# Nutrients in food

**The main nutrients in food are carbohydrates, protein and fats. These are called macronutrients.**

## Carbohydrates

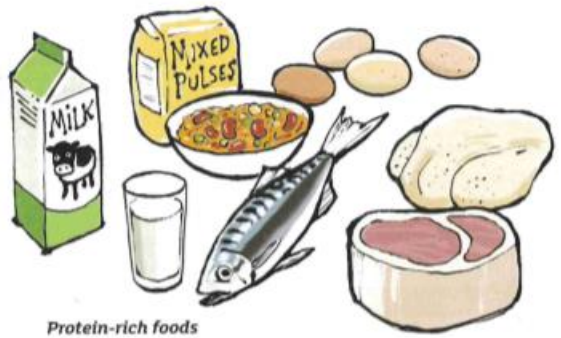
Carbohydrates are a source of energy. Foods rich in carbohydrates include bread, pasta, rice and breakfast cereals, as well as sugar. Simple carbohydrates are known as *sugars* and this energy is released quickly. Complex carbohydrates are starchy foods such as bananas, chickpeas, nuts, potatoes and wholegrain cereals. These foods release energy slowly as they are digested, which makes your energy levels more stable. For a healthy diet, eat more of the complex carbohydrate foods.


*Carbohydrate-rich foods*

## Protein

Protein is needed for growth and repair, and is also a source of energy.

Protein-rich foods include meat, fish, chicken, eggs, beans and nuts. Vegetarians obtain their protein from foods such as pulses – peas, beans, lentils, soya products, grains, pasta, bread, nuts and seeds. A balanced diet should contain all the proteins the body needs.




*Protein-rich foods*

## Fat

Fat is a good source of energy and a source of the essential fatty acids that the body can't make itself, and fat helps the body absorb some vitamins.

All fat is high in calories, so if you are watching your weight, you should limit your fat intake. The total amount of fat you eat should make up no more than 30% of your calories from food.

Foods high in fat include butter, oil, margarine and fried food.

There are two types of fats:

- unsaturated fats
- saturated fats.

Eating too much *saturated* fat can increase blood cholesterol levels and the risk of coronary heart disease. The healthier type of fat is *unsaturated* fat, which can improve cholesterol levels.

Solid fats which contain saturated fat include butter and ghee (clarified butter), lard and coconut cream. Replace saturated fats in cooking with rapeseed or corn oil, which contain unsaturated fat, or just use less of them.

Fats and oils that are liquid at room temperature are more likely to be unsaturated. Food products high in saturated fat include meat, sausages, pies, hard cheese, cakes, pastries, biscuits and food containing coconut or palm oil.


***These crisps have less fat***

You can buy lower-fat products such as reduced fat spreads and salad dressings, low-fat yogurts, extra-lean minced beef and pork, skimmed and semi-skimmed milks.

| Food | % fat |
|---|---|
| Chocolate | 31% |
| Crisps | 33% |
| Sausage roll | 32% |
| Bombay mix | 33% |
| Salami sausage | 44% |
| Fried bacon | 22% |
| Biscuits | 22% |

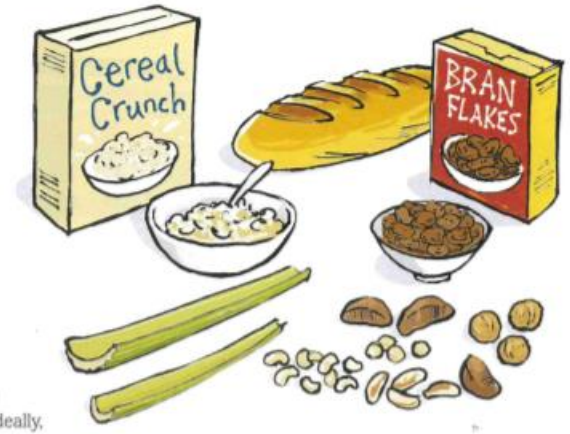
## Fibre

Fibre is needed to keep the gut healthy and prevent constipation. Fibre is not digested when we eat it. In the UK most people eat far too little fibre, on average about 12 grams a day or less. Ideally, adults should aim for 18 grams a day, or a little more.

All plant-based foods contain fibre. Good sources of fibre are fruit, vegetables, wholegrain rice and pasta, wholemeal bread, many breakfast cereals, nuts, seeds and bran.

The food label shows the amount of fibre in a food product and you can use a nutritional analysis program to help.

This chart shows foods which are high in fibre. How would you use each one in a recipe? Choose three and describe how you could make them into a recipe or meal.




***High fibre foods***

**To do**

Collect some food labels and sort them into groups to show a) foods high and low in sugar, b) foods high and low in fat, c) foods which contain a lot and a little fibre. You can use a nutritional analysis program to find these foods, too.

| Food high in Fibre (g) | g/100g |
|---|---|
| Ingredients | |
| brussels sprouts, raw | 4.1 |
| chapati flour, white | 4.1 |
| chestnuts | 4.1 |
| chickpeas, canned, drained | 4.1 |
| flour, chapati, white | 4.1 |
| garlic | 4.1 |
| green beans/French beans, boiled in unsalted water | 4.1 |
| nut roast | 4.1 |
| rissoles, chick pea, fried in sunflower oil | 4.1 |
| taro, raw | |

***Source: The Nutrition Program***

**Questions**

1. Describe a) the functions of carbohydrates, protein and fat; b) three examples of foods which contain each of these nutrients.
2. Why do some people need to reduce the amount of fatty food that they eat? Suggest three ways to cut down on fat.
3. What is the difference between unsaturated and saturated fat? Which foods contain lots of saturated fats?
4. Why is it important to eat foods which contain fibre? Design a meal which contains foods which are good sources of fibre.



