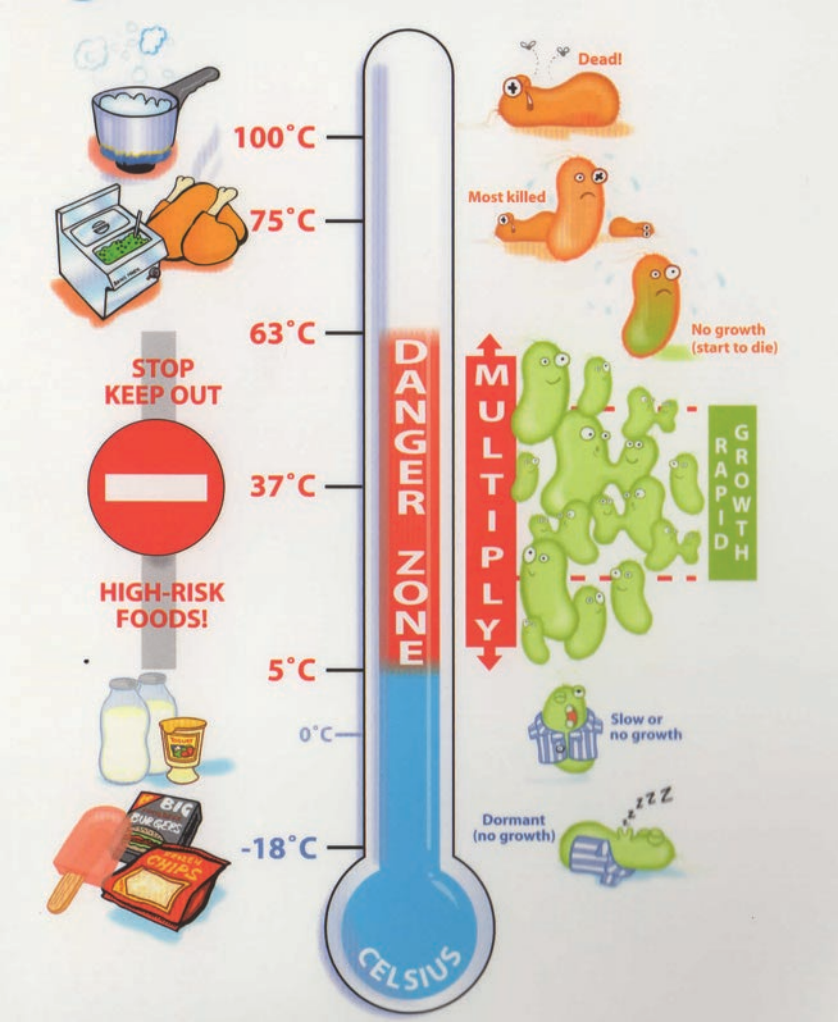

100°C
75°C
63°C
37°C
5°C
0°C
-18°C
DANGER ZONE
CELSIUS
STOP
KEEP OUT
HIGH-RISK
FOODS!
Dead!
Most killed
No growth
(start to die)
MULTIPLY
RAPID GROWTH
Slow or
no growth
Dormant
(no growth)
zzz
BIG
BURGERS
CHIPS

contents

The images below highlight important information about **your responsibility** as a food handler and **what the law says** about this. Make sure you read and understand these sections as you go through the book.

YOUR responsibility

what the LAW says

GLOSSARY

Important terms used throughout this book have been highlighted in **bold red** text. A definition of each term can be found in the glossary at the end of the book.

Introduction to food safety

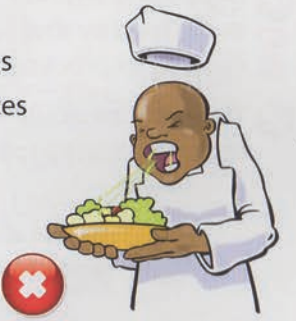
Food poisoning usually occurs within one to 36 hours of eating contaminated or poisonous food. Symptoms normally last from one to seven days and include one or more of the following: **abdominal pain, diarrhoea, vomiting, feeling sick, fever, dehydration** and **collapse**. Every day thousands of people in the UK suffer from food poisoning. Many of these will be very ill and some of them will die. Those most at **risk** include the very young, the elderly, persons who are already ill or recovering, and pregnant women and their unborn babies.

The main reasons for food poisoning are negligence, ignorance, poor management, a poor food safety culture and a failure to implement good practices. Effective instruction and training will prevent food poisoning if the good practices food handlers are taught are implemented in the workplace.

This book provides food handlers with the information to control **food safety** hazards. If this knowledge is applied in your food business you should not be responsible for causing a food poisoning outbreak.

The MAIN FAULTS contributing to food poisoning outbreaks include:

- preparing food too far in advance and storing at room temperature
- cooling food too slowly
- not reheating food to high enough temperatures
- buying food from unreliable suppliers and sources
- undercooking
- not thawing food thoroughly
- cross-contamination
- eating contaminated raw food
- storing hot food below 63°C
- unhygienic and infected food handlers

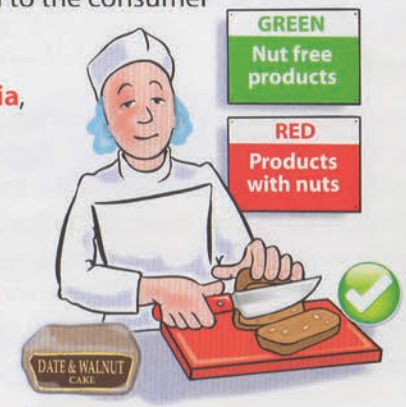


Food handlers are potentially the most serious hazard in a food business

Hazards

A **hazard** is the potential to cause harm to the consumer and the main hazards are:

