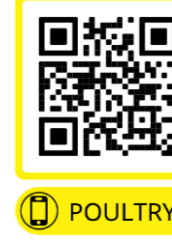


Beans, pulses, fish, eggs, meat and other proteins



Fish in the diet

Fish is a popular food in many cultures, although many people in the UK do not consume as much fish as is recommended.

Eating a wide variety of fish and buying fish from sustainable sources ensures there are enough fish to eat now and in the future.

Recommendations

Fish is part of the Beans, pulses, fish, eggs, meat, and other proteins food group in the Eatwell Guide.

Around one-sixth of the food that people consume should come from this group in the diet. It is recommended to consume two portions (one portion is 140g) of sustainably sourced fish per week.



Nutrients provided by fish

Fish provides a range of nutrients, including:

- Omega-3 fats (in some fish);
- protein;
- vitamin D (in some fish);
- B vitamins;
- iodine.



Salmon is high in Omega-3 fats and vitamin D, as well as protein and B vitamins.

Cod is lower in Omega-3 and vitamin D than salmon, but still contains other nutrients, and is also higher in iodine.

Task

Create a poster featuring facts and figures about the 'big five' fish. Include ideas about how they can be used in meals.

Types of fish and shellfish

There are over 33,000 fish species in the world, but people often prefer to eat a few species that are easier to catch and eat.

The 'big five' are the most common seafood items that are eaten in the UK. They are:

- cod;
- haddock;
- tuna;
- salmon;
- prawns.



Oily fish

The UK Eatwell Guide states that one of the recommended two portions of fish a week should be oily.

Salmon and **trout** are classified as 'oily fish', which means they contain a type of healthy fat called Omega-3. **Mackerel, herring,** and **sardines** are types of small oily fish that are mostly sold in cans.

White fish

Cod and **haddock** are the most popular fish in the UK. They are flaky, white fish when cooked. Most of the cod and haddock eaten in the UK is breaded or battered.

Plaice, sole, halibut and **turbot** are all types of flatfish that are classed as white fish.

Shellfish

Shrimp and prawns are a wide group of small shellfish. The words 'shrimp' and 'prawn' are used to describe many different species.

Mussels and oysters are 'bivalve molluscs'. Bivalve means that they have two shells that close around the soft body inside. Cockles, whelks, and winkles are small shellfish that are common around the UK.

Tasks

1. Research the farm to fork journey of beef, lamb, pork or chicken in the UK. Draw a poster to show your findings.
2. Identify two recipes that contain two different cuts of meat and compare the different preparation and cooking methods.

What is meat?

- Lean meat is the muscle tissue of animals which is made up of bundles of muscle fibres held together by creamy white connective tissue.
- Connective tissue is made up of two proteins called collagen and elastin.
- Two different types of fat can be found in meat, visible and invisible.
- The colour of meat varies due to the red protein called myoglobin and some haemoglobin remaining in the muscles. Exposure to oxygen increases the red colour of meat.
- Lean meat comprises water, protein, fats, vitamins, and minerals.

Preparing & cooking meat

- Food preservation is important to increase the shelf life of products including meat. Shelf life depends on water; acidity; hygienic handling; methods of preservation.
 - Meat can be tenderised by physical action, enzymes or acids and marinades.
 - Meat changes colour during food preparation when the pigment myoglobin changes.
- There are three main methods of heat transfer normally used for cooking meat - convection; conduction; radiation.
- Convection is where currents of hot air or hot liquid transfer the heat energy to the food, e.g., roasting.
 - Conduction is where heat is transferred through solid objects by the vibration of heated molecules, e.g., stir frying.
 - Radiation is where heat is transferred from a heat source in the form of rays which travel quickly in straight lines, e.g., grilling.



Meat and poultry nutrition

Meat and poultry are good sources of protein as well as different vitamins and minerals. Poultry like chicken provides B vitamins, phosphorus and selenium and can be low in fat if you choose chicken breast without skin.

Red meats like beef, lamb and pork provide B vitamins, phosphorus, potassium and zinc. Meat is one of the main sources of vitamin B12 in the diet. Beef is a source of iron and pork a source of selenium. Red meat can be high in saturated fat, but you can reduce this by choosing lean cuts and cutting off any extra fat.

Vegetarian sources of iron

Vegetarians are more likely to have lower iron stores than people who eat meat.

Good sources of iron for vegetarians include:

- pulses, such as kidney beans, chickpeas and lentils
- dried fruit, such as apricots
- dark green vegetables, such as watercress, broccoli and spring greens
- wholemeal bread and flour
- fortified cereals (with added iron)
- nuts

Vegetarian sources of vitamin B12

Vitamin B12 is needed for growth, repair and general health. It's only found naturally in animal products. If you regularly eat eggs or dairy products, you probably get enough. But if you only eat a small amount or avoid all animal products, it's important to have a reliable source of vitamin B12 in your diet.

Good sources of vitamin B12 include:

- milk
- cheese
- eggs
- fortified yeast extracts, such as Marmite
- fortified breakfast cereals
- fortified soya products

Vegetarian sources of omega-3 fatty acids

Omega-3 fatty acids, primarily those found in oily fish, can help maintain a healthy heart and reduce the risk of heart disease when eaten as part of a healthy diet.

Sources of omega-3 fatty acids suitable for vegetarians include:

- flaxseed (linseed) oil
- rapeseed oil
- walnuts
- egg enriched with omega-3

Evidence suggests that vegetarian sources of omega-3 fatty acids may not have the same benefits for reducing the risk of heart disease as those in oily fish. But if you eat a vegetarian diet, you can still look after your heart by eating at least 5 portions of a variety of fruit and vegetables each day, [eating less saturated fat](#), and watching how much [salt](#) you eat.