

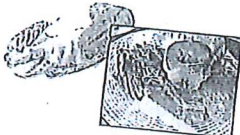
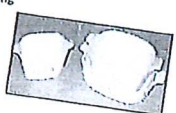
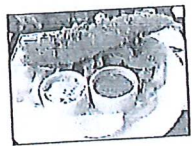
British cuisine







Cuisine is a style of cooking characteristic for a given region or country, which uses specific ingredients, dishes, preparation and cooking methods.

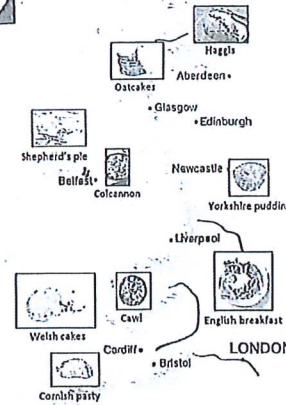
Cuisine may be affected by various factors, such as climate, type of soil available for growing plants, or history.

Immigrants and conquerors in the past have brought many new meals, ingredients, spices and cooking methods, not previously known in the UK.

Distinctive features and characteristics of cooking	Equipment and cooking methods	Eating patterns	Presentation styles	Traditional and modern variations of recipes
<p>Main ingredients used, traditional dishes and other factors which distinguish the cuisine from others.</p> <p>Traditional ingredients:</p> <ul style="list-style-type: none"> Beef, lamb, pork, poultry, bacon and ham Potatoes, onions, leek, peas, beans, swede Milk and cheese (e.g. Cheddar, Stilton) Herbs, such as mint and sage <p>Traditional meals and dishes differ depending on the region (see below).</p> 	<p>Kitchen utensils, dishes and cooking methods specific for a given cuisine.</p> <p>Equipment:</p> <ul style="list-style-type: none"> Open fire for roasting, now exchanged with ovens Thick ceramic dishes used for stews, soups and sauces Tins and moulds for making puddings, pies and tarts <p>Cooking methods:</p> <ul style="list-style-type: none"> Stewing, simmering and braising Roasting and baking Grilling and barbecuing Poaching Frying 	<p>The meals during the day vary between countries – both the time at which they are eaten and the types of meals that are served. This is changing dynamically due to busy lifestyles.</p> <ul style="list-style-type: none"> Breakfast – eaten in the early morning; traditionally very filling; nowadays lighter: may consist of toast with coffee or a bowl of cereal Eleveners – small, usually sweet snacks eaten around 11am with a cup of tea or coffee Brunch – eaten before noon instead of breakfast and lunch, usually at weekends or during business meetings Lunch – midday meal consisting of a sandwich, salad or soup; traditionally, a Sunday lunch is more filling and consists of roasted meat, vegetables, Yorkshire pudding and gravy Afternoon tea – eaten in the afternoon, consists of a pot of tea or coffee with a range of small snacks, sandwiches, biscuits and cakes Dinner – hot meal eaten in the early evening, the main meal of the day Supper – consumed a bit later than dinner, usually replaces it 	<p>How the food is served – how it appeals to the appetites and tastes of consumers.</p> <ul style="list-style-type: none"> Presentation is usually simple, some garnish or sauce may be used to make the food more appetising. Meat or fish is served accompanied by potatoes, vegetables and gravy Puddings are also served with sauces, e.g. custard Desserts are served in individual 	<p>Traditional recipes can be modified to suit busy lifestyles, healthy eating patterns or medical conditions. Variations help to make the meal faster, easier and cheaper to cook.</p> <ul style="list-style-type: none"> Meats, sausage and bacon can be exchanged with low-fat or low-salt products, or substituted with protein alternatives, such as soy chunks or tofu Traditional breakfast is replaced with lighter options, such as toast with jam and orange juice or a bowl of cereal Instead of frying, people may choose to roast, grill or dry-fry the food to make it healthier and less fatty Lard and suet may be exchanged for vegetable oils and spreads New ingredients are introduced to meals as importation allows for a greater variety of foods

Traditional foods of Great Britain








England	Wales	Northern Ireland	Scotland
<ul style="list-style-type: none"> Cornish pasty Yorkshire pudding Lancashire hotpot – lamb and vegetable stew topped with mashed potatoes Clotted cream, cream tea Fish and chips English breakfast – rich and high in calories, contains bacon, sausages, baked beans, buttered toast, fried egg, fried mushrooms and tomatoes Sandwiches Sunday roast Beer and cider 	<ul style="list-style-type: none"> Cawl – meaty broth served with bacon or lamb and vegetables Welsh rarebit – spiced melted cheese served on toast Glamorgan sausage Welsh cakes Bara brith – rich yeast bread with dried fruit Laver bread – stewed laver weed Tatws poply – potatoes baked with onion under a thick layer of cheese 	<ul style="list-style-type: none"> Colcannon – mashed potatoes with kale and cabbage Soda bread Black pudding – sausage made from pork fat, blood and oatmeal Shepherd's pie Irish stew Oatmeal Irish cream Whiskey and beer 	<ul style="list-style-type: none"> Porridge Scotch broth Dunlop cheese Kippers – smoked herring Tatties and herring Haggis – sausage made from sheep offal and barley Scotch pie – pie with mutton meat filling Oatcakes, scones Shortbread Neeps and tatties – potatoes with suede (turnip) Whisky and ale 



International cuisines

Cuisine depends on a region: its culture, religion, climate and weather conditions, and even plant and animal species that live there. For centuries, countries and regions have created a variety of meals, cooking dishes and methods, and even serving and eating patterns, which are characteristic of them.



