



Minerals

Food nutrients include carbohydrates, protein, fat, vitamins and minerals. The body needs to absorb appropriate amount of minerals from food in order to maintain the normal functions of cells and organs, and to promote growth and development. Any deficiency or overdose of minerals could have adverse side effects.

Functions

Minerals play roles in coagulation and oxygen binding capacity in blood, heartbeat, transmission in the nervous system, and body metabolism.

Mineral	Function(s)	Food sources	Health effect(s) of deficiency	Health effect(s) of overdose
Sodium	<ul style="list-style-type: none"> Major electrolyte which maintains body fluid balance Help stable blood pressure Maintain our muscles and nerves to function normally 	<ul style="list-style-type: none"> Table salt Processed meat e.g. ham, sausage, luncheon meat Condiments e.g. soy sauce, chili sauce 	<ul style="list-style-type: none"> Fatigue, vomiting Lower blood pressure 	<ul style="list-style-type: none"> Increase the risk of chronic diseases e.g. high blood pressure, cardiovascular disease, gastric cancer
Iodine	<ul style="list-style-type: none"> Maintain normal thyroid functions Help produce thyroid hormones Promote growth and development 	<ul style="list-style-type: none"> Milk and milk products Seaweed Iodine-rich snacks *1 Seafood e.g. prawn, oyster Marine fish Egg Kelp Iodized salt *2 	<ul style="list-style-type: none"> Goiter Retarded mental and physical development 	<ul style="list-style-type: none"> Goiter
Iron	<ul style="list-style-type: none"> Help produce haemoglobin which transports oxygen from lungs to various tissues 	<ul style="list-style-type: none"> Red meat e.g. beef, pork Egg yolks Dark green vegetables e.g. spinach Beans 	<ul style="list-style-type: none"> Iron deficiency anaemia (fatigue, dizziness, paleness, etc.) 	<ul style="list-style-type: none"> Constipation Interfere with other minerals absorption e.g. zinc
Zinc	<ul style="list-style-type: none"> Help produce cells, enzymes, growth hormones Promote wound healing Maintain normal function of immune system 	<ul style="list-style-type: none"> Seafood e.g. oysters Meat Milk and milk products Nuts e.g. pecans 	<ul style="list-style-type: none"> Reduced taste acuity Reduced immunity 	<ul style="list-style-type: none"> Vomiting Abdominal pain Interfere with iron absorption
Calcium	<ul style="list-style-type: none"> Strengthen bones and teeth Help blood coagulation Help in muscles and blood vessels contraction Help in nerve impulse transmission 	<ul style="list-style-type: none"> Milk and milk products Dark green vegetables e.g. bok choy Sardines Sesame 	<ul style="list-style-type: none"> Osteoporosis 	<ul style="list-style-type: none"> Interfere with zinc absorption
Magnesium	<ul style="list-style-type: none"> Strengthen bones Help produce proteins Help in nerve impulse transmission 	<ul style="list-style-type: none"> Dark green vegetables e.g. spinach Whole grain cereals Meat, poultry Nuts e.g. almonds Brown rice Beans 	<ul style="list-style-type: none"> Affect heart functions Muscle weakness 	<ul style="list-style-type: none"> Diarrhoea
Phosphorus	<ul style="list-style-type: none"> Strengthen bones Participate in energy metabolism Help regulate acid-base balance in body Help produce cell membranes 	<ul style="list-style-type: none"> Milk and milk products Meat, fish, poultry Egg Beans Dried fruits Nuts e.g. walnuts 	<ul style="list-style-type: none"> Muscle weakness Cardiac failure 	<ul style="list-style-type: none"> Diarrhoea
Potassium	<ul style="list-style-type: none"> Maintain body fluid balance Maintain the normal function of nerve conduction and heart muscle system 	<ul style="list-style-type: none"> Fruits, dried fruits Vegetables Potatoes 	<ul style="list-style-type: none"> Muscle weakness 	<ul style="list-style-type: none"> Affect heart functions

*1 Avoid those snacks which are high in salt or fat content.

*2 Use iodized salt instead of ordinary table salt, keeping total salt intake below 5g (1 teaspoon) per day to lower the risk of raised blood pressure. As iodine content in iodized salt may be affected by humidity, heat and sunlight, iodized salt should be stored in a tight and colored container and kept in a cool dry place. To minimize loss of iodine through the cooking process, in particular from prolonged boiling and pressure cooking, add iodized salt to food as close to the time of serving as possible. Persons with thyroid problems should seek medical advice regarding use of iodized salt.

Should we need to take mineral supplements?

There are various kinds of mineral supplements available on the market. Should we take these "tonics" to maintain good health?

We should maintain a balanced diet and should not be a picky eater. Eating according to the "Healthy Eating Food Pyramid" principles can provide the necessary minerals to stay healthy. If you need to have diet control because of any illnesses, you should consult a doctor or dietitian. Never take any mineral supplements on your own.

