing severe dryness in the eyes. These spots do not affect eye sight in the day light.
3. Blindness – once the dry eyes set in, the eye becomes very sensitive and begins to scatch and scar. The eyelids become swollen and sticky. This eventually leads to blindness. Vitamin A deficiency is one of the top causes of preventable blindness in children.
4. Other – when the body lacks vitamin A, the systems that resist infection and disease do not work very well. That is why children with vitamin A deficiency fall sick more often, take much longer to recover and are more likely to die. Problems with bones and teeth can also occur frequently.



Bitot Spots



Blindness due to Vit A deficiency

The growth and differentiation of epithelial cells throughout the body are especially affected by vitamin A deficiency. Mucous secretions (with their antimicrobial components) diminish. The decline in mucous secretions and loss of cellular integrity reduce the body's ability to resist invasion from potentially pathogenic organisms.

Adequate intake of vitamin A reduces the risk of catching respiratory and gastrointestinal infections – the increased mortality risk from concurrent infections extends at least to 6 years. Chronic diarrhea also leads to excessive loss of vitamin A in young children, and vitamin A deficiency increases the risk of diarrhea. Vitamin A deficiency can increase the likelihood of a child under 6 dying from an infectious disease by 20-30%.

There are some particularly groups of people who are at increased risk of a Vitamin A inadequacy or deficiency.

1. Preterm infants – this is because preterm infants do not have enough stores of Vitamin A in their liver at birth.
2. Infants and young children in developing countries – this is because if a mother has a Vitamin A deficiency, then they will not pass on this important nutrient in their breast milk. Also, women

who have a Vitamin A inadequacy do not have the same volume of breast milk, which can lead to other nutritional issues in infants and young children

3. Pregnant and Lactating women in developing countries – pregnant women need extra vitamin A for fetal growth and tissue maintenance for supporting their own health. Other effects of vitamin A deficiency in pregnant and lactating women include increased maternal and infant health complications, increased risk of anaemia, and slower infant growth and development.

### Too much Vitamin A:

Vitamin A is a fat soluble vitamin. This means that the vitamins are absorbed and stored in fat. So, once you have eaten a food that contains vitamin A, the vitamin will be stored in your body fat. It can be stored for a long time. This means that routine consumption of large amounts of vitamin A over a period of time can lead to toxicity. In contrast large doses of supplements of Vitamin A as retinol (10 to 15 times the RDA) is harmful and could result in fatty liver (hepatomegally), dry skin, nausea, vomiting, fatigue, weakness, headaches, anorexia and possibly an increase in birth defects among pregnant women. This is reasonably common with as many as 5 per cent of people taking vitamin A suffering from the toxicity symptoms. Stopping the large doses usually reverses the symptoms with no lasting damage, although in children damage can be permanent. Too much carrot juice and vitamin A supplements can kill you! But don't worry, this is very rare, and as long as you consume the right amount of Vitamin A, you will not have any problems.

#### "The Orange Man"

In 1974 one unfortunate English health advocate named Basil Brown consumed 10 gallons of carrot juice and took 10,000 times the recommended daily intake of vitamin A in 10. Those 10 days were the unfortunate mans undoing, his skin turned bright yellow and he died of severe liver damage.