	Distinctive features and characteristics of cooking	Equipment and cooking methods	Eating patterns	Presentation styles	Traditional and modern variations of recipes
Mediterranean cuisine	<p>Includes: Italy, France, Spain, Greece, North Africa, Turkey</p> <p>Ingredients: olives and olive oil, grapes and wine, fish and seafood, tomatoes, aubergines, courgettes, wheat (e.g. in couscous, pasta, semolina), bell peppers, citrus fruits, apricots, herbs (saffron, thyme, oregano, marjoram), garlic and onion, beans and lentils, milk and dairy</p> <p>Typical meals:</p> <ul style="list-style-type: none"> Italian: risotto, pizza, spaghetti, mozzarella, ricotta French: cassoulet, ratatouille, fish soup, bouillabaisse, selection of cheeses, croissants, crêpes Spanish: paella, cured and dried ham, empanette, gazpacho Greek: moussaka, tzatziki, feta, filo pastry Morocco: tabbouleh, hummus, bulgur, couscous, tagine, harissa Turkish: börek, pilav, kebab, sheep cheese, baklava, halva 	<p>Equipment:</p> <ul style="list-style-type: none"> Clay ovens used for baking, now exchanged for electric or gas ovens Thick ceramic dishes for stews Paellera – shallow frying pan used to make paella Tagine – a dome-shaped clay dish used to prepare tagines in Arabic countries <p>Cooking methods:</p> <ul style="list-style-type: none"> Baking Frying Simmering and stewing Grilling Steaming and boiling 	<p>Meals vary between countries; for example, the time of day at which they are eaten and the types of meals that are served. This is changing dynamically due to busy lifestyles.</p> <ul style="list-style-type: none"> In Italy and France, especially on large occasions, meals can have many courses (usually a starter, soup, main dish, salad, cheese and dessert), usually accompanied by wine Breakfast might be rather small and sweet, e.g. croissants with jam and coffee In Spain, a siesta (short nap) is taken after the midday meal In Spain (kens) and Greece (vradioto) is eaten quite late – after 9pm In Morocco and other Arabic countries, meals are celebrated and a long time is spent eating In Turkey, hands and mouth are washed before and after eating. Traditionally, it was considered to be good manners to belch and lick one's fingers while eating; nowadays it may be considered rude 	<p>How the food is served – how it appeals to the appetites and tastes of the consumers.</p> <ul style="list-style-type: none"> Most meals are quite simple, consisting of 4-8 ingredients only, but they are usually very colourful Sauce may be splashed on top to make it more appetising, e.g. cream on top of a soup, carbonara sauce with pasta Dishes might be garnished with fresh herbs, such as coriander or parsley In Morocco, meals are often served in large clay dishes so people may eat from one dish 	<p>Traditional recipes can be modified to suit busy lifestyles, healthy eating patterns or medical conditions. Variations help to make the meal faster, easier and cheaper to cook.</p> <ul style="list-style-type: none"> Traditional meals are quite time-consuming to prepare, so are often exchanged for more modern, faster to cook meals People often choose to eat out or order take-away Thick sauces based on fat and cream may be exchanged for lighter versions, e.g. yoghurt People more often choose, healthy, natural, organic foods In Morocco, more modern cooking includes the use of fewer spices and eating more raw vegetables Culinary shows make cooking more trendy and inspire people to cook at home more often
Asian cuisine	<p>China</p> <p>Each Canton in China has its own regional cuisine and uses different ingredients and spices (e.g. Sichuan and Cantonese)</p> <p>Ingredients: noodles and rice, pork, duck, chicken, Chinese cabbage, water chestnuts, bamboo shoots, mushrooms, bean sprouts, soy, soy sauce, lychee fruit, fish and seafood, eggs, ginger, garlic, sesame and peanut oil</p> <p>Traditional meals: steamed or fried rice, chicken soup with noodles, tofu and sticky tofu, moon cake, spring rolls, wontons, dumplings, chow mein, sweet and sour pork</p> <p>Japan</p> <p>Ingredients: rice, soya, fish and seafood, noodles, seaweed, eggs, seasonal foods, green tea, wasabi</p> <p>Traditional meals: sushi, tempura, donburi, udon noodles, miso soup, sashimi</p> <p>India</p> <p>Also differs from region to region</p> <p>Shaped by colonialism and development of trade</p> <p>Ingredients: pearl millet, rice, lentils, chickpeas, beans, peanut oil, coconut milk, ghee butter, paneer cheese, many rich spices</p> <p>Traditional meals: fried paneer, vindaloo curry, rogan josh, korma, bhaji, tandoori chicken</p>	<p>Equipment:</p> <ul style="list-style-type: none"> Wok – deep, rounded pan Chopsticks – used instead of cutlery Knives – famous for their sharpness Deep-frying, grilling and steaming Eating raw fish, vinegared dishes <p>Cooking methods:</p> <ul style="list-style-type: none"> Stir-frying and deep-frying Steaming and boiling Red stewing (cooking with addition of a red-dyed liquid)   	<p>Typically three meals a day</p> <ul style="list-style-type: none"> Early breakfast, might contain boiled white rice with various sides Lunch may be substituted with light snacks Dinner, usually shared with family or friends <p>Rich, filling breakfast is important to provide energy for the whole day</p> <p>Beet leaves may be eaten after the meal to support digestion</p> <p>Evening meal is usually eaten with the whole family – it is the most important meal of the day</p>	<p>Very colourful dishes</p> <ul style="list-style-type: none"> Served in many small bowls for people to share May be garnished with spring onions or herbs Chopsticks are provided instead of cutlery The use of a knife may be seen as offensive <p>Food is often served and eaten on the floor, while diners kneel</p> <p>A hot towel may be provided to clean hands before eating</p> <p>Soy sauce is provided for dipping food in</p>  	<p>Traditionally, meals were served in individual dishes; nowadays, they are placed in the middle of the table for people to share and try all of them</p> <p>Talking is now allowed during the meal – in the past people rarely spoke while eating</p> <p>Modern lifestyle has caused a dramatic increase in obesity rates in China</p> <p>International cuisines are gaining in popularity, e.g. pizza</p> <p>Foreign meals are eaten more often, such as American burgers, Korean kimchi, Hawaiian spam musubi and Chinese ramen</p> <p>Meat consumption has increased during the last 50 years</p> <p>Meals can be skipped or replaced with light snacks</p> <p>People more often use cutlery to eat, especially the middle class</p> <p>The use of many nuts may need a replacement which is suitable for nut-allergy sufferers</p> <p>The cuisine is mainly vegetarian</p> <p>The use of many various spices may also pose a risk for allergy sufferers, as well as deterring people who don't enjoy spicy foods</p> <p>People more often choose to eat out than cook at home</p>

