

Nutrients & Dietary Fibre



Learning Intentions



- To reinforce the functions and sources of nutrients in the diet.
- To learn the functions and sources of Dietary Fibre in the diet.
- To gain an understanding of the dietary diseases and deficiencies these nutrients and dietary fibre helps to prevent.

What the words mean....



- Fibre is not a nutrient but is essential for the body to function properly, every other vitamin and mineral mentioned is classed as a NUTRIENT.
- Function - What that nutrient does for the body.
- Food Sources - Which foods contain that nutrient.
- Deficiency - What happens if the body doesn't get enough of that nutrient.



Dietary fibre

- Dietary fibre is a type of carbohydrate found exclusively in plants.
- Unlike other types of carbohydrate, it is not absorbed in the small intestine to provide energy. However, it is fermented by the bacteria in the colon (large intestine) and provides a small amount of energy.
- Dietary fibre is found in plant foods, such as: wholegrain cereals and cereal products; oats; beans; lentils; fruit and vegetables; nuts and seeds.

Dietary fibre helps to:

- Reduce your risk of heart disease, Type 2 diabetes and some cancers;
- Help weight control;
- Bulk up stools and make waste move through the digestive tract more quickly;
- Prevent constipation;
- Improve gut health.

SOURCES OF DIETARY FIBRE





How to increase fibre in your diet:

- Choose a high fibre breakfast cereal, e.g. bran flakes, or porridge.
- Go for wholemeal or granary breads instead of white bread.
- Choose wholegrains like wholewheat pasta, bulgur wheat or brown rice.
- Go for potatoes with skins e.g. baked potato or boiled new potatoes.
- For snacks try fruit, rye crackers, oatcakes, unsalted nuts or seeds.
- Include plenty of vegetables with meals added to sauces, stews or curries.
- Add pulses like beans, lentils or chickpeas to stews, curries and salads.
- Have some fresh or dried fruit, or fruit canned in natural juice for dessert.



Nutrition

Typical values	100ml contains	200ml contains
Energy	275kJ 65kcal	545kJ 130kcal
Protein	3.4g	6.8g
Carbohydrate	4.7g	9.4g

Calories & Energy

- 2000 Kcal per day for Women (equivalent to 8,400 Kilojoules).
- 2500 Kcal per day for Men (equivalent to 10,500 Kilojoules).

Macro-Nutrients

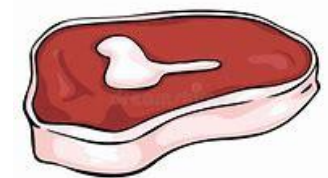
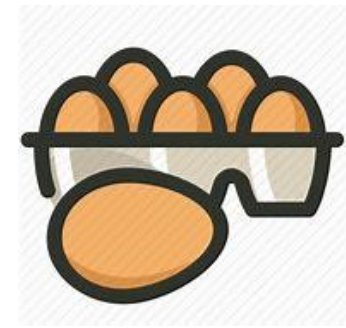
These nutrients are required by the body in large amounts.

- Protein
- Carbohydrate
- Fat



Protein

- Required for growth and repair of body tissues and is a secondary source of energy.
- Found in meat, eggs, fish, beans, lentils and Quorn.



Carbohydrate

- Required by the body for energy. However too much carbohydrate can cause weight gain if we don't burn off the energy.
- Found in bread, pasta, rice, potatoes, muffins and doughnuts, we should try to eat wholemeal versions e.g. Wholemeal pasta and brown bread.



Fat



- There are bad fats (**saturated**) and good fats (**unsaturated**).
- The body uses fat for energy and protecting vital organs like the liver, fat also keeps us warm. However eating too much **saturated fat** can cause health problems like Type 2 Diabetes and Obesity whereas eating **unsaturated fats** helps to prevent these dietary diseases.

- **Unsaturated Fats** - Avocados, Nuts, Olive Oil, Salmon.



- **Saturated Fats** - Red meat (Bacon, Lamb, Beef), Deep fried foods.

Micro-Nutrients



These nutrients are required by the body in small amounts.

- Vitamins A, B, C, D, E & K
- Minerals: Iron, Calcium, Phosphorus, Sodium.

Fat Soluble Vitamins

These types of vitamins are stored in the body so they do not need to be consumed daily.

