Elearning Solutions



A Visual Coursebook
by
Elearning Solutions

LEVEL 2

FOOD SAFETY COURSEBOOK

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Chapter 01:
Introduction to Food Safety and the Law

Introduction

This Chapter will teach you where food businesses and preparers stand in relation to UK law, and the details of what is expected from you under the legislation which governs food preparation, handling, displaying and serving.

You will also gain an understanding of how this legislation is enforced by Food Safety Officers (FSOs) and others and ultimately what might happen if you fall foul of the law.





Topics to Be Covered in this Chapter :

- What Is Food Safety?
- Food Handlers and the Law
- Food Business Owners and the Law
- The Powers of Local Authorities
- Role of the Environmental Health Officer (EHO)
- Prosecution
- Due Diligence
- The Food Standard Agency and the Food Hygiene Ratings Scheme

What is Food Safety?

Most people love to eat out and everyone will at some point need to buy and eat food at a commercial or catering premises.

However, the preparation and handling of food carry with them a number of hazards. It is a food handler's and food business's legal obligation to protect the public and staff from these hazards - as well as an ethical and moral necessity, too.

The overriding responsibility of food handlers and preparers and food business staff and managers can be summarised in three points:

- To make sure that all food being handled, prepared, displayed and served is safe to eat
- To make sure that all food is protected from potential hazards
- To prevent and protect all customers and consumers from harm





Food Handlers and the Law

Basic Hygiene-

Food safety begins with cleanliness - in other words, a rigorous attitude towards hygiene. Here are some general tips about what you should do and how you should behave:

- Maintain your personal hygiene and cleanliness
- Maintain the hygiene and cleanliness of your workplace and premises
- Routinely wear appropriate protective or clean clothing
- Ensure that all food is protected from any contamination at all times
- Prepare, display, serve and store food at legally designated safe temperatures and in scrupulously clean conditions
- Report any staff illnesses showing symptoms of food poisoning to your line manager or supervisor

You will find more on this subject later in the course, in Chapter 6: Personal Hygiene.

Food Business Owners and the Law

Food safety laws are provided directly by UK law and also from the EU - both must be strictly adhered to in your business or employment handling and selling food.

These laws are intended to enforce clear standards of food and hygiene on food handlers and managers with regard to five aspects of their business:

- Food safety
- Food safety management
- Food handling (including appropriate training)
- Temperature maintenance and control
- The workplace and its equipment



Continue...



Food Business Owners and the Law

The law states that every person involved in food handling, whether they be an employee, supervisor or manager, must be aware of their legal duties in performing their work.

The most important legislation are as follows:

1. The Food Safety Act 1990
2. The Food and Safety Hygiene (Scotland) Regulations 2006 and The Food and Safety Hygiene (England) Regulations 2016
3. European Food Regulation (EC) No. 852/2004

Continue...

Food Business Owners and the Law

1. The Food Safety Act 1990

This is the major legislation covering food standards and makes it a criminal offence to:

- Knowingly or unknowingly produce food that is dangerous to health
- Sell substandard quality foodstuffs (assessed as those which don't meet standards that might reasonably be expected by a customer)
- Sell food products which do not comply with food safety and hygiene regulations



Continue...



Food Business Owners and the Law

2. Food Safety Hygiene Regulations

There are two major sets of legislation in the UK, one for Scotland and the other for the rest of the union:

- ✅ The Food and Safety Hygiene (England) Regulations 2016
- ✅ The Food and Safety Hygiene (Scotland) Regulations 2006

Both of them set out food hygiene regulations for every food business, controlling every level of commercial food production and consumption from initial production right through to its consumption by the customer.

Continue...



Food Business Owners and the Law

3. European Food Safety Regulations

The main set of regulations governing food production and consumption across the EU is:

- ☑ European Food Regulation (EC) No. 852/2004

These rules are even wider-reaching than the UK's own and concern the handling of food in the following circumstances or contexts:

- ☑ On food production and consumption premises (whether this is a factory, canteen, restaurant or café)
- ☑ Food business registration
- ☑ Equipment, from cooking to storage and even down to the maintenance of cutlery
- ☑ The robust implementation of HACCP or FSMSs
- ☑ The behaviour and training of the food handlers themselves



The Powers of the Local Authority

The main enforcers of food safety legislation are local authorities, who have their powers set out by law.

To enforce regulations and standards in food businesses, local authorities employ two kinds of inspectors:

- **Environmental Health Officers (EHOs)**
- **Trading Standards Officers (TSOs)**

There are also two main organisations in the UK that are responsible for protecting the consumer from food production and consumption hazards:

- **The Food Standards Agency (FSA)**
- **Food Standards Scotland (FSS)**

The Role of the Environmental Health Officer (EHO)

The major investigator of a food business's premises and conditions (once a complaint has been made or a regular assessment is underway) is the Environmental Health Officer or EHO.

In food premises, the main role of the EHO is to investigate the potential or existing health hazards and ensure that they are meeting the legal sanitary standards required by food safety legislation and to make sure that any infractions are eliminated or mitigated for, whichever is most essential.



Continue...



The Role of the Environmental Health Officer (EHO)

These official operatives have the powers to perform any of the following actions, if and how they see fit within the law:

- Enter any food production or consumption premises at a reasonable time for the purpose of performing food safety inspections
- Investigate complaints they have received about food hygiene and safety
- Investigate food poisoning outbreaks and complaints about incidences of food poisoning
- Give advice and recommendations on how a food business could improve safety and hygiene
- Give guidance and good practice advice to food business managers, employers and employees

The Serving of Legal Notices

One of the most important jobs of EHOs and TSOs is to serve legal notices. There are three different forms of these notices:

- **Hygiene emergency prohibition**
- **Remedial action**
- **Hygiene improvement**

In addition, EHOs and TSOs have the authority to perform the following actions:

- Take samples or photos of food they consider may be unsafe or unfit for human consumption
- Confiscate or destroy such foods
- Recommend that food business companies, managers or staff be prosecuted



Continue...



The Serving of Legal Notices

Food businesses must cooperate and comply with the law, especially if they receive a legal notice or recommendation from an EHO or TSO. Failure to do so will almost certainly result in a prosecution and conviction for obstruction of the law.

You will be committing a criminal offence if you do not act upon or ignore a legal notice or order.

Hygiene Emergency Prohibition Notices (HEPNs)

If a hygiene emergency prohibition notice is served, it is the law that the business must close immediately. The officer who served the notice must then apply to court for it to be turned into a Hygiene Emergency Prohibition Order (HEPO) within three days of the legal notice being issued.

The business will remain under this order until it can be definitively demonstrated that it no longer poses any threat to public health or safety. Only then will the order be lifted by the local authority.





Remedial Action Notices (RANs)

Away from England in the UK, Scottish, Welsh or Northern Irish food businesses can be served with a remedial action notice by an EHO or TSO.

This means that:

- ☑ **Any use of the food business or its equipment stated in the RAN is prohibited**
- ☑ **The RAN can specify a timescale for complete closure or reduction of the business's operations, which can be immediate**
- ☑ **The RAN can impose any number of conditions on a food business or production process, or even prohibit such activities**

Examples could be that a restaurant will be forced to close for the foreseeable future or a catering business might be prohibited from providing its services until further notice.

Hygiene Improvement Notices (HINs)

An officer can serve an HIN to any food business that is found to not comply with its legal food safety obligations.

A HIN will usually state:

- **The particular reason that the HIN has been issued**
- **Improvements that must be made by the food business in order to comply with the HIN**
- **How much time is being allowed for these recommended improvements to be made (this is generally at least 14 days)**





Food Businesses and the Law

To avoid falling foul of the law, the owners, directors and operators of food businesses have a number of additional responsibilities under UK law, as follows:

- All food production and consumption premises must be officially registered with the local authority
- At all stages of its preparation and use, all food premises must be properly operated and equipped to prevent contamination of food
- Workplace hazards must be assessed, minimised and eliminated where possible using appropriately designed and written food safety management procedures and protocols
- All food premises must have adequately cleaned, maintained and constructed facilities for washing and personal comfort and hygiene
- Appropriate and thorough training must be given to all employees and staff



Prosecution

What Happens if You Are Prosecuted?

Failure to comply with food safety laws and regulations or any notices served by the local authority's officers could result in any or all of the following:

- Prosecution
- An unlimited fine
- A prison sentence
- Closure of your business

The length of the prison sentences imposed can vary, from a maximum of six months, if your case is prosecuted in a magistrate's court, up to two years if it is held in a crown court. Either is possible.



Due Diligence

As a food business owner or manager, you only have one defence under UK law: due diligence.

This means that you can prove that you took all reasonable precautions to ensure that the food that is being handled by your business was safe.

The only way to adequately prove this is to be able to show that you set up an appropriate system of controls under which any dangers or hazards should have been prevented or minimised.

Furthermore, these controls cannot be proved to have been in place **WITHOUT:**

- ☑ Keeping complete and accurate records for inspections and protocols performed
- ☑ Ensuring the source of each food product and tracing their packaging
- ☑ Showing that you rigorously followed the good practice guidelines of the UK food industry

Being able to provide evidence of all the above is due diligence.

Food Standards Agency (FSA) and the Food Hygiene Ratings Scheme

The FSA partners up with all the UK local authorities (other than Scotland) to run the Food Hygiene Rating Scheme (FHRS) which governs all food selling and serving businesses, including:

- Supermarkets, grocers, shops and food stalls
- Restaurants, cafes and takeaways
- Hotels and pubs

Once one of these businesses has been inspected by the FSA, the Food Safety Officer (FSO) gives it a hygiene rating which shows how well the business is meeting the standards of food hygiene legislation.

The premises should then prominently display an FSO sticker to demonstrate that they have met hygiene standards (a legal requirement in Wales and Northern Ireland but not in England). Details of the business's compliance are also published online on the FSA and local authority websites.





The FSA Inspection

On-site (that is, your premises), the FSOs will assess the following::

- The structural conditions of the building in which your food business is based and its layout
- How clean, well ventilated and lit the premises are
- Whether the food is handled hygienically at all stages of its production and consumption, including storage, preparation, cooking, cooling, reheating and display
- Whether the business has adequate means of making preparers and customers aware of the presence of allergens in each of the foods
- How the supervisors, managers or other relevant staff maintain and record their procedures

Continue...

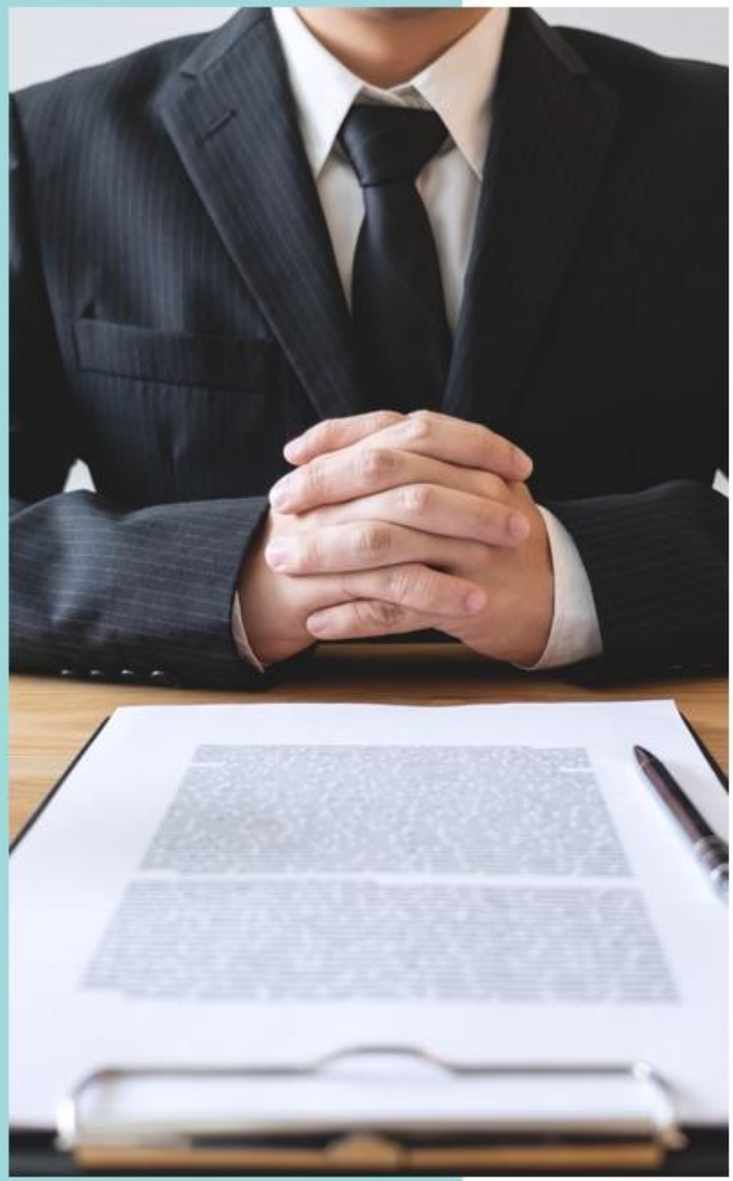
The FSA Inspection

The highest rating available under the FHRS is '5', and is given if the business's food hygiene and safety are of sufficiently high standard - in reality, any food-handling businesses should be able to achieve this score with ease.

If you want to know more about Food Hygiene Ratings Scheme, click on the following link:

www.food.gov.uk/safety-hygiene/





What Happens If You Get a Poor Food Hygiene Rating?

This is never a good thing for a food business for a number of reasons, including the facts that:

- Your business might have to close forever
- You may lose a substantial amount of business
- You may lose your reputation in the industry, with the local authority and among members of the public
- You might receive a lot of customer complaints, both in person and publicly online
- You might be the cause of a food poisoning outbreak

Question 1

What do the initials FSMS stand for?

- (●) **Food Safety Management System**
- ( ) **Food Sugar Meat and Savoury**
- ( ) **First Sweet then Mustard and Salt**
- ( ) **Food Standards Must be Sustained**



Correct	Choice
X	Food Safety Management System
	Food Sugar Meat and Savoury
	First Sweet then Mustard and Salt
	Food Standards Must be Sustained

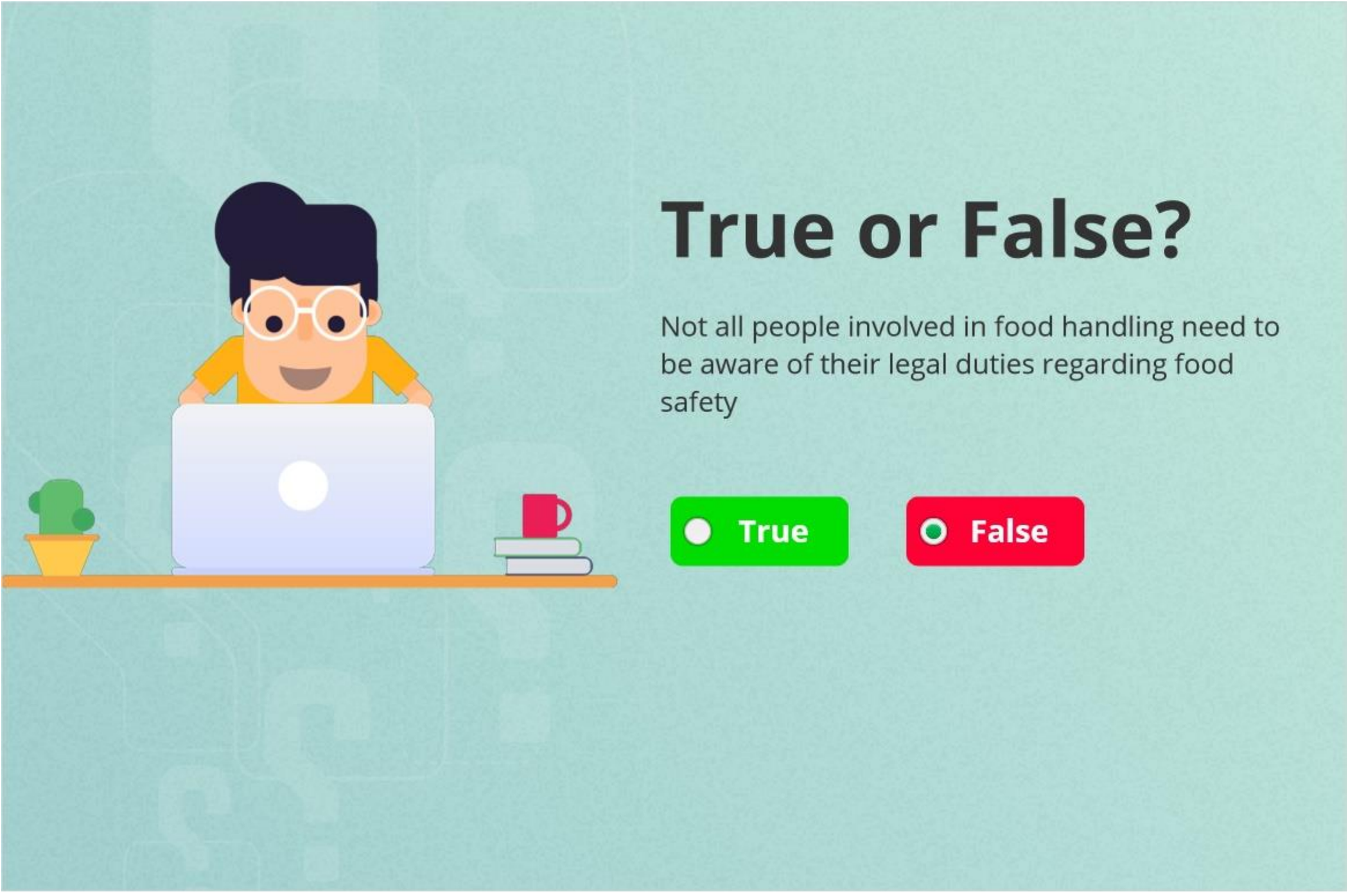
Question 2

What is the maximum length of a prison sentence for not complying with an EHO's legal notice when prosecuted in a crown court?

- ○ **Six months**
- ○ **Life**
- ◉ **Two years**
- ○ **Thirty days**



Correct	Choice
	Six months
	Life
X	Two years
	Thirty days


True or False?
Not all people involved in food handling need to be aware of their legal duties regarding food safety
True
False

Correct	Choice
	True
X	False

Summary

In this Chapter, we have learned that:

- Your responsibility as a food handler or business is to make sure that your food is safe to eat, protected from hazards and fit for human consumption.
- All people involved in food handling must follow the Food Safety Act 1990 and the Food and Safety Hygiene Regulations, as well as the European Food Regulation.
- The local authority and its Environmental Health Officer (EHO) have the power to inspect your premises and methods when they deem it suitable.
- You must maintain adequate records of your hygiene and safety procedures to be able to prove due diligence.
- The maintenance of good food handling standards will result in you being given a good score under the Food Hygiene Rating System and a sticker which should be displayed obviously on your premises.


Chapter 02: Bacteria and
Microbiological Hazards



Introduction

Perhaps the most prevalent and tenacious hazard in food safety is food poisoning, the primary cause of which is microbiological contamination.

Food poisoning can be caused by bacteria, viruses or moulds entering the food and spreading illnesses or diseases, or introducing toxins to the food.

In this Chapter, you will discover these microscopic enemies and what they do. Later in the course, you will find out how to prevent them from making food harmful and what the law has to say about your responsibilities and obligations.

Topics to be Covered in this Chapter:

- Bacteria
- Types of bacteria
  - Helpful bacteria
  - Spoilage bacteria
  - Pathogenic bacteria
- Sources and vehicles of bacterial contamination
- How do bacteria multiply?
- What do bacteria need to multiply?
- Cross-contamination
- Bacteria and the 'Danger Zone'
- How to prevent bacterial contamination
- Viruses
- Moulds
- High-risk and low-risk foods as biological hazards





Bacteria

In Chapter 1, we saw that the greatest danger involved in food handling is food poisoning. The biggest cause of such illness is from bacterial contamination.

Bacteria are microscopic, single-celled organisms which inhabit almost every place on earth and can be found on and in almost every object, including food and food equipment.

They are found from the deepest parts of the oceans to the upper reaches of the atmosphere, and from the soil beneath our feet to the human gut. Most are harmless and many are beneficial to us, while some are harmful in the wrong place or cause food to spoil or spread disease.