*This provides two cuisines, however schools or colleges/students can select any two different cuisines



Food sources

Where and how food is made depends on many factors, such as:

- Climate
- Soil quality
- Availability of water and other resources
- Availability of land suitable for growing plants and pastures
- The size of a population and how much food needs to be produced.

Other factors, such as religion and ethical beliefs of local communities, also play an important role in deciding what foods will be made in the nearest area.

For example, more and more free-range eggs are produced in the UK nowadays due to popular belief that free-range hens are happier and produce better-quality eggs, but also to ensure animal welfare standards are kept.

Food source type	Where	Example	What for?
Grown	Orchards	Apples, plums, avocados, cherries, nuts	Fruit, nuts, animal feed
	Fields	Root vegetables, grains, seeds, legumes	Food, animal feed, fertilisers, bioenergy
	Polytunnels	Lettuce, radish, strawberries	To ensure availability all year long
Reared	Sheds, barns	Cattle, pigs, horses, poultry	Meat, milk, leather, feathers, eggs, work, bioenergy
	Fish farms	Fish, seafood	Food, animal feed
Gathered	In forests, near the roads	Wild berries, mushrooms, herbs	Medicines, beverages, herbal teas, spirits and liquors, pickles
Caught	Open spaces and forests	Wild animals, game and venison	Food, enjoyment
	Oceans and seas	Wild fish, seafood	Food

Farming

A farm is an agriculture establishment in which crops are grown and livestock is reared for profit. The two main ways of farming include:

Organic farming

- ✓ No chemicals
- ✓ Little or no use of pesticides
- ✓ No artificial fertilisers
- ✓ No herbicides
- ✓ No GM feed or seeds
- ✓ Antibiotics are only used when necessary
- ✓ Crop rotation may be applied to preserve soil quality
- ✓ Animal welfare standards are kept

Intensive farming

- Chemicals such as pesticides, herbicides and artificial fertilisers are used to prevent crop failure
- Antibiotics are used to prevent diseases in livestock, not to cure them
- GM feed and seeds are used to obtain high-yield crops
- Animal welfare standards are often violated

Sustainable fishing

Rearing fish and seafood in fish farms for meat, caviar, pearls, animal feed or other reasons. Sustainable fishing means that fishing in natural fisheries is allowed only for certain periods of time so that the shoal of fish has the chance to reproduce and restore itself.

Advantages of fish farms:

- ✓ Protect natural ecosystems
- ✓ Prevent overexploitation of fisheries
- ✓ Keep animal welfare standards
- ✓ Protect wild species diversity
- ✓ Prevent by-catch



By-catch: accidental catch of a sea organism which wasn't the primary goal of the fishing.

Disadvantages of fish farms:

- ✗ The fish tanks are often overcrowded
- ✗ Fish might be fed low-quality feed which affects their flavour and nutritional value
- ✗ Fish might be fed antibiotics, increasing the risk of antibiotic resistance

Sustainable fishing policy is set by the Marine Stewardship Council.

Methods of fishing:

- Purse seining: fishing with the use of a large net in which fish and other sea organisms are trapped
- Longlining: fishing with the use of a longline to which other lines are attached, each of which ends with a hook
- Bottom trawling: pulling a large net along the sea bottom, used to catch shrimp and bottom-dwelling fish



Food production

The way food is made affects its quality, safety and yield. Modern technologies help to obtain high amounts of food while ensuring it's safe to eat and nutritious.

Egg production

Symbol	Name	Conditions
0	organic	Birds are fed only organic feed, animal welfare standards are applied
1	free-range	Hens are let outside the barn during the day to enjoy the most natural conditions possible
2	barn	Birds can move freely around the barn, but may have trimmed beaks to reduce injury caused by fighting among themselves
3	cage	Hens are kept in tight cages, without being able to move

Red Lion Scheme is a quality mark which ensures that all hens have been vaccinated against salmonella so the eggs are safe to eat.

Local and seasonal foods

Characteristic of countries or regions, as well as certain seasons of the year.

- fresher
- more nutritious
- tastier
- empowers local farmers
- supports local communities
- may be cheaper than imported foods
- supports biodiversity of species

- limited offer / small variety of foods offered
- limited availability / short time for purchase
- depends on weather conditions and local climate
- may be more expensive than imported foods

Genetically modified foods

Come from GM animals or plants, or GM microorganisms are used during production.