- **(Micro)biological**, such as **bacteria**, **viruses**, moulds and parasites, e.g. tapeworms
- **Physical**, such as glass, screws, stones and hair
- **Chemical**, such as pesticides and cleaning chemicals
- **Allergenic**, such as peanuts, tree nuts, sesame seeds, eggs and milk



ALLERGENIC HAZARDS

Understanding food hygiene/safety

Food hygiene is more than just cleanliness: it also includes all practices involved in:

- Obtaining food from a reliable, approved source
- Protecting food from risk of **contamination**
- Preventing any bacteria present from multiplying to high numbers
- Destroying any harmful bacteria in the food by thorough cooking or processing
- Throwing away unfit or contaminated food

Dispose of any deliveries of food products contaminated by pests

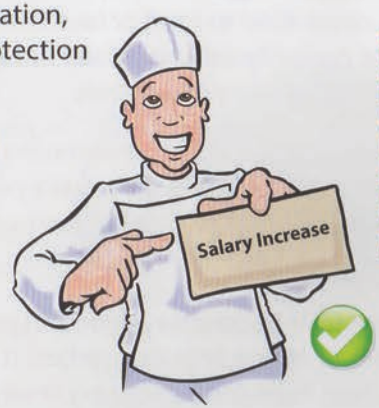
The cost of poor food hygiene/safety:

- Food poisoning outbreaks and sometimes death
- Food contamination and customer complaints
- Brand damage and loss of trade
- Pest infestations
- Wasted food due to spoilage
- The closure of food premises by local authority action
- Fines and costs of legal action taken
- Civil action taken by food poisoning sufferers
- Lower profits

If businesses lose money, employees may lose overtime, bonuses or even their jobs. It is therefore in the best interests of everyone to observe the highest standards of food hygiene.

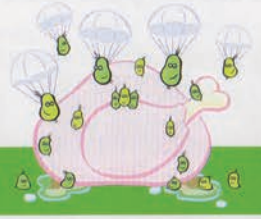
The benefits of good food hygiene/safety:

- Satisfied customers, a good reputation, increased business and brand protection
- Compliance with food safety law
- Less food wastage and increased shelf life of food
- Good working conditions, higher staff morale and lower staff turnover, which increases productivity
- Higher profits



HIGHER STAFF MORALE

Microbiological hazards (bacteria)



Microbiological hazards include the:

- **contamination** of food by bacteria, **viruses** and moulds
- multiplication of bacteria within food
- survival of bacteria or other **pathogens** because of inadequate cooking or processing

To control these hazards we need to understand bacteria, where to find them, how they get into food, how they multiply and how they can be destroyed.

Bacteria

Bacteria are microscopic organisms, often referred to as germs. Most bacteria are harmless and some are essential, for example, for breaking down waste, or for manufacturing food such as cheese or yogurt.

A small number of bacteria, known as spoilage bacteria, cause food to spoil or become unfit. We do not normally eat spoilt food because it smells "off" and may be slimy and rotten.

Other bacteria, such as **food poisoning** bacteria are known as pathogens. If pathogens get into food they make people ill. Pathogens have **no** effect on the appearance, taste or smell of food and can only be detected by laboratory testing.

It is not possible to operate a food business without food poisoning bacteria being present at one time or another. It is therefore essential that we prevent them from contaminating **ready-to-eat food** and deny them the conditions, which allow them to multiply to a level where they present a risk to customers.

Requirements for bacterial multiplication

Bacteria responsible for causing **food poisoning** need the following conditions to enable them to multiply and produce **toxins** (poisons). Toxins may be released in our body or in food. Some toxins cannot be destroyed by normal cooking and are very dangerous.

WARMTH:

The best temperature for the multiplication of most food poisoning bacteria is around 37°C (body temperature). They can multiply quickly between **20°C** and **50°C**. To prevent their growth ensure that the temperature of food is kept below **5°C** or above **63°C**.

The temperature range from 5°C to 63°C is known as the '**danger zone**'. Food poisoning bacteria multiply rapidly in warm food rooms, but most will not grow in a refrigerator (1°C to 4°C) and none in frozen food (-18°C). Many will survive and start multiplying when the food thaws.

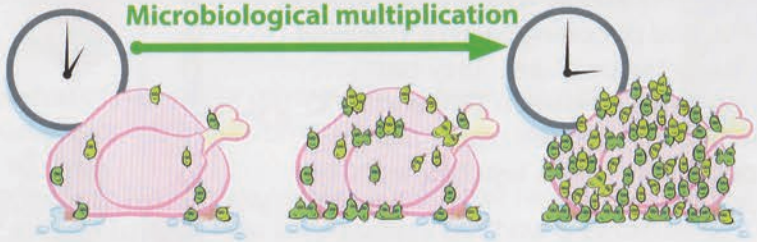
FOOD AND MOISTURE:

Bacteria prefer foods which contain nutrients and moisture especially raw or cooked meat, poultry and dairy produce. Foods such as dried egg or milk powder do not provide the moisture necessary for the growth of bacteria. To help identify hazards effectively food is often categorised into the following groups:

- **High-risk foods**
- **Low-risk foods**
- **Raw foods to be cooked**
- **Ready-to-eat raw foods**