Types of Bacteria

There are three kinds of bacteria for our purposes:

- Helpful bacteria
- Spoilage bacteria
- Pathogenic bacteria

However, it is the last two which cause problems in food handling and production.

- spoilage bacteria make food smell 'off', become discoloured and otherwise unpalatable as it decomposes
- pathogenic bacteria cause disease and illness.



Continue...



Types of Bacteria

Pathogenic bacteria are usually undetectable by sight, smell or taste when they are on food but can multiply at such a rate that threatening quantities can still be present on even the freshest of foods.

This is the reason that food standards laws and regulations were created – to remove the conditions in which such bacteria multiply and to prevent them from reaching humans and causing food poisoning.

Helpful Bacteria

Not all bacteria are harmful and, in fact, we couldn't exist without some kinds of helpful bacteria.

These are mostly found in dairy and fermented foodstuffs. Examples of foods which contain helpful bacteria include:

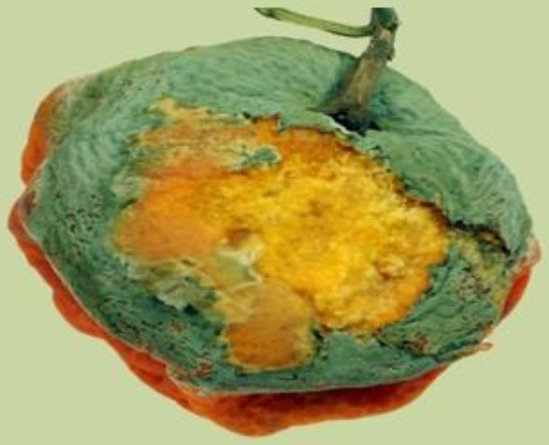
- ☑ Live yoghurt (which includes probiotic bacteria)
- ☑ Sauerkraut (fermented cabbage preserved in saltwater)
- ☑ Tempeh (fermented soya bean extracts)
- ☑ Kimchee (Korean cabbage fermented in spices)
- ☑ Miso (fermented soya bean paste)
- ☑ Pickles

However, we now need to consider the kinds of bacteria that poison food.









Spoilage Bacteria

Food spoilage is essentially the state where food begins to decompose and is usually easy to spot. Spoilage will make the food unappetising, and you should not consume food in such a state.

The kinds of organisms which cause food spoilage eventually grow and reproduce on any food items left unprotected and include moulds and other fungi, viruses and certain types of bacteria which are called spoilage bacteria.

However, these aren't necessarily dangerous but cause food to be inedible and unfit for human consumption.

Pathogenic Bacteria

Many significant types of bacteria cause the genuinely health-threatening set of illnesses known as 'food poisoning' – these are the pathogenic bacteria, and they can be particularly dangerous because there are often no sensory indications of their presence in food.

You come into contact with thousands of types of bacteria all the time; however, it is the common but harmful types that get into our food and water and cause illnesses that can sometimes be fatal.

There are more than 1 million cases of food poisoning in the UK every year, which result in more than 20,000 hospital admissions and about 500 deaths.



Continue...



Pathogenic Bacteria

There are seven frequently encountered major types of pathogenic bacteria which occur in our food:

- Salmonella
- Clostridium perfringens
- Bacillus cereus
- Campylobacter
- Escherichia coli (E coli) 0157
- Listeria
- Staphylococcus aureus

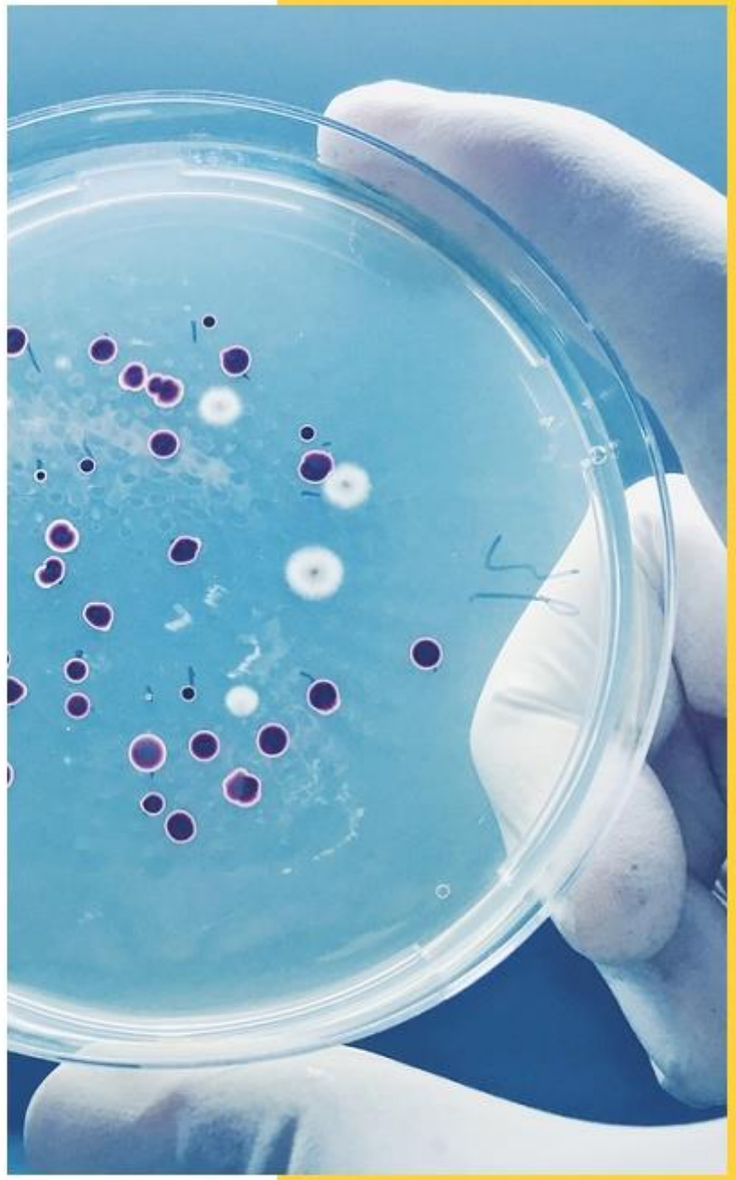
How Do Bacteria Multiply?

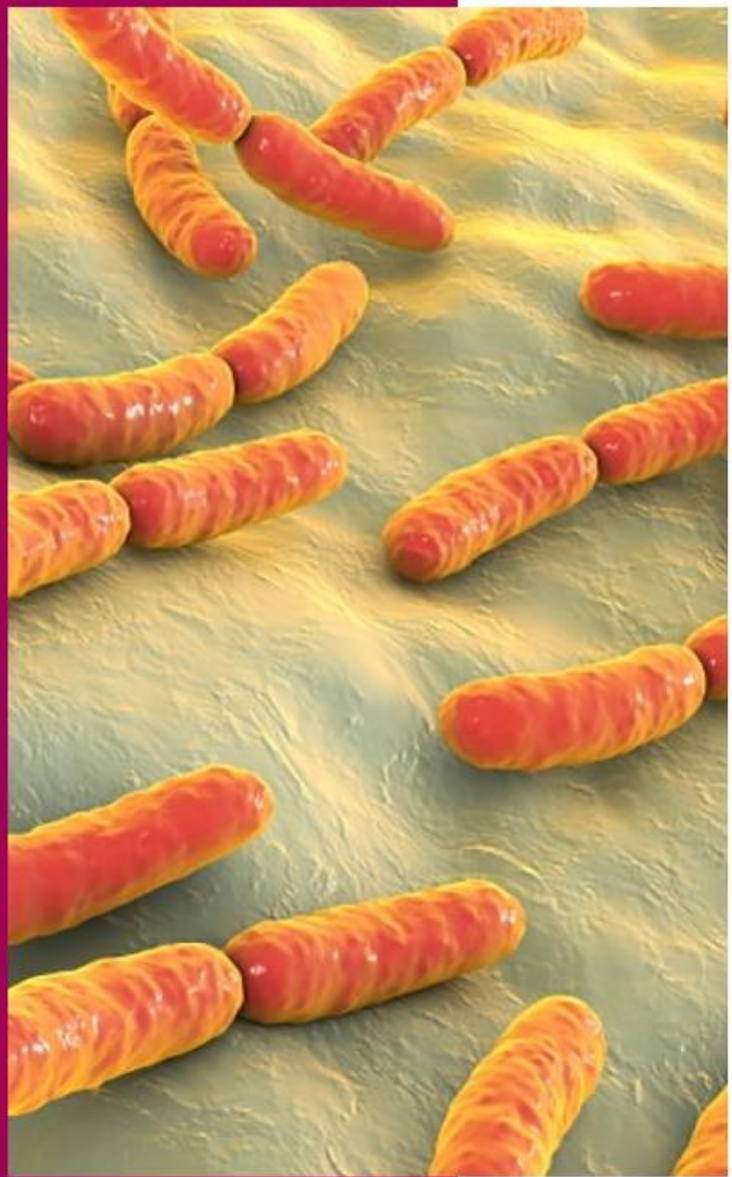
While they are mobile life-forms, bacteria reproduce, grow and multiply very differently from animals – by splitting in two.

If there are enough nutrients in a bacterium's immediate environment – along with adequate temperature and moisture – it will divide exponentially. This will result in a rapid multiplication in the space of quite a short time – some kinds of bacteria can double in number every 20 minutes!

This means that one bacterium can become more than 16 million bacteria in 8 hours.

Clearly, controlling the conditions needed for bacterial growth is an essential part of any food handler's responsibility to ensure that bacteria don't get the chance to spread and become a danger to humans.





What Do Bacteria Need to Multiply?

The conditions needed by bacteria to multiply are perhaps best remembered using the acronym **F.A.T.T.O.M.**

This stands for:

- [x] Food
- [x] Acidity
- [x] Temperature
- [x] Time
- [x] Oxygen
- [x] Moisture

FATTOM

FATTOM can be further explained by outlining how each of these factors encourages bacterial growth:



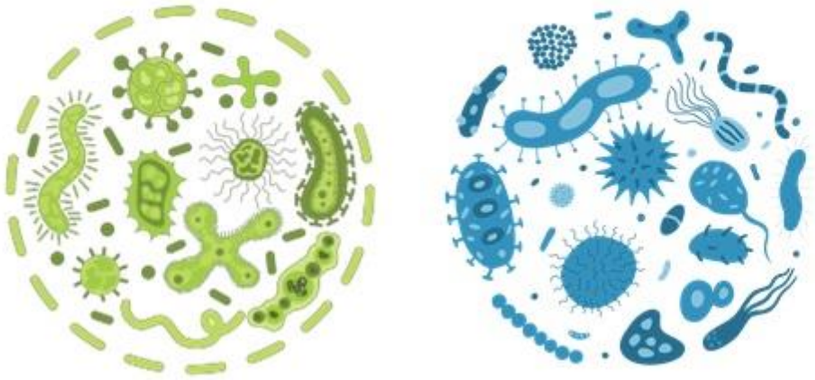
- **Food** – with warmth and moisture, protein-rich foods are particularly suitable for bacterial growth
- **Acidity** – vinegar and lemon juice are good preservatives because most bacteria can't survive or grow in acidic conditions
- **Temperature** – the optimum temperatures for bacterial growth are from 4°C–60°C, a range known as the 'Danger Zone'
- **Time** – the longer foods present the conditions for bacterial growth, the more dangerous they become as they create an increasingly favourable growth environment
- **Oxygen** – influences bacteria by presence or absence; there are two types reliant on these conditions:
  - **Aerobic bacteria** need oxygen to multiply; can be prevented from growing by vacuum-sealed containers
  - **Anaerobic bacteria** only multiply with the absence of oxygen; will contaminate jars or cans of food which have been improperly processed
- **Moisture** – bacterial growth is faster in moister conditions, which is why dried and salted foods tend to be viewed as low-risk

Sources and Vehicles of Bacterial Contamination

There are many ways in which bacteria can enter food and these can be grouped into three main routes: passive, indirect cross-contamination and direct cross-contamination.

We'll discuss cross-contamination in more detail below but there are several forms of passive contamination route:

- **Food animals** – pathogens transferred during slaughter from their skins or intestines, with faecal matter crossing over during evisceration
- **Poultry** – slaughtering machinery can transfer bacteria from bird to bird, while Salmonella can get on to eggs



- **Shellfish** – bacteria accumulates via filter-feeding in live molluscs; particularly risky if eaten raw
- **Raw fruit and vegetables** – can carry soil microorganisms from contamination by insects and other creatures via urine and walking on food
- **Milk** – must be pasteurised to kill bacteria as milk is a perfect reproduction substrate for bacteria
- **Water** – must be properly treated to neutralise the run-off from soil, sewage and slurry; stagnant and storage tank water should only be used for washing not drinking

Cross-contamination

There are two kinds of contamination:

- ☑ Indirect
- ☑ Direct

Indirect contamination happens when pathogenic bacteria are passed from a source via a vehicle to the food.

The following are examples of when this can occur:

- ☑ Handling food without washing your hands or wearing protective gloves
- ☑ Not washing or disinfecting a chopping board or knife between use on raw meat, when followed by cooked meat or vegetables
- ☑ Using the same dishcloth to wipe raw food preparation areas as cooked food areas



Continue...



Cross-contamination

Direct contamination happens when the source of the pathogen contacts food without an intermediate stage.

Example of this can include:

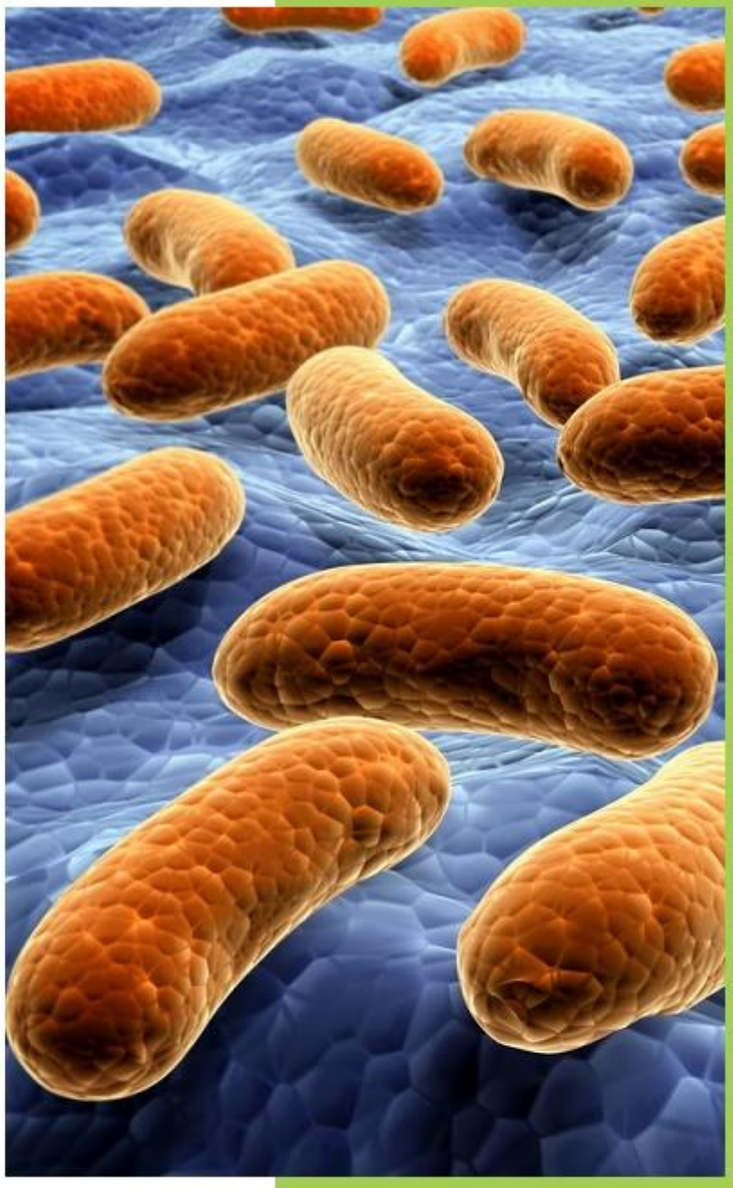
- When the food handler coughs or sneezes onto the food
- When raw chicken is stored above cooked chicken in a fridge
- When fresh meat is stored among or next to cooked meat
- When uncooked seafood is stored above salad or vegetables

Bacteria and the Danger Zone

As we have seen, under **FATTOM**, warmth is one of the factors which encourages bacterial growth.

- **Bacterial growth is particularly rapid in the 'Danger Zone' of 4°–60°C; in fact, most bacteria can't reproduce outside this range.**
- It is perhaps our misfortune – or evolution's ploy – that our healthy body temperature sits right in the middle of that rage at 37° C. This is the optimum reproduction temperature of most bacteria which cause sickness in humans.
- Consequently, food safety protocols and laws insist that:

  Hot food is stored above 63° C while cold food is stored below 5° C so that bacterial growth is prevented.



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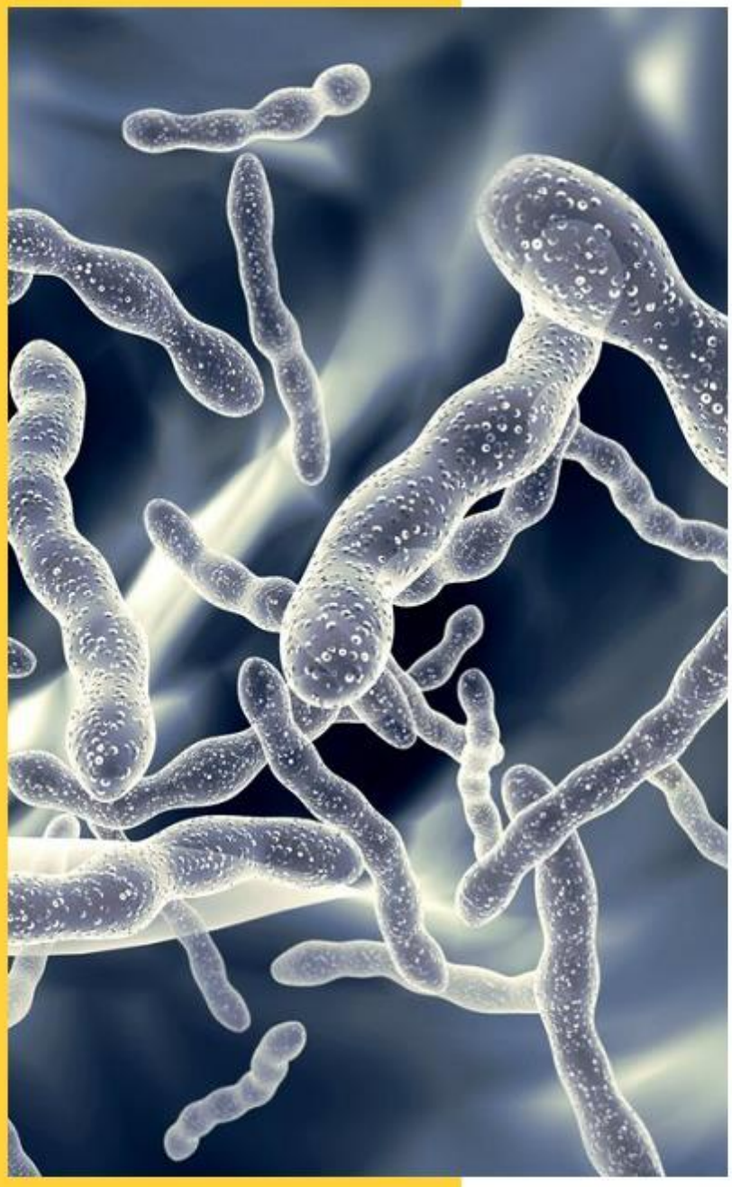


Bacteria and the Danger Zone

By law, you have to store cold food below 8° C (though best practice is below 5° C).

All food served hot or cold must have been cooked thoroughly to kill bacteria. Undercooking can actually encourage bacteria to grow and reproduce.

This means that you must cook food at 70° C (or above) for two minutes - and preferably more.

How to Prevent Bacterial Contamination

The following rules will ensure that you prevent the growth of bacteria and prevent cross-contamination:

- Raw and ready-to-eat food should be prepared separately using cleaned and disinfected equipment
- Fresh vegetables must be washed thoroughly in a designated separate sink
- Utensils should never be washed in the same sink as raw food is prepared
- Disposable single-use cloths should be used for wiping or drying utensils and work surfaces
- You must wash your hands thoroughly before handling food, as well as after handling raw food



Continue...



