

LC Home Economics – Vitamins

Vitamin A Properties



Fat-soluble alcohol
Insoluble in water
Destroyed by exposure to oxygen
Heat stable
When dried, may be some vitamin loss
Acts as an antioxidant

Vitamin A Functions



1. Produces rhodopsin (helps eyes adjust to dim light)
2. Necessary to maintain the lining membrane
3. Epithelial cells produce mucus to lubricate body interiors e.g. eyes

Vitamin A Functions



4. General growth and repair of all body cells
5. Boosts immune system, therefore protects the body from infection

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Vitamin A Deficiency



Night blindness

Inhibits growth

Rough, dry skin

Lack of mucus in the eyes can cause infection, which eventually can lead to blindness

Vitamin A RDA



Children: 400–500 μg

Teenagers: 600–700 μg

Male adults: 700 μg

Female adults: 600 μg

Pregnant women: 700 μg

Lactating women: 950 μg

Vitamin D Properties



Fat-soluble vitamin

Insoluble in water

Heat stable

Unaffected by normal cooking temperature

Unaffected by acids, oxygen or alkalis

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Vitamin D Functions



1. Healthy bones and calcification of teeth
2. Aids the absorption of calcium and phosphorous

Vitamin D Functions



3. Controls the levels of calcium in the blood.
4. Inhibits the development of bone diseases such as osteomalacia and rickets

Vitamin D Deficiency



Dental decay

Rickets: softening of bones in children

Osteomalacia: softening of bones in adults

Osteoporosis: weakening of bones in adults, especially women

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Vitamin D RDA



Children: 7–10 μg

Teenagers: 15 μg

Adults: 10 μg

Pregnant or lactating women: 10 μg

Vitamin E Properties



Fat-soluble

Insoluble in water

Heat stable, even in very high temperatures

Acts as an antioxidant

Stable in acid environments

Unstable when exposed to oxygen and light

Vitamin E Functions



1. Acts as an antioxidant, reducing the risk of heart disease and cancer
2. Destroys free radicals, reducing the effects of aging
3. Protects red and white blood cells from damage

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Vitamin E Deficiency



Available in a wide variety of food,
deficiency rare

In infants, can lead to eye disorders and
anaemia

Increases the risk of lung cancer among
smokers

Vitamin E RDA



No fixed RDA

Vitamin E Sources



Found in PUFA foods

Wide variety of foods in diet

Wholegrain cereals, nuts, pulses, olive
oil, fish, eggs

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Vitamin K Properties



Fat-soluble vitamin

Insoluble in water

Heat stable, especially during cooking

Destroyed by exposure to UV light

Vitamin K Functions



1. Synthesises prothrombin, which is necessary for blood clotting

2. Helps to maintain calcium levels in the bones

Vitamin K Deficiency



1. Available in a wide variety of foods so deficiency is rare

2. May delay blood clotting

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Vitamin K Deficiency



3. Infants may need a supplement due to their restricted diet and lack of intestinal bacteria

Vitamin K RDA



No precise RDA due to its availability in a variety of foods and the manufacture of Vitamin K in the intestine

Vitamin K Sources



Spinach
Cabbage
Peas
Cereals