Know your fat-soluble vitamins

Vitamin A



Vitamin E



Vitamin D



Vitamin K



Vitamins (Fat soluble)



A

- Required for growth in children, good eyesight in dim light.
- An antioxidant so it helps reduce risk of heart disease & cancer.
- Carrots, Margarine, Liver.

D

- Helps absorb calcium. It works together with phosphorus to develop strong bones and teeth.
- Prevents rickets.
- Sourced from sunlight, oily fish, egg yolk, fortified breakfast cereals.

Vitamins (Fat Soluble)



E

- Maintains cell membranes.
- An antioxidant so it helps reduce risk of heart disease & cancer.
- Vegetable oil, green leafy vegetables, peanuts.

K

- Regulates normal blood clotting.
- Promotes good bone health.
- Reduces risk of Osteoporosis.
- Green Leafy Vegetables.

Water Soluble Vitamins



- These type of vitamins cannot be stored in the body so they need to be consumed daily.
- These type of vitamins are easily lost or destroyed during storage, preparation and cooking.

Vitamins (Water Soluble)



B

- B vitamins release energy from food.
- **Vitamin B1** - Releases energy from carbohydrate and helps the nervous system function.
- Milk, Meat, Bread

B

- **Vitamin B2** - Releases energy from proteins, carbohydrates and fats.
- Essential for growth in children.
- Milk, Meat, green vegetables.

Vitamins (Water Soluble)



B

- **Folic Acid** - Helps form red blood cells.
- Protects against neural tube defect (spina bifida) in unborn babies so required by pregnant women.
- Green leafy vegetables, liver, fortified breakfast cereals.

Vitamins (Water Soluble)

C

- Prevents colds & flus.
- Boosts your immune system.
- Prevents Scurvy
- Citrus Fruits - Oranges, Lemons & Limes. Tomatoes, Peppers, Kiwi Fruit, Melons.



Minerals - Iron



- Needed to form red blood cells in the body (**haemoglobin**).
- Red blood cells transport oxygen around the body.
- Iron has an interrelationship with **Vitamin C**.
- Lack of Iron can lead to anaemia.
- Red Meat, Green Leafy Vegetables, Fortified breakfast cereals & bread.

Minerals - Calcium



- Required for growth & development of bones & teeth.
- Helps in the normal clotting of blood.
- For normal functioning of muscles & nerves.
- Calcium has an interrelationship with **Phosphorus** and **Vitamin D**.
- Helps to prevent Rickets and Osteoporosis.
- Dairy products - Milk, Cheese, Yoghurt, Tinned fish with bones, Dried fruits & Nuts.

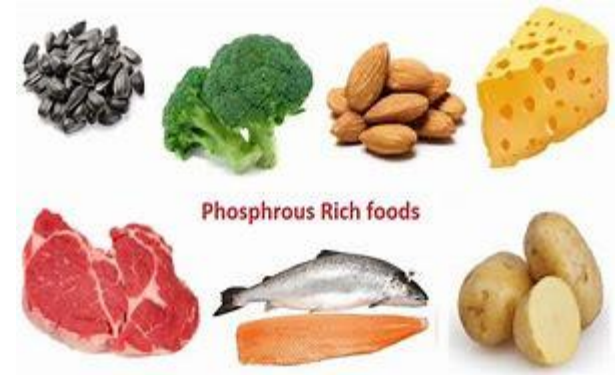
Minerals - Sodium



- Essential for maintaining the correct water balance in the body.
- For normal functioning of muscles & nerves.
- Sodium is present in salt, too much can lead to high blood pressure (hypertension) and strokes.
- Salt is often added to tinned foods as a preservative. Foods high in sodium are: Table salt, canned foods, bacon and savoury snacks e.g. crisps



Minerals - Phosphorus



- Required for growth & development of bones & teeth.
- Phosphorus has an interrelationship with **Calcium** and **Vitamin D**.
- Helps the body use carbohydrates for energy.
- Helps to prevent Rickets and Osteoporosis.
- Dairy Products - Milk, Cheese, Yoghurt, Fish, Meat, Dried Fruits & Nuts.

Success Criteria



- I know the functions and sources of nutrients in the diet.
- I have learned about the functions and sources of Dietary Fibre in the diet.
- I have an understanding of the dietary diseases and deficiencies these nutrients and dietary fibre help to prevent.