How to Prevent Bacterial Contamination

- Food should be moved and put in place using tongs, spoons or ladles wherever possible
- Gloves should be used where possible and changed after each food-handling task
- You should wash your hands before wearing protective gloves
- Never leave food standing in a warm or moist environment
- Prepare food in the smallest amounts possible so that it isn't kept out of refrigeration for very long

Viruses

Viruses are also responsible for some food pathogens and are different organisms entirely to bacteria, though still microscopic.



A virus is essentially a parasite which reproduces itself inside other organisms' cells, thus infecting them and causing diseases. However, because they need to use a living cell to do this, they don't multiply within food but need to be ingested to reproduce.

The two most frequently seen viral food-borne illnesses are norovirus and hepatitis A. Both can transfer between people easily and can survive for lengthy periods on door handles, light switches and work surfaces.

Both are common in shellfish and other kinds of seafood, which means that such foods must be certified as having been collected from approved locations.

There is little protection from viruses other than by thoroughly cooking foods as they can be disinfectant resistant and also survive bactericidal hand washes.

Moulds

Also microscopic, moulds are forms of fungi which live on mostly dead animal or plant matter. They are transferred via their even tinier spores, which can be transported via the air, water or living creatures such as flies.

Despite being mostly visible as a green, blue, yellowish or white surface dusting , it is far more extensive than can be generally seen, having thin roots which penetrate down below the surface of the food.



Continue...



Moulds

It is not just unsightly – moulds exude enzymes to digest the food, giving rise to the tell-tale signs of spoilage or decomposition in it, such as a mouldy or offensive smell, atypically slimy appearance and unusual colour.

Not only that, but some kinds of mould also introduce toxic substances into the food known as mycotoxins which are fatal. Typically, these are ingested via wheat or other grains which have become mouldy in storage.

High Risk and Low Risk Foods

High Risk Foods

Because of the conditions needed to encourage the multiplying of bacteria, viruses or moulds, certain foods are more likely to carry them – these are known as 'high risk' foods.

Such foods are generally those which are ready to eat and examples include the following:

- Pre-cooked fish, poultry and meat, including 'deli meats'
- Shellfish and other seafood
- Cheese, cream, fresh milk and other dairy products
- Stocks, gravies, sauces, chowders and soups
- Cooked pasta
- Cooked rice
- Unwashed leafy greens and salad
- Unwashed fruit
- Vegetable sprouts



Continue...



High Risk and Low Risk Foods

Low Risk Foods

These are foods which usually don't need to be chilled or kept warm and are often dry or preserved in some way. Consequently, they don't provide a favourable environment for microorganism growth.

Common examples of such food usually have a 'best before' or shelf-life date on their packaging or labels and include:

- ✅ Crisps and corn chips
- ✅ Crackers and breadsticks
- ✅ Packeted breakfast cereals
- ✅ Dried rice, pasta, quinoa and couscous
- ✅ Pastries, cakes and biscuits (without dairy-based cream or fillings)

Continue...

High Risk and Low Risk Foods

- Sweets and other sugar-based confectionery
- Canned drinks
- Tinned food
- Cooking sauces in sealed jars
- Condiments including table sauces

Once some of these are opened and out of the refrigerator, they quickly become high-risk foods and should be stored and consumed as directed on their packaging.



Question 2

By law, you are obliged to store food below which temperature?

- (●) **Below 8°C**
- ( ) **Above 8°C**
- ( ) **Below 5°C**
- ( ) **Above 32°C**



Correct	Choice
X	Below 8°C
	Above 8°C
	Below 5°C
	Above 32°C

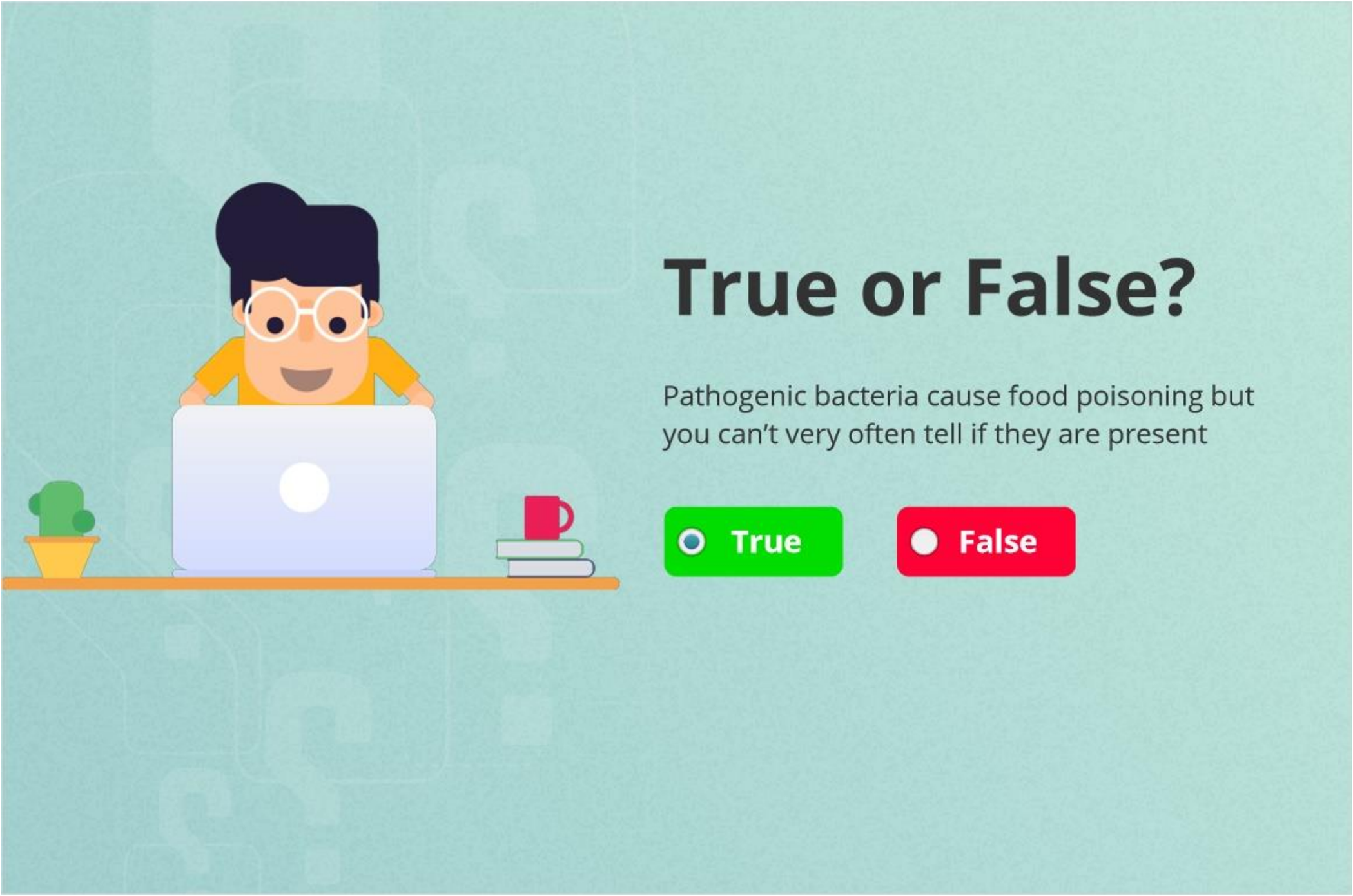
Question 3

Which temperature range is considered the 'Danger Zone' by most food scientists?

- (●) **Between 4°–60°C**
- ( ) **Below 4°C**
- ( ) **Above 100°C**
- ( ) **Above 60°C**



Correct	Choice
X	Between 4°–60°C
	Below 4°C
	Above 100°C
	Above 60°C

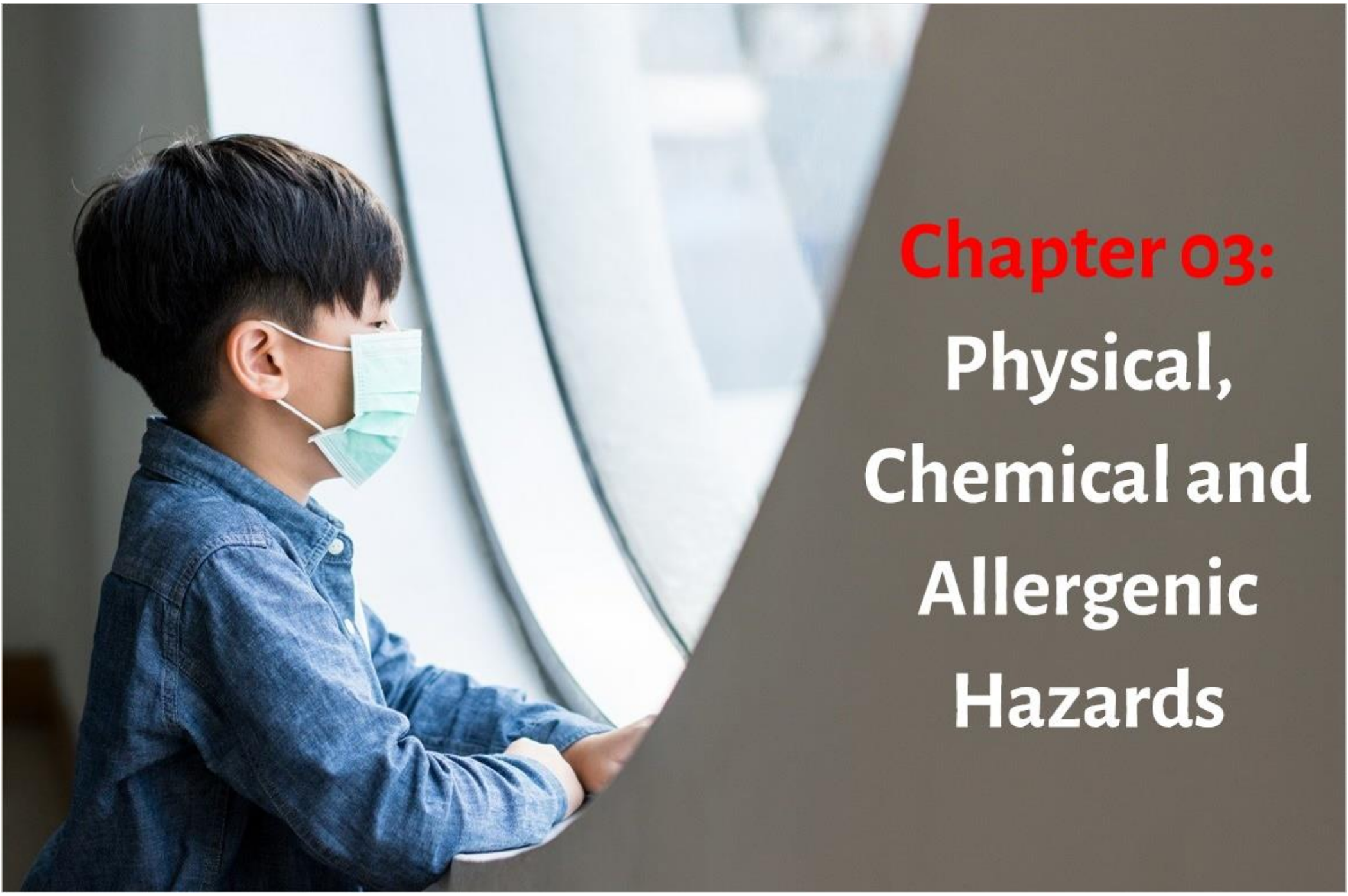

True or False?
Pathogenic bacteria cause food poisoning but you can't very often tell if they are present
True
False

Correct	Choice
X	True
	False

Summary

In this Chapter, you have learned that;

- There are three different types of bacteria in terms of their effect on humans: helpful, spoilage and pathogenic
- Bacteria, viruses and moulds all cause forms of food poisoning and need to be controlled to prevent this
- Bacteria need certain conditions to grow, described by the mnemonic FATTOM: Food, Acidity, Temperature, Time, Oxygen and Moisture
- Food handlers need to protect against both direct and indirect cross-contamination by being scrupulously clean and hygienic
- The bacterial growth Danger Zone is between 4° C and 60° C and the optimum temperature is the human body temperature of 37° C
- There are high-risk foods which are those which are cooked, ready to eat or unwashed and low-risk foods which are generally dried or preserved


Chapter 03:
Physical,
Chemical and
Allergenic
Hazards

Introduction

In Chapter 2, we saw that microbiological hazards potentially provide the greatest risk when handling food by causing food poisoning; we also learned how these are treated by the law and how to prevent them from occurring.

However, there are three other primary forms of hazard that can contaminate food and harm people, and which need to be considered in terms of how they are treated by the law.



Continue...



Introduction

These are classified as follows:

- **Physica**l - objects such as glass fragments, cement and plaster, screws, nails, pins, needles and human hair
- **Chemical** - substances such as cleaning fluids, petrol, anti-freeze and pesticides
- **Allergenic** - foods and substances which cause an unhealthy physical reaction in humans, such as nuts and seafood

By law, as a food handler, you will need to prevent such hazards from contaminating any food meant for human consumption that you are involved with, at all stages of its preparation, storage and serving.

Topics to be Covered in this Chapter

We will cover:

- Physical Contamination
- The 'Six Ps'
- Prevention and Controlling Physical Contamination
- What are Chemical Hazards
- How to Control Chemical Contamination
- Allergenic Hazards
- Major Types of Allergen
- Controlling Allergenic Contamination
- Food Allergy vs. Food Intolerance
- Anaphylactic Shock
- Human Allergens and the Law





Physical Contamination

A physical contaminant in food can be defined as any object which should not be in that food.

Aside from the upset and repulsion caused by simply finding foreign objects in food which you are eating, there is also the potential for such objects to cause pain and injury.

As well as minor injuries such as cuts in the mouth or cracked teeth, their presence can be life-threatening when they cause choking or internal bleeding.

The 'Six Ps'

The physical hazards that can find their way into the food can be memorably summarised as 'the Six Ps', which are:

- **People-** Any person, whether they are a food handler, customer or visitor, can introduce a physical contaminant to food during cleaning, repairs or maintenance of the food. Physical contaminants can be grouped into three major types according to their source, as follows:
  - Objects that may fall into food accidentally during food preparation
  - Objects that are introduced carelessly to the food
  - Objects that are introduced deliberately to the food
- **Packaging-** Some foreign objects may be introduced during the packaging of food in the form of plastic wrappers, crisp bags, string, polystyrene, lids etc.



Continue...



The 'Six Ps'

- **Product-** Other food parts or waste that come into contact with otherwise perfectly edible food. Glace cherries or pebbles falling into a meat dish can be a good example.
- **Pests-** Dead or alive insects, maggots and other larvae, worms etc can also be found in contaminated food rarely.
- **Premises-** Unhygienic food premises such as poorly maintained buildings and badly looked-after mobile food stalls or vans can contaminate your food.
- **Parts of machinery-** Parts of machinery such as nails, screws, clips, nuts and bolts etc. can come loose and fall into food. So, machineries must also be maintained properly to ensure that parts don't find their way into the food.

All should be kept out of the food you are handling at all costs. We will now go into more detail of how these objects can be prevented from getting into food.

Prevention and Controlling Physical Contamination

There are seven main methods of preventing and controlling the physical contamination of food. These are:

1. Issuing appropriate protective clothing to all staff involved in food handling, including masks, hats and hairnets, and overalls or other clothing with internal pockets
2. Introduce a rigorous procedure for reporting equipment defects and make sure that staff follow this and know how to report such problems properly
3. Always replace and repair damaged, broken or worn parts on equipment used by food handlers or in the food-handling areas
4. Make sure that all the staff are appropriately trained to use their equipment and utensils correctly and safely
5. Introduce a glass breakage protocol
6. Institute a rigorous pest-control policy and procedure
7. Make sure that all the staff know how to report signs of pests and that they have to do this





What Are Chemical Hazards?

A chemical hazard arises from potentially dangerous substances being introduced into food while being handled. This situation can occur at any stage of the storage, preparation or serving process.

Chemical hazards are commonly introduced via the following sources:

- ☑ Cleaning products being stored or used near food
- ☑ The residues of cleaning products remaining on work surfaces or food preparation equipment
- ☑ Food deliveries made in transportation previously used for carrying hazardous waste or chemicals
- ☑ Unlabelled containers that haven't been cleaned properly after holding hazardous substances
- ☑ Corroding metal or paint leaking into food from containers or open cans stored in the fridge

Continue...

What Are Chemical Hazards?

- Industrial incinerators or rubbish dumps contaminating the air or soil where food is produced
- Lead or copper being present in the soil where vegetables are grown
- Misuse of fertilisers, insecticides or herbicides on fruit and vegetables, or the remaining residues being left on unwashed food
- Over-use or misuse of veterinary drugs on domestic animals used for food





How to Control Chemical Contamination?

Chemical contamination of food must be prevented. Here are the most important ways of doing this:

- ☑ Use food-grade packaging materials to seal, wrap or pack food and the containers it is in
- ☑ Always keep chemical and food deliveries and storage separate from each other
- ☑ Always store chemicals and other substances in clearly labelled and securely sealed containers
- ☑ Keep any likely hazardous substances in a securely locked or sealed area away from any food ingredients or products
- ☑ Never store food in old chemical or cleaning substance containers
- ☑ Always follow the substance manufacturer's instructions
- ☑ Always make sure that you use high-quality, reliable and reputable suppliers for any products you use on your premises

Allergenic Hazards

Our immune system protects our body against infection and disease. In an allergic reaction, the immune system identifies a substance such as chemicals from peanuts as invasive and uses proteins to grab hold of the invader, releasing chemicals called histamines which produce an overreaction in the body.

An allergic reaction occurs in the human body when the immune system recognises an item of food that is normally healthy and harmless as a threat and tries to fight it.

An allergic reaction is usually immediate and can produce minor physical effects such as sneezing or the reddening of the skin to very serious, such as a life-threatening anaphylactic shock which can cause the death of the person if not quickly treated.





Major Types of Allergen

Employees and employers of food businesses must know about the major allergens and identify their presence prominently on menus, food packaging and ingredients lists.

These are the 14 most common ones:

- Celery and celeriac
- Cereals which contain gluten
- Crustaceans - prawns, shrimps, crabs, crayfish and lobsters
- Eggs
- Fish
- Lupin - the seeds of this flower are eaten as a snack in Mediterranean and Latin countries, and are now fashionable in the UK
- Molluscs - shellfish, squid (aka calamari) and octopus
- Milk and dairy products

Continue...

