

Basic Food Safety and Hygiene



Introduction to Food Safety

Food Safety is protecting consumers from any kind of hazard and injury, harm or illness.

What happens when you get food safety wrong?

- If you work in the food industry, Customers may complain or become ill and the business may get a bad reputation and have to close down.

The reputation of your organization depends on you.

- Outbreaks of food poisoning will increase. Food Standards Agency estimates that there are more than 850,000 cases per year in the UK.

Most cases are not reported.



Food Safety is your responsibility!

As a food handler, you must do everything you can to keep food safe, control hazards and stop contamination of food.

How can you do this?

- Storing food products correctly in transportation and final destination, fridge temp- 0-8, ideal 5°C.
- Freezing food- minus 18°C
- Keeping dry store tidy and clean & stock rotation
- Date marking food -
best before (non-perishable items), use by
- Correct cooking and re-heating procedures in place
- Good food hygiene and personal hygiene is important to make sure that the food we eat is safe.
- Follow HACCP systems ensuring that Hazards are assessed and Controls are in place to combat hazard.



What is a hazard?

In food production, a hazard is anything that can cause harm to a customer.

A control point is the step in the making process where the hazard must be controlled. This step has to be carried out correctly to make sure the hazard is removed or reduced to a safe level.

When the hazard is “high risk” the control points are called **Critical Control Points** (CCP's), because it is critical (essential) that the hazard is removed or reduced.

HACCP

Hazard Analysis and Critical Control Points

This is a system to identify specific hazards and risks associated with food production and to describe ways to control these hazards and ways of minimising them.



Common food hazards

Three main types of food hazard that can contaminate food and cause injury or illness:

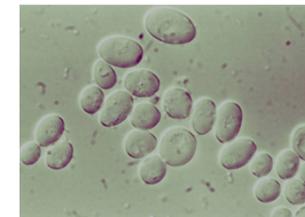
- **Physical** - occurs at any stage of food production. personal hygiene, hair on the food, handling, string, equipment, packaging, broken glass, foreign body, pests



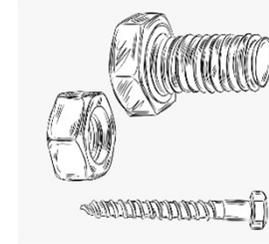
- **Chemical** - perfumes, detergents, cleaning, washing up, pesticides, chemicals used in agriculture and farming methods.



- **Biological / Micro-organism spoilage** – yeasts, moulds, viruses, bacteria, Parasites, fungus



Physical contamination:



FOREIGN BODIES LANDING IN FOOD:

- Bolts, wire - lost in food from equipment in manufacture and production.
- Cardboard, string and staples - landing in food packaging.
- Earrings, false nails - leave off jewellery and nails, etc when preparing food.
- Sweet papers, cigarette ends - do not smoke or eat when preparing food.
- Glass and china - discard any food from broken or chipped containers.
- Cat and dog hairs - keep animals out of the kitchen
- Vegetable stalks - care needed in food prep



Chemical contamination

- Care needed when washing up etc. So that cleaning agents don't end up in food.
- Also, equipment needs to be thoroughly dried so that no traces of cleaning agent are left on it, which may end up in food.
- Work surfaces need to be carefully cleaned to remove any traces of detergent, which could land in food.
- Fruit and vegetables need to be thoroughly cleaned to remove traces of pesticides and fertilizers.



Biological hazards;

Cause food poisoning or food-borne illnesses or food spoilage.

There are 4 types: moulds, yeasts, viruses and bacteria. They are called micro-organisms.