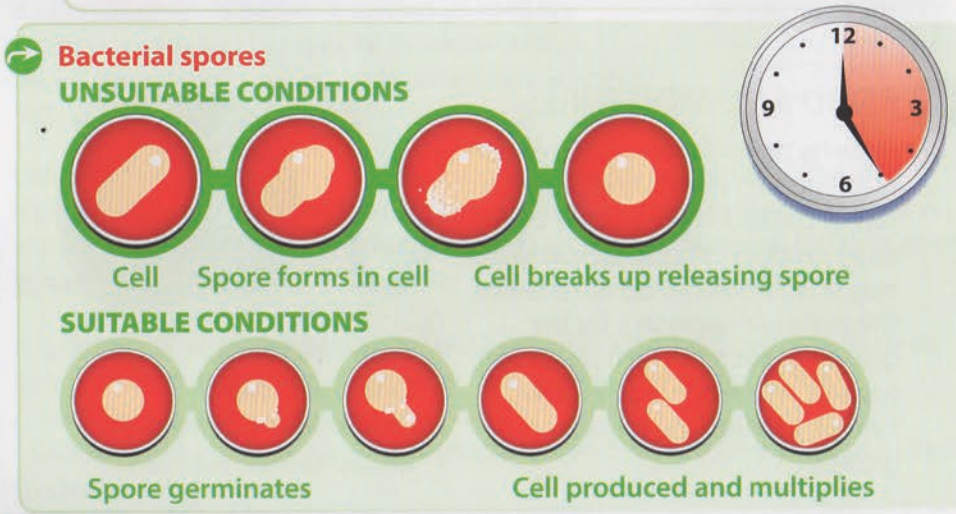
TIME:

Given the right conditions of food, moisture and warmth, some bacteria can divide into two every ten minutes. This process is known as **binary fission**. If there is sufficient time, a few bacteria can multiply to such an extent that there are enough present to cause food poisoning. For this reason it is essential that high-risk foods are not left in the **danger zone** for longer than is absolutely necessary.



In 2 hours 1,000 bacteria can become millions.

Some bacteria are able to produce **spores**, which protect them against harmful conditions such as high temperatures, drying and **disinfection**. Some spores can survive boiling for up to **5 hours**. Spores are a resting phase and they do not multiply. When favourable conditions return the spore releases the bacterium, which can then start to grow and multiply. This process is known as germination.



High-risk foods

High-risk foods are ready-to-eat foods, which support the multiplication of harmful bacteria and include most cooked foods. These foods are usually **proteins**.

- Protect them from contamination.
- Keep refrigerated to prevent bacteria multiplying.
- Keep separate from raw foods.

Examples include:

- Cooked meat and cooked poultry
- Cooked meat products such as pâtés, gravy, stews, meat pies and stock
- Milk, cream, soft cheese, custards and dairy produce
- Eggs and products made from raw eggs, e.g. mayonnaise, desserts
- Shellfish and other seafoods especially oysters, prawns and crabs
- Cooked rice

Cooked pasta, bean sprouts, jacket potatoes, cut tomatoes and cut melons have all been implicated in food poisoning outbreaks and should be considered as high-risk foods.

High-risk foods are often involved in outbreaks of **food poisoning**. Unfortunately, contaminated food usually looks, tastes and smells completely normal and is unlikely to be detected.

Raw meat for cooking is not considered to be **high-risk food** because **food poisoning** bacteria will be destroyed by cooking.

Low-risk foods

Bacteria cannot multiply in dry food or food containing high concentrations of sugar, salt, acid and other preservatives. These foods are known as low-risk. They include cereals, dried pasta, bread, biscuits, jam, canned food and crisps. When water is added to dried food such as milk powder it becomes high-risk and must be stored under refrigeration or used immediately.

Examples of low-risk foods

Raw foods to be cooked

Raw foods are likely to already be contaminated with large numbers of food poisoning organisms and must be kept separate from **ready-to-eat foods**. The food poisoning organisms will be destroyed by thorough cooking.

Ready-to-eat raw foods

Raw foods such as salads or fruit may be contaminated with bacteria and **viruses** which may cause illness even when present in very low numbers. They must always be washed in running water before eating.

(NB bean sprouts, cut melons, tomatoes, raspberries, spinach and lettuce have been involved in food poisoning outbreaks.)

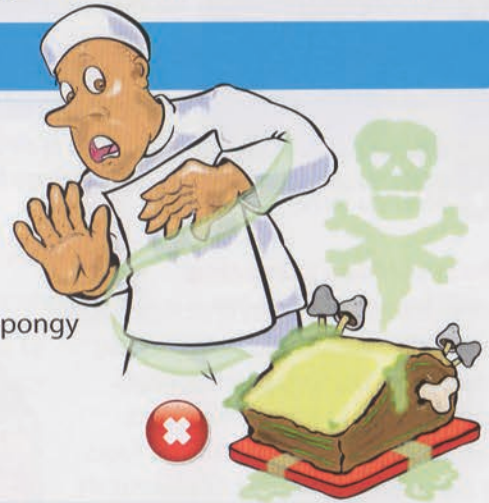
Ensure ready-to-eat raw foods are washed thoroughly under running water

Spoilage & preservation

Spoilage commences in food as soon as it is harvested, taken from the sea or slaughtered. Spoilage results from the action of bacteria, moulds, and yeasts. Poor hygiene practices, including poor temperature control, inadequate or unsuitable packaging and bad handling, result in damage and accelerate (speed up) spoilage, as does pest infestation. Unlike food contaminated with pathogens, the effects of food spoilage can be seen, felt, tasted and smelled.