Major Types of Allergen

- Mustard
- Nuts - including pistachios, brazil nuts, cashews, pecans, walnuts, macadamia nuts, hazelnuts and almonds
- Peanuts
- Sesame seeds
- Soya beans and extracts
- Sulphur dioxide and sulphites at levels above 10 mg per kg or 10 mg per L





Controlling Allergenic Contamination

There are four major stages in preventing and controlling allergenic contamination:

- Always use approved and reputable suppliers who work to an accredited code of practice
- Make sure that all potentially allergenic products are packaged and labelled clearly and correctly
- Make sure that allergenic products are kept separate from all other foods and ingredients to prevent cross-contamination
- Keep all preparation areas, equipment, clothes and utensils used for preparing or storing allergenic foods separate and clean

Food Allergy vs. Food Intolerance

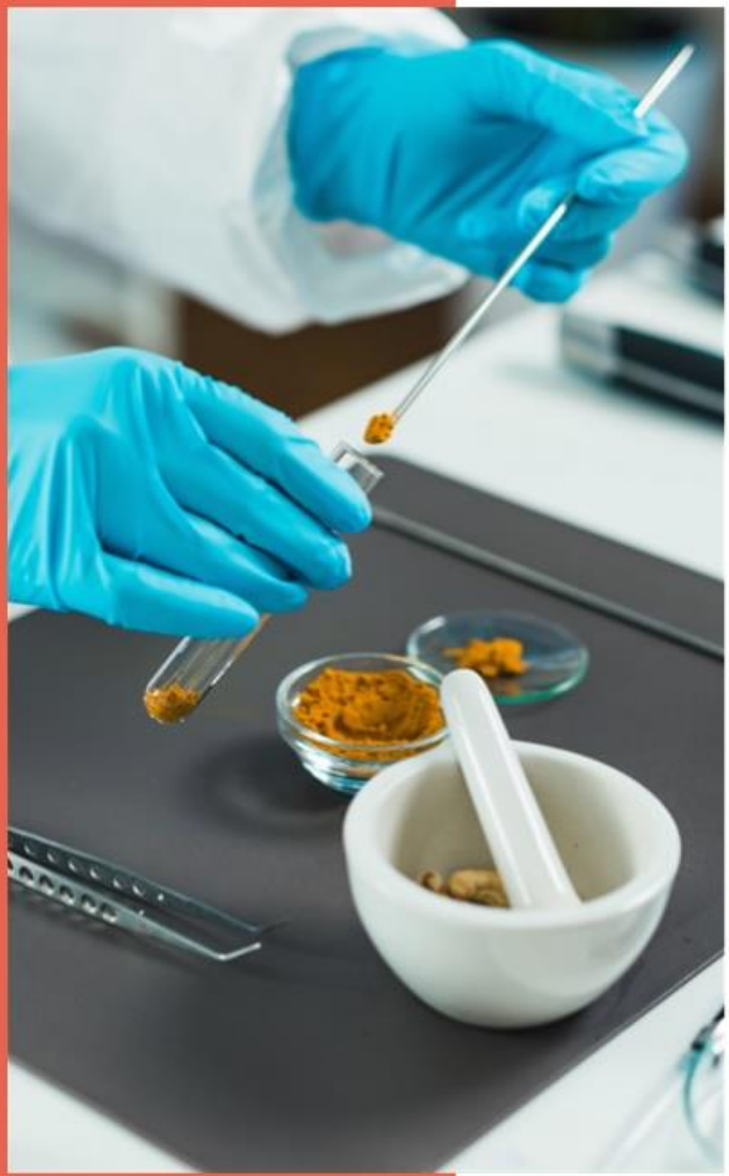
People often confuse food intolerances with allergies but they are not the same thing.

While they can produce similar physical reactions, food intolerance is actually due to hypersensitivity towards certain foods and is not allergenic.

That said, food intolerance can still produce rashes, nausea, diarrhoea and bloating, and can last for several days after these particular foods have been consumed.



Continue...



Food Allergy vs. Food Intolerance

People with food intolerances can sometimes consume small amounts of food which will have little or no effect, but they will suffer greatly if they eat too much of the same food.

This is not the case with food allergies, where even the slightest trace of allergenic food can cause an obvious reaction in a person who suffers from the condition.

The most well-known food intolerance is probably that of gluten, which is present in most wheat and other cereal products, including beer.

Anaphylactic Shock

An allergic reaction can induce anaphylactic shock, a state in which a person's blood pressure drops to a dangerously low level.

The initial symptoms of anaphylactic shock are a noticeable swelling and reddening of a person's throat and face. They will also experience difficulty in breathing and feel very distressed, often to the point of panic.

Even extremely small amounts of an allergen can cause anaphylactic shock, as well as inducing lesser allergenic side effects. Some people can die in a matter of minutes, and the effects in most sufferers can emerge very rapidly. For someone allergic to peanut proteins, for example, a fraction of just 1/44,000th of a peanut can be enough to kill them.





Treatment of Anaphylactic Shock

If you are in the presence of someone who appears to be suffering from anaphylactic shock, act quickly and follow this simple procedure:

- ☑ Do not move them
- ☑ Call an ambulance immediately
- ☑ If the person stops breathing, perform CPR if you know how - or quickly find someone who does
- ☑ Check on how the person is, afterwards

Most people who suffer from the danger of extreme allergic reactions will carry an Epipen, a device that enables rapid injection of adrenaline to help stop the anaphylactic shock from being fatal.

Human Allergens and the Law

As a food business, since December 2014, you are legally obliged to add information on any allergens that might be in your products on all packaging.

Otherwise, this information must be obviously displayed on menus or labels and signs for food that is being stored or displayed without packaging.

This is an important initial step in preventing someone who might be susceptible to anaphylactic shock from consuming what to them can be life-threatening substances in their food.



Continue...



Human Allergens and the Law

Food businesses must also list all allergenic food products by their most commonly understood name - for example, casein should be clearly listed as a milk derivative, while albumen must be listed as being derived from eggs.

The presence of such ingredients must be emphasised in bold or differently coloured type to make it stand out to the consumer.

All catering workers must declare the allergens contained in any food if asked to by a customer - they must also know exactly which allergens are in their food to be able to do this.

Question 1

Which one of the following is NOT a potential physical hazard in food?

- ○ Bristles
- ○ Screws
- ◉ Bacteria
- ○ Flakes of paint



Correct	Choice
	Bristles
	Screws
X	Bacteria
	Flakes of paint

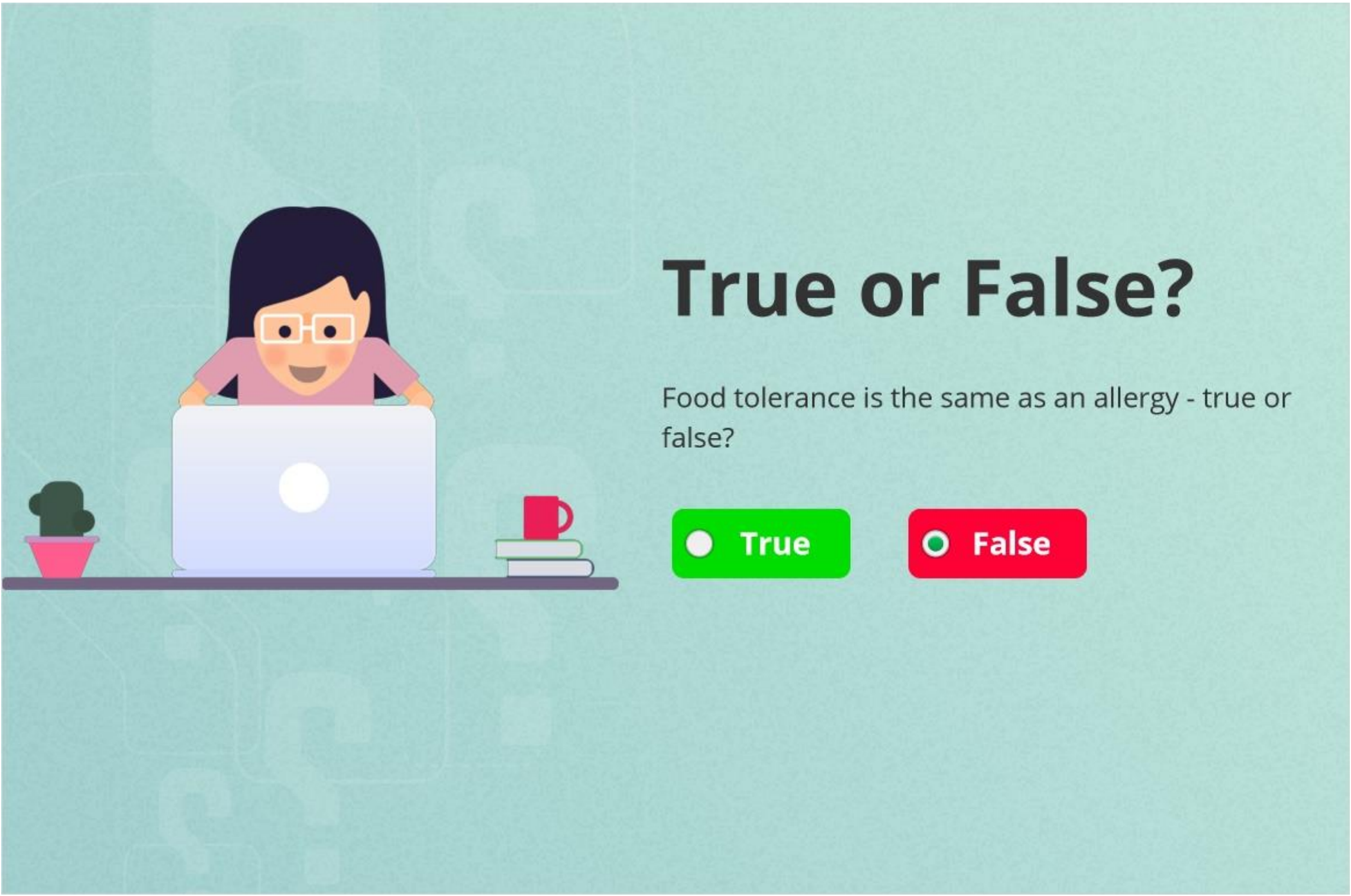
Question 2

Which one of the following is NOT one of the 14 major allergens which may be present in food?

- ○ Peanuts
- ◉ Vinegar
- ○ Celery
- ○ Mustard



Correct	Choice
	Peanuts
X	Vinegar
	Celery
	Mustard


True or False?
Food tolerance is the same as an allergy - true or false?
True
False

Correct	Choice
	True
X	False

Summary

What have we learned?

- Physical hazards are foreign bodies in foods which should not be there and can cause harm such as cuts in the mouth and choking
- Chemical hazards are substances which should not be in the food and can derive from cleaning products or pesticides
- An allergenic food can cause a life-threatening reaction from the body's immune system when it tries to defend the body against something it recognises as a threat
- Allergenic foods can send a person into anaphylactic shock and we've learned to identify its basic symptoms; therefore, all foods should be clearly labelled if they contain such ingredients to protect the customer.
- By law, all of these sources of food contamination must be avoided by putting procedures and systems in place to ensure that all possible means of preventing them are in place.


Chapter 04: Food
Poisoning and
Control Measures



Introduction

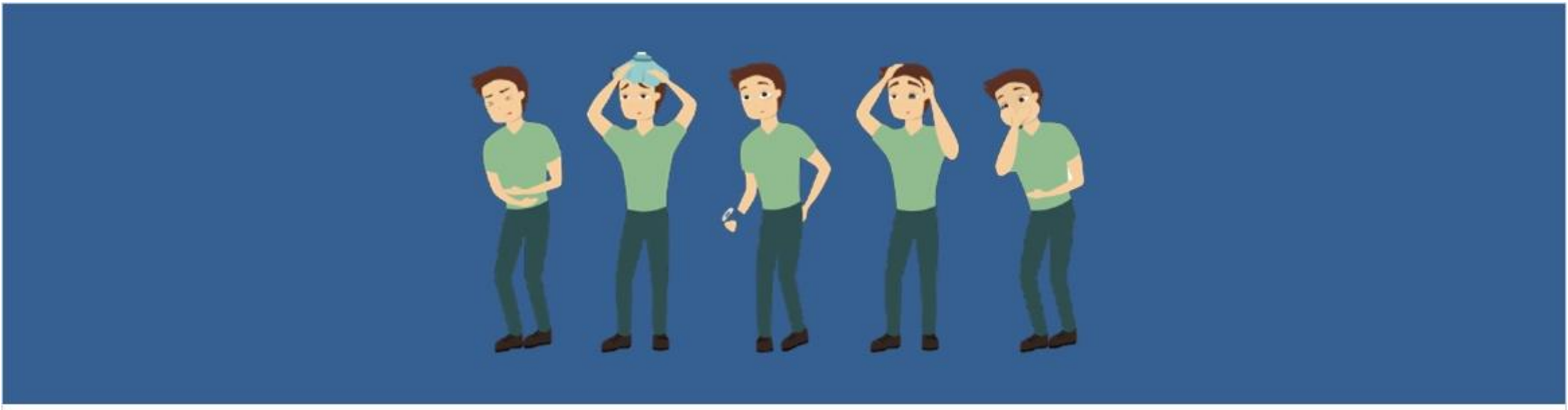
From Chapter 2, we've learned that spoilage or pathological bacteria caused most food poisoning. In this Chapter we will delve deeper into the subject of food-borne disease, establishing exactly what it is, the different types and how they are caused and how we can control them in a food handling environment.

Topics to be Covered

Topics to be covered in this Chapter:

- Definition of Food Poisoning
- Symptoms of Food Poisoning
- Causes of food poisoning
- Control Measures
  - Control the temperature to control the bacteria
  - Cooking Food
  - Hot Holding Food
  - Cooling Hot Food
  - Cold Holding Food
  - Thawing Frozen Food
  - Reheating Food
  - Checking Temperatures
  - When things go wrong





Definition of Food Poisoning

In simple terms, food poisoning is any illness which results from consuming food or drink that contains the bacteria, viruses, parasites or moulds that cause spoilage or are actively pathogenic. It can also be caused by the presence of pesticides or toxins in the food.

Symptoms of Food Poisoning

You'll normally know if you have food poisoning between two to six hours after the substance or organism has entered your body.

You'll be able to tell by the combination of stomach pain or cramps, nausea and vomiting, diarrhoea, fever (accompanied by a high temperature of 38°C or more), headache and general feelings of weakness which will overwhelm you.

Such symptoms can take up to a few weeks to show themselves, depending on which sort of food poisoning you have, but that, but they won't be subtle!





Causes of Food Poisoning

The organisms which cause pathogenic food poisoning (generally bacteria, viruses or moulds) can multiply in the food at any stage of the production and handling process -

- When the plants are growing or the animals are being raised
- When they're slaughtered or harvested, or
- When they're packed, transported stored or being prepared for human consumption.

Note: the chance of contracting food poisoning gets higher, the warmer temperatures are - which includes warmer weather as well as kitchen temperatures. At the height of summer, exposed food can begin to go off within the hour.

Control the Temperature to Control the Bacteria

One of the most important ways of preventing food poisoning bacteria from reproducing is to control the food temperature.

We have seen that there is a Danger Zone of 8-63°C in which most bacteria multiply at an exponential rate. By law, cold foods must be stored below 8°C and food cooked at above 63°C accordingly.

This is the only way to make sure that food is safe to eat. There are strict temperature guidelines for the major types of food preparation, whether during cooking, reheating, chilling, cooling or keeping food warm. This is to make sure that the danger of bacterial contamination is kept to an absolute minimum.

There are also a number of other preventative measures that can be employed against bacterial spread; we will now deal with all of these.





Cooking Food

if cooking is done wrong, it can cause a significant pathogenic bacterial hazard to people eating the food.

If you are cooking food, you must make sure that you avoid introducing bacteria or other contaminants by:

- ☑ Not using the same spoon to repeatedly taste dishes you are cooking
- ☑ Covering pans whenever possible to avoid physical contaminants such as splinters, hair or insects
- ☑ Not cooking acidic food ingredients (such as tomatoes, lemons or vinegar) in copper or aluminium pots and pans; this prevents chemical contamination when the pans release atoms of their constituent metal into the food, resulting in an unattractive colour, acrid taste or discolouration
- ☑ Making sure that food is eaten or cooled rapidly as soon as possible after the completion of the cooking process

Continue...



Cooking Food

When cooking food, maintaining a core temperature of 70° C for two minutes or more or 75° C for 30 seconds or more (in Scotland, 82° C) should destroy bacteria and make the food safe to eat.

Despite this, bacterial toxins are not always destroyed by heat, so the food being cooked must be as fresh as possible. It is essential that the core temperature of cooked food is correctly checked in commercial food premises - even if the food otherwise seems to show the correct indications that it is properly cooked.



‘Hot Holding’ Food

‘Hot holding’ is the phrase used to describe storing ready-to-eat food at a temperature **above 63**° C to prevent the reproduction of bacteria and germination of spores.

Even if this temperature is consistently maintained, the food must still be thrown away after two hours.

The temperature of the food should also be taken when it is put into the hot-holding cabinet and again when the two-hour limit is almost up.

Containers of ‘hot held’ food must also be covered to prevent contamination.

When replenishing containers in hot-food cabinets or counters, never mix the freshly prepared food with any previous batch - even if it is ‘just chips’!

Cooling Hot Food

Cooling food down always runs the risk of some bacterial contamination, as food can hold on to toxins, spores and even bacteria, despite the cooking process.

For this reason, you shouldn't allow food to cool for more than two hours. This is difficult with some food, so using a blast chiller, an ice bath or a fan can acceptably (and legally) speed up the cooling process.

Other methods of cooling include:

- ☑ Running cold, clean water over boiled eggs, potatoes, rice or cooked vegetables, or
- ☑ Spraying bagged joints of meat with cold water





Cooling Hot Food

Large batches of stews, casseroles, curries and other pot-cooked meals can be decanted into smaller portions in manageable containers to help them cool down more easily.

Generally, food should be covered while cooling and kept away from raw ingredients.

Once it is cooled, it should be stored at a temperature below 5°C.

Hot food should never be placed directly into the refrigerator as it can raise the temperature inside the machine to above its legally acceptable limit.

Cold Holding

'Cold-holding' food is keeping ready-to-eat food chilled during sale or service.

As you know, it is a legal obligation for chilled foods to be kept at a temperature below 8°C. If the temperature rises above this, the food should be thrown away after no more than four hours.Best practice for chillers and refrigerated units containing 'cold held' food is to run them at between 1°C and 4°C.

The temperatures should be checked at regular intervals to make sure that they remain at this level.

When cold-held food is replaced, you should also make sure that the new food is put into fresh, clean containers to avoid cross-contamination. Raw food should never be placed on top of older food to ensure good food-rotation practice.



Continue...



Cold Holding

Food on open display should be covered with a **'sneeze guard**' to make sure that it is protected from human viruses and bacteria.

Be sure to check the 'best before' and 'use by' dates on the packaging. Remember that it is against the law to display food which has passed its expiry date.



Thawing Frozen Food

Thawing is most commonly done by holding food under running water, allowing it to rest and thaw gently at room temperature or in a microwave at between 10°C–15°C.

The thawing of meat, whether beef or poultry, needs to happen well away from other foods, to prevent them from coming into contact with the liquids or blood from defrosting meat. Cross-contamination must be strictly avoided between different thawing foods, as well as between thawing foods and other foods.

If using a microwave to defrost food, make sure that the food is not defrosting unevenly, as some parts of the same food item can remain frozen while others thaw out.

Freshly defrosted food must be treated in the same way as raw or fresh food and refrigerated or prepared straight away.

Clean and disinfect the area in which the food was defrosted immediately.

Continue...

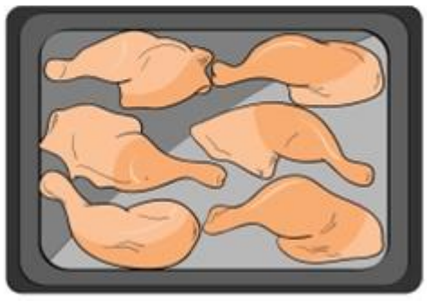
Thawing Frozen Food

Special care must be taken when defrosting and preparing poultry (that is, the meat from birds, including chickens, geese, turkeys, quails and ducks).

The best way to check that defrosted poultry is ready for cooking is to check it with your fingers – if the legs feel flexible, the body pliable and the gutted body cavity free from ice crystals then you can cook it. However, once it is completely thawed, you must cook the poultry within 24 hours, according to the supplier's instructions.

A good way of checking whether poultry is cooked is to use **a meat thermometer:**

- If the thigh meat gives a reading of 75° C, then it is cooked and safe to eat.





- If you are chilling the cooked poultry to be eaten later – perhaps in sandwiches or a salad – you must ensure that the chilling is completed within 90 minutes.





Reheating Food

When reheating food which has been cooked previously, it is important to follow all the same procedures and guidelines as you used when cooking it. This is particularly true with regard to cooking temperatures.

However, you must remember, above all, that food must only ever be reheated once!

Checking Temperatures

Making sure that your food temperatures are legal and consistent is your highest priority when serving food for human consumption.

By far, the best way of ensuring that cooked food has been prepared at a suitably safe temperature is to use a digital probe thermometer.

If the correct and safe core temperature has not been reached, you must continue cooking the food until it has.



Continue...



Checking Temperatures

- To check the core temperature, insert the thermometer into the thickest part of the food, avoiding bone, fat or gristle if you are checking meat, as these areas can give a misleading reading.
- The thermometer must always be thoroughly cleaned and disinfected after each use. This is best done by thoroughly using a disinfectant wipe for at least 30 seconds. You can also wash the thermometer in hot water above 82° C, as that is an effective disinfecting temperature.
- A digital probe thermometer must always be calibrated by placing it into thawing ice to make sure it reads 0° C and boiling water to check that it reaches 100° C. This will ensure that the probe is accurate. A small amount of variation around 1°C is allowable.