- **Moulds** – tiny plants or fungi, grow on surface of food. They produce spores, they are generally harmless but some can produce MYCOTOXINS which can be dangerous.
- **Yeasts** - these do not cause food poisoning, but can be capable of spoiling food. Have beneficial effects however - bread, beer.
- **Viruses** - they can cause disease as they destroy living cells. They are carried by human beings and animals. A virus can be passed to food by an infected food handler.
- **Bacteria**- single celled and found in water, air, soil and people. Some are essential in food production - helpful bacteria are used in production of yogurt, actimel, etc

Types of bacteria:

Spoilage bacteria - these bacteria can affect the quality of a food product. Signs of spoilage in food are evident. Can be assessed using our senses to find out any changes in smell, taste, texture or appearance.

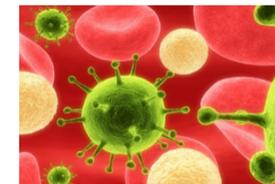


Pathogenic bacteria (harmful) - can spread very easily and cause food poisoning. There may be no evidence of spoilage on the food itself. Food poisoning is very common, causing many thousands of reported cases each year.

Pathogenic bacteria include: Salmonella, Campylobacter, Listeria, E-Coli, and Staphylococcus Aureus.

Sources of pathogenic bacteria: raw foods, people, pests, Animals, air and dust, water, soil and food waste.

There are no visible signs of poisoning in food; can't be assessed by using our senses.



Helpful bacteria – these are used to make beer, cheese, yoghurt, ferment meat for salami

The ideal conditions for bacterial growth are:

Food - bacteria needs food to be able to multiply, it prefers protein rich foods but can survive on dirt or a tiny drop of blood.

Moisture - this is why it is important to make sure surfaces are dry. That's why the sink area of the kitchen often has the highest levels of bacteria.

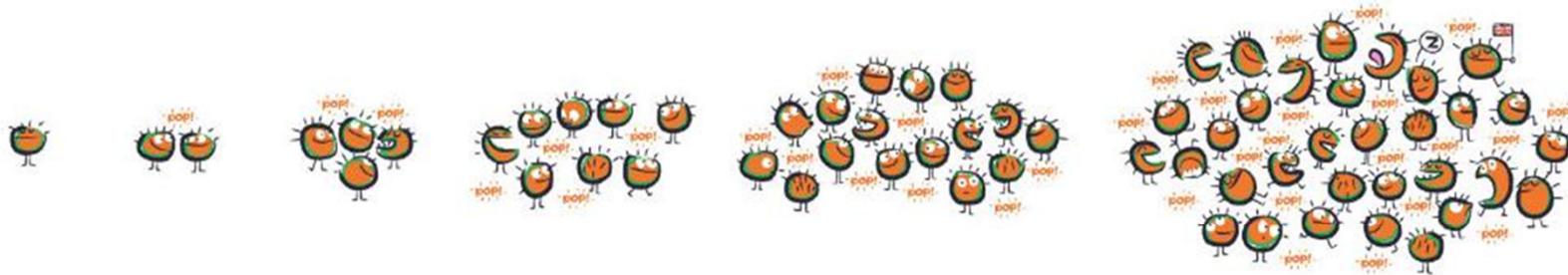


Warmth - when the temperature is between 8 to 63°C bacteria will multiply rapidly – this is known as the danger zone

Time - under the right conditions bacteria can double every 10 to 20 minutes.