Signs of **SPOILAGE** include:

- Off-odours
- Discolouration
- Slime/stickiness
- **Mould** growth
- Changes in texture, e.g. dry or spongy
- Unusual taste, e.g. sour
- The production of gas
- Blown cans or leaking packs



Packaging is very important to extend the life of preserved foods, e.g. cans, tetrapacks, bottles and pouches. Once opened, the food should be treated as fresh and stored under refrigeration. Pasteurised food, smoked food and vacuum packed meat should also be stored under refrigeration.

YOUR responsibility

To learn about bacteria and how they can be controlled.
To protect food from contamination.
To make sure spoilt or unfit food is not sold.

Food poisoning & its control

Food poisoning may be caused by:

- Bacteria or their **toxins**
- Viruses (multiply in living cells, not in food or water)
- Poisonous chemicals such as pesticides, cleaning agents and weedkillers
- Poisonous metals such as lead, copper and mercury
- Poisonous plants such as deadly nightshade and toadstools
- Poisonous fish or shellfish
- Moulds (rare)

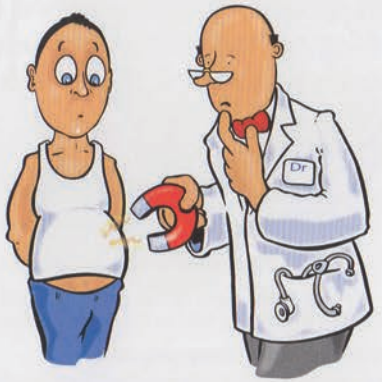
Never use sprays when there is open food about

Chemical food poisoning

Food poisoning from chemicals is rare and usually accidental. It may result from poisonous chemicals being stored in unlabelled food containers, **contamination** of food by significant amounts of chemicals (insecticides or cleaning agents) or large amounts of chemical additives.

Metallic food poisoning

Acute metallic food poisoning is also quite rare and usually results from acid food or drink being in contact with certain metals such as copper or zinc. Symptoms, mainly vomiting and abdominal pain, usually develop within an hour.



Poisonous plants/fish

Poisonous plants rarely cause food poisoning in commercial premises. However, cases of poisoning from toadstools, tea contaminated with deadly nightshade, undercooked red kidney beans and the Japanese puffer fish have been recorded.

Japanese puffer fish

Moulds (mycotoxins)

Moulds are often responsible for the spoilage of food, especially baked products and fruit, due to prolonged unsatisfactory storage. However, some moulds produce mycotoxins which cause illness and sometimes death. Fortunately, this is rare. Foods involved include nuts, figs and apple juice.

Mouldy tomatoes

IMPORTANT FOOD POISONING ORGANISM

BACTERIA	SOURCES	ONSET PERIOD	Typical Symptoms & Duration of Illness
Salmonella	Raw meat, raw milk, raw eggs, raw poultry, fruit and salads, carriers (intestines), pets, rodents, terrapins, flies, sewage/water.	Usually **12** to **36** hours	Abdominal pain, diarrhoea, vomiting and fever (**1** to **7** days).
Clostridium perfringens	Animal and human excreta, soil (on vegetables), dust and raw meat.	Usually **8** to **12** hours	Abdominal pain, diarrhoea, vomiting is rare (**12** to **48** hours).
Staphylococcus aureus	Human nose, mouth, skin, boils and cuts. Raw milk from cows or goats.	**1** to **7** hours	Abdominal pain, mainly vomiting, some diarrhoea, low temperatures (**6** to **24** hours).

IMPORTANT FOOD POISONING ORGANISMS *continued*

BACTERIA	SOURCES	ONSET PERIOD	Typical Symptoms & Duration of Illness
Clostridium botulinum	Soil, fish, meat and vegetables.	Usually **12** to **36** hours	Difficulties in swallowing, talking and breathing, double vision and paralysis of the cranial nerves. Fatalities are common and **the recovery of survivors may take several months.**
Bacillus cereus *(i) Toxin in food*	Cereals, especially rice, dust and soil.	**1** to **6** hours	Vomiting, abdominal pain and some diarrhoea (**12** to **24** hours).
(ii) Toxin in intestine	As above.	**6** to **24** hours	Abdominal pain, diarrhoea and some vomiting (**1** to **2** days).
**Campylobacter* *(most common cause of diarrhoea from bacteria)*	Raw poultry/meat/ milk, farm animals, pets, birds, sewage and untreated water.	**2** to **5** days	Diarrhoea (often bloody), abdominal pain, nausea and fever.
**E. coli* O157 *(often fatal for the elderly and young children)*	Intestines of people and animals, sewage and untreated water.	Usually **3** to **4** days	Nausea, diarrhoea, often bloody and abdominal cramps. Kidney failure, especially children.
**Listeria* *(multiplies in refrigerated foods, even below 3°C)*	Soil, sewage, water, vegetation, people, animals and birds.	**1** to **70** days	Flu-like symptoms. Vomiting, diarrhoea and fever. Miscarriage in pregnant women.
**Norovirus* *(only multiplies in the body)*	Ill people, the environment and sewage. (Airborne and person-to-person)	Usually **24** to **48** hours	Vomiting (projectile), diarrhoea, abdominal pain and fever.
**Typhoid*	Carriers, sewage/ manure and water.	Usually **8** to **14** days	Fever, nausea, headache, rose spots on trunk, slow pulse, anorexia, constipation and sometimes diarrhoea (severe).

*These organisms are also known as foodborne diseases.