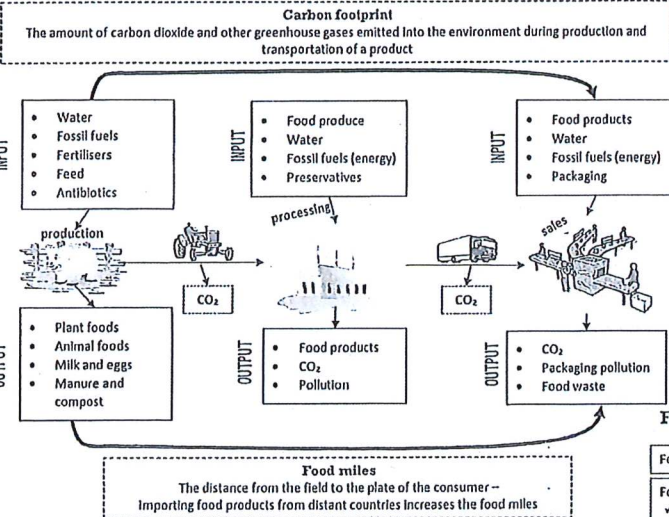
- resistance to pests and unfavourable weather conditions
- more nutrients, e.g. beta-carotene in Golden Rice
- fewer pesticides and herbicides are used
- higher yield of crops = more food stay fresh for longer, shelf life is improved

- no known long-term health effects
- use of viruses and bacteria may pose risk of spreading new diseases
- GM seeds can contaminate natural habitats and decrease species variety
- pests, bacteria and viruses may develop resistance and pose new risks

Food and the environment, and sustainability of food

Why is carbon dioxide so dangerous?

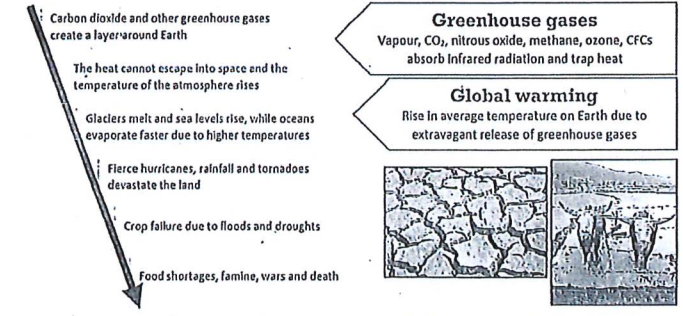
Food production, at each of its stages, emits large amounts of carbon dioxide. Carbon dioxide creates an impermeable layer around Earth. When warmth is reflected from the Earth's surface, it is caught by that layer and bounces back. As a result, the average temperature on Earth rises, and that affects plant and animal species.



Each step of food production has a huge impact on the environment. Overexploitation of natural resources, such as water, soil and fossil fuels, together with transportation and packaging of food, contribute significantly to climate change.

Climate change

... the effect of this process is known as global warming. Global warming means that climate conditions change and plants cannot grow anymore, because they are not used to the new conditions. Also, as it is warmer, oceans evaporate faster, and this leads to severe hurricanes and massive rainfall, which damage even more crops by causing flooding.



How food production affects the environment and communities

Food production has a direct and an indirect effect on the environment by creating various pollutants or by causing deforestation. The way we produce and transport food is also meaningful to those who produce it: farmers, farm workers, and even people working in your local shop.

Packaging

- Fossil fuels are used to produce many types of packaging
- Tonnes of used packaging are thrown away every day
- Unrecycled packaging creates pollution
- Animals, birds and fish swallow the debris and die
- Some materials used for packaging NEVER decompose!

Fairtrade

A foundation and ethical movement focused on supporting farmers and sustainability of food.

Advantages of Fairtrade:

- ✓ Ensures fair wages and prices
- ✓ Improves working conditions
- ✓ Empowers local communities, farmers and workers
- ✓ Supports education and growth in developing countries
- ✓ Helps to protect the environment

Food availability

Food security - when all people, at any time, have access to nutritious, healthy food in sufficient amount

Food availability may be increased by:

- ✓ The use of GM seeds and organisms to produce more food
- ✓ Modern technologies to store food for longer
- ✓ Transportation of food around the world, e.g. to those who affected by famine

Food availability may be decreased by:

- ✗ Climate change and the effects of global warming
- ✗ Insufficient land for growing food
- ✗ Growing world population which requires more food
- ✗ Overexploitation of soil and fisheries
- ✗ Limited resources such as water and fossil fuels

Seasonal foods

Food products which are characteristic of a given season, because this is when they are ripe and are harvested

Spring: sprouts, kale, lettuce, spring onion, radish
 Summer: peas, berries, courgettes, cucumbers, apricots, cherries
 Autumn: apples, pears, plums, aubergine, pumpkin
 Winter: potatoes, carrots, parsnips, beetroot, Brussel sprouts, onions

Advantages of seasonal foods:

- ✓ Are often produced locally, so reduce food miles and carbon footprint
- ✓ Are cheaper in season
- ✓ Are higher in nutrients and tastier than off season

Food waste

Reasons:

- Buy and cook too much
- Don't eat the food before it goes off

Effects:

- Waste of money, pollution, carbon footprint increase

Methods of prevention:

- Plan shopping, don't go shopping when hungry
- Only cook as much food as needed
- Eat everything on the plate or store leftovers for later
- Reuse food products to make new meals
- Store food correctly to avoid spoilage
- Use peelings and scraps to make compost

Food choices

Religion often dictates nutritional regime, indicates what foods can be eaten and when, and what foods should be avoided.

