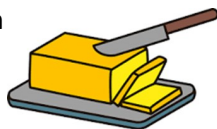


# Year 10 Food Preparation & Nutrition: Fats

# Knowledge Organiser

## Types

**Fats** e.g. butter and lard are usually from animal sources and are solid at room temperature. Margarine is a solid fat made from vegetable oils.



**Oils** e.g. olive oil and rapeseed oil are liquid. Vegetable oils come from seeds such as sunflower seeds or from the flesh of fruit such as olives.



## Main nutrients

The main nutrient in fats and oils is fat. The functions are:

- Provides energy
- keeps us warm
- provides a protective layer around internal organs
- Essential for absorbing the fat soluble vitamins A, D, E and K.

## Packaging

Food is packaged: to protect it from damage; to avoid contamination; for ease of transportation and storage and to provide information.

Information required by law on packaging includes: name; quantity; country of origin; 'best before' or 'use-by' date; storage conditions; list of ingredients; allergy warnings; name and address of manufacturer; cooking instructions.

Material used for packaging	Advantages	Disadvantages
Paperboard	Lightweight, can be printed on, inexpensive, recyclable	Not very durable, not weatherproof
Metal	Lightweight, can be printed on, recyclable	Cannot see the food content
Glass	Provides a long shelf life, reusable, recyclable	Heavy, can break easily
Plastic	Lightweight, made into shapes, clear to see the food	Cannot all be recycled

## Functions of fat

**Shortening** - fat coats the flour which gives a waterproof coating to prevent gluten forming e.g. shortbread.

**Aeration** - adding air into a mixture e.g. fat creamed with sugar.

**Preservation** - keeping food in its present state. The fat helps food keep its moisture e.g. muffins.

**Frying** - cooking using fat.

**Spreading** - to form a waterproof coating e.g. sandwich.

**Laminating** - separates layers of flaky pastry.

**Emulsifying** - oils form an emulsion with liquid e.g. salad dressing.



## Key vocabulary

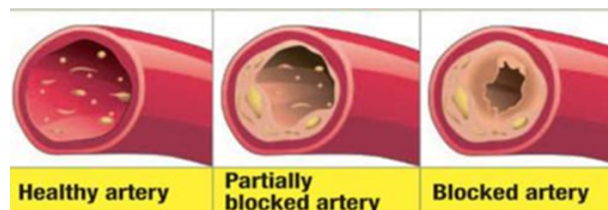
Cholesterol	A fatty substance in blood and food.
Coronary heart disease	The blood flow to the heart is reduced or interrupted.
Shortening	Fat coats the flour in cake and pastry which gives a waterproof coating to prevent gluten from forming, giving a crumbly, short texture.
Laminating	In flaky pastry, alternate layers of dough and fat are pressed together.
Emulsion	A fine dispersion of fat droplets in liquid e.g. salad dressing.
Aeration	Adding air to a mixture.

## Saturated and unsaturated fat

**Saturated fats** are mainly from animal sources and are the least healthy as they can raise blood cholesterol levels. Cholesterol sticks to the artery walls, gradually building up. This narrows arteries, restricting blood flow. This can increase blood pressure and the risk of coronary heart disease (CHD), stroke or heart attack which, if severe, can cause death.

**Unsaturated fats** are healthy fats found in plant based foods such as oils, avocados, nuts and seeds.

Whichever fats are eaten, they can **all** cause weight gain if intake is too high.



Prolonged weight gain and obesity can lead to heart disease, stroke, type 2 diabetes and certain cancers.

## Tips for reducing fat in the diet

- Choose foods that are lower in fat e.g. baked potato wedges instead of chips.
- Use yogurt in recipes instead of cream.
- Reduce intake of processed meat e.g. sausages, pork pies, salami
- Grill, bake, poach or steam rather than frying and roasting so no extra fat is added.
- Choose leaner cuts of meat.
- Trim off visible fat from meat e.g. bacon.
- Choose lower fat versions of dairy foods e.g. skimmed milk.
- Read food labels to compare the fat contents
- Choose low fat options.
- Cook from scratch.



## Types

Sugar is made from either sugar beet or sugar cane.



**White sugars** include: granulated, caster and icing.

**Brown sugars** include: soft brown, demerara and muscovado.

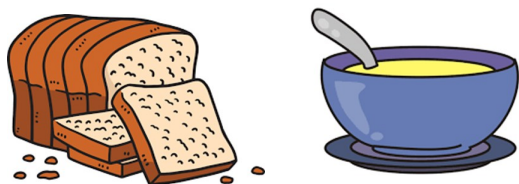
**Syrups** are liquid sugar and include: honey, golden syrup, maple syrup and black treacle.

## Main nutrients

The only nutrient in sugar is carbohydrate which provides energy. The energy from sugar is digested and absorbed relatively quickly in the body, making blood sugar levels rise quickly, providing a short burst of energy.

Sugar is often described as having '**empty calories**', meaning that it adds no other nutrients to the diet.

'**Hidden sugar**' can be found in readymade foods including savoury foods such as bread, soup and sauces.



Sugar can be disguised as other names e.g. sucrose, corn syrup.

## Key vocabulary

Caramelisation	A change in the structure of sugar when heat is applied to give a brown colour.
Aeration	adding air into a mixture e.g. when fat and sugar are creamed together.
Artificial sweeteners	Synthetically produced food additives which offer sweetness without calories.
Choux pastry	Pastry used for profiteroles and eclairs.
Preservative	Something that is used to keep food in its present state.

## Artificial sweeteners

These are synthetically produced food additives.

There are some advantages of using sweeteners including:

- They offer sweetness without calories
- Less chance of tooth decay in comparison to sugars
- They have a range of uses including in drinks, cereals, chewing gum, toothpaste and in baking

There are also many disadvantages including:

- They have a distinct aftertaste
- They can make baked products have a dense, dry texture
- As they are not high in calories, they provide no energy
- Studies show links to increase risk of cardiovascular diseases such as heart problems and stroke

Examples of artificial sweeteners include: aspartame, saccharin, sucralose.



## Functions of sugar

**Sweetness** - to flavour foods and make them more acceptable.

**Caramelisation** - a change in the structure of sugar when heat is applied to give a brown colour.

**Preservation** - keeping food in its present state. Microorganisms cannot grow in a high sugar content e.g. jam.

**Fermentation** - helps to speed up the action of yeast by providing food e.g. bread making.

**Aeration** - adding air into a mixture e.g. when fat and sugar are creamed together.

**Prevents enzymic browning** – adding sugar syrup to raw fruit prevents it turning brown by protecting the surface from oxygen in the air.

## Tips for reducing sugar intake

- Choose wholegrain breakfast cereals instead of those coated in sugar or honey.
- Choose tinned fruit in natural juice and not syrup.
- Instead of sugary drinks choose water, milk or diet drinks or dilute fruit juice with sparkling water.
- Swap cakes and biscuits for fruit or vegetable sticks.
- Gradually reduce the amount of sugar added to cereal, tea or coffee.
- Instead of jam try low fat spreads.
- Use less sugar in baking.

## Health consequences of consuming too much sugar

Trials have shown links between sugar and health problems such as:

- Type 2 diabetes
- Tooth decay and cavities
- Obesity