The control of food poisoning

Food poisoning rarely occurs because of a single isolated mistake. Food poisoning results from management failing to identify hazards and/or failing to control these hazards. The food poisoning chain consists of three links:

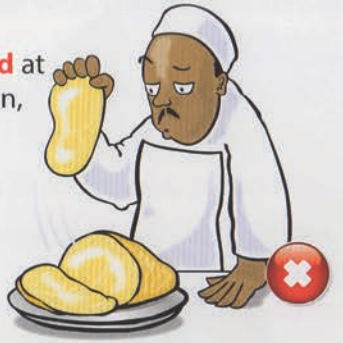
The FOOD POISONING Chain

NB Some bacteria only require low numbers and do not need to multiply in food to cause illness

Controlling these hazards breaks the chain and prevents food poisoning.

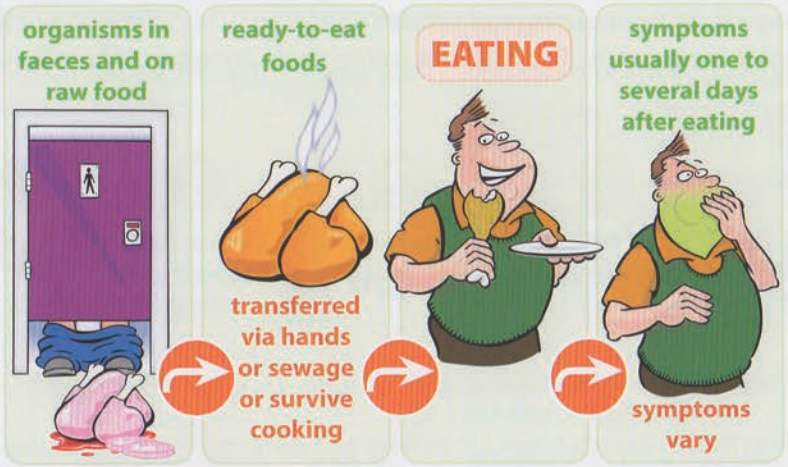
Prevent contamination by:

- Purchasing food from approved suppliers.
- Effective instruction, supervision and training of food handlers.
- High standards of personal hygiene and good hygiene practices (keep food covered and minimise handling) and the provision of adequate, suitable facilities for personal hygiene.
- Separation of raw and **ready-to-eat food** at all stages of delivery, storage, preparation, serving and distribution.
- Effective **cleaning** and **disinfection**.
- Well-designed and constructed food premises and food rooms.
- Effective pest control.
- Effective storage and disposal of waste and unfit food.
- Well-designed and proper use of suitable equipment/utensils.
- Ensure food handlers who are unwell or suffering from food poisoning are excluded from food handling duties until they have fully recovered.



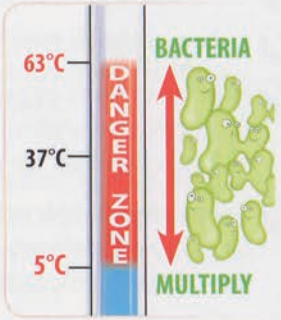
AVOID HANDLING FOOD

The FAECAL-ORAL Route



Prevent bacteria within food from multiplying by:

- Storing food out of the danger zone. Food should be kept below 5°C, e.g. in a refrigerator or kept above 63°C, e.g. in a hot cabinet.
- Ensuring that during preparation, food is within the danger zone for as short a time as possible.
- Cooling food as quickly as possible.
- Good stock rotation.
- Not allowing dried foods to absorb moisture.
- Using suitable preservatives such as salt, sugar or vinegar (acid).



Prevent customers eating contaminated food by:

- Disposing of all contaminated, spoiled, unfit or out-of-date food.
- Ensuring foods such as pâté, soft cheese and oysters are not served to **risk groups** such as pregnant women, and that honey is not served to babies under one year old.

- Removing bacteria from ready-to-eat raw food such as salad, by thorough washing.
- Destroying bacteria in raw food by:
  - thorough cooking
  - heat processing
  - **sterilisation** or canning

NB Bacteria can also be destroyed by irradiating food, for example spices, and using chemicals, e.g. chlorination of water.

A combination of a suitable temperature and sufficient time is always required to destroy bacteria. Cooking temperatures of at least 75°C should normally be achieved at the centre of food to ensure safety. Foods such as stews should be boiled at temperatures approaching 100°C.

YOUR responsibility

To know the symptoms of food poisoning.
To learn about food poisoning and its control.
Not to handle food if you suspect you have food poisoning.

Contamination hazards & controls

Food may be contaminated before or during delivery or may become contaminated as a result of poor hygiene practices.

Microbiological hazards (micro-organisms including: bacteria; viruses; parasites, moulds and yeasts):

- **Bacterial contamination** - usually occurs within food premises because of ignorance, poor hygiene practices, inadequate space, poor design or because of food handlers taking short cuts.

Bad food preparation areas

- **Viral contamination** - may involve an infected person, polluted irrigation water used on salad vegetables or oysters grown in sewage-contaminated water.
- **Parasites** - found in raw meat or fish. (They grow in the live animal or fish.)

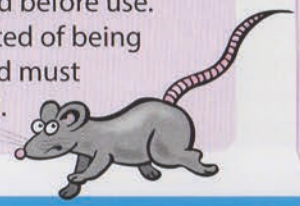
- **Moulds and yeasts** - are primarily responsible for spoilage.