	Rastafarians	Buddhists	Muslims	Jews	Hindus	Sikhs	Christians
Eat	• Ital • Coconut oil, herbal tea, fruit and juices, vegetables	• A vegetarian diet	• Halal food only	• Kosher food only	• Milk • A mainly vegetarian diet	• A vegetarian diet	• Generally everything, no special restrictions
Don't eat	• Pork and other meat • Salt • Milk • Coffee • Alcohol	• Alcohol • Meat	• Pork • Alcohol • Fish and shellfish without scales	• Shellfish • Pork • Meat with dairy	• Beef • Alcohol	• Alcohol • Kosher or halal food • Beef	• Meat on Fridays
Holidays or fasting periods	• Ethiopian Christmas (7 th Jan) • Groundation Day	• Vesak – Buddha's birthday	• Ramadan – month-long fasting period during which Muslims can eat only at night	• Passover • Rosh Hashanah • Yom Kippur • Hanukkah	• Diwali – festival of lights	• Guru Nanak's birthday	• Lent – period of fasting lasting for 40 days before Easter • Easter • Christmas
Other	• Ital means clean, natural, pure	• Don't kill animals purposefully but would not refuse meat if given	• Halal means permitted, allowed	• Kosher means clean • Matza is a special unleavened bread	• Cows are sacred animals • During Diwali, sweets are given as gifts	• Karah Parshad pudding eaten during the holiday	• Many festive foods, usually different for Easter and Christmas; Christmas pudding, hot cross buns, chocolate Easter eggs

Fasting means that a person cannot eat any food for a given period of time. Sometimes water and other beverages are permitted.

Alcohol consumption is forbidden by most religions



Ethical beliefs

People may choose to eat or avoid eating certain products because of their ethical or moral beliefs.

These may be based on:

- Whether animals or people suffer during food production
- How food is made
- How food production affects the environment

Fairtrade
Global movement focused on ensuring fair working conditions, prices and wages to farmers and workers in developing countries.

- Improves working and living conditions
- Supports education and development
- Empowers farmers and their families

Animal welfare
Movement focused on ensuring the well-being of animals and humane conditions for rearing animals.

- How animals are treated
- How they are treated for medical conditions or protected from diseases
- How they are slaughtered
- What their living conditions are like

Organic foods
Plants and animals are grown and reared in the most natural way possible.

- No chemicals
- No pesticides or herbicides
- No artificial fertilisers
- No antibiotics
- No GM feed or fertilisers

GM foods
Plants or animals in which DNA has been altered.

DNA
Carrier of all information about a living organism, in the form of a double helix tightly packed in a cell's nucleus

Gene
Part of a DNA strand, which carries specific information

- Improved immunity, reduced need for pesticides
- Higher crops and smaller risk of food shortage
- More nutrients (e.g. Golden Rice)
- Unknown health effects
- Probably cause morbid obesity
- Potentially cause cancer

Local produce

- Fresher, tastier, cheaper food products
- Fewer food miles and lower carbon emissions
- Support for local farmers and societies
- No need for long-distance transportation

Food miles
Distance from a farm to the plate

Carbon footprint
Indicates how much carbon dioxide and other greenhouse gases were emitted during the production and transportation of a given product

Greenhouse gases

- Carbon dioxide
- Water vapour
- Nitrous oxide
- Ozone
- Chlorofluorocarbons

Trap heat around Earth and contribute to global warming.

Medical conditions

Many people cannot eat certain products because they would cause harm to their bodies.

Food intolerance
Reaction of the digestive tract to a food ingredient

What are the most common intolerances?

- Lactose – the sugar naturally occurring in milk
- Gluten – the protein naturally occurring in wheat, barley, rye and oats

Symptoms and diet

- Food intolerances cause bloating, stomach cramps or diarrhoea, but aren't dangerous.
- People should avoid eating certain foods or eat them in small amounts only.

Food allergy
Reaction of the immune system to a food ingredient

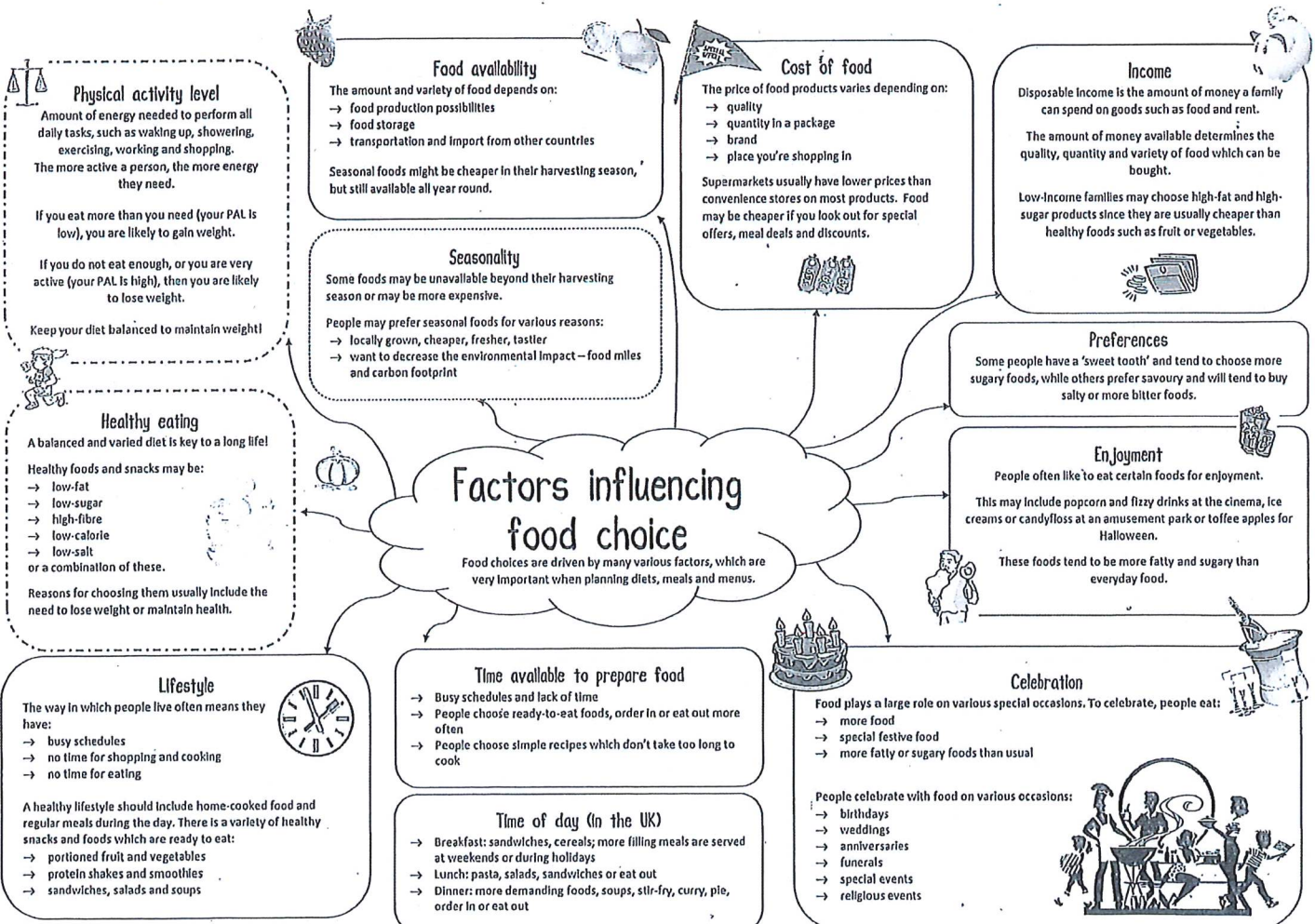
What are the most common allergens?