When Things Go Wrong

As food-handling premises, you are highly likely to be spot-checked by the local authority to make sure that you are complying with all of your legal requirements regarding food safety. Failure to do this could mean that you are prosecuted or that your business is closed down for good.

However, it is inevitable that a customer will, at some point, complain that they have contracted food poisoning from food bought or consumed from your premises. Whether it is true or not, you must take such complaints seriously.

Such complaints are not just a public health risk but can dent your business's reputation and bank balance and require more than just a formal response.

If the customer is correct, having a rigorous **HACCP system** in place should allow you to find out where a mistake may have been made and for you to tighten up your protocols accordingly.



Continue...



When Things Go Wrong

Your investigation must cover the following aspects:

- [x] Were there any other complaints regarding the food the customer claims to have eaten?
- [x] Did these complaints come from around the same time?
- [x] Checking any kitchen records to make sure that all procedures have been followed correctly
- [x] Asking your staff considerately about any information they might have

Continue...

When Things Go Wrong

To make sure that you avoid all possible contamination and consequent complaints of food poisoning, follow this checklist of procedures:

- ☑ Make sure that you have a well-documented HACCP system
- ☑ Have your food safety protocols regularly audited - even bring in a consultant to increase thoroughness
- ☑ Ensure that all staff are correctly trained and have proper official food hygiene qualifications
- ☑ Raw and ready-to-eat food should be prepared using separate clean and disinfected equipment and utensils
- ☑ Raw vegetables need to be washed thoroughly in a separate designated sink
- ☑ Never wash utensils in the same sink in which raw food is prepared
- ☑ Single-use, disposable cloths should be used for wiping and drying utensils and work surfaces



Continue...

Question 1

The temperature range of between 8–63°C which governs high-risk foods is known as the ...?

- ○ **Risky Zone**
- ○ **Friend Zone.**
- ◉ **Danger Zone.**
- ○ **Stranger Zone**



Correct	Choice
	Risky Zone
	Friend Zone.
X	Danger Zone.
	Stranger Zone

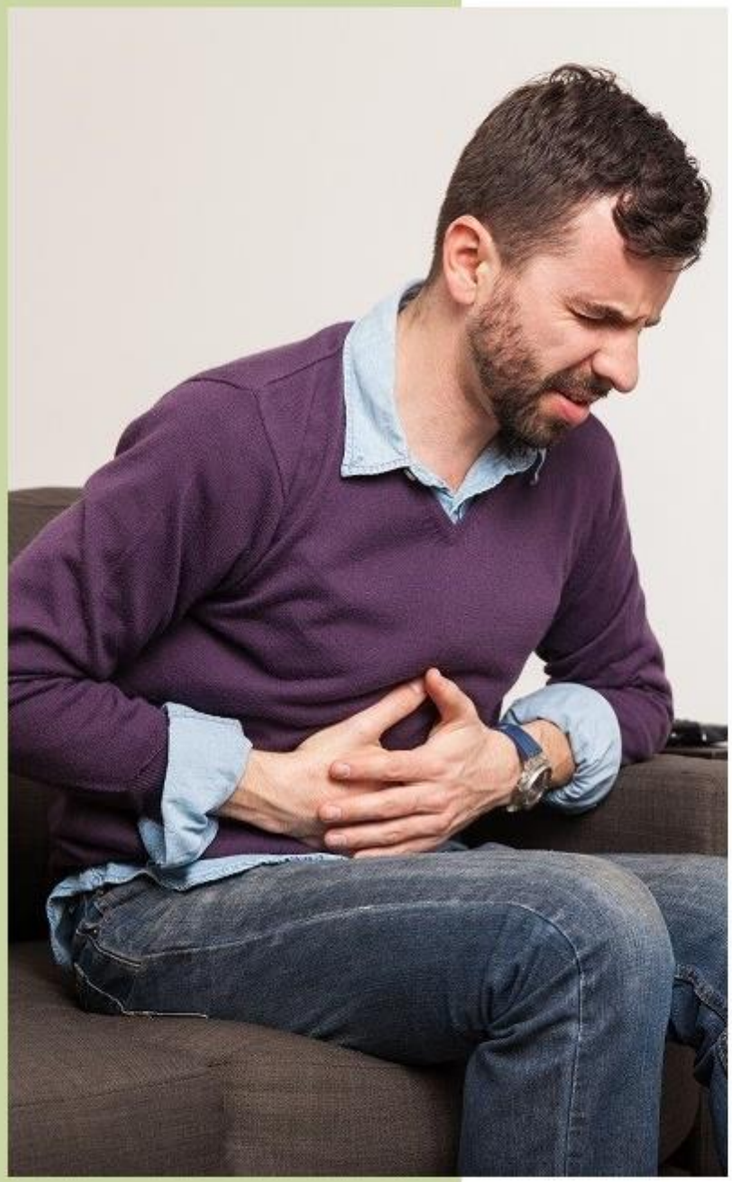
Question 2

"Control the temperature to control the ..."?

- (●) **Bacteria**
- ( ) **Moulds**
- ( ) **Mycotoxins**
- ( ) **Viruses**



Correct	Choice
X	Bacteria
	Moulds
	Mycotoxins
	Viruses



Summary

In this Chapter, we have seen how to prevent and control the different ways that food can become hazardous while it is being handled, prepared and presented. We have seen all the methods you can use to ensure that the food is safe and also complies with UK law.

We paid particular attention to control measures and learned how temperature was key to controlling the spread of bacteria. We established that there were different temperatures and conditions needed for cooking, reheating, cooling and defrosting food.

Finally, we saw that if things go wrong and customer complaints on the hygiene or safety of your food, you have only one defence; that is 'due diligence'.

Chapter 05: Food Spoilage and Food Storage



Introduction

In this Chapter, we will learn the best ways to preserve food, how to spot and prevent spoilage and drill down into the main methods of preserving foods, some of which have been with us from time immemorial.

We will also cover your obligations under the law in performing these duties and when freezing and defrosting food. Lastly, we will see the relevance of 'sell by' and 'use by' dates on food and what they mean.





Topics to be Covered in this Chapter:

- Spoilage
- Preservation
- Recognising Spoilt Food
  - Common Signs of Spoilage
  - Organoleptic Checks (Sense Check)
- Preventing Spoilage
- Food Preservation Methods
- Frozen Storage
- Freezing and defrosting
- Refrigeration and temperatures
- Dry Food Storage
- Food distribution and deliveries
- Food labelling and storage
- 'Use by' and 'Best before' dates

Spoilage

Food spoilage is the primary cause of wasted food in food businesses and wider society, as well as the most significant source of food poisoning.

Therefore, it is in everyone's interests to ensure that food is prevented from spoiling and not served or sold to unsuspecting members of the public.

According to Fareshare, about 1.9 million tonnes of food is wasted every year by the food industry, half of which is believed to have been avoidable.

The anti-food-waste campaign group WRAP claims that 21 percent of this waste comes from food spoilage, with another 45 percent from food preparation and 34 percent uneaten by food business customers.

Clearly, spoilage makes up a significant part of this and much of it can be prevented.



Continue...



Spoilage

Food spoilage is caused mostly by bacteria, moulds and yeasts.

There are six main methods of preventing these organisms from spoiling your foods and making them inedible or even dangerous:

- ☑ Store food at the correct temperature at all times
- ☑ Ensure that all food packaging is appropriate, intact and undamaged
- ☑ Handle food carefully and hygienically
- ☑ Maintain good personal cleanliness and hygiene
- ☑ Keep a clean workplace
- ☑ Control pests such as pigeons, cockroaches, ants, rats and mice

Recognising Spoilt Food

Common Signs of Spoilage

There are different ways to tell if food has 'gone off'. The 10 most common ways are:

- **The presence of slime** - an unnatural slimy texture or sheen over meat or vegetables is a sure sign of spoilage.
- **Mould** - A fuzz or powder appears on food after fungal spores have settled on it. Parts of mouldy bread can be carefully cut off but any mould on meat, dairy products or vegetables means that they are inedible.
- **Discolouration** - While some foods change colour on exposure to the air (for example, avocadoes), other foods such as vegetables and meats should be trashed if discoloured – especially if there is slime present.



Continue...



Recognising Spoilt Food

- **Bad smells** - Sniffing food can usually reveal if it has begun to go off. If it smells bad, it'll almost certainly taste bad, too, and could well be bad for your health.
- **Unusual texture** - Fruit and vegetables that become overly soft, mushy, sunken in, wrinkled or too grainy should probably be thrown away (though they can sometimes be used in baking or jams)
- **Frost damage** - Frost on frozen foods can indicate 'freezer burn' which can make food bad to eat in even mild cases
- **Damaged packaging** - This can be a problem in both frozen and fresh foods – causing bacteria or mould to enter, or causing food to thaw (and sometimes refreeze, causing a poor texture)

Continue...

Recognising Spoilt Food

- **Floating eggs** - A simple test to see if eggs have gone bad is to place them in cold water. If they sink and stay sunk, they're fresh enough to eat. But, if they float (sometimes end up), they are producing gases as an effect of spoilage and should be thrown away.
- **Dents or bulges in tins** - Defects in food cans are often indicated by bulging, areas of rust around dents and bends, broken lid seals or leaks. All of these should be taken seriously because spoiled canned food is a source of botulism – a potential killer.
- **Bubbles in jars** - Signs of gas in jarred foods are a tell-tale sign of spoilage as is corrosion under or at the edge of a lid.
- **Strong seafood smell** - All seafood smells a little fishy or salty, but a strong version of these smells often indicates spoilage (anchovies and fish sauce can be exceptions).





Organoleptic Checks (aka Sense Checks)

Despite our current technological advancement, food manufacturers and businesses still use sense or organoleptic checks to ensure that food is fresh, tastes as it should and to make sure that their products are consistent in flavour, texture and appearance.

Such tasting can occur at any stage in the production process, whether the food is raw, being prepared, cooked or finished, in storage or ready to be eaten.

There are usually considered to be four organoleptic factors which need to be considered during testing. These are:

- Smell or scent
- Flavour or taste
- 'Mouthfeel' (aka texture)
- Visual appearance or colour

Preventing Spoilage

The life of preserved foods is not just reliant on the process of preservation but needs the packaging to be intact and in good condition.

Sterile sealed containers such as jars, bottles and cans are ideal, particularly when the food and the packaging are sterilised separately before being combined.

However, once the packaging is opened, all food should be treated as if it were fresh and refrigerated. Constant refrigeration is even essential for smoked, pasteurised or vacuum-packed foods.

All food handlers must:

- ☑ Store preserved foods properly
- ☑ Know exactly where they should store preserved foods
- ☑ Make sure that spoiled or unfit preserved food is never sold or served to a customer





Food Preservation Methods

Food preservation prolongs the amount of time in which the food can be safely consumed.

It is done best by using specific and well-tried methods to control, restrict or prevent the reproduction of bacteria.

Most methods of preserving food are well-known and include:

- **Pasteurisation** - this process involves applying high temperatures to food, such as when making Ultra Heat Treated (UHT) milk, particularly in bottling, canning and boiling before the food packaging is finally sealed
- **Freezing and refrigeration** - low temperatures slow down the growth of most bacteria

Continue...

Food Preservation Methods

- **Dehydration** - removing moisture, which effectively turns a high-risk food into a low-risk food
- **Salting** - adding salt (sodium chloride) to food, which has the effect of drawing moisture out of it by osmosis, making the food unviable for most bacterial growth
- **Pickling** - the fermentation of food in acid, which also inhibits most bacterial growth
- **Chemical preservation** - this is performed by the addition of preservatives such as benzoates, nitrates and 'E' numbers



Continue...



Food Preservation Methods

- **Removing oxygen -** occurs during 'vacuum packing', and prevents the spoiling of food by taking away the environment favoured by aerobic bacteria. If you refrigerate the food, then the reproduction of anaerobic bacteria is inhibited and the food's 'shelf life' further extended
- **Smoking -** wood smoke is an antioxidant and antimicrobial agent, but because it doesn't penetrate far into the food being smoked, it needs to be combined with drying, salting, chilling or other preservation methods to extend its shelf life; this is particularly useful in oily fish, where the process prevents the oils and fats from going rancid

Frozen Storage

Freezing is the most common way of ensuring that food can be kept for long periods of time without spoiling.

However, it comes with its own set of necessary procedures and dangers, most of which are associated with maintaining correct temperatures.

The temperatures of freezers used in food businesses should be maintained at between -18° C and -22° C to inhibit bacterial and fungal growth.

However, freezing only makes spores and bacteria lie dormant, and the slight cellular damage that some food undergoes when being frozen can actually make it spoil more quickly when it is thawed. Such recently defrosted food should be treated as fresh, and be consumed or cooked immediately.



Continue...



Frozen Storage

Further freezing temperature facts include:

- Fungi - that is, yeasts and moulds - are able to grow at -10° C or above
- The temperature of any delivery of frozen food should be checked with a commercial thermometer or other appropriate temperature-measuring tools
- Any frozen food delivery which has a freshly measured temperature above -12° C should be rejected and reported to your manager or supervisor
- New frozen food stock should still be placed below or behind your old stock
- Never stack frozen food above your freezer's load line
- Always abide by the 'best before' and 'use by' dates on the food's packaging

Continue...

Frozen Storage

Frozen food storage guidelines:

- Vegetables and fruit = up to 12 months
- Butter and cheese = up to six months
- Fish = up to six months
- Meat = up to 12 months
- Sausages and bacon = up to six months
- Offal = up to six months





Refrigeration and Temperatures

- ☑ Thawed food must be cooked immediately or put into refrigeration to ensure that bacterial growth is inhibited. The areas used for thawing food should be cleaned and disinfected thoroughly.
- ☑ Food must be reheated only once, and then cooked to such a temperature as to ensure that it destroys harmful pathogenic bacteria.
- ☑ Chilled food must be kept at a temperature below 8° C and preferable between 1° C and 4° C.

Enough refrigeration should be present to safely and hygienically cope with your likely peak production levels.

When chilling food in a cabinet, for example, refrigeration temperatures should operate between 1° and 4° C at all times, while freezers should be safely set at -18° C or below. .



Chilled Food

High-risk food should be stored in refrigerators, refrigeration rooms or chilled storage units. You are obliged to keep such spaces and units at 8° C or below, and it is generally viewed as good practice to maintain a constant temperature of between 1° C and 4° C.

Consequently, refrigeration should be made readily available if you stock any high-risk, raw or ready-to-eat foods in your business premises.

Inside your refrigeration units, it is essential that raw food is placed below ready-to-eat food to avoid contamination. Strong-smelling food should be sealed, labelled and dated to prevent any unpalatable tastes or odours being absorbed - this is disagreeable to the consumer but not usually dangerous. .

Continue...

Chilled Food



In the process of refrigerating food, always make sure that you:

- Keep enough space in between the different foods to allow air to circulate
- Never overload the fridge
- Never place any food in front of the cooling unit
- Always store vacuum-packed or tins of pasteurised meat in a refrigeration unit
- Regularly rotate your stock to use the oldest items first and avoid spoilage
- Check 'use by' dates daily

Continue...



Chilled Food

- Immediately discard or remove out-of-date food
- Always place new stock behind the old stock to make sure that the old is used first
- Place partly used food in sealed non-metallic containers which are labelled with a 'use by' date of no more than 48 hours after you store it
- Always destroy food that has been stored at above 8° C for four hours or more
- Never store open cans in the refrigeration unit, particularly tinned fruit and tomatoes, which are susceptible to chemical contamination from oxidising metals.

Continue...

Chilled Food

If the temperature of your fridge seems too high, it's probably due to one of three reasons:

- ☑ You have overloaded the storage space within the fridge
- ☑ Food has been stored in front of the cooling units
- ☑ You've set the thermostat too high

Don't deal with this problem yourself but report it to your manager or supervisor straight away. You must also report faults in the door lock or seal. If your manager or supervisor can't fix the problem, then an engineer should be called.





Dry Food Storage

Dry foods should be correctly stored in dry food stores which are rooms or places in which low-risk foods can be safely stored at room temperature.

A safe dry food store should:

- ☑ Be cool and well ventilated
- ☑ Have adequate lighting to allow proper cleaning and for the food's appearance to be checked

Food racks should be assembled clear of the floor - food should never be placed on it - and the food itself should be sealed in pest-proof tubs. Make sure that loose pieces of discarded packaging are not left littering the dry store's space.

Storing Fruit and Vegetables

- Fruit and vegetables should be stored away from other types of food
- They also need to be examined regularly for signs of mould (for example, oranges or cauliflowers are particularly prone to rapid tainting in this way)
- Any vegetables with soil still attached (for example, root vegetables, lettuces or cabbages) should be stored below other fruit and vegetables
- Potatoes should be stored in the dark to prevent sprouting or encouraging the green areas of the surface which produce solanine (a toxin) to develop





Food Distribution and Deliveries

Delivery vehicles have to meet high standards, which include:

- **The use of insulated or refrigerated vehicles** for high-risk foods, to ensure that microbiological contamination is controlled; this even includes vehicles used for short journeys
- **Having thermometers** installed in all vehicles to show that food is stored in suitable conditions en route
- Never loading **warm food** onto vehicles designed for chilled or frozen food
- Having all vehicles **pre-cooled** before food is loaded into them
- **Only opening doors** for the **shortest length of time** possible
- **Switching refrigerators off** when the doors are open, to prevent the cooling units from icing up

Continue...

Food Distribution and Deliveries

- Making sure that all delivery vehicles are **regularly and thoroughly cleaned**
- Ensuring the complete separation of high- and low-risk foods when they are being transported together
- High-risk chilled food must be delivered while stored at 5° C or less
- Frozen food must be delivered while being stored at -18° C
- Any chilled food that is delivered while at a temperature of 8° C or above should be disposed of
- Any frozen food delivered at a temperature of above 12° C should also be disposed of

To ensure the above standards are rigorously adhered to, all food being delivered should be tested on the spot and placed in new storage meeting the above requirements within 20 minutes of being unloaded.



Continue...



Food Distribution and Deliveries

Inspections of frozen food being delivered should include the checking of its:

- Freshness
- Temperature
- Colour
- Smell
- Labelling
- Packaging
- Freedom from pest infestation

Records must be kept of all deliveries and their contents so that they remain traceable after any outbreak of food poisoning or customer complaints.

All outer packaging should be disposed of before food is brought into any food preparation areas.

Food Labelling and Storage

EU legislation - which is likely to remain mostly relevant to the UK - requires specific information to be clearly displayed on all pre-packed foods.

The **Food Information Regulations 2014 (FIR) (European Food Information to Consumers Regulation No 1169/2011)** governs this, and states that labels must show:

- ☑ The name and contact details of the manufacturer
- ☑ The name and brand of the product
- ☑ The product's weight
- ☑ A list of ingredients, listed in descending order of weight



Continue...



Food Labelling and Storage

- Cooking or heating instructions
- Storage instructions
- A 'use by' or best before' date to indicate its shelf life
- Its place of origin and manufacture
- Nutritional information
- The presence of any allergens

Continue...

Food Labelling and Storage

Further legislation governing labelling and packaging also includes the **General Food Regulations (EC) 178/2002**, which highlights the requirement for accurate food labelling to help businesses trace the source of unfit food and withdraw it.

This legislation states that businesses have to:

- Not present, label or advertise any food products in a misleading way
- Not sell food that is unfit for human consumption or which is otherwise unsafe
- Recall or withdraw unsafe food from the sale, even if some has already been sold to customers
- Identify where the ingredients of their food, the animal products it contains and the food itself all come from originally





‘Use by’ and ‘Best before’ Dates

‘Use by’ dates

A ‘use by’ date is not the same as a ‘best before’ date, and it is crucial to know the difference.

‘Use by’ dates are usually found on refrigerated high-risk foods and indicate the date (and sometimes the time) up to which the product is safe to eat.

It is against the law to sell, use, distribute or display food that is past its ‘use by’ date, and these foods must be checked daily to ensure that they are still safe to eat and within date.

Continue...

‘Best before’ Dates

‘Best before’ dates are much more to do with food quality than food safety and indicate the length of time at which the food is likely to be at its best.

Apart from eggs, the majority of types of food can continue to be sold beyond their ‘best before’ date, but the date is a way of letting the customer or consumer know that the food will not be at its best.

Instructions such as ‘display until’ or ‘sell by’ are sometimes present on the packaging and are instructions to the shop’s employees, not the customers.



Question 1

The Food Information Regulations 2014 state that labels must show all EXCEPT _____.