To control microbiological hazards effectively it is important to know what brings **pathogens**, especially food poisoning bacteria, into food premises. These are known as **sources** of food poisoning bacteria.

Sources of food poisoning bacteria include:

- **People:** People commonly harbour food poisoning bacteria in the nose, mouth, intestine, cuts and on the skin. Food may be contaminated by the hands, sneezing or coughing, or by sewage-contaminated water.

- **Pests (including insects & rodents):** There are a number of pests known to transmit food poisoning bacteria. This may be from their bodies, droppings, by eating food and by cross-contamination, e.g. from objects contaminated with urine to ready-to-eat food. Food-contact surfaces which may have been contaminated by pests must be disinfected before use. Food suspected of being contaminated must be destroyed.



- **Water:** Only drinking water should be used in food businesses.

- **Raw food:** Raw food often contains large numbers of food poisoning bacteria, especially red meat, poultry, raw milk, raw eggs, bean sprouts and shellfish such as oysters. Raw food should always be kept separate from ready-to-eat food. The liquid from thawing foods, especially frozen poultry, must not be allowed to contaminate wiping cloths, ready-to-eat food or equipment used for ready-to-eat food.

- **Soil:** Soil harbours harmful bacteria, and care must be taken when bringing vegetables into food rooms. Paper towels or separate, colour-coded, clean cloths should be used for cleaning raw and ready-to-eat food surfaces.

Dust: There are always large numbers of bacteria in dust and floating about in the air. Open food should always be removed or covered when **cleaning** is carried out, especially dusting and sweeping.

Waste & unfit food: Care must be taken to avoid contamination of food from waste.

Vehicles and routes of bacterial contamination

Sometimes, harmful bacteria pass directly from the source to ready-to-eat food, but, as bacteria are usually static and the sources may not be in direct contact with food, the bacteria rely on other things to transfer them to food. These things are known as vehicles and the main ones are:

HANDS | CLOTHS & EQUIPMENT | HAND-CONTACT SURFACES | FOOD-CONTACT SURFACES

Cross-contamination is the transfer of the bacteria from a source (often raw food) to ready-to-eat food by either direct or indirect means.

DIRECT - for example, raw meat touches cooked meat, or where a raw food drips onto ready-to-eat food (for example, blood from raw meat dripping onto cooked meat due to incorrect storage in a refrigerator).

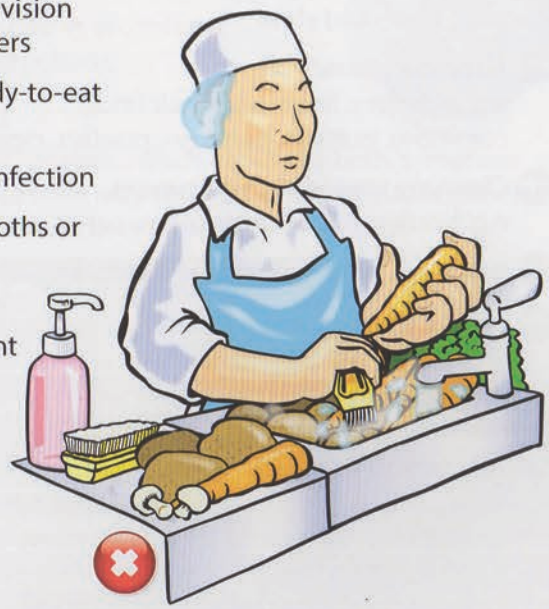
INDIRECT - for example, when a food handler prepares cooked meat after handling raw meat without washing their hands or when the same surface is used for both raw food and ready-to-eat food without cleaning and disinfecting between uses.

SOURCES, VEHICLES AND ROUTES OF CONTAMINATION

SOURCES → VEHICLES → READY-TO-EAT FOOD

Control of cross-contamination

- Effective instruction, supervision and training of food handlers
- Separation of raw and ready-to-eat food (colour-coding)
- Effective cleaning and disinfection
- Use of disposable paper cloths or colour-coded cloths
- Not using washbasins for washing food or equipment



Physical hazards and controls

Physical hazards include things which are harmful, for example, glass, nails and stones. They may cause cuts, broken teeth, and choking. Sources include:

- **Raw ingredients**, e.g. stones, pests, bones, dirt, and vegetable stalks
- **Buildings/equipment**, e.g. wood, flaking paint/rust, glass, screws, nuts and bolts
- **Notice boards**, e.g. paper and drawing pins
- **Packaging materials**, e.g. cardboard, paper, string, staples, wood, plastic and polythene
- **Maintenance activities**, e.g. screws, nuts, bolts, wire, fibres and cloth
- **Food handlers/visitors**, e.g. jewellery, fingernails, hair (most common), buttons, pen tops, plasters, cigarette ends and fibres
- **Cleaning materials/equipment**, e.g. bristles, bits of cloth and paper
- **Pests**, e.g. bodies, droppings, webbing, larvae/eggs and feathers
- **Sabotage** (deliberately added), e.g. needles, razor blades, toothpicks and glass

Physical controls

Physical controls start with satisfactory design, construction and maintenance. Old, worn, damaged or unsuitable equipment should be replaced. Staff must be trained to use equipment properly and report defects. A glass breakage policy and a ban on the use of soft wood is also important. Appropriate protective clothing must be worn and care must be taken with pest control to prevent dead pests ending up in food.

Chemical hazards and controls

Deliveries of food may be contaminated with chemicals such as pesticides and weed-killers. Food may be contaminated in food rooms because of poor cleaning or pest control practices.

