NUTRIENTS

Vitamins

Vitamins are essential nutrients required in very small amounts and serve as facilatators for normal metabolism, growth and physical well being. Most vitamins are not made in the body so they must be obtained from the diet.

The 13 major vitamins are found in a wide range of foods and each has a different function in the body. Many are essential for the biochemical processes within our cells and tissues. Vitamins are either fat soluble or water soluble.

Fat-soluble means they dissolve in fat and unsued supplies can be stored in the body. Water-soluble vitamins dissolve in water and cannot be stored in the body. Therefore we need a daily supply from the diet.

Fat-soluble vitamins

Vitamins	Major Functions	Sources
Vitamin A	Plays an essential role in: - • eye health • normal growth and development Helps with the body's immune function Aids the body's reproductive system	Liver Kidney Fortified margarine Yellow and dark green leafy vegetables and fruit Apricots
Vitamin D	Plays an essential role in: - • maintenance of the calcium and phosphorus balance • normal cell growth and function • in the functioning of several organs including skin, muscles, pancreas, nerves and the immune system	Fish liver oils Fortified milk Fortified margarine Liver Egg yolk Salmon Tuna Sardines Sunlight
Vitamin E	Has antioxidant properties which help maintain healthy cells and protects against conditions such as ageing, air pollution, arthritis, cancer, cardiovascular disease, cataracts, diabetes and infection	Wheat germ Vegetable oils Green leafy vegetables Egg yolk Nuts
Vitamin K	Plays an essential role in: • Making of blood-clotting proteins and a blood protein that regulates blood calcium levels	Bacterial synthesis in digestive tract Liver Leafy green vegetables

Water-soluble vitamins

Vitamins	Major Functions	Sources
Thiamin Vitamin B1	Is part of a coenzyme used in energy metabolism Supports normal appetite and functioning of the nervous system	Widespread in foods Lean pork Lean beef Liver Wheat germ Whole grains and enriched breads and cereals Legumes
Riboflavin	Plays an essential role in: • conversion of nutrients into their functional forms • communication between cells May play a role in the prevention of damage to cells	Milk Liver Brewer's yeast Meats Green leafy vegetables Fortified cereals
Niacin	Plays an essential role in: • metabolism of carbohydrates, fatty acids and amino acids • respiration within cells	Meats Poultry Fish Peanuts Brewer's yeast
Pyrodoxine Vitamin B6	Helps the body to use proteins as building blocks Is essential for healthy blood Helps to maintain a healthy nervous system Maintains normal brain-function	Fortified cereal Dried beans Peanut butter Potatoes Liver Milk Eggs Bananas
Folate	Forms part of various coenzymes used in cell synthesis	Leafy green vegetables Legumes Seeds Liver
Vitamin B12 Cobalamin	Forms part of coenzymes used in cell synthesis Helps to maintain nerve cells Reforms the folate coenzyme Meat	Fish Poultry Shellfish Milk Cheese Eggs
Pantothenic Acid	Forms part of Coenzyme A, used in energy metabolism	Widespread in foods
Biotin	Forms part of a coenzyme used in energy metabolism, fat synthesis, amino acid metabolism, and glycogen synthesis	Widespread in foods
Vitamin C Ascorbic Acid	Has antioxidant properties which help to protect against damage done to cells Is involved in several enzyme systems for the: • synthesis of collagen (connective tissues, cartilage, teeth and skin)	Citrus fruit Strawberries Tomato Peppers Cabbage

	• the healing of wound • conversion of nutrients into their functional forms Promotes resistance to infection Protects lung functioning	Guava Potato Paw-paw (Papaya) Broccoli

A varied diet based on wholegrains, fruit and vegetables, should provide all the nutrients essential for health.

Some individuals are at high risk for vitamin deficiency and have higher individual needs for vitamins which will not be covered by diet alone.

For further, personalized and more detailed information, please contact a dietitian registered with the Health Professions Council of South Africa.*References from the scientific literature used to compile this document are available on request.*

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