Multiplication of Bacteria

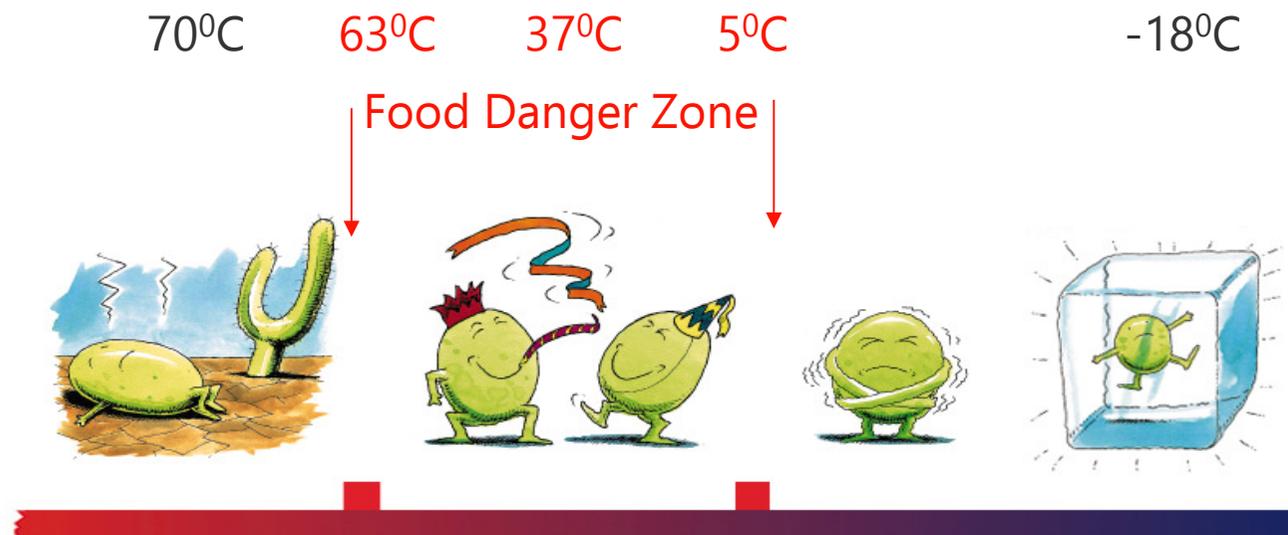
Binary fission



One bacterium becomes two, two become four, four become eight and so on.

To prevent bacteria multiplying and therefore reduce the risk of food poisoning bacteria, time and temperature control is essential:

- the danger zone (easy for bacteria to multiply) is between 5°C and 63°C
- storing food at cold temperatures will slow down multiplication of bacteria, but will not kill them
- cooking at 70°C for at least 2 minutes will kill most bacteria



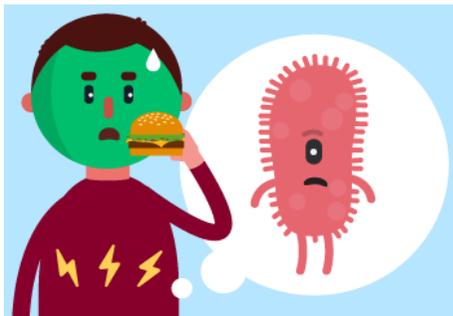
Food Poisoning

Symptoms of food poisoning include:

- Nausea;
- Vomiting;
- Stomach pains;
- Diarrhoea.



Bacterial contamination is the most common cause of food poisoning.



In severe cases, food poisoning can even cause death.

Allergens

Allergies cause a specific reaction in certain people and include: tingling and swelling around the mouth, nose and throat, difficulty breathing, rashes, vomiting, diarrhoea, cramps; may ended with death.

We should label our foods if they contain the above allergens because the reaction for those who are allergic to the allergen can be life threatening.

Allergens:

- ✓ Peanuts
- ✓ Nuts / Tree Nuts
- ✓ Dairy Products
- ✓ Eggs
- ✓ Fish
- ✓ Gluten
- ✓ Sesame Seeds
- ✓ Celery
- ✓ Mustard
- ✓ Sulphur Dioxide
- ✓ Shellfish
- ✓ Soya



People MOST AT RISK:

Anyone can be affected by food poisoning or food-borne illness but some people are particularly at risk:

- Very young people
- Elderly people
- Pregnant women and unborn babies
- People who are ill or recovering from illness



At greater risk are those people who:

- Have immune systems which are not working well
- Cannot “fight” illness



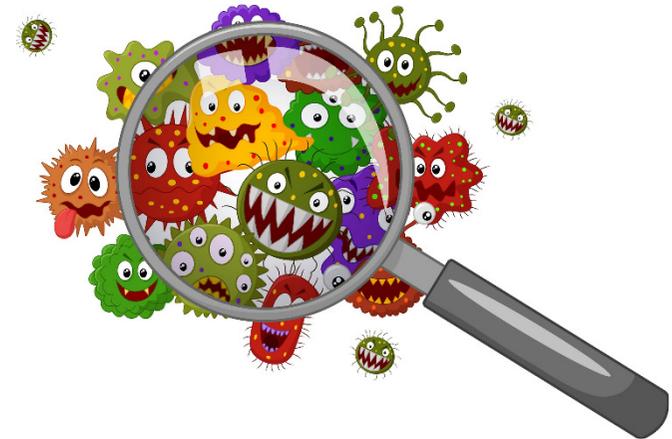
Cross Contamination

Contamination is the presence of any objectionable or harmful pathogenic micro-organisms in the food making it unsafe for the consumer. Contamination can occur at any time in food preparation or service.

Cross Contamination is the transfer of harmful bacteria from one place to another by someone or something.

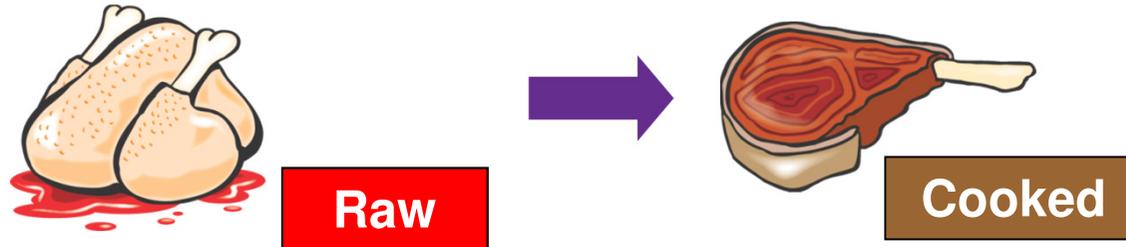
This spread or transfer could be:

- direct = raw meat touching cooked
- indirect = from a knife, cutting board
- by dripping = blood drip