- Approved suppliers should always be used.
- Cleaning chemicals should be delivered separately or completely segregated from food.
- A lockable area is recommended for chemical storage, separate from food.
- **Cleaning** and pest control must never expose food to **risk** of **contamination**, for example, spraying near food.
- Cleaning chemicals must never be transferred to unmarked bottles, or food containers.
- Food should never be stored in old chemical containers.
- Only food-grade packaging should be used.
- Chemicals must always be used in accordance with the manufacturers' instructions.

Frozen prawns stored in an old chemical container

Allergenic hazards and controls

Allergens are substances, usually protein, which cause the body's immune system to respond. In severe cases this may result in an anaphylactic shock and even death. Symptoms may include:

- Swelling of the throat and mouth
- Asthma
- Sudden feeling of weakness (fall in blood pressure)
- Nettle-rash
- Flushing of the skin
- Difficulty in swallowing or speaking
- Abdominal pain, feeling sick and/or vomiting
- Collapse

Foods which commonly contain **allergens** and which must be identified as allergens in food labels are:

- Celery
- Cereals containing gluten
- Crustaceans
- Eggs
- Fish
- Lupin
- Milk
- Molluscs
- Mustard
- Nuts
- Peanuts
- Sesame seeds
- Soya
- Sulphur dioxide

(nb. it is also necessary to identify products made from these foods)

Staff action in the event of a customer suffering from anaphylactic shock

All staff must be aware of the procedures. The customer should not be moved and an ambulance should be called using the emergency number. The customer should be asked if they have a pre-loaded adrenaline injection kit and be encouraged to use it.

Allergen CONTROL MEASURES for businesses

COMMUNICATION:

Clear menu descriptions/labelling

Effective staff training

Having information and knowledge of ingredients in all foods so that customers are given accurate information about their food

Listen to customer requirements carefully and provide accurate information to the person preparing the food.

CONTAMINATION:

Use approved suppliers.

All products must be suitably packaged.

Segregate foods prepared for people at risk; use separate preparation areas, utensils, cooking equipment/oil and cloths.

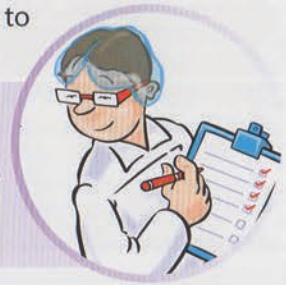
Discard or clearly label contaminated products.

CLEANING:

Effective handwashing immediately before preparation

Thorough cleaning of utensils and work surfaces immediately before preparation

Regular audits and effective supervision are important to ensure control measures are working.



YOUR responsibility

To learn about hazards and how they can be controlled.
To observe all Company rules.
To protect food from contamination.

Food handlers & personal hygiene

Most people carry some type of **food poisoning** organism at one time or another, especially when they have diarrhoea and/or vomiting. Food handlers have a moral and legal responsibility to observe high standards of personal hygiene to ensure that they do not contaminate food.

Because our body temperature is 37°C, it is ideal for the growth of most food poisoning pathogens, either in the intestines or on our skin. Food handlers should keep themselves clean and a daily shower is recommended. Food handlers are potentially the most serious **hazard** in a food business. Bad practices of food handlers may result in the **contamination** of **high-risk food** with food poisoning organisms or physical contaminants.

Hands

As the hands are in direct contact with food, they are the most common vehicle for transferring food poisoning bacteria. Hands must be kept clean at all times. The correct handwashing procedure is essential to prevent contaminating food. A non-hand operated warm water spray is preferred. The hands should be wet and sufficient liquid soap applied to ensure a good lather. The fingertips, between the fingers, the thumbs, the hands, and the wrists should all receive attention. Where necessary, e.g. after visiting the toilet, a clean, soft-bristled nailbrush should be used to brush and lather the fingertips and clean under the fingernails, (the nailbrush must be kept clean). The hands should be rinsed thoroughly in warm running water (30°C to 40°C) to remove all the lather, bacteria and dirt. Efficient drying of the hands with clean disposable paper towels is essential and will reduce the number of bacteria remaining. A paper towel may be used to turn off taps. Reusable towels should not be used.

Food handlers must wash their hands regularly throughout the working day and especially:

CRITICAL

- After visiting the toilet
- On entering the food room, after a break and before handling food
- After cleaning up animals' faeces (stray cats or guard dog) or handling boxes, or waste contaminated by bird droppings
- After putting on or changing a dressing
- After dealing with an ill customer or a baby's nappy
- After handling raw food, including eggs, and before handling ready-to-eat food

IMPORTANT

- After combining or touching the hair, face, nose, mouth or ears
- After handling waste food or rubbish
- After cleaning, or handling dirty cloths, crockery, etc
- After handling external packaging, flowers or money

what the LAW says

Washbasins must be provided with hot and cold water, soap and drying facilities.

Fingernails may harbour bacteria and should be kept short and clean. Nail varnish and false fingernails may contaminate food and should not be used. Food handlers should avoid actions such as biting their nails and licking fingers.

The nose, mouth and ears

Up to 40 per cent of adults carry harmful bacteria in the nose and mouth. Coughs and sneezes carry droplet infection for a considerable distance and persons with bad colds should not handle open food. Staff should turn away from food and cough or sneeze into the upper arm or shoulder. Disposable single-use paper tissues are preferable to handkerchiefs. The hands must always be washed after using a tissue or handkerchief. Picking or scratching the nose is not acceptable. Sleeves should never be used for wiping the nose. As the mouth is likely to harbour germs, food handlers should not eat sweets, chew gum, taste food with a finger or an unwashed spoon, or blow into glasses to polish them. Spitting is not allowed.