- The cooking or heating instructions
- 'Use by' or 'best before' dates
- Whether any allergens are present
- The recipe used to create the food



Correct	Choice
	The cooking or heating instructions
	‘Use by’ or ‘best before’ dates
	Whether any allergens are present
X	The recipe used to create the food

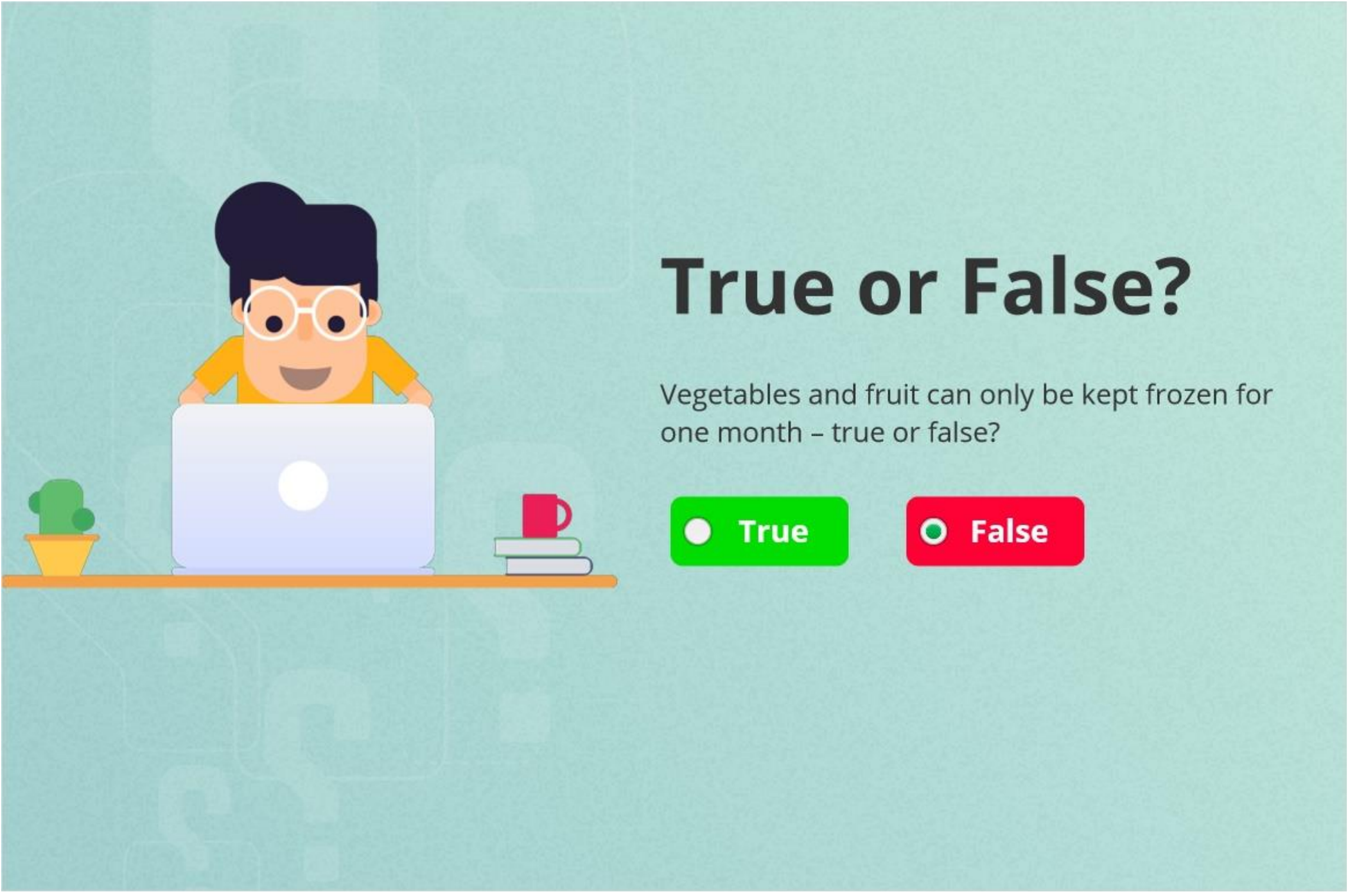
Question 2

A ‘use by’ date is important because it indicates _____.

- The time before which the food is at its best quality
- **The date up to which the food is safe to eat**
- Seasons during which the food is best used
- The date at which the manufacturer finished making the food



Correct	Choice
	The time before which the food is at its best quality
X	The date up to which the food is safe to eat
	Seasons during which the food is best used
	The date at which the manufacturer finished making the food


True or False?
Vegetables and fruit can only be kept frozen for one month – true or false?
True
False

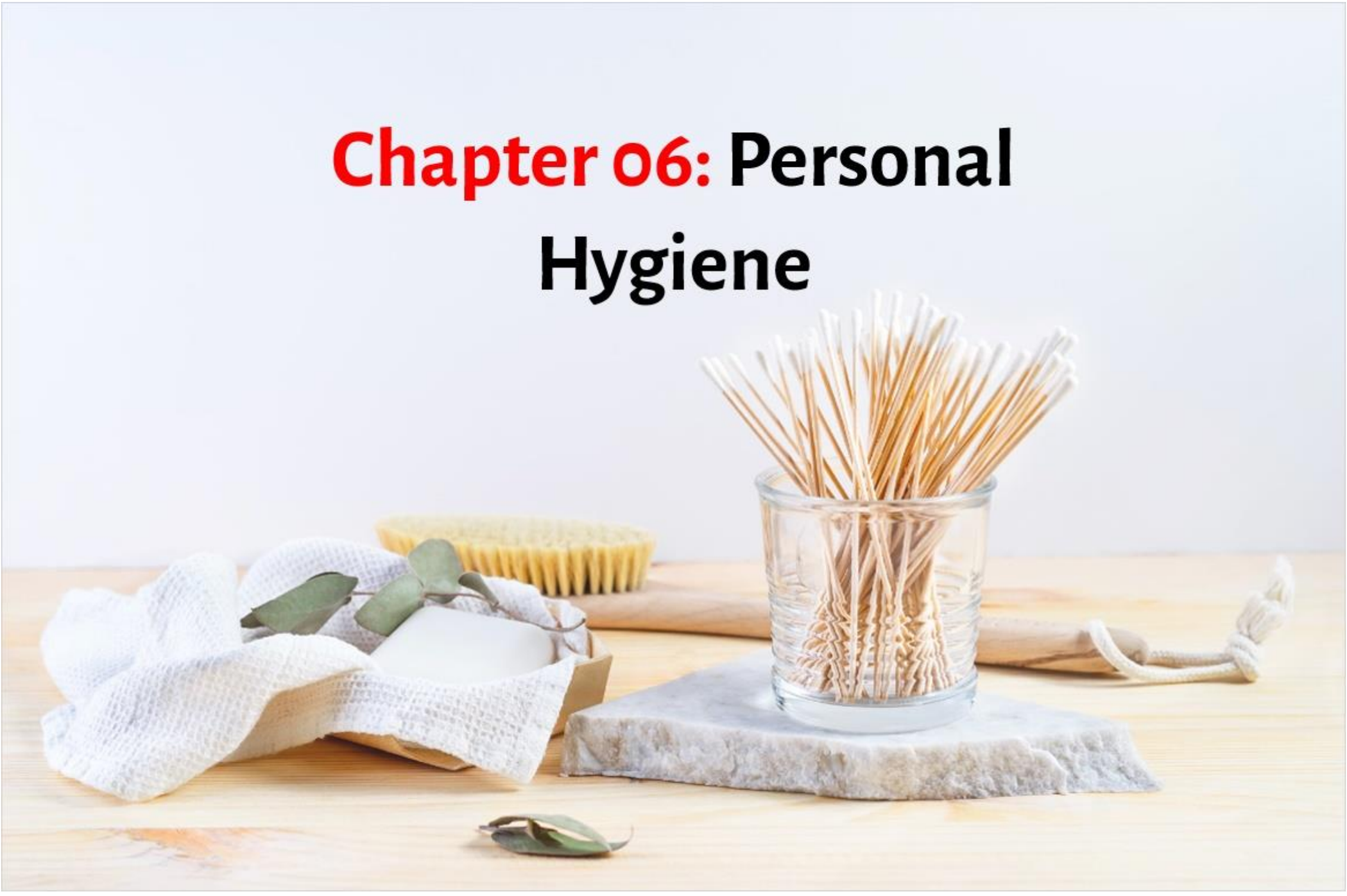
Correct	Choice
	True
X	False

Summary

What have we learned?

- In this Chapter, we have looked at how food spoilage is one of the biggest causes of both food wastage and food poisoning in the UK.
- We learned that the major causes of food spoilage are bacteria, viruses, yeasts, moulds and parasites and that there are various tried and tested legal ways of preventing or limiting their spread.
- We also learned how to recognise spoiled food through our senses and how organoleptic checks using our senses are employed by professional testers in the food industry to maintain standards.
- We also saw how to store foods using the methods of freezing and drying and how to best to go about these and maintain legal and safe standards.
- Lastly, we saw how food labelling can help keep food safe and what the differences are between 'use by' and 'best before dates'.

Chapter 06: Personal Hygiene





Introduction

Of all the hazards in a catering or similar food-oriented business, it is the food handlers that are potentially the biggest and most direct source of illness. This Chapter will teach you the essentials of personal hygiene 'best practice' while ensuring that you know all of the laws and regulations which you need to follow.

Topics to Be Covered in this Chapter :

- Food Handler Responsibilities
- Hand Hygiene
- Hand-washing Procedures
- Protective Clothing and Gloves
- Unhygienic Habits
- Cuts and Spots
- Reporting Illness
- Hair
- Jewellery
- Smoking
- Food Safety Training





Food Handler Responsibilities

Food handlers must observe the legal hygiene obligations of all food premises. They have four main responsibilities when working in the food business:

- ☑ To keep themselves and their work environments and areas clean at all times
- ☑ To report any damage or defects in the premises such as cracked plaster or broken windows without delay
- ☑ To know about food business pests and how to effectively control them
- ☑ To immediately report any signs of pest infestation to their supervisor

Continue...

Food Handler Responsibilities

There are binding legal requirements regarding food premises – they must have:

- Adequate and appropriate design, construction and layout
- The ability to be kept in good repair
- Adequate cleanliness and hygiene
- Design that enables effective hygiene
- Equipment installed that allows effective, thorough cleaning and maintenance
- Adequate washing facilities and drainage
- Clean drinking water
- Adequate lighting and ventilation
- Tolerable and suitable temperature ranges and controls
- Clean and well-maintained equipment
- The ability to minimise the risk of any type of contamination



Continue...

Food Handler Responsibilities



In your role as a food handler, you must be aware of the hazards that are inherent in preparing food.

You must also understand how to use the correct legal controls while working with food, and why they are important in keeping food safe and free from contamination.

According to the law in the UK, food handlers:

- Must have a high standard of personal hygiene and wear appropriate protective clothing
- Must not handle food if they have a skin infection, sores, diarrhoea or a food-borne disease and must report their situation to their supervisor or manager
- Have to be trained and instructed thoroughly in food safety and hygiene matters that are relevant to their work
- Are obliged to follow and implement food hygiene laws and regulations in all their daily tasks

Hand Hygiene

Perhaps the most common method of transferring the bacteria responsible for food poisoning is via people's hands.

The temperature of the human body is perfect for bacterial growth at 37°C, and that is why it is so important for hands to be regularly washed while in the process of food handling.

Because of this, you must ensure that your hands are frequently washed throughout the working day.

Food business premises must, therefore, have adequate sinks, hot and cold water, soap and washing and drying facilities on-site, according to the law.





When Should You Wash Your Hands?

These are the situations after or during which you should wash your hands while working as a food handler:

- Combing your hair
- Touching any part of your body, including your face, ears, mouth and nose
- Cleaning the premises or parts of it
- Handling dirty cutlery, equipment or clothing
- Before handling food (especially high-risk food)
- When you enter a food room
- Handling raw food, including eggs
- Cleaning up or throwing out refuse
- Dealing with external packaging
- Going to the toilet
- Blowing your nose or sneezing, even if into a handkerchief
- Handling any of the allergens which are required to be listed on menus or packaging

Continue...

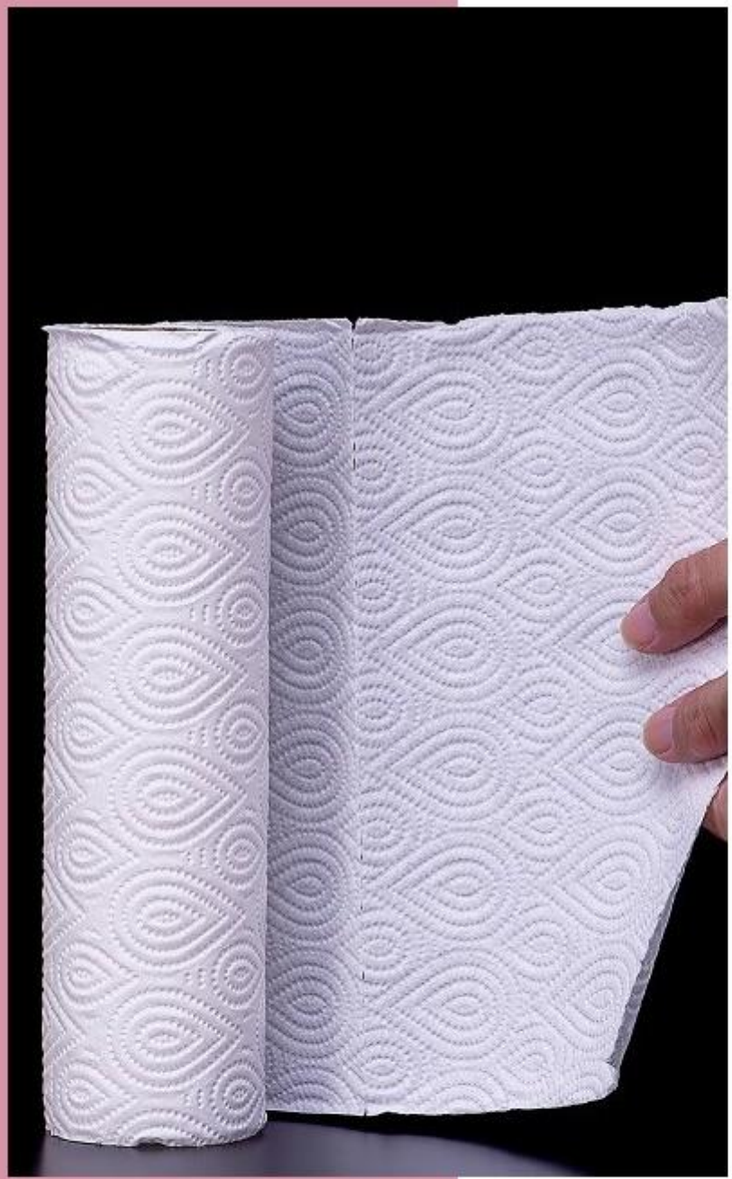
Hand-washing Procedures

To wash your hands correctly for safe food handling, you should follow these rigorous procedures:



- Your hands must be wet and have enough soap on them to produce a good lather
- The whole of both hands, including your fingers, thumbs, the gaps in between the digits, palms and the backs of your hands and wrists, all need to be cleaned during hand washing
- The water temperature when washing your hands must be between 35° C and 45° C
- Soft nailbrushes are recommended for cleaning under the fingernails
- You must thoroughly rinse your hands in warm, running water after lathering and washing

Continue...



Hand-washing Procedures

- Use a clean disposable towel for drying your hands to make sure that any remaining bacteria is removed

- It is also recommended that a disposable paper towel is used to turn taps off, as they often harbour bacteria; in fact, taps not operated by hand are preferable in food-handling premises

- Avoid reusable or washable towels

Protective Gloves

- When handling food intended to be eaten by people, it is advisable to use gloves as protective coverings for the hands. You must always make sure that you wash your hands before putting on protective gloves.
- All protective gloves used in a food business have to be 'food grade', which means that they are latex-free, made of vinyl or polyethylene (aka 'poly'), powder-free and disposable. Such gloves are cheap and widely available from most commercial and wholesale kitchen and food suppliers.
- Your food-handling gloves must be changed as frequently as you wash your hands because they are just as susceptible to contamination as your bare hands.





Protective Clothing

In all food businesses' premises and work areas, some form of appropriate protective clothing must be worn. This clothing should cover your garments completely to protect food and drink from the potential contaminants that are often carried on everyday clothes, such as hair, dust, fluff, bacteria and food particles.

Ideally, protective clothing should be:

- White or light coloured
- Clean
- Washable
- Not have external pockets
- Have sleeves that reach down to the elbows at least

Continue...

Protective Clothing

You should never wipe your hands on your protective clothing to avoid transferring bacteria.

Footwear should completely cover your feet, have low heels and be completely non-slip.

You must avoid wearing protective clothing when:

- Travelling to work
- Going to the toilet
- Taking a break from the food areas





Unhygienic Habits

Many people have personal habits which inadvertently transfer dirt, viruses and bacteria, and there are also other facets of their physical grooming which can also create contamination. These include picking your nose, picking off bits of skin and scratching at nail polish - all may be done habitually and absent-mindedly.

Here are some tips to help you stop endangering food products with unhygienic habits:

- ☑ Keep your fingernails clean and short - not only is this necessary for hygiene, but customers can also be put off by dirty or broken nails
- ☑ Don't wear nail varnish or false nails when handling food - varnish is very likely to chip, and the nails can easily fall off, introducing physical contamination into the food
- ☑ Don't bite your nails
- ☑ Don't lick your fingers to separate papers or plastic bags

Continue...

Unhygienic Habits

People who are suffering from persistent coughs, sneezes and runny noses should be kept away from all open food, whether being prepared, cooking, plating, serving or presenting.

You should also always wash your hands thoroughly after coughing or sneezing, even if this was into a tissue or handkerchief - fingers are just as bad at transferring viruses or bacteria.



Continue...

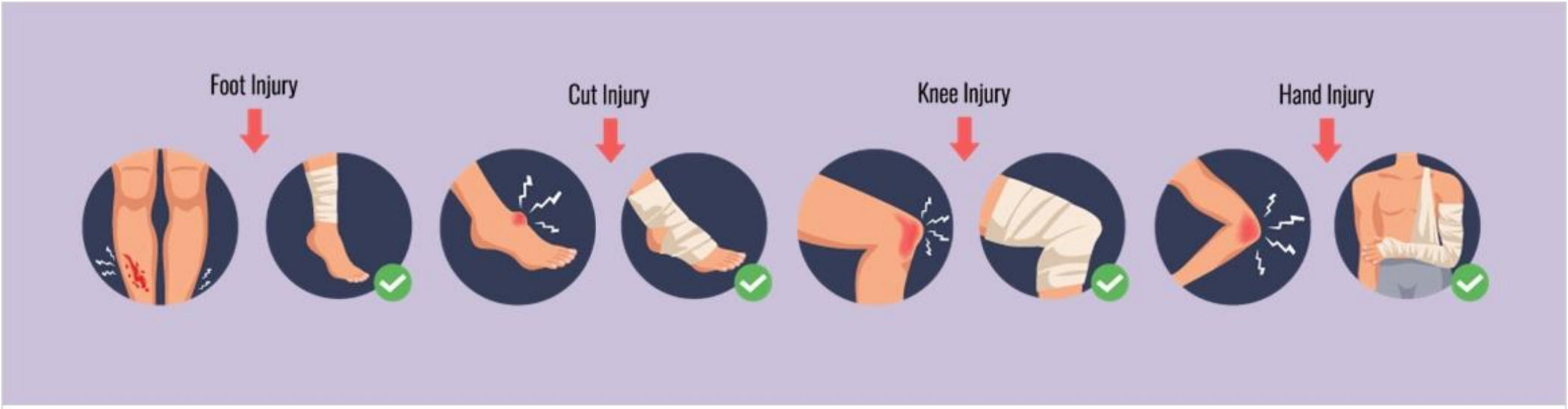


Unhygienic Habits

Food handlers need to be fully aware and conscious of the many habits that humans pick up - and they need to stop them actively.