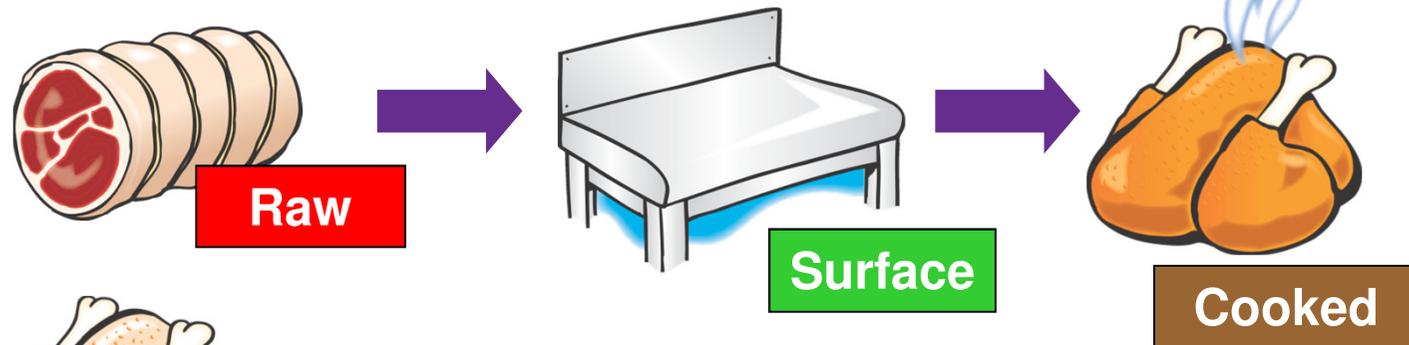


Types of Cross Contamination

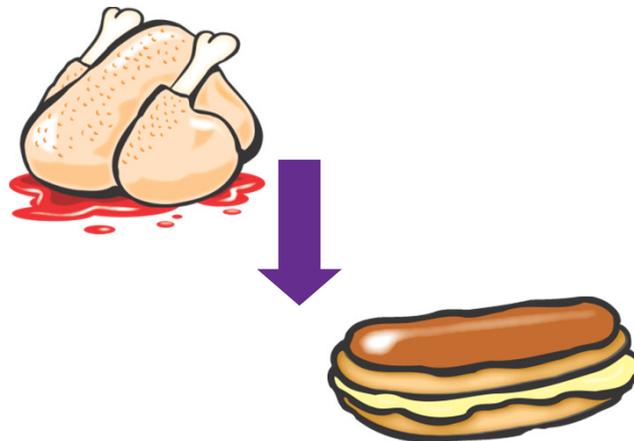
Direct



Indirect



Drip



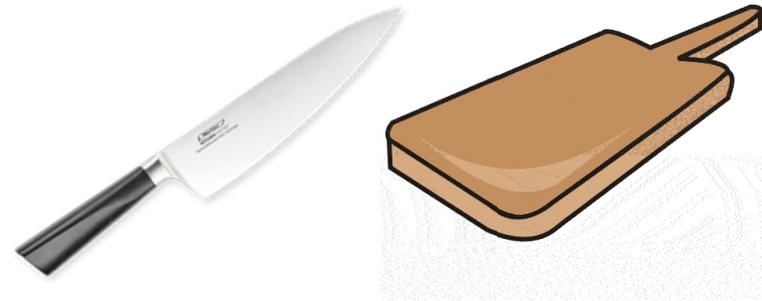
Cross contamination

usually involves a vehicle of contamination – something that helps the bacteria to “travel” from one surface to another. Common vehicles of contamination include:

- Hands



- Utensils and equipment – such as knives, chopping boards – any surface that has not been cleaned properly between uses.
- Handles of doors, refrigerators, cupboards etc.



Preventing cross-contamination

- Keep raw and ready-to-eat foods apart
- Do not use the same knives and boards for preparing raw and ready-to-eat foods
- Wash your hands and clean food-contact surfaces each time you finish a task
- Use disposable cloths/paper roll for cleaning tasks, when possible
- Keep all foods covered at all times
- Use the colour-coded system
- Pests must be controlled as they can contaminate food, spread disease and damage premises



Preventive measures

Vegetables
and fruits

Raw
Poultry

~~CROSS
CONTAMINATION~~



COLOR CODES

Cooked
Meat

Dairy and
Bakery
Items

Raw Fish
and
Seafood



Everyone is responsible!

Food Handler has a duty to make sure it is safe and does not cause the customer harm.

Your legal requirements are:

- keep yourself and workplace clean
- protect food from contamination or anything that could cause harm
- follow good personal hygiene practices – e.g. hand washing
- wear appropriate protective clothing
- tell your employer if you are suffering from or are a carrier of a food-borne illness



Due diligence

Every food business must be able to demonstrate that it has done everything within its power to safeguard consumer health.

Handwashing

Hand washing is one of the most important actions you can take to help prevent contamination and food poisoning and food borne illness.