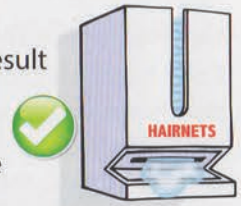
Clean cuts, sores and spots

Cuts, spots and sores provide an ideal place for bacterial multiplication. To prevent **contamination**, these lesions should be completely covered by waterproof dressings, preferably coloured blue to aid detection if they fall off. Cuts on fingers may need the extra protection of waterproof fingerstalls.

Jewellery and perfume

Food handlers should not wear earrings, watches, jewelled rings or brooches, as they harbour dirt and bacteria. Furthermore, stones and small pieces of metal may end up in the food. Food handlers should not wear strong-smelling perfume or aftershave, as it may taint foods.

The hair

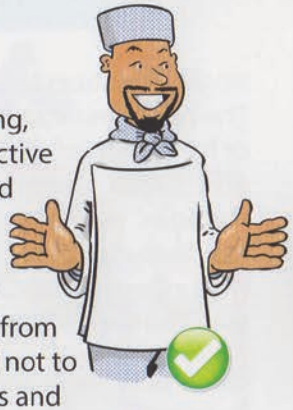


Hair is constantly falling out and, along with dandruff, can result in contamination of food. The scalp often contains harmful bacteria and must be shampooed regularly. To prevent hair getting into food, long hair should be tied back and suitable head covering and/or hairnets worn by all food handlers. Head covering should always be put on before other protective clothing. Combing of hair and adjustments to head covering should only take place in cloakrooms and should not be carried out whilst wearing protective clothing, as hairs may end up on the shoulders and then in the product.

Smoking

If food handlers smoke at break time, they should change out of protective clothing before leaving the building as clothing may become contaminated. In addition, smoking can result in microbiological (from hand to mouth contact when smoking) and physical contamination (from cigarette ends and ash). It also encourages coughing and may result in droplet infection.

Protective clothing



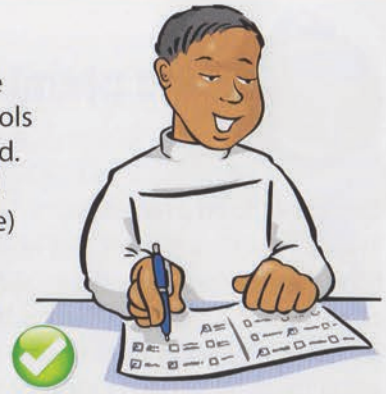
Food handlers must wear clean and washable over-clothing, preferably light-coloured without external pockets. Protective garments should be appropriate for the work being carried out and should completely cover ordinary clothing. Sleeves of jumpers and shirts must not protrude and, if short-sleeved overalls are worn, only clean forearms must be visible. Protective clothing is worn to protect the food from **risk** of **contamination** (microbiological and physical) and not to keep our own clothes clean. Dust, pet hairs, woollen fibres and pathogens are just a few of the contaminants carried on ordinary clothing.

Protective clothing should not be worn outside the food premises, e.g. not used to travel to and from work and not worn during lunchtime sporting activities. Outdoor clothing and personal effects must not be brought into food rooms unless stored in suitable lockers. Protective clothing should not be hung in toilets. Hands should not be wiped on protective clothing, especially after handling raw meat or poultry. Protective clothing should be removed when visiting the toilet. This is particularly important for food handlers involved with preparing **ready-to-eat food**.

General health and reporting of illness

Food handlers should be in good health. Food handlers suffering from diarrhoea, vomiting or a foodborne illness must not handle food. They must notify their supervisor who must exclude them from any work which would expose food to risks from **pathogens**. They should not return to work until symptoms have been absent for at least 48 hours and they have finished taking any medication. Food handlers who have consumed a meal known to have caused **food poisoning** or live in the same household as a confirmed case or have suffered from diarrhoea or vomiting whilst abroad should also report to the supervisor, who will probably require them to visit the doctor. The doctor should be advised if a patient is a **food handler**. Food handlers with skin infections, infected cuts, boils, heavy colds and ear or eye discharge must also be excluded and should not resume food handling duties without clearance. Even a boil on the leg may result in a **hazard** if, for example, a dressing is changed and hands are not washed properly.

Hygiene training



All food handlers must be aware of the hygiene hazards associated with their job and the controls necessary to ensure the safety of food produced. A training programme should be implemented to ensure the competency (skill and knowledge) of all food handlers to produce **safe food**. Programmes should include induction training before new staff handle food, Level 1 training for low-risk food handlers and Level 2 training of **high-risk food** handlers within 3 months. The knowledge gained on courses must be implemented to comply with the law. Continuous refresher training is also recommended to ensure staff keep up to date and continue to follow good hygiene practices.

what the LAW says

Food handlers must have high standards of personal cleanliness and wear suitable protective clothing.
Food handlers with a foodborne disease, or with infected wounds, skin infections, sores or diarrhoea must not handle food and must report to their supervisor (food business operator) any symptoms or illness.
Food handlers must be supervised and instructed and/or trained in food hygiene matters commensurate with their work activity.

YOUR responsibility

To keep yourself, your protective clothing and your hands clean.
To cover cuts with waterproof blue plasters.
To report food poisoning symptoms or skin infections to your supervisor before handling food.
To report to your supervisor if there is no soap, hot water or drying facility.
To successfully complete and implement your food safety training.