- Nuts, eggs, milk, wheat, fish and shellfish

Symptoms and diet

Allergens may cause a severe, life-threatening reaction: anaphylactic shock.

People with allergies have to avoid the foods they are allergic to for their entire life.



Food labelling

Proper labelling of food products is important to ensure food safety (e.g. for allergy sufferers) and nutritional education (e.g. for those who wish to lead a healthy lifestyle).

- Name of the food is important so that people know what is inside the package, e.g. butter or butter-like spread
- Use by – applies to food safety; it may be harmful to eat food after this date; used on fresh, perishable foods such as milk, dairy and fresh meat
Best before – applies to food quality; it is usually safe to eat the food after this date, although its flavour, colour or appearance may be changed; used on dried, preserved or tinned foods such as jams and pasta
- Quantity is given so that it is easier to compare prices between products; and so that the consumer knows how many portions of food the package contains
- Warnings are given as necessary, e.g. may contain nuts, source of phenylalanine
- List of ingredients is shown in descending order, from the one which is used in the largest amount to the one which is used in the smallest amount
- Name of the company is important to track where the food comes from in case of food spoilage, anaphylactic reactions, pieces of glass inside, etc.
- The lot number is useful in case of food spoilage or contamination – it is easier to track the whole lot and remove it from the market
- Storage conditions are given if needed, e.g. refrigerate after opening, suitable for freezing
- Instruction for preparation helps people to properly prepare and enjoy the food, without poisoning themselves
- Country of origin is important to track in case of food poisoning, but also for people who prefer to eat locally produced food

Food Legislation authorities



European Parliament and the European Council



Food Standards Agency

11 Allergens – ingredients which may cause an allergic reaction – are shown in bold

List of allergens which HAVE to be indicated on the label

- X Cereals containing gluten: wheat, rye, barley, oats
- X Peanuts
- X Nuts: almond, hazelnut, walnut, cashew, pecan, Brazil, pistachio, macadamia, Queensland nut, e.g. *flavourings (almond)*
- X Sesame, e.g. *tahini (sesame)*
- X Soybeans, e.g. *tofu (soya)*
- X Fish, e.g. *cod (fish), salmon (fish)*
- X Crustaceans: prawns, crayfish, lobster, shrimp
- X Molluscs: oyster, squid, cockles, mussels, winkles, scallops, snails, e.g. *oyster sauce (molluscs)*
- X Lupin
- X Eggs, e.g. *powdered yolk (eggs)*
- X Celery
- X Milk, e.g. *Cheddar cheese (from milk)*
- X Sulphur dioxide or sulphites, e.g. *preservative (sulphur dioxide)*

Food label: mandatory information

- Name of the food
- Date marks
- Quantity, e.g. in litres, grams or pieces
- Warnings
- List of ingredients
- Name and address of the producing, packing or selling company
- The lot number
- Special storage conditions
- Necessary instructions for use or preparation
- Country of origin
- Allergens
- Nutrition declaration

12 Nutrition declaration informs consumers of the amount of certain nutrients per 100 g or portion of product and % of GDA it provides.

Traffic light label may be used to indicate low (green), medium (amber) or high (red) amounts of sugar, fats, saturated fats, and salt in a portion of a food product.

Protein	8.8g	0.6g	1%	50g
Salt	1.55g	0.10g	2%	6g

Some food labels may include non-mandatory information, such as a picture of the food, health and nutritional claims or serving suggestions.

GDA – guideline daily amount – amount of a nutrient a person should eat each day to remain healthy and avoid under- or over-nutrition

Nutritional claim
Statement regarding nutrient content, e.g. 'low energy', 'low fat', 'sugar free', 'source of vitamin C'

Health claim
Statement suggesting potential health benefits of eating a given product, e.g. 'Calcium is needed for the maintenance of healthy teeth and bones'

- Nutrients have to be listed in a specific order...
- Energy
 - Fat, inc. saturates
 - Carbohydrates, inc. sugars
 - Fibre, if any
 - Proteins
 - Salt or sodium
 - Vitamins and minerals

Marketing influences

Various techniques and methods which aim to increase sales and maximise profit

MEAL DEAL

A type of special offer in which buying two or more indicated products means that the price is cheaper than when buying them separately.