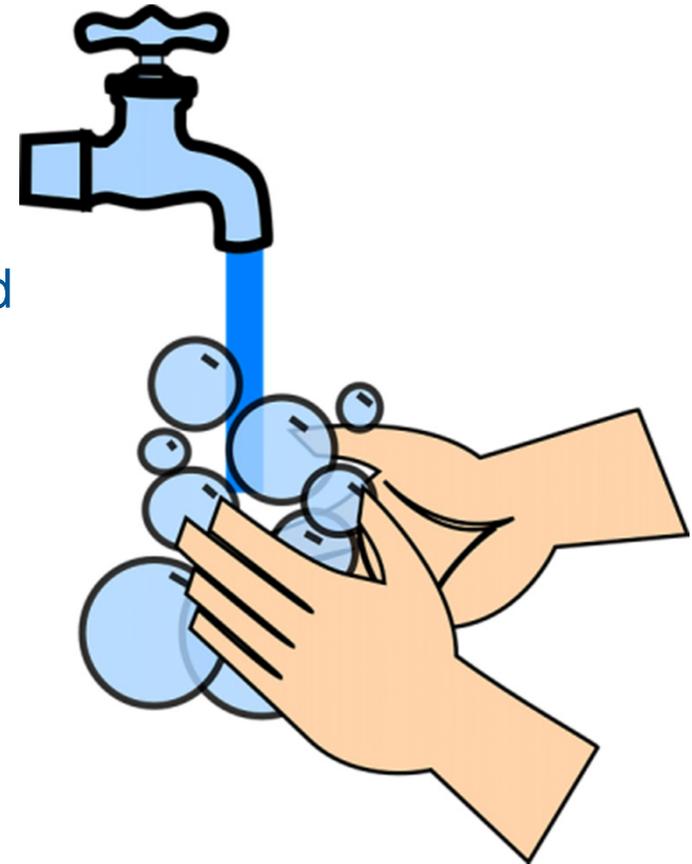
When to wash Hands?

Before:

- ✓ Before you start work or preparing food
- ✓ Before touching ready to eat or high risk food
- ✓ Before eating

After :

- ✓ After every break
- ✓ After eating, drinking and smoking
- ✓ After you handle raw food or waste
- ✓ After you use the toilet
- ✓ After you clean surfaces or equipment
- ✓ After you cough, sneeze or blow your nose
- ✓ After touching hair or face



Effective Handwashing



Wet hands under warm running water



Apply 3-5ml of liquid soap to hands



Rub hands vigorously together, under running water, cleaning all parts of hands



Clean between fingers and around the wrist, especially the nails and fingertips.



Rinse off all the lather (and bacteria!)



Dry hands completely using a paper towel



Dispose of paper towel in a foot operated container.

Personal Hygiene

In order to reduce the risk of food poisoning, food handlers, whether in their own home or a place of work, should be particularly careful with their own personal hygiene.

Food handlers should:

- Keep themselves clean
- Wash hands at all the time
- Wear clean protective clothing

Protective clothing include: overall / apron, hair net, beard snood and gloves



Remember, the protective clothing is worn to prevent bacteria from your clothes contaminating the food rather than to keep your clothes clean!

- Tie up long hair
- Keep nails short and clean



- Cover cuts and sores with waterproof, high visibility plaster (blue)



- Do not wear jewellery, watches or nail varnish

- Do not eat, smoke or drink whilst working



- Do not cough, spit or pick nose in food area

- Tell the manager before work if they have suffered from diarrhoea, vomiting or skin problems.

Reporting Illness/ Fitness to Work

You must not work with food if you have food poisoning or any other illness with similar symptoms, as you may contaminate food- if you have a virus this could be passed to food also.

Report to your Manager or Human Resources Office in the following cases:

- Vomiting or diarrhoea
- Food borne illnesses, typhoid
- Nausea
- Ear, eye, nose discharges
- Septic cuts or weeping skin infections
- Any other communicable diseases



