

I.4. Food Safety Knowledge Organiser and Revision Planner



Keywords

Word/term	Meaning
Pathogen	A type of bacteria which can make you ill such as salmonella
Bacteria	A tiny living microorganism
Allergy	When our immune system reacts to something we have come in contact with. Happens immediately and can be life threatening (anaphylaxis).
Allergen	The trigger / cause of the allergic reaction. For example: nuts, eggs, shellfish
Intolerance	A delayed reaction to foods which our bodies do not digest very well or are irritated by.
Anaphylaxis	Is a serious and life-threatening reaction to an allergen where the throat can swell and block the airway.
Conditions required for growth	The environment and factors needed for survival and growth (for bacteria). They include moisture, warmth, protein, time and a neutral pH.
High risk food	Any 'ready to eat food which provides the right conditions for bacteria to grow.
Low risk food	Any foods which bacteria do not like to grow on, so are unlikely to cause food poisoning.
Coeliac disease	A condition where your immune system attacks your own tissues when you eat gluten.
Contamination	When something which should not be in the food gets into it or comes into contact with it.
Cross contamination	When bacteria transfers from place to place.
Physical contamination	When a physical item such as jewellery contaminates food.
Chemical contamination	When a chemical such as bleach contaminates a food.
Biological contamination	When a living organism such as bacteria contaminates a food.
EHO	Environmental Health Officers (EHOs) are employed in the UK by local authorities and overseen by the Food Standards Agency to enforce food safety legislation
HACCP	Hazard Analysis Critical Control Point – A type of risk assessment. The document is made by food establishments as a way of controlling the risk of harm to the public when consuming food.
Emergency Prohibition Notice	When an EHO decides there is an urgent need to close a premises (if there is a high risk of food poisoning).



Topic: I.4.1 Food related causes of ill health	Revise	Test	Perfect
Causes of food related ill health (allergies, bacteria, chemicals, intolerances)			
Type of food poisoning pathogens and their conditions for growth (bacillus cereus, campylobacter, clostridium, perfringens, e-coli, listeria, salmonella, staphylococcus aureus)			
Food allergies What it is, common allergens, visible and non-visible symptoms including anaphylaxis			
Food intolerances What it is, common intolerances including coeliac disease			
Food safety legislation (food labelling legislation, food safety act and general food hygiene regulations)			

Topic: I.4.2 Symptoms and signs of food-induced ill health	Revise	Test	Perfect
Visible and non-visible symptoms of food poisoning			

Topic: I.4.3 Preventative control measures of food-induced ill health	Revise	Test	Perfect
Cross contamination and how to avoid it happening			
Correct temperatures for food at all stages: <ul style="list-style-type: none"> • Delivery • Storage (fridge/freezer) • Preparation • Cooking • Hot holding 			
Preventing physical, chemical and biological contamination			

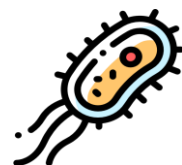
Topic: I.4.4 The Environmental Health Officer (EHO)	Revise	Test	Perfect
The role and responsibilities including actions which can be taken			

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1.4.1 Food related causes of ill health & 1.4.2 Symptoms and signs of food-induced ill health

Causes of food related ill health

There are many ways in which food related ill health can occur. This includes:

- Bacteria
- Allergies
- Intolerances
- Chemicals (such as: detergent and bleach, pesticides and fertilisers)