In a food-handling environment, you must make sure that you don't:

- Pick or scratch your nose
- Wipe your nose on your sleeve or the back of your hand
- Blow across the surface of cooking or freshly-served food - this might be fine at home but not for customers
- Taste food with an unprotected finger or unwashed spoon
- Blow on clean cutlery or glass before drying or polishing it
- Rub cutlery, tools or crockery on your clothes to clean off small amounts of dirt
- Eat sweets or chew gum when preparing or handling food
- Smoke anywhere near food (or indeed anywhere in communal premises)



Cuts and Spots

All sores, cuts, grazes and spots (and wounds!) must be covered by a proper waterproof dressing or plaster when handling food to prevent contamination.

The dressings or plasters should be of a very visible colour - preferably blue (this being a colour not usually seen in food). This means they can be easily seen and retrieved from the food if they accidentally fall off.

Eczema sufferers must be kept away from food-handling tasks because food poisoning bacteria can be found in the associated rashes and hives; very mild cases of eczema can be carefully covered with protective gloves, as long as hygiene procedures are rigorously observed.

Reporting Illness

You must inform your supervisor or manager if you are suffering (or have very recently suffered) from:

- ☑ Diarrhoea
- ☑ Vomiting
- ☑ A food-borne illness
- ☑ Flu-like symptoms

You are prohibited from returning to work until 48 hours have passed since you last showed any symptoms of these illnesses.



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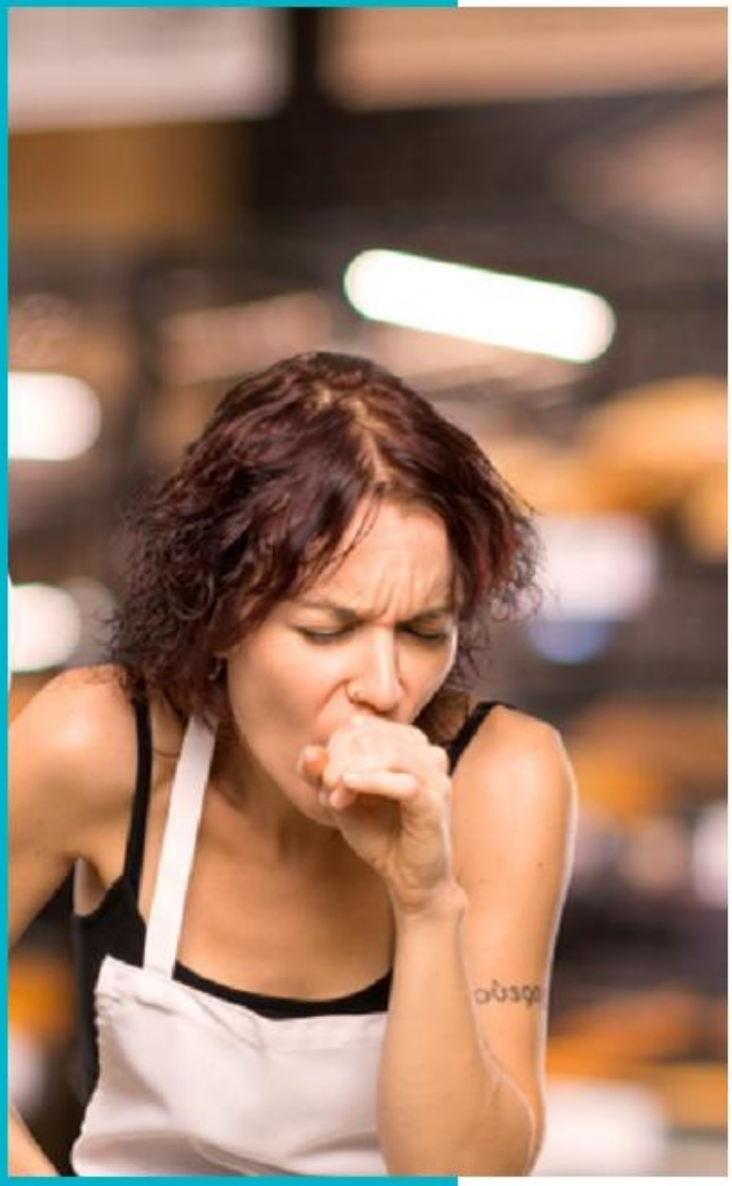


Reporting Illness

As a food handler, you are obliged to report in sick if any one of the following situations applies:

You share a house with someone currently suffering from food poisoning

- ☑ You have recently eaten food which is known to have caused such an illness
- ☑ If you have returned home from abroad having suffered from vomiting, diarrhoea or food poisoning
- ☑ You currently suffer from infected cuts, boils or sores, or any other infection or lesion of the skin
- ☑ You have obvious flu-like symptoms
- ☑ You are currently suffering from discharges from the nose or ears

If any of these apply, please refer yourself to a doctor and tell them straight away that you are a food handler.

Hair

Human hair is continuously shed during our daily lives (and even while we are asleep) – it's impossible to avoid!

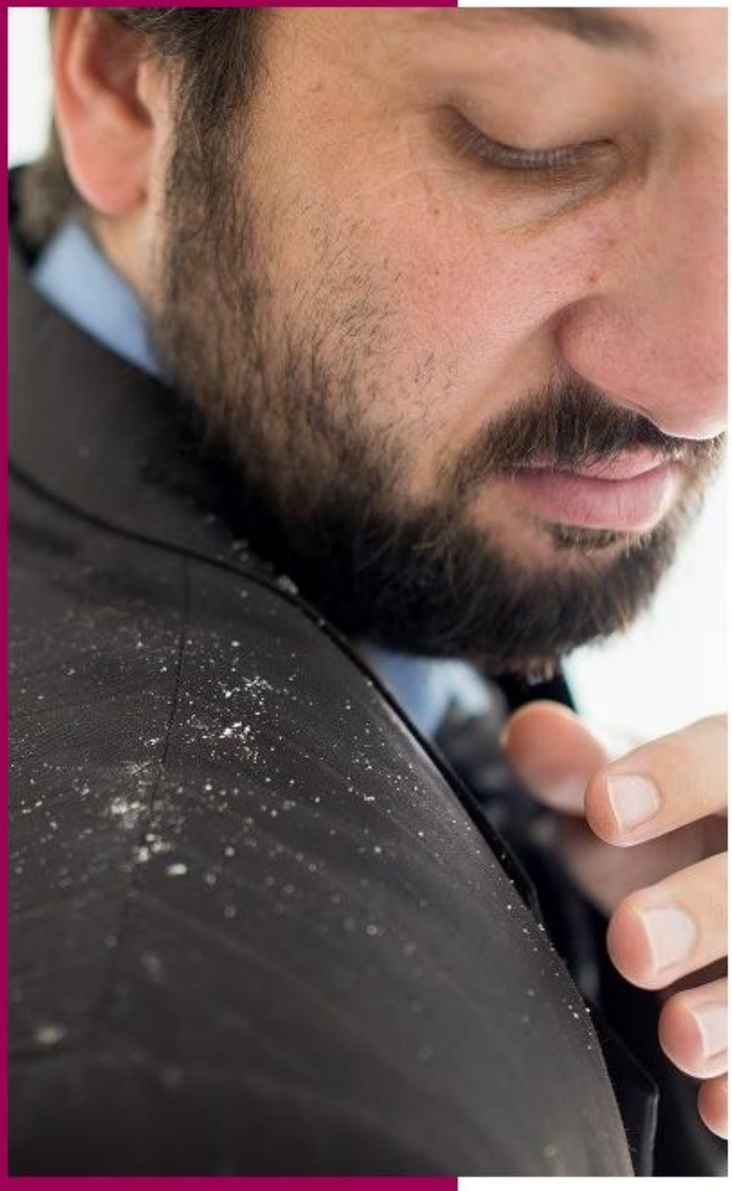
Because of this, hair has to be prevented from dropping or being blown into the food you are handling, preparing or serving.

There are several ways of making sure that hair does not become a contaminant:

- Tie long hair back securely
- Wear appropriate and adequate hair coverings such as industry-standard hairnets, caps and hats
- Put such hair coverings on before you put on other protective clothing to ensure that hair doesn't fall onto the rest of your body and outer garments



Continue...



Hair

- Combing or adjusting hair should only be done well away from the food preparation area
- Remove your protective clothing before taking off your head covering
- Above all, regularly wash your hair with shampoo and conditioner, particularly if you are a dandruff sufferer



Jewellery and Perfumes

- You must not wear jewellery or wristwatches when handling food – they harbour dirt and bacteria, and can cause physical contamination, as small pieces of metal or stone can fall off into the food.
- Strong perfumes and colognes can taint oily and fatty foods with acrid or chemical-type flavours and should also be avoided.

Smoking

- By law, smoking can only be indulged in outside buildings or designated areas away from food rooms; these must be indicated by the appropriate signage.
- You must always wash your hands after smoking because the pungent and lingering smell of tobacco can taint food. Also, small droplets of saliva or phlegm can be transferred to your fingers while smoking and promote bacterial contamination.
- **You must never smoke while serving food or cooking, even if you are outdoors – no one wants ash or cigarette ends in their food!**





Food Safety Training

All food businesses are legally obliged to make sure that their employees receive proper training in how to handle food safely and hygienically.

The training given must be relevant and appropriate to each employee's role in the workplace and in the context of the food handling tasks they will be performing.

Every food handler is required to take part in any training provided by his or her employer or workplace – taking part in this course is part of that legal obligation.

Continue...

Food Safety Training

Your training should make sure that you understand:

- ☑ All the essentials of food handling
- ☑ Your legal duties
- ☑ What 'best practice' is with regard to your role in the food-handling process

Such training should include 'on-the-job' instruction and regular revision or refresher sessions to make sure that your training remains up-to-date.



Continue...

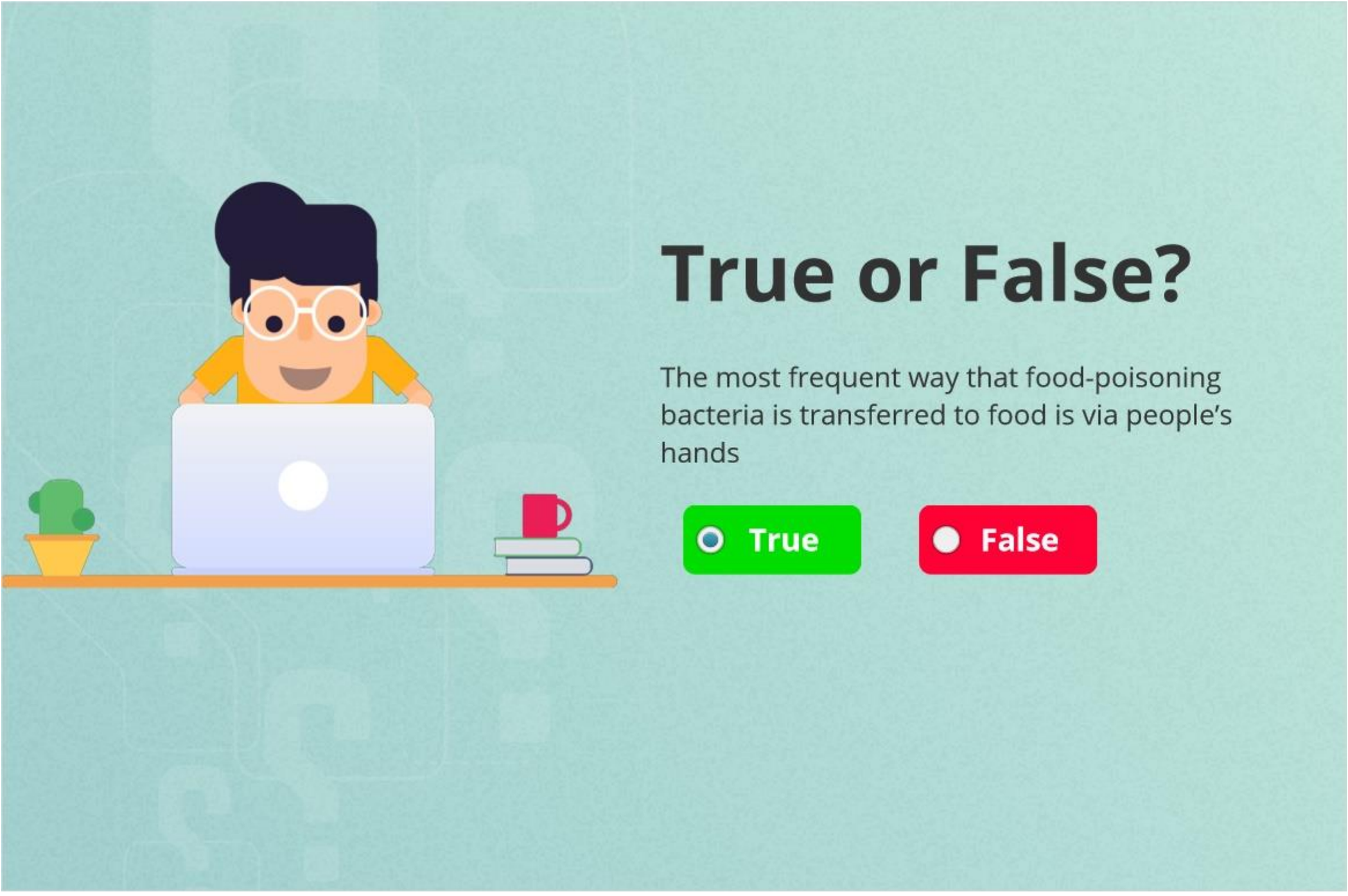
Question 1

How often should a food handler wash his or her hands?

- (●) **Frequently throughout the day**
- ( ) **Twice a day**
- ( ) **Only after going to the toilet**
- ( ) **Once a day**



Correct	Choice
X	Frequently throughout the day
	Twice a day
	Only after going to the toilet
	Once a day


True or False?
The most frequent way that food-poisoning bacteria is transferred to food is via people's hands
True
False

Correct	Choice
X	True
	False

Summary

In this Chapter, you have learnt that;

- Food handlers are the most serious hazard in the food industry due to the high likelihood of contaminating food through poor personal hygiene
- Food handlers must wash their hands thoroughly and regularly throughout the day, every time they change task; food must always be handled with 'food-safe' gloves or clean equipment such as a pair of tongs
- Hair must be well covered to prevent it from contaminating food as it naturally falls out
- Your street clothes should be entirely covered with protective clothing, and this should be light in colour, clean, washable, long-sleeved and without external pockets
- If a food handler shows symptoms which indicate a probable food-borne illness, they must not return to work for 48 hours after those symptoms have disappeared



Chapter 07: HACCP and Food Premises



Introduction

All food businesses must take every precaution possible to prevent food-borne illnesses being transmitted in their products. Robust systems must be put in place to enforce hygiene and cleanliness in all aspects of your business.

This is best done by a system called **Hazard Analysis and Critical Control Points (HACCP),** in which potential risk is prevented by identifying its source.

In this Chapter, we will learn about the legal responsibilities of the owners of food businesses to implement HACCP and design the premises and equipment to fit the purpose of food hygiene.

Topics to be Covered in this Chapter

We will cover:

- What Is HACCP?
- Food Safety Management Systems (FSMS)
- The Legal Responsibilities of the Owners
- HACCP in Action
- Making the Food Business Premises Fit-for-Purpose
- Key Premises and Equipment Considerations
- Principles of Design
- Waste Management





What Is HACCP?

All food business operators are legally obliged to maintain a food safety management system based on HACCP by law.

HACCP is intended to prevent or minimise risk of food contamination.

A HACCP document helps identify and control hazards at 'critical points' in a food production operation.

At its simplest, HACCP is a logical way of managing food safety. You must base all of your food safety procedures on the principles of HACCP.

Continue...



What is HACCP?

Here is an outline of what you must do:

- Have an analytical overview of your business in terms of:
  1. The work performed within it
  2. The potential for things to go wrong
  3. All the risks which might be present
- Be able to identify the 'critical control points' to which your business needs to pay close attention - these risks need to be safely reduced or removed
- Ensure that HACCP procedures are working and followed by all employees
- The actions you need to take if something goes wrong
- Keep up-to-date records of your HACCP procedures, which should be critically analysed to make sure they work

By law, you must be able to show you have appropriate and adequate food safety management procedures in your business.

Food Safety Management Systems (FSMSs)

Safer Food, Better Business (SFBB)

Safer Food, Better Business is a government food hygiene guidance scheme provided by the Food Standards Agency (FSA) for small catering and retail businesses in England and Wales; in parallel, Scotland has Cooksafe and Northern Ireland has Safe Catering.

All these schemes exist to ensure that safe food systems are put in place and maintained.

You can download the free advice and guideline packs provided by each initiative in the UK at the following links:

England and Wales
Scotland
Northern Ireland



Continue...



Food Safety Management Systems (FSMSs)

Having an FSMS is a requirement by law for any food business.

An FSMS is a systematic way of controlling food safety hazards - so you can be confident that all the food you produce is safe to eat.

All food handling businesses are required to put an HACCP-based FSMS in place and commit themselves to its implementation and maintenance.

It is Food Business Operators (FBOs) that are responsible for implementing an adequate FSMS and seeing that legal obligations are met.

Your business will risk causing serious illness and being prosecuted if you don't properly maintain such a system.

How to Base Your FSMS on HACCP?

Your FSMS must identify all potential food hazards in your premises and worksites, and have procedures installed to control or remove that risk.

The principles of HACCP mean that identifiable hazards must be controlled at certain critical points which must be monitored appropriately.

However, all food handling operations are different and will need to employ different types of FSMS.

If you are operating a small business out of your home - perhaps making samosas or birthday cakes - then you might use a simpler system such as the FSA's Safer Food Better Business.

In contrast, catering for a large school or hospital will be much more complex because of the presence of many vulnerable patients or schoolchildren with multiple needs.





The Legal Responsibilities of the Owners

Everyone involved in the production of food has a duty to ensure it is safe to eat.

However, the owners of the business are legally responsible to ensure that HACCP is rigorously followed.

Hygiene is paramount - for this reason, you must:

- Maintain high levels of personal hygiene
- Make sure that the workplace is kept as clean as possible
- Protect your business's food from contamination
- Store, prepare, display and serve food at legally designated safe temperatures
- Wear appropriate clean and washable clothing
- Report illnesses - including vomiting, diarrhoea, flu-like symptoms, cuts, sores and wounds and any skin conditions and infections - to your supervisor

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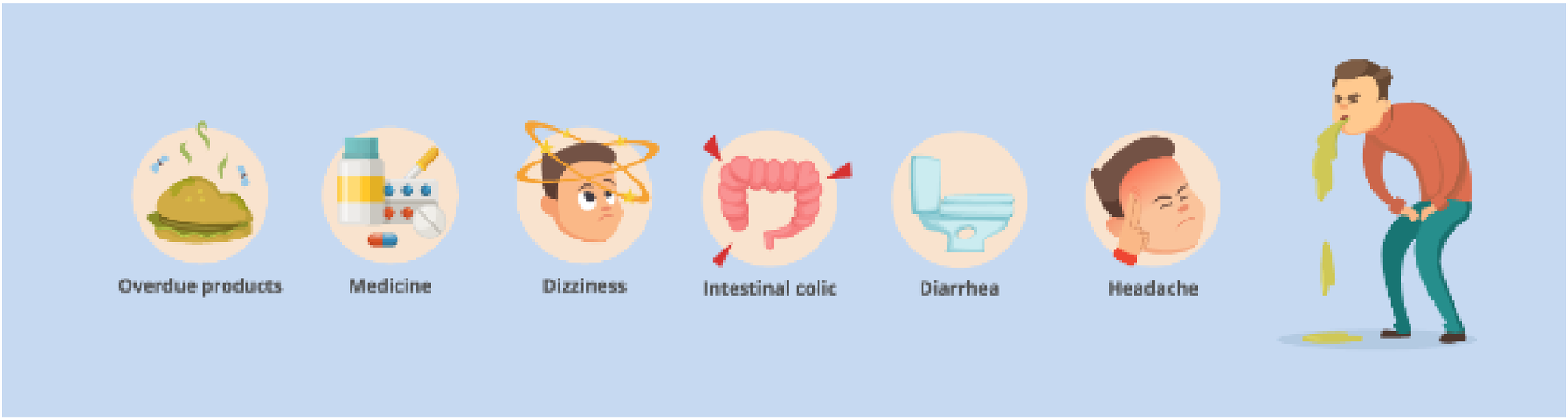


The Legal Responsibilities of the Owners

Poor food handling can have serious consequences, including:

- Food poisoning
- Pest infestation
- Prosecution and fines
- The closure of the business
- Loss of customers and reputation due to bad publicity
- Potential legal action
- Imprisonment
- Waste and higher costs
- Loss of employment



HACCP in Action

HACCP is the most effective and systematic way to ensure that food remains safe from farm to plate - its aim is to prevent any risks occurring during that journey.