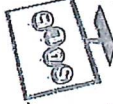
BOGOF

Special offer whereby buying one item of a product means that another pack of the same product will be free. Other versions include 'buy one, get one half price' or 'three for the price of two'.

BUY 1 GET 1 FREE

ADVERTISING

Posters, TV spots, newspaper publications and other actions taken to promote a product and make it desirable for consumers.



SPECIAL OFFER

Usually, special offers include discounts when buying larger amounts of a given product, free gifts, vouchers, etc.

A specific type of special offer is selling food more cheaply shortly before its 'best before' / 'use by' date.

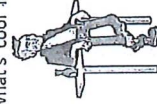
MEDIA INFLUENCES

The television, radio or newspapers may have a large impact on food choices by using a technique called 'product placement'.

A food product is used by famous actors, movie characters or characters from popular sitcoms to make the food look 'desirable', 'fashionable' and 'cool'.

PEER PRESSURE

This applies especially to children and teenagers, as they tend to follow what's 'cool' in their age group, e.g. smoking.



Point of sales

Food stand located near checkouts, usually containing relatively expensive items such as chewing gum, chocolate bars and other sweets.

People tend to buy these products more often if they spend a lot of time standing in a queue.

PESTER POWER
The ability of children to force their parents to buy them sweets, toys or other things.

Food packages are often colourful and eye-catching to make them desirable for children. This technique uses pester power to increase sales.



Food production

Various methods of food production and processing help to obtain a variety of food products, but can also affect the nutritional value of food.

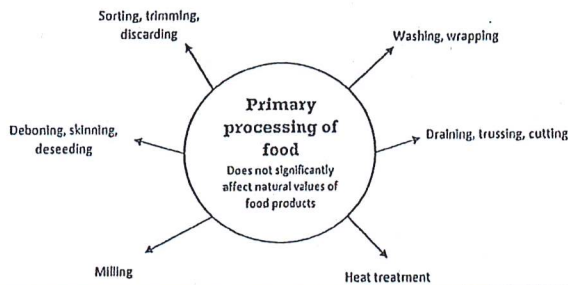
Water-soluble vitamins are especially fragile to such factors as light and temperature. Heating can lead to a loss of approximately 70% of folates, 55% of thiamine and 50% of vitamins C, B6 and B12.

Primary sources of food

Foods in their natural, raw state, e.g. milk, wheat grains, apples

Secondary sources of food

Foods that have been changed, e.g. yoghurt, flour, jam

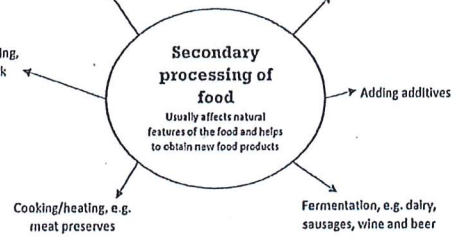


Drying and freeze-drying, e.g. fruit, herbs, milk



Smoking, e.g. meat, fish, cheese

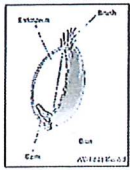
Irradiation, e.g. herbs, meat



The making of flour

1. Harvesting and transport to the factory/mill
2. Separating from dirt, stones, pieces of metal and other pollution
3. Washing and drying to easily separate the bran
4. Milling
5. Sieving to separate the bran

Bran: the outer layer of a grain



Heat treatment of milk

Pasteurisation: warming up the milk to 72 °C for 15 seconds to kill most of the pathogenic bacteria
Ultra-heat treatment: heating up the milk to 135 °C for 1–2 seconds to kill all bacteria and spores
Microfiltration: pushing the milk through very fine membranes to remove bacteria and other pollutants
Homogenisation: pushing the milk under pressure through very fine membranes to reduce the size of fat droplets and prevent the formation of cream
Sterilisation: heating up the milk to over 110 °C for 30 minutes to kill bacteria and spores.
 Sterilisation of milk leads to a change in colour, flavour and nutritional value of milk. During the process, milk proteins react with lactose, creating brown pigments which also affect the flavour of milk. High temperature decreases the amount of vitamins in the milk, especially vitamins B1 and B12.
Drying: process in which milk is first condensed, and then dried. The temperatures used during the process may lead to a fall in the levels of vitamin B1 and vitamin B12 in the powdered milk.

The making of pasta

1. Harvesting the cereals and transportation to the mill
2. Milling and transportation to the factory
3. Mixing flour with warm water
4. Kneading and gluten formation
5. Adding flavourings and colourants
6. Rolling and pressing
7. Pasteurisation with steam
8. Cutting the pasta into chosen shape
9. Drying
10. Packaging

The making of jam

1. Harvesting the fruit
 2. Washing and crushing/cutting
 3. Adding water and sugar
 4. Simmering
 5. Pouring into jars
- Pectin:** natural gelling agent present in fruit. It is released from fruit in the presence of heat and acid.
Acid: may be naturally occurring in fruit or may be added to the mixture to help release the pectin.



The making of yoghurt

1. Milking cows and transporting the milk to the factory
 2. Pasteurisation and homogenisation
 3. Warming up to 42 °C
 4. Adding starter cultures
 5. Fermentation (ripening)
 6. Cooling
 7. Adding flavourings
 8. Packaging
- Starter cultures:** probiotic bacteria added to milk during yogurt and cheese production to begin the process of fermentation
Fermentation: changing lactose into lactic acid by adding bacteria. This changes the pH of milk and leads to protein coagulation/denaturation and thickening of the mixture.