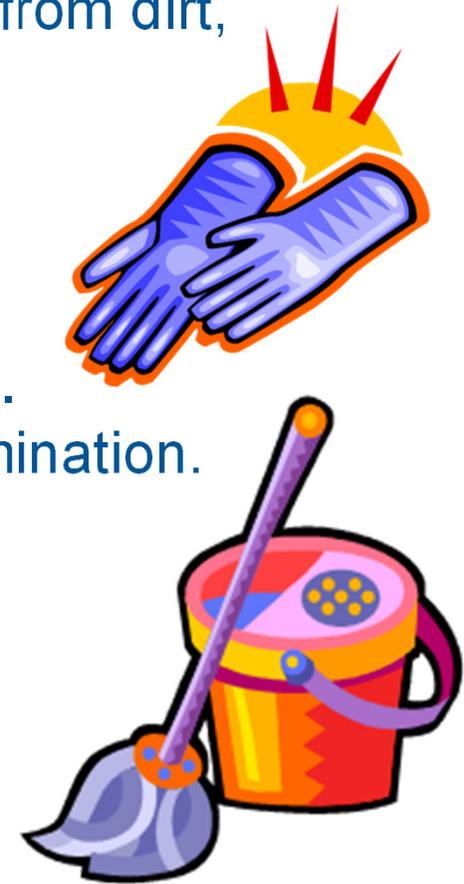
Cleaning

Cleaning is the process of making something free from dirt, grease and contamination.

The aim of cleaning:

- Protect food from microbial contamination.
- Reduce opportunities for bacterial multiplication.
- Protect food from physical and chemical contamination.
- Avoid attracting pests.
- Maintain a safe environment.
- Create a good impression to customers.
- Carry out legal obligations to keep food safe.

To keep food safe adopt a
CLEAN AS YOU GO approach.



Cleaning of High Risk Surfaces

Food contact and hand contact surfaces are considered as high risk surfaces. Such surfaces should be given high priority and should be always, cleaned, disinfected and dried.

Examples (food contact surfaces):
food containers, chopping boards, cutleries,
plates and food preparation tables



Examples (hand contact surfaces):
water taps, door, drawer and freezer handles,
light switches, phone receiver, can opener,
soap and towel dispenser, machine and
equipment switches, sinks for hand wash
or utensil wash, waste bin lids, broom
and mop handles



Cleaning of Low Risk Surfaces

Items that do not touch food and those that are subject to heat treatment are considered as low risk and should be always cleaned.

Examples:

- bain marie
- chaffing dish
- door
- dishwasher
- dry storage areas
- floors
- microwave
- inside an oven
- ceiling
- freezers



Cleaning & Chemicals

Food premises must be kept clean, as high standards of hygiene are key to ensuring food safety.

Types of cleaning and chemicals:



Detergent is a chemical that can be used to dissolve grease and remove dirt. Do not kill bacteria, eg: Fairy liquid

Disinfectant is used to reduce bacteria to safe levels.

Sanitiser is a chemical that both cleans and disinfects at the same time, eg: Dettol

Sterilisation is the removal or destruction of all bacteria including spores.

All cleaning chemicals must be food safe.

Chemicals should be stored away from food.

Segregate, Separate & Store

- **First In First Out**
- First Expiry First Out
- Segregate washed and unwashed
- Separate Raw and Cooked Food
- Ready to eat food must be kept above the raw food
- Keep food covered, make sure lid is closed
- Keep food equipment in good condition and sanitize before using
- Sanitize the probe thermometer before and after use
- Do not keep carton boxes in food area
- Keep small bin clean and lined with a bag, empty when full
- Tie bag securely and no bags are left on the floor
- Label the Food - Production, Expiry and Defrosting Start Dates.
- Do Not Serve the Food Past Shelf Life



| |
|--------------------------|
| EXPIRATION DATE _____ |
| INITIALS _____ |

Pest Control

Pests are living creature that lives on or in human food, causing damage or contamination, or both.



It is important to prevent an infestation of food pests because They can transmit diseases, contaminate foods (bodies, hair, faeces, urine, etc), damage the structure of premises and equipment. Also, pest infestations can lead to businesses being taken to court, fines and possible closure of business.

Common Food Pest:

- Rats
- Mice
- Cockroaches
- Birds
- Ants
- Flies
- Insects



They might also include animals that scavenge from food businesses, e.g., squirrels and foxes.