This is also on a separate PDF file called:

Year 9 ' Food nutrition' reading article for Summer task.

# Salt

**Most people eat too much salt, which can raise blood pressure and increase the risk of heart disease and stroke. Salt is sodium chloride and it is the sodium in salt that can raise blood pressure.**

| Nutrition information | | | | Guideline daily amounts | | |
|---|---|---|---|---|---|---|
| Typical values (cooked as per instructions) | Per 100g | Per pizza | % based on GDA for women | Women | Men | Children (5–10 years) |
| Energy | 961kJ 228 kcal | 1922 kJ 456 kcal | 22.8% | 2000 kcal | 2500 kcal | 1800 kcal |
| Protein | 15.8g | 31.6g | 70.2% | 45g | 55g | 24g |
| Carbohydrate | 25.3g | 50.6g | 22.0% | 230g | 300g | 220g |
| of which sugars | 2.7g | 5.4g | 6.0% | 90g | 120g | 85g |
| of which starch | 22.6g | 45.2g | - | - | - | - |
| Fat | 7.1g | 14.2g | 20.3% | 70g | 95g | 70g |
| of which saturates | 1.4g | 2.8g | 14.0% | 20g | 30g | 20g |
| mono-unsaturates | 2.2g | 4.4g | - | - | - | - |
| polyunsaturates | 3.2g | 6.4g | - | - | - | - |
| Fibre | 3.3g | 10.6g | 44.2% | 24g | 24g | 15g |
| Salt | 0.8g | 1.5g | 25.5% | 6g | 6g | 4g |
| of which sodium | 0.3g | 0.6g | 25.4% | 2.4g | 2.4g | 1.6g |

## Cutting down on salt

The average salt consumption of adults should be up to 6g a day – a teaspoonful. Most of the salt we eat – 75% – is already in food, rather than added.

The daily recommended maximum for children depends on age:
1 to 3 years: 2g
4 to 6 years: 3g
7 to 10 years: 5g
11 and over: 6g

You need to know how much salt is in the food you eat. Many food labels show the salt or the sodium content in a portion of food, and the percentage of GDA – the guideline daily amount.


The label shows that in this pizza, which serves one, there is 1.5g salt, which is over 25% of the GDA.

You can see the amber colour on the chart. Amber is a warning sign, and it means 'Go easy on this food'.

To convert from sodium to salt, multiply the grams of sodium by 2.5.

### Levels of salt

The level of salt in food is measured by the amount of salt in 100g of the food.

- High level of salt: more than 1.5g per 100g
- Medium level of salt: 0.3–1.5g per 100g
- Low level of salt: less than 0.3 g per 100g.

## Hidden salt

As we have seen, 75% of the salt we eat is already in the foods we buy. Foods high in salt are ready meals, pizzas and sauces such as ketchup. Food companies are trying to cut down on the salt they use.


*Reduced salt gravy powder*


*Reduced salt beans*


*LoSalt contains 66% less sodium than ordinary salt*

**Foods which may be high in salt:**
Baked beans, breakfast cereals, bread products, bagels and ciabatta, cooking and pasta sauces, crisps, pizza, ready meals, soup, sandwiches, sausages, tomato ketchup, mayonnaise, bacon, cheese, chips (if salt added), ham, olives, pickles, prawns, salami, salted nuts, soy sauce, stock cubes, yeast extract.

## How to reduce salt

- Don't add salt to your foods.
- Try reduced-salt or lower-salt foods.
- Look at food labels and avoid foods which are high in salt.
- If you eat out, watch your choices; for example, try not to add too many salty foods to a pizza.

### Hotlinks

Food Standards Agency – search for information on salt
British Heart Foundation

### To do

Use a nutritional analysis program to find out how much salt is in 100 grams of each of the foods high in salt. When you have the results, list the foods in order, with the highest first. Now discuss which of these foods you would eat a lot, and then think about how you could lower the salt content.

Look at Jack's diet for the day on page 5 – he has eaten over 17 grams of salt!

### Questions

1 What is the most salt that someone of your age should be eating per day?
2 Look at the pizza food label opposite. Is the pizza high, medium or low in salt? Give your reasons.
3 Keep a food diary for a day. Tick the foods you think contain salt. Use a computer program to analyse the amount of salt you have eaten – is it too much? If so, how would you cut down on your salt?



This is also on a separate PDF file called:

Year 9 ' Food nutrition' reading article for Summer task.

The Hospitality and Catering Option you will be studying in September begins with understanding the nutrients that we need and what food we get them from.

# Year 9 Task sheet

## Task 1

**READ THROUGH** the information about 'Nutrients in food' and 'Salt' and answer the following questions. You will notice that they all start with a **COMMAND** word which is also something you will need to become familiar with in GCSE.

**DESCRIBE** the functions of Carbohydrates, protein, fat and fibre. Make sure that you give examples of which foods they can be found in.

**EXPLAIN** why you should try to have complex carbohydrates in your diet. Give an example of a meal that you could have that would be a good source of complex carbohydrates.

**COMPARE** The difference between saturated and unsaturated fat. Give examples of each.

**EVALUATE** the food label that is on the 'Salt' page. What does the information tell you? Give a more detailed explanation referring to the salt section.

**Use these definitions of 'Command words' to help you answer the questions.**

**DESCRIBE**- A written report of how something is done or what something is like.

**EXPLAIN**- Making something clear or easy to understand.

**COMPARE-** Identify similarities and differences.

**EVALUATE**- To judge from available evidence

## Task 2

Use the information that you have discovered about nutrients to plan a balanced diet for 2 days.
Your plan should include:

- Breakfast, Lunch and dinner.
- Explain what nutrients are included in each meal.
- Explain why you have chosen them
- You could have a go at cooking some of the meals you have chosen.