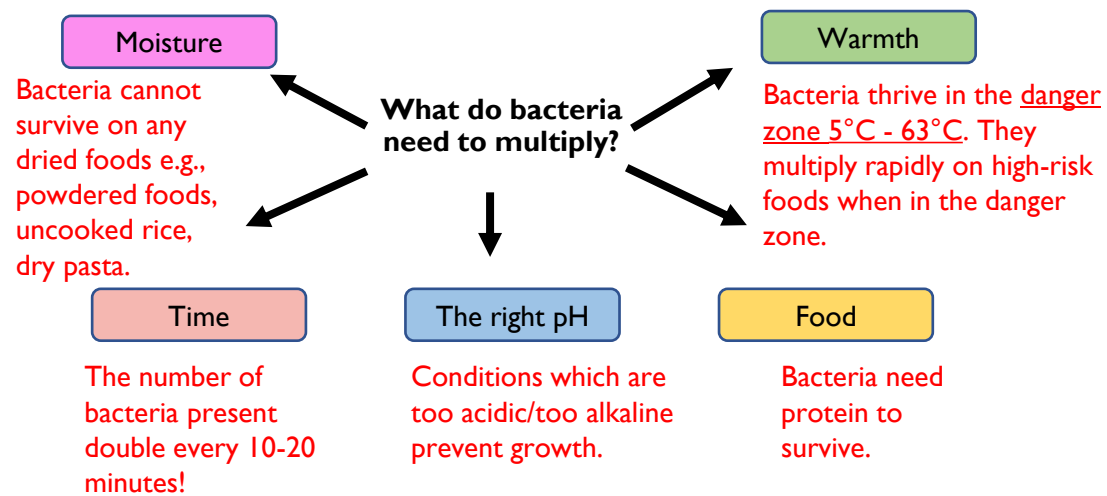


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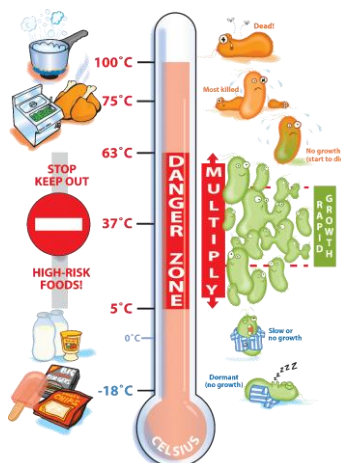
Food poisoning and pathogens

Pathogenic bacteria must be **INSIDE** your body to make you ill. These are consumed via the food you eat. Once inside they can harm your bodies and cause food poisoning symptoms to occur. There are lots of different types of food poisoning which can occur, depending on the type of pathogen you have consumed.

Conditions bacteria need to grow and survive



Influence of temperature



75°C for 30 seconds or 70 °C for 2 minutes
The core temperature of food when cooking. Destroys most pathogens.

63°C
'Hot holding' temperature for cooked food. Too hot, bacteria start to die.

5°C - 63°C
The danger zone. This is when bacteria multiply rapidly on high-risk foods.

0°C - 5°C
Fridge temperature. This is when growth slows or stops. Cool down leftover cooked food within 90 mins.

-18°C
Freezer temperature. Bacteria are dormant, no growth happens.

Types of food poisoning

Pathogen (Type of food poisoning)	Source (where they are found)
Salmonella 	<ul style="list-style-type: none"> • Raw eggs • Undercooked poultry • Unpasteurised milk and dairy products • Pets
Listeria 	<ul style="list-style-type: none"> • Ready to eat foods such as prepackaged sandwiches • Unpasteurised milk and dairy products • Soft cheeses • Soil, sewerage and contaminated water
E-coli 	<ul style="list-style-type: none"> • Raw and undercooked meat and poultry • Soil on unwashed fruits and vegetables • Unpasteurised milk and dairy products • Contaminated water
Campylobacter 	<ul style="list-style-type: none"> • Soil/animal faeces on unwashed fruit and vegetables • Raw and undercooked meat • Contaminated water
Bacillus cereus 	<ul style="list-style-type: none"> • Reheated rice and dried goods • Raw meats – turkey, beef and seafood
Clostridium perfringens 	<ul style="list-style-type: none"> • Soil/animal faeces on unwashed fruit and vegetables • Raw and undercooked meat and poultry
Staphylococcus aureus 	<ul style="list-style-type: none"> • Found on skin and in noses • Unpasteurised milk and dairy products • Raw meats

Try to learn at least these top four well

Visible symptoms of food poisoning



- Vomiting
- Diarrhea
- Bloating
- Sweating
- Fatigue

Non-visible symptoms of food poisoning



- Aches and pains
- Cramps
- Nausea
- Stomach ache
- Fever and chills

High risk foods: Any 'ready to eat food which provides the right conditions for bacteria to grow.'

- ✓ Contain moisture
- ✓ High in protein
- ✓ Will not be cooked again



Low risk foods: Any foods which bacteria do not like to grow on, so are unlikely to cause food poisoning.

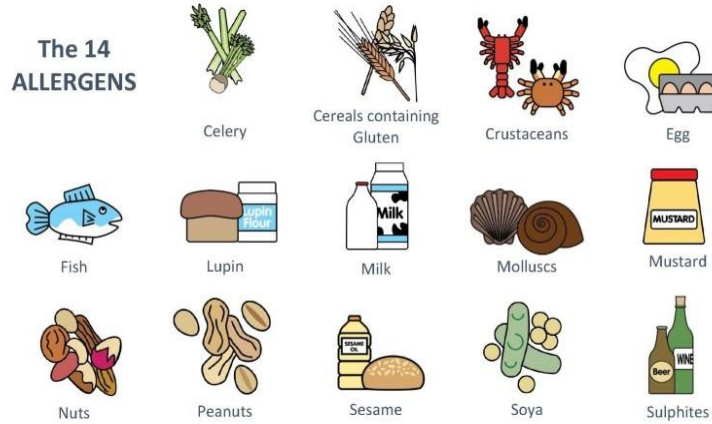
- ✓ Dried foods
- ✓ Low in protein
- ✓ High in sugar/salt/acid (preserved foods)



