



Pharmaceutical
Society of Australia



Vitamins

We need vitamins to stay healthy. They protect against some medical conditions and can help treat some conditions. The most important source of vitamins is a healthy diet, but some people need vitamin supplements. Sometimes vitamin supplements, in large doses, can be harmful – ask a pharmacist or doctor for advice.

Types of vitamins

Fat-soluble vitamins include:

Vitamin A (retinol)
Vitamin D2 (ergocalciferol)
Vitamin D3 (cholecalciferol)
Vitamin E (alpha tocopherol)
Vitamin K (phytomenadione).

Water-soluble vitamins include:

Vitamin B1 (thiamine)
Vitamin B2 (riboflavin)
Vitamin B3 (niacin)
Vitamin B5 (pantothenic acid)
Vitamin B6 (pyridoxine)
Vitamin B12 (hydroxocobalamine)
Folic acid (folate)
Biotin
Vitamin C (ascorbic acid).

The fat-soluble vitamins are stored in the body in larger amounts than the water-soluble vitamins. Consequently, supplements of fat-soluble vitamins are more likely to lead to adverse effects if taken in high doses. Ask a doctor, pharmacist or naturopath for advice.

Healthy eating

The best source of vitamins is a healthy, balanced diet that includes a wide variety of foods.

A healthy, balanced diet means:

- Lots of plant-based foods (e.g., breads, cereals and grain foods, pasta, noodles, rice, vegetables, legumes and fruit)
- Moderate amounts of low fat animal foods (e.g., milk, yoghurt, cheese, meat, fish, poultry and eggs)
- Small amounts of fat and sugar (e.g., oils, butter and margarine, cakes, desserts, pastries, cream and creamy foods, chips, pies, pasties, sausage rolls, pizzas, lollies and chocolate)
- Limit alcohol to no more than two standard drinks a day.

The vitamins in foods can be destroyed by some cooking methods.

To retain the vitamins in food:

- Prepare food just before serving
- Cook vegetables for the shortest time possible – steam or microwave
- Cook frozen vegetables quickly without thawing
- Reuse cooking water in gravies, soups, stews
- Leave vegetables in large pieces – do not cut up too much or soak them before cooking.

Vitamin intake

Someone may not get enough vitamins in their diet for their health and wellbeing if they have:

- A poor diet (e.g., don't have enough money, heavy alcohol drinker)
- A diet low in certain foods for health, cultural or religious reasons (e.g., vegans)
- An extra need for vitamins (e.g., while recovering from illness or surgery, during pregnancy or breastfeeding)
- Lifestyle habits that alter vitamin levels (e.g., no sun exposure, cigarette smoker, heavy alcohol drinker)
- A medical condition that alters vitamin levels (e.g., coeliac disease, ulcerative colitis, cystic fibrosis, gastrectomy)
- Medicines that alter vitamin levels (e.g., the pill, laxatives, long term antibiotics, orlistat).

When dietary intake is inadequate, vitamin supplements may be necessary. Many vitamin supplements are available orally as tablets, capsules and liquid nutrition. Sometimes vitamins are best given as an injection. Ask a pharmacist or doctor for advice.

Related fact cards

- Alcohol
- Complementary Medicines
- Osteoporosis
- Weight and Health

For more information

Dietitians Association of Australia – listed under 'D' in the white pages of the phone book or website www.daa.asn.au

HEALTHInsite – website www.healthinsite.gov.au

Heart Foundation of Australia – phone 1300 36 27 87 or website www.heartfoundation.com.au

Nutrition Australia – website www.nutritionaustralia.org or phone: NSW (02) 4257 9011 QLD (07) 3257 4393 VIC, NT, TAS & SA (03) 9650 5165 WA (08) 6304 3410 ACT 0420 379 560.

The Poisons Information Centre – in case of poisoning phone 131 126 from anywhere in Australia.

Consumer Medicine Information (CMI) leaflets – your pharmacist can advise on availability.

NPS Medicines Line – phone 1300 888 763 Monday to Friday, 9am to 6pm EST.

Pharmacists are medicines experts. Ask a pharmacist for advice when choosing a medicine.

Vitamin	Some functions in the body	Some signs of deficiency	Some food sources
A (Retinol)	Involved in growth, immunity, maintaining healthy eyes and skin	Poor night vision, dry eyes and skin, low immunity, poor growth	Liver, kidney, dairy products, eggs, fish
Beta Carotene	Can be converted by the body to vitamin A. (Is one of the carotenoids – antioxidants that give the yellow and orange colours in vegetables and fruit)	Low immunity	Green leafy vegetables, and orange and red fruits and vegetables
B group	Involved in biochemical processes and maintaining the nervous system, circulatory system, skin, hair, nails and eyes	Nerve problems, blood problems, skin problems, psychological problems, poor wound healing, fatigue, less ability to cope with stress	Liver, kidneys, meat, poultry, fish, grains, nuts, seeds, eggs, legumes, milk, fruits, vegetables
C (ascorbic acid)	Involved in formation of collagen in skin, bones, cartilage, teeth, muscle and blood vessels. Antioxidant. Helps the body absorb iron	Scurvy (fatigue, weakness, poor wound healing, easy bleeding and bruising)	Fruits and vegetables
D (colecalfiferol and ergocalciferol)	Helps maintain calcium levels in the body. Calcium is necessary for healthy bones and teeth	Bone weakness (rickets in children, osteomalacia and osteoporosis in adults), muscle weakness	Main source is action of sunlight on the skin. Small amounts in fatty fish, liver, eggs, milk, butter, margarine
E (tocopherol)	Antioxidant – protects cells from chemical injury. Involved in many biochemical processes. May interfere with anti-clotting medicines – check with doctor before taking supplements	Blood, nerve and immunity problems	Grains, seeds, nuts, vegetable oils, egg yolks, dairy products
K	Maintains normal blood clotting. Can interfere with anti-clotting medicines (warfarin) – check with doctor before taking supplements	Blood takes longer to clot, greater tendency to bleed	Green leafy vegetables, fruit, nuts, grains. Breast milk is a poor source so a vitamin K injection is often given at birth
Folic acid (folate)	Involved in synthesis of DNA, RNA, amino acids and other biochemical processes. Can reduce risk of neural tube defects in foetus if taken daily in the month before and the first 3 months of pregnancy – ask your pharmacist	Anaemia, and can play a role in neural tube defects in the unborn baby	Grains, nuts, green leafy vegetables, fruits, legume, yeast extract

Your **Self Care** Pharmacist