

Good Nutrition

Activity for Life

a **DSM** Product



DSM Nutritional Products

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Good health is not just the «Luck of the draw» - to a large extent our health is under our control.

Help maintain your long-term good health

- Eat a nutritious, balanced diet.
- Take regular exercise.
- Give up or don't start smoking.



Your food choice guide

VITAMIN	FUNCTION	GOOD SOURCES
A	Growth, Vision in poor light, healthy connective tissue and skin	Whole milk, margarine, liver, oily fish, dark green/yellow/orange vegetables and fruit (as carotene)
B ₁	Release of energy, especially from carbohydrate; functioning of nerves, brain, muscles	Cereals, and bread (especially wholegrain), pork, beans, lentils
B ₂	Release of energy from food; healthy vision, skin	Milk, dairy products, fortified cereals, eggs, meat
Niacin	Release of energy from food; nerve and digestive system function	Cereals and bread, meat, liver, fish, eggs
B ₆	Protein and fat metabolism red blood cell formation, nervous system	Wholegrain cereals, liver, fish, nuts, bananas and wheatgerm
B ₁₂	Formation of red blood cells; healthy nervous system; fat, protein and carbohydrate	Meat, fish, dairy products, yeast extract
Folic Acid	Formation of red blood cells; regulating growth of cells	Liver, green leafy vegetables, fortified cereals and bread, yeast extract, oranges
Biotin	Fatty acid and glycogen manufacture; protein metabolism and growth	Egg yolk, liver, wholegrain cereals, nuts
Pantothenic Acid	Metabolism of fats and carbohydrate; promotes healthy skin and hair growth	Vegetables, liver, yeast extract, kidney, eggs, nuts, bread
C	Growth and repair of cells and tissues; healing of wounds; improving iron absorption. Also helps keep skin, gums, bones and immune system healthy	Fruit and vegetables e.g. citrus fruits and juices, blackcurrants, strawberries, tomatoes, potatoes, fortified drinks
D	Important for the absorption of calcium from the diet; formation of bones and teeth	Produced by the action of sunlight on the skin Wholemilk, margarine, oily fish, eggs, fortified cereals
E	Helps protect body tissues and cells. Function of cell membranes, normal growth and development	Vegetable oil, wheat germ, wholegrain cereals, green vegetables, seeds, nuts

Good Nutrition and Activity for Life

Whatever your sport, good nutrition is essential. Whether you are a top athlete, general fitness fan or weekend enthusiast, a balanced diet will help you to maximise your performance and enjoyment.

The nutrients in your food have three major functions:

- 1) Supply energy
- 2) Build, repair and defend body tissues
- 3) Regulate metabolism

For health and physical wellbeing, a balance of vitamins and minerals is essential. You need to get them from food as they cannot be manufactured in your body.

This is particularly important during exercise such as dancing, running, long distance walking or cycling, as certain vitamins are crucial for the processing of carbohydrates and fats to release energy.

Energy supply

Muscles need energy in order to work. It is provided by carbohydrate, fat and protein. Carbohydrate and fat provide most of the energy during exercise although carbohydrate is the most important. Diets rich in carbohydrate help build up a substance called glycogen in the muscles which is used to provide a rapid supply of energy. Therefore it is a good idea to base meals on carbohydrates such as starchy wholegrains which are rich in fibre.



Antioxidant defence

To provide the additional energy needed during exercise, the oxygen used in the exercising muscles increases by about 10–20%. A product of the increased use of oxygen is an increased production of free radicals. These are reactive molecules that can damage healthy cells and tissues in a process called oxidation.

Damage to muscles and tendons during exercise, along with exposure to environmental pollutants can also increase the body's free radical load. The body has a natural antioxidant defence system which helps protect it against damage. However, if excess free radicals are produced, the antioxidant defences may need boosting by increasing the amount of antioxidants or ACE vitamins in the diet.

Vitamins C and E and beta carotene (which can be converted to vitamin A in the body) are found mainly in fruits, vegetables, seeds and nuts. Experts recommend eating at least 5 portions of fruit and vegetables a day to have optimal supplies of the antioxidants needed for good health e.g. 1 glass of orange juice, a banana, a slice of melon, 2 tablespoons of carrots or 2 tablespoons of peas.

Build and repair body tissues

Vitamins and minerals are involved in the repair and maintenance of cells and tissues, and the transport of essential oxygen to your muscles.



B group vitamins

- The B group vitamins work as a team to convert food to energy. Vitamin B₁ is vital for releasing energy from starchy and sugary foods, while vitamins B₂, B₆ and niacin help release energy from foods including protein and fats.
- If you increase your energy intake, particularly by eating more carbohydrates, your body may need extra vitamin B₁.
- Vitamin B₁₂ and folic acid, together with iron and vitamin C are of major importance to sportsmen and women as they are used in the formation of red blood cells which transport oxygen to the muscles.

Vitamin C

- Vitamin C promotes healthy body cells, blood vessels, bones and tissues (e.g. tendons and ligaments). It is also necessary for the manufacture of adrenalin.
- Exercise has been shown to increase the body's requirements for vitamin C.
- Vitamin C is essential for the immune system and there is some evidence to show that extra vitamin C may reduce the severity of respiratory infections
- Vitamin C helps iron absorption. Its role in red blood cell formation also helps to transport essential oxygen to exercising muscles.
- Iron deficiency may lead to reduced strength and stamina during exercise, along with other symptoms such as poor concentration. Women are particularly vulnerable as iron is lost during menstruation.
- Vitamin C is not stored within the body so make sure your diet contains a regular supply.



Vitamin E

- Vitamin E is vital to the formation and normal function of red blood cells and muscles.
- Vitamin E is a powerful antioxidant which helps to protect cells from damage by free radicals (see Antioxidant Defence).
- Polyunsaturated fats in our diets are protected from damage by vitamin E. Polyunsaturated fats, which are found in vegetable and fish oils are essential for normal function of cells in the body.

Weight control

- A combination of exercise and diet is the best way to lose weight. But make sure that cutting down on food doesn't mean you are missing out on important nutrients.
- Eating fewer calories can make it more difficult to get all the vitamins and minerals you need, especially iron, vitamin B₂, calcium and vitamin A.
- Cut down fatty and sugary foods as these are often low in nutrients, yet high in calories.
- If you constantly battle with your weight or eat a limited range of foods, a multivitamin and mineral supplement may be advisable.

NB:

- Consult your doctor before taking up any vigorous exercise, especially if you are unfit or worried about your health.

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