The making of cheese

1. Milking cows and transporting the milk to the factory
 2. Pasteurisation and homogenisation
 3. Adding starter cultures
 4. Fermentation (ripening)
 5. Adding rennet
 6. Cutting the curd and separating it from the whey
 7. Pressing (stacking curds on top of each other)
 8. Adding salt
 9. Pressing into cheese hoops
 10. Ageing
- Rennet:** enzyme which coagulates milk and increases curdling
Whey: liquid by-product of cheese production

Technological developments associated with better health and food production

Modern technologies not only help to obtain high-yield crops, but also help to better preserve and improve nutritional value of food to support healthy living.

Supporting health

What we eat has a huge impact on our health. Eating too little may lead to deficiency of a given nutrient. This is important since processing of food often leads to a decrease in its nutritional value – higher calorie content, but lower vitamin and mineral amount, etc.

Governments and producers strive to make food safe and healthy for consumers by adding substances which are beneficial for health.

Cholesterol-lowering spreads

Cholesterol: fatty substance necessary for correctly transporting fats around the body. It is found in many animal-derived foods, such as meat, cheese and eggs. Cholesterol does not occur in plant-derived foods.
 → LDL is 'bad' because it increases cholesterol amount in blood where it can be used to build plaque in blood vessels
 → HDL is 'good' because it transports cholesterol to the liver, which can remove its excess from the body

Health outcomes of increased cholesterol levels and excessive fat consumption:
 → In excess, cholesterol may be deposited in the blood vessels, creating atherosclerotic plaque
 → This increases the risk of hypertension, CHD, heart failure and stroke.

Some fat spreads are enriched with plant sterols and plant stanols. These substances have proven to be effective in lowering blood cholesterol level and preventing atherosclerosis.



Food fortification

During processing, many food products lose their nutritional value.

The function of food fortification is to:

- Restore the nutritional value of foods
- Improve the nutritional value of foods
- Make food more suitable for certain groups of consumers
- Prevent diseases caused by malnutrition

Some foods are fortified by law:

Wheat flour and bread	Thiamine	To prevent beriberi disease, help release energy from food
	Niacin	To prevent pellagra, help release energy from food
	Calcium	To prevent rickets and osteoporosis
	Iron	To prevent iron deficiency anaemia
Vegetable fat spreads	Vitamin A	To prevent growth and eyesight issues, such as night blindness
	Vitamin D	To prevent rickets and osteoporosis
Semi-skimmed and skimmed milk	Vitamin A	To prevent growth and eyesight issues, such as night blindness

Other foods, such as cereals and fruit juices, may be fortified voluntarily.

60% Wholegrain Rolled Oats, 38% Wholegrain Oat Flour, Calcium, Niacin, Iron, Riboflavin B2, Vitamin B6, Thiamin B1, Folic Acid, Vitamin D, Vitamin B12.

Genetic modifications

Each cell of a plant or animal has a nucleus, which contains its DNA. DNA is built of tiny fragments called genes, which encode all information about the organism.

Cell → nucleus → chromosome → DNA → gene

Modern technologies have allowed people to manipulate and change the DNA code. It is possible to:

- Cut out unwanted genes to avoid diseases or eliminate bad features
- Modify the sequence of genes to change the information they carry
- Paste new genes to a DNA strand to give the organisms new features

If a plant or an animal's DNA has been changed, we say the organism has been called genetically modified.

Advantages of GM foods

- ✓ Resistant to weather conditions
- ✓ Resistant to pests
- ✓ Need fewer nutrients to grow
- ✓ Less need for fertilisers and herbicides
- ✓ Animals produce more muscle tissue and milk
- ✓ Produce high-yield crops necessary to feed the growing population
- ✓ May have more nutrients than the natural species (e.g. Golden Rice)
- ✓ May have more intense flavour or colour

Disadvantages of GM foods

- ✗ GM seeds contaminate fields and lower biodiversity of plant species
- ✗ No proof that they are safe to eat
- ✗ May increase the risk of allergies and cancer
- ✗ May contribute to the growing rates of obesity in the world
- ✗ The use of bacteria and viruses in production can cause the creation of new diseases
- ✗ May lead to antibiotic resistance and the spreading of diseases which are difficult to fight off
- ✗ Pests may develop resistance and the use of pesticides may increase drastically when this happens

Food additives

All food additives must be carefully tested before they can be used in food products. They are listed on the food label along with their E number and their function.

	Advantages	Disadvantages
Colourings	<ul style="list-style-type: none"> • Improve the look of food • Make food more appetising 	<ul style="list-style-type: none"> • May be used to hide poor quality of food • May cause hyperactivity in children
Emulsifiers and stabilisers	<ul style="list-style-type: none"> • Prevent the ingredients from separating • Maintain the texture of food 	<ul style="list-style-type: none"> • Flatulence and bloating • May be used to hide poor quality of ingredients used
Flavourings	<ul style="list-style-type: none"> • Improve the taste and smell of food • Make food more appetising 	<ul style="list-style-type: none"> • May be used to hide poor quality of ingredients used • Increase appetite and make people eat more than they need
Preservatives	<ul style="list-style-type: none"> • Enhance shelf life of food • Prevent oxidation and spoilage 	<ul style="list-style-type: none"> • May cause allergy response and anaphylactic shock • Nitrates may contribute to cancer development

Food additives may be natural (e.g. beetroot extract used as a colouring agent) or synthetic (e.g. citric acid).