1.4.1 Food related causes of ill health

Allergies

Is a rapid and potentially serious response to a food by your **immune system**. It can trigger classic allergy symptoms such as a rash, wheezing and itching. Many foods can trigger an allergic reaction. The trigger is known as an **allergen**. Although many foods can be considered allergens, there are 14 more common ones. They are shown below:



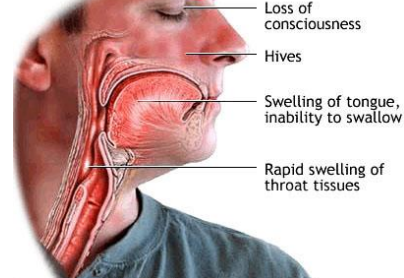
Visible symptoms of food allergies

- Swelling of face, lips, throat
- Rash/hives
- Redness
- Difficulty breathing

Non-visible symptoms of food allergies

- Dry itchy skin/throat
- Nausea
- Pain/stinging/cramps
- Feeling faint/dizzy

Anaphylaxis



Anaphylaxis

Is a serious and life threatening reaction to an allergen. It can cause loss of life if not treated quickly – normally with an EpiPen. Symptoms include swelling of the throat, loss of consciousness and hives.



Intolerances

More common than food allergies. The symptoms of food intolerance tend to come on more slowly, often many hours after eating the problem food. Typical symptoms include bloating and stomach cramps.

Lactose intolerance

Intolerance to dairy foods such as milk, cheese and yoghurt as it contains the sugar lactose.

Gluten intolerance (not as extreme as coeliac disease)

Intolerance to wheat, rye and barley

Eggs

Intolerance to eggs and products with eggs in. Particularly egg whites.

Flavour enhancers such as MSG

Intolerance some additives like MSG (Monosodium Glutamate) which is often added to Chinese foods, spice mixes and noodles.

Wine

Intolerance to wines, particularly red wine.

Fruits

Intolerance to fruits. Often red fruits or citrus fruits.

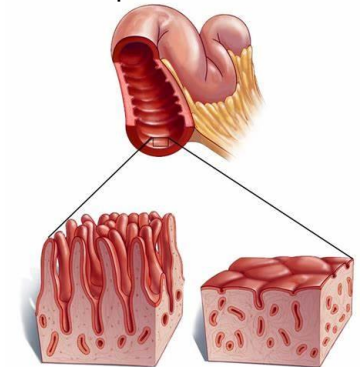
Aspartame

Intolerance to sweeteners – often added to sugar free foods.

Coeliac disease

A condition where your immune system attacks your own tissues when you eat gluten. This damages your gut (small intestine) so your body cannot properly take in nutrients.

Coeliac disease can cause a range of symptoms, including weight loss, malnutrition, diarrhea, abdominal pain and bloating. All foods containing gluten must be avoided. Gluten is mainly found in wheat, barely and rye but many products such as pasta, cereals and processed foods contain gluten.



Healthy gut

Gut damaged by coeliac disease

Food Safety Legislation

Food labelling regulations What it states	Food safety act What it states	Food safety (general hygiene) regulations What it states																				
<p>Correct food label is essential for managing food safety, particularly for those with allergies. It must be permanent, clear and easy to read.</p> <p>You must show the following information:</p> <ul style="list-style-type: none"> • the name of the food • a 'best before' or 'use by' date • any necessary warnings • net quantity information • a list of ingredients (if there is more than 1, allergens must be in bold) • the country or place of origin, if required • the lot number or use-by date • any special storage conditions • instructions for use or cooking, if necessary • If you're selling food in Great Britain (England, Wales and Scotland), you must also include the name and address of the UK or EU business responsible for the information on the food. <p>Nutritional traffic light labels are not required by law but are often still used by food manufacturers as they help inform customers.</p> <div data-bbox="801 1407 1142 1582" data-label="Figure"> <p>Each 1/2 pack serving contains</p> <table border="1"> <tr> <td>MED</td> <td>LOW</td> <td>MED</td> <td>HIGH</td> <td>MED</td> </tr> <tr> <td>Calories</td> <td>Sugar</td> <td>Fat</td> <td>Sat Fat</td> <td>Salt</td> </tr> <tr> <td>353</td> <td>0.9g</td> <td>20.3g</td> <td>10.8g</td> <td>1.1g</td> </tr> <tr> <td>18%</td> <td>1%</td> <td>29%</td> <td>54%</td> <td>18%</td> </tr> </table> <p>of your guideline daily amount</p> <p>Source: Food Standards Agency</p> </div>	MED	LOW	MED	HIGH	MED	Calories	Sugar	Fat	Sat Fat	Salt	353	0.9g	20.3g	10.8g	1.1g	18%	1%	29%	54%	18%	<p>The main responsibilities for all food businesses under the Act are:</p> <ul style="list-style-type: none"> • To ensure food businesses do not include anything in food, remove anything from food or treat food in any way which means it would be damaging to the health of people eating it. • To ensure that the food that businesses serve or sell is of the nature, substance or quality which consumers would expect. • To ensure that food is labelled, advertised and presented in a way that is not false or misleading 	<ul style="list-style-type: none"> • All food which is handled, stored, packaged, displayed and transported, shall be protected against any contamination likely to render the food unfit for human consumption. • HACCP (Hazard analysis critical control point) must be in place, which is a type of risk assessment document. This should analyse the risk there is which might make the food unsafe and put control measures in place. • Manufacturers must keep records of all suppliers so that ingredients can be traced back should any harm from the food occur. <div data-bbox="2352 1784 2567 1945" data-label="Image"> </div>
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Types of contamination and how to prevent it