Pest Signs:

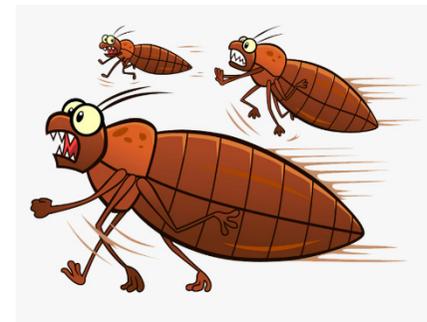
- Live or dead bodies e.g. larvae, pupae
- Droppings, nests and webbing
- Eggs, feathers and fur
- Damage including bite marks, holes in boxes, gnawed pipes, cables, fittings, etc
- Spillage adjacent to sacks of food
- Unusual smells
- Scratching, pecking or gnawing sounds
- Paw or claw prints
- Smears and rat runs
- The loss of small amounts of food

Pest Control

Food premises can provide pests with food, moisture, warmth and shelter. Effective pest control is essential to keep pests out of food premises and prevent them from spreading harmful microbes.

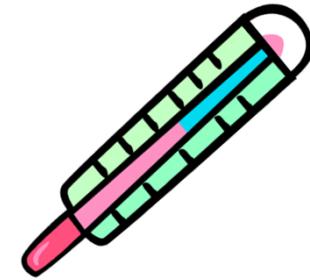
You can prevent infestation by:

- Keeping the business clean and tidy
- Covering foods at all times
- Storing the food off the ground and in pest-proof containers
- Checking incoming goods carefully. Do not accept a delivery if it shows sign of pests such as gnawed packaging or insects
- Checking regularly for signs of an infestation
- Rotating stock
- Keeping well fitting lids on the rubbish bins
- Keeping door and window screens closed
- Keep external areas tidy and free from weeds
- In the event of a sighting of a pest or activity, it must be reported immediately to your supervisor



Cooking

It is essential to cook food properly to kill harmful bacteria that can cause food poisoning.



- Cook, or reheat food to a minimum core temperature of 75°C for two minutes.
- If holding food hot, the minimum core temperature must not fall below 63°C.



**Cooking does not eliminate all bacteria;
it reduces it's count to a safe level!**

Chilling

Chilling food properly helps stop/prevent harmful bacteria from growing or multiplying.



- Some foods need to be kept chilled to keep them safe, such as salads, milk and cream, desserts, cooked food which will not be served immediately and food that says keep refrigerated on the label.
- Fridges and chilled display equipment should be set at below 5°C - out of the 'danger zone' (5°C to 63°C)
- Avoid overloading the fridge. Overloading will prevent air circulation.

Options for chilling down hot food:

- Chill hot food to 5°C or below as quickly as possible
- Divide food into smaller portions and put in small shallow pans or containers with large surface area and cool under running cold water
- Ice bath: put in a pan and put the pan on ice bath, ice should not come in contact with the food.
- Blast chiller: Cools down the hot food to below 3°C within 90 minutes.



Freezing:

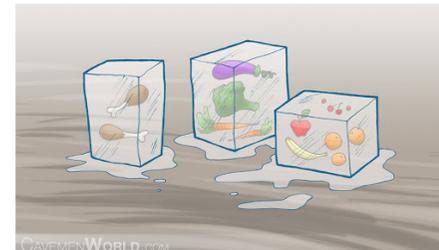
Frozen food should be stored at -18°C or colder.

Freezing does not kill bacteria, it prevents bacteria from multiplication.

- Put frozen food in the freezer at -18°C as soon as it is delivered/received.
- Freeze hot food as soon as it has been properly chilled down/use blast
- Divide food into smaller portions and put it in containers or in freezer bags before freezing, if possible.

Options for Defrosting Food:

- Defrost frozen food in the fridge and ensure that the product is fully defrosted before cooking
- Under cold running water below 21°C
- Microwave: defrost setting Keep food



**Act to ensure that
the food you produce,
serve or sell is safe to eat.**

The End

Thank you for your time