Food can be contaminated in three main ways. Biological, chemical and physical.

Biological



Pathogens such as salmonella, e-coli, campylobacter, listeria

Chemical



- Pesticides
- Fertiliser
- Cleaning chemicals such as bleach

Physical



- Plasters
- Jewellery
- Machine parts
- Plastic
- Glass
- Metal
- Wood

Preventing cross contamination (biological)

Washing hands regularly

- At the start of cooking
- Regular intervals throughout
- Whenever raw food has been touched
- Whenever bins/dirty surfaces have been touched

Keep raw and ready to eat foods separate.

- They should be separate in storage
- During preparation by using separate chopping boards etc
- Separate preparation stations if possible.

Thoroughly wash fruit and vegetables

Store, prepare and cook high risk foods at the correct temperature

Fridges (including refrigerated trucks for delivery) should be	0°C - 5°C
Freezers	-22°C - 18°C
Hot holding	63°C
Danger zone	5°C - 63°C
Core temperature of cooked foods	75°C for at least 30 seconds or 70°C for at least 2 minutes.

Check best before and use by dates

- Discard any food past the use by date. If in doubt throw it out.



Always separate and store raw foods from cooked foods.



Preventing chemical contamination

Physical contamination can be controlled by:

- Always washing fruit and vegetables thoroughly.
- Storing chemicals away from food safely – following COSHH legal guidelines.
- Not spraying sanitiser / cleaning sprays near to food

Preventing physical contamination

Physical contamination can be controlled by:

- food workers following personal hygiene rules
- keeping food preparation and serving areas clean
- checking deliveries for broken packaging
- thoroughly washing fruits and vegetables before preparation
- using tongs or gloves for handling food.

The role of an Environmental Health Officer (EHO)

Environmental Health Officers (EHOs) are employed in the UK by local authorities and overseen by the Food Standards Agency to enforce food safety legislation. They do this by inspecting premises where food is sold to the public. In the Hospitality and Catering industry they inspect restaurants, cafes, hotels, guest houses, pubs, etc. **Their main purpose is to check that food establishments who are serving food to the public are complying with food safety legislation (laws).**



If a case of food poisoning is suspected, it should be reported to the food standards agency.



A department of the government which helps to enforce food safety legislation.

An EHO during an inspection

An EHO during an inspection

What kinds of things might an EHO check for?



- Staff training records – do they have training such as a food hygiene certificate?
- Personal hygiene of all employees (hair back, hands washed, clean chef clothes etc)
- General cleanliness of the premises and establishment
- Signs of pests/animals on premises
- Hand washing facilities
- HACCP documents
- Temperature of fridge, freezer, hot holding, cooked food
- Food use by dates
- Storage rooms and condition of food packaging

If there is a report of food poisoning...

- ✓ Enter the premises of a food business, without an appointment at a reasonable hour.
- ✓ Inspect the premises and the food being stored, prepared, cooked and sold there.
- ✓ Take food samples away for testing in a laboratory for food poisoning bacteria.
- ✓ Take photographs as evidence of what they find during an inspection.
- ✓ Look at data and records that the business has kept, e.g. refrigerator and freezer temperatures, staff training records, etc

Actions after the inspection

- ✓ Remove food that they suspect is a food safety.
- ✓ Tell the owners of the business to make hygiene improvements within a set time and come back to inspect that they have done so.
- ✓ Close the premises if there is a high risk of food poisoning - this is called an **Emergency Hygiene Prohibition Notice**.
- ✓ Give evidence in a court of law if the owners of the business are prosecuted for breaking the law.