Its logic and rationality are based on seven basic principles:

- Conducting a risk analysis
- Identifying the Critical Control Points (CCPs)
- Establishing the Critical Limits
- Putting monitoring procedures in place
- Deciding on appropriate Corrective Actions
- Verification
- Documentation and Review

You can register on the FSA's free web tool MyHACCP

It will guide you through the process of developing a food safety management system (FSMS) based on the HACCP principles.

Making Food Premises Fit-for-Purpose

To make a food business premises suitable involves careful design which should take prevention of contamination as its first consideration and avoid any overlap between 'clean' and 'dirty' parts of the food production process.

Essential facilities that must be included in a fit-for-purpose food premises include:

- A constant supply of hot water flowing at about 41°C, and cold at less than 10°C
- Facilities for the washing of food
- Strict enforcement of personal hygiene
- Ease of cleaning and disinfecting utensils and equipment



Continue...



Making Food Premises Fit-for-Purpose

The internal arrangement of rooms and equipment is essential in your premises - as is the building's structure:

- Walls and ceilings must be composed of smooth, non-flaking, fire-resistant materials to keep bacteria out of cracks and corners
- Walls and ceilings must be light in colour and easy to clean
- Walls must be covered where they meet the ceiling
- Floors must be smooth, durable, non-slip, waterproof and acid-, grease- and salt-resistant - and easy to clean
- Floors must have a slight incline with a gutter at one end for drainage
- Doors must be self-closing and self-sealing to avoid gaps at the bottom, which can allow vermin in
- Removable and cleanable fly screens must be installed

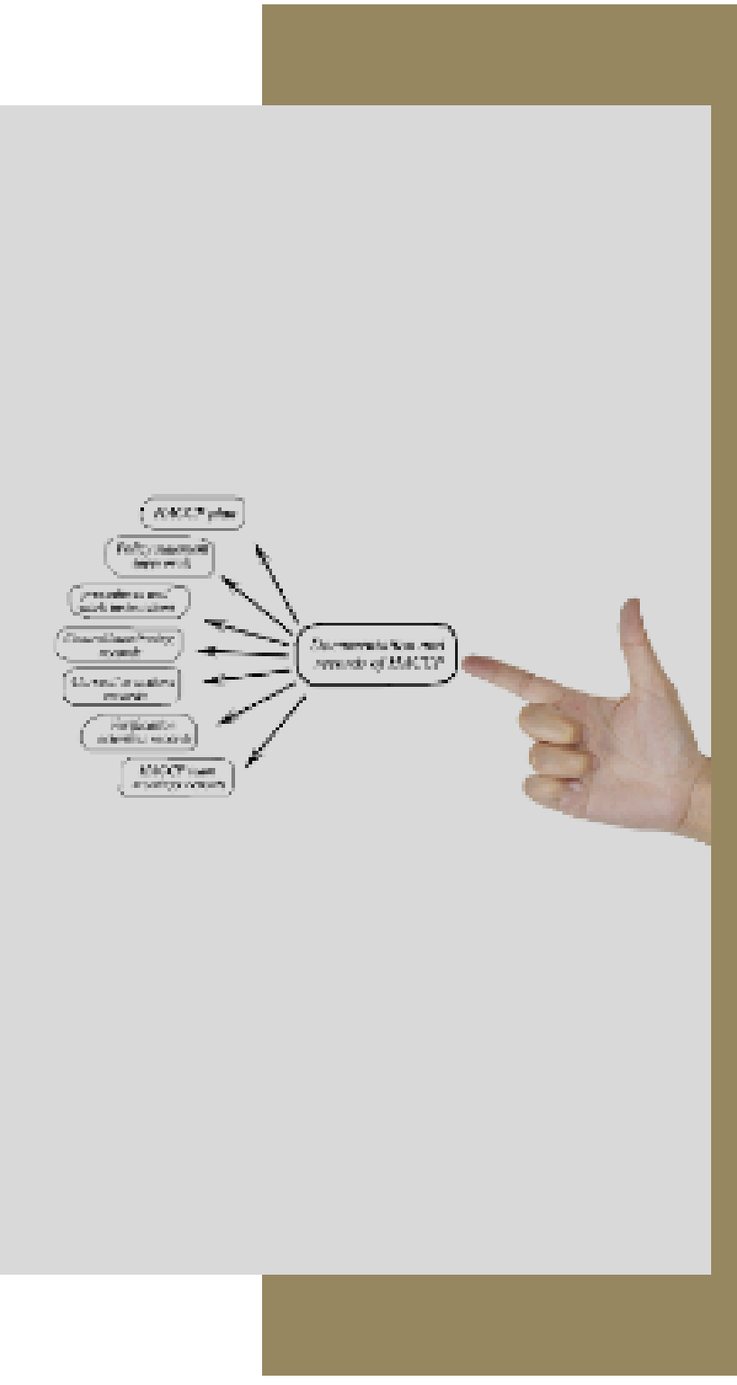
Making Food Premises Fit-for-Purpose

Every business in the UK is required to have an adequate, accessible first-aid kit on the premises - food businesses are no exception.

Your first-aid kit must be kept in durable well-labelled boxes, and ideally contain the following:

- **Waterproof plasters** - these should be brightly coloured to be easily spotted if they fall off into food
- Sterile, individually sealed (preferably non-medicated) **wound dressings or bandages**
- **Sterile eye pads**
- Individually sealed, sterile **triangular bandages**
- Several pairs of disposable surgical or laboratory **gloves**
- **Safety pins**
- An illustrated **first-aid procedure** or guidance card

The results of your business's risk assessment will help decide the contents of the first-aid kit, and should be listed in a written summary.





Key Premises and Equipment Considerations

In a food premises, the building and equipment should be easily cleaned and keep food safe at all stages of production.

You are also legally obliged to register a new food business at least 28 days before you open for trade.

Forms are available at www.gov.uk/licence-finder, where you can find licence applications for different types of food business.

If planning permission is needed because you intend to alter the building, you must contact your local authority.

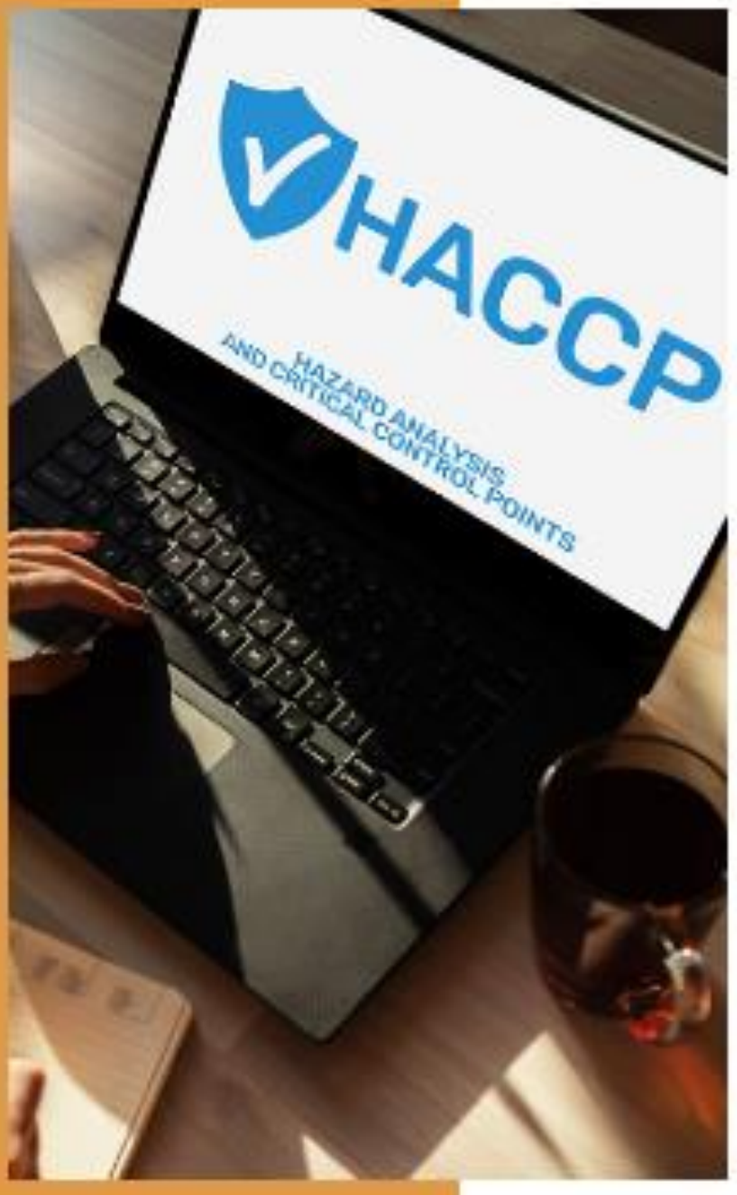
Principles of Design

Food Premises Design

The design, construction and lay-out of food premises must fulfil the following conditions by law:

- Ease of cleaning and disinfecting
- The prevention of condensation or mould on all surfaces
- The ability to protect food and surfaces from contamination
- Facilities to chill or heat food while it is stored, prepared, displayed and sold
- Employment of 'best practice' food hygiene procedures
- Stopping pests from gaining access or food





Building Surfaces

Structural surfaces such as walls, ceilings, floors, windows, doors, stairs, plasterwork, metalwork and woodwork need to be made of easily cleanable and disinfected materials if in areas where food is stored, prepared or served.

If not, equipment should be easily movable to a place where cleaning can be carried out.

Continue...

Drainage

Wastewater from sinks, toilets, washing machines, dishwashers and the like should be directly connected to an efficient foul drainage system.

Excessive amounts of fat and oil must be stopped from entering the system. There are many cooking oil recycling facilities to be found online.

Toilets must feed into the foul drainage system after the kitchen equipment. Never flush non-degradable waste such as wet wipes and plastic down the toilet, nor any organic kitchen waste (which should be collected for composting).





Surfaces Used for Food Preparation

All surfaces on which food is rested or prepared must be easily cleanable and disinfected.

Ideal materials include stainless steel, marble, food-grade plastic and glazed ceramics. Melamine and wooden kitchen surfaces should not be installed because they wear easily and are too absorbent.

Ventilation

Smoke, steam and cooking odours must be removed rapidly to provide a comfortable atmosphere for staff and public.

Natural ventilation via windows or doors is not usually enough, and you should install mechanical or electric air extractors.

Such extractors must have the following:

- ☑ A hood or canopy of appropriate size directly over the cooking area
- ☑ A fan that can cope with 20 air changes per hour in a cooking area



Continue...



Ventilation

- A variable speed control switch for the fan
- Washable or disposable removable fat filters, changed on a regular schedule
- Air ducts placed at ceiling level or higher to carry extracted air and fumes out of the building or into a disposal area
- Fly-proof incoming ventilation units above head-height
- External ducting

Lighting

Adequate lighting is essential for safety and efficiency in a food premises.

This should allow:

- Staff to see well as they work
- Good cleaning to be performed
- Food to be examined properly
- Printed instructions to be read easily

Where open food is handled or cooked, there should be secure shatterproof covers over light bulbs.



Continue...



Washing Utensils and Equipment

Cleaning and disinfecting equipment and utensils is of paramount importance. All must be sanitised after use in a dishwasher or by a human using a sink and detergent.

The number and size of sinks and dishwashers must be related to the size of your food business.

Even the smallest catering enterprise must have at least two sinks (or dishwashers): one for washing utensils and the other for disinfecting equipment.

Larger, more specialised operations should install an oversized sink for cleaning bulkier items.

Food Preparation and Washing

It is highly recommended that businesses install an extra sink for each of these tasks:

- Defrosting, washing and preparing raw meat or chicken
- Washing salads, vegetables and fruit





Handwashing

Hand basins should be placed close to the area where you prepare and cook foods and in the toilets, which should be regularly cleaned.

Basins must have:

- Hot and cold running water
- Liquid soap in a pump container
- Paper towels or a hot-air dryer

The basin must only be used for handwashing and kept clear of clutter at all times.

Storage, Display and Service

Ingredients and food should be stored, displayed and served in a separate facility with good lighting and ventilation. All should be kept covered to prevent contamination.

If wooden shelving is present, it should be well varnished or painted with gloss paint to enable thorough cleaning.

Ready-to-eat fish, poultry, meat and dairy products should all be stored in a fridge and displayed in chiller cabinets or display fridges.

Raw and cooked food must be stored well away from each other, preferably in separate refrigerators. These should constantly run below 8°C, while freezers should operate below -18°C.





Cooking Equipment

- All gas or electric cooking ranges must be movable for cleaning.
- Gas appliances should be connected to the mains supply by industry-approved flexible hoses.
- The insides of cookers, ovens, microwaves and tandooris must be easily cleanable.

How to Store Staff Clothing

Day-to-day outdoor staff clothing must be kept away from food areas in designated staff rooms or lockers.

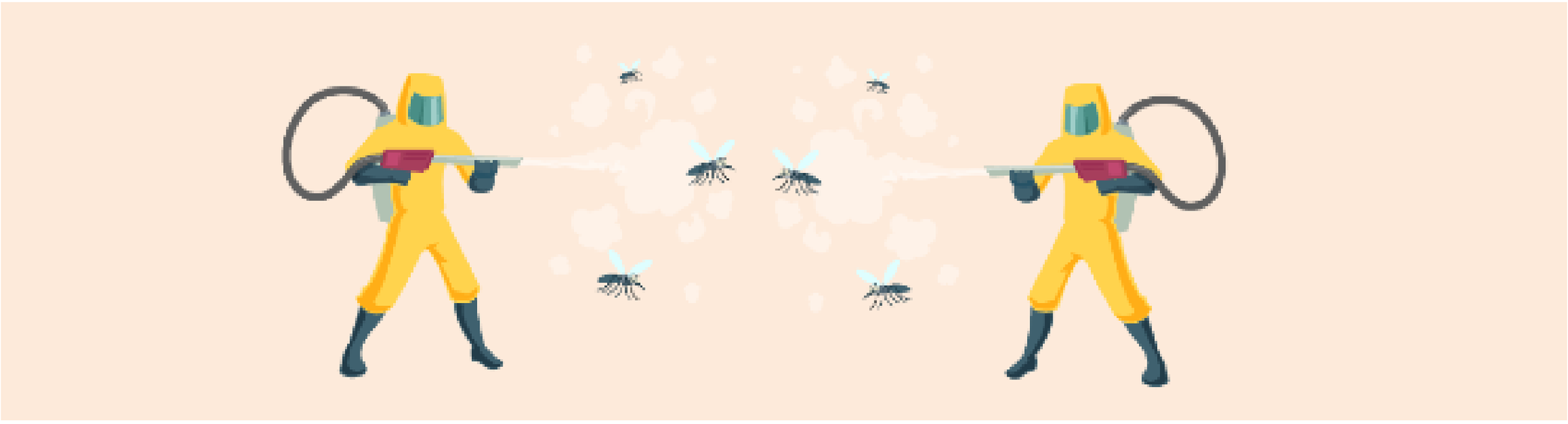
Street clothes can be a source of contamination and should not be worn anywhere near food areas unless covered by prescribed protective clothing.

Staff Toilets

There should be a minimum of one toilet and hand basin for every 15 staff members, whether male or female.

Toilets should also be available to customers if they eat on your premises. Consult Sanitary Convenience Regulations 1964 and the Washing Facilities Regulations 1964 to work out how many you need.





Pest Control

- All doors to the outside of the premises, back and front, should close tightly to prevent pests from entering
- Holes where cables and pipes enter the building should be sealed completely
- Insect screens should be fitted to openable windows to prevent airborne pests from entering

By law, you must have adequate procedures in place to control pests. Seek advice from a professional pest controller about which protocols would best suit your premises.



Waste Management

Food preparation areas should contain enough bins to prevent build-up of refuse. All external or internal bins should have close-fitting, air-tight lids and be easy to clean.

Question 1

What does the acronym SFBB stand for?

- Salty Food, Baked Bread
- Safer Food, Bad for Business
- Safer Food, Better Business
- Strict Food Business By-laws

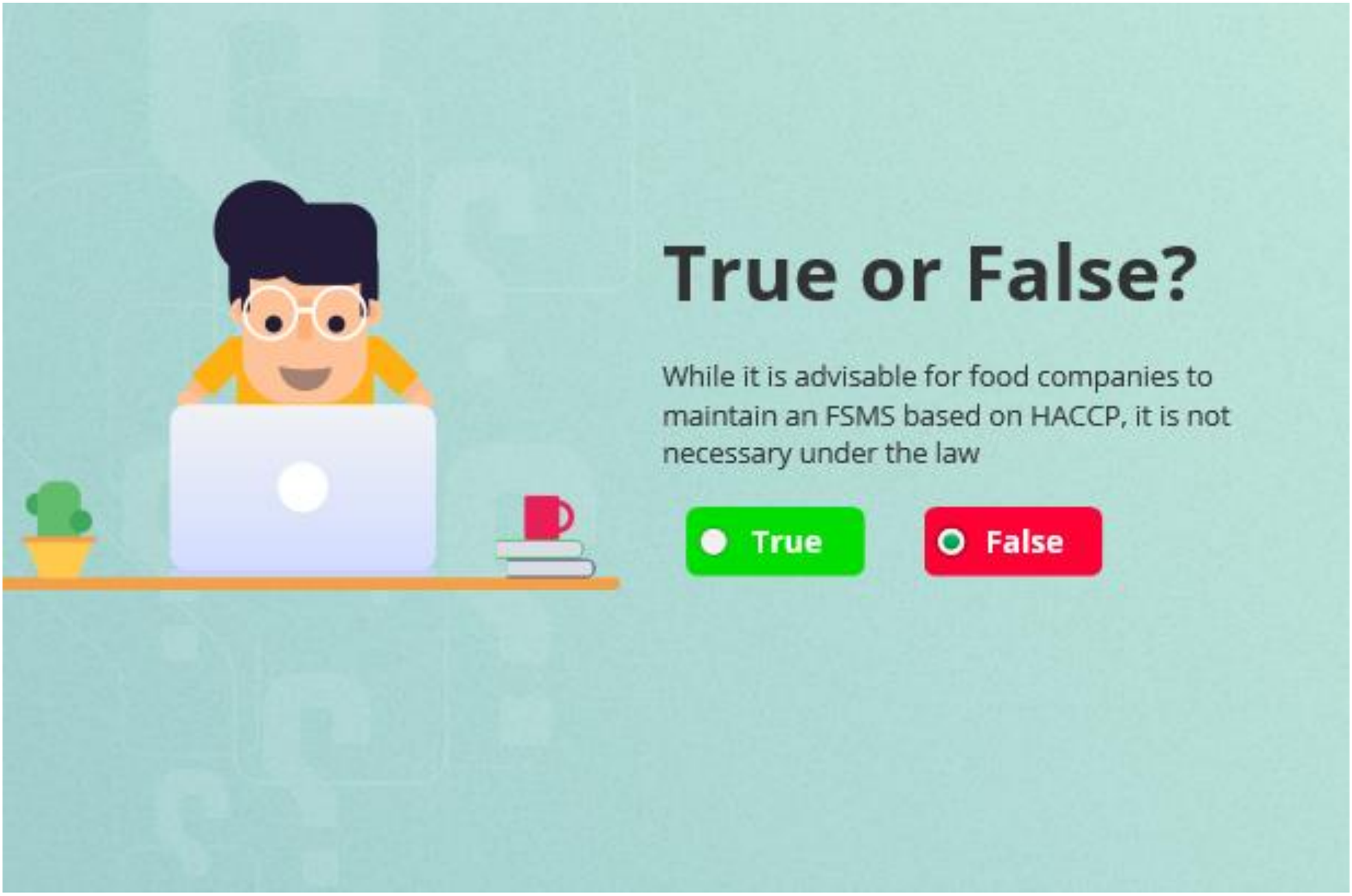


Question 2

What does the acronym FSMS stand for?

- (●) **Food Safety Management System**
- ( ) **Fresh Supplies Management System**
- ( ) **Food Safety Mixing Situation**
- ( ) **Food Supply Mixing Site**




True or False?
While it is advisable for food companies to maintain an FSMS based on HACCP, it is not necessary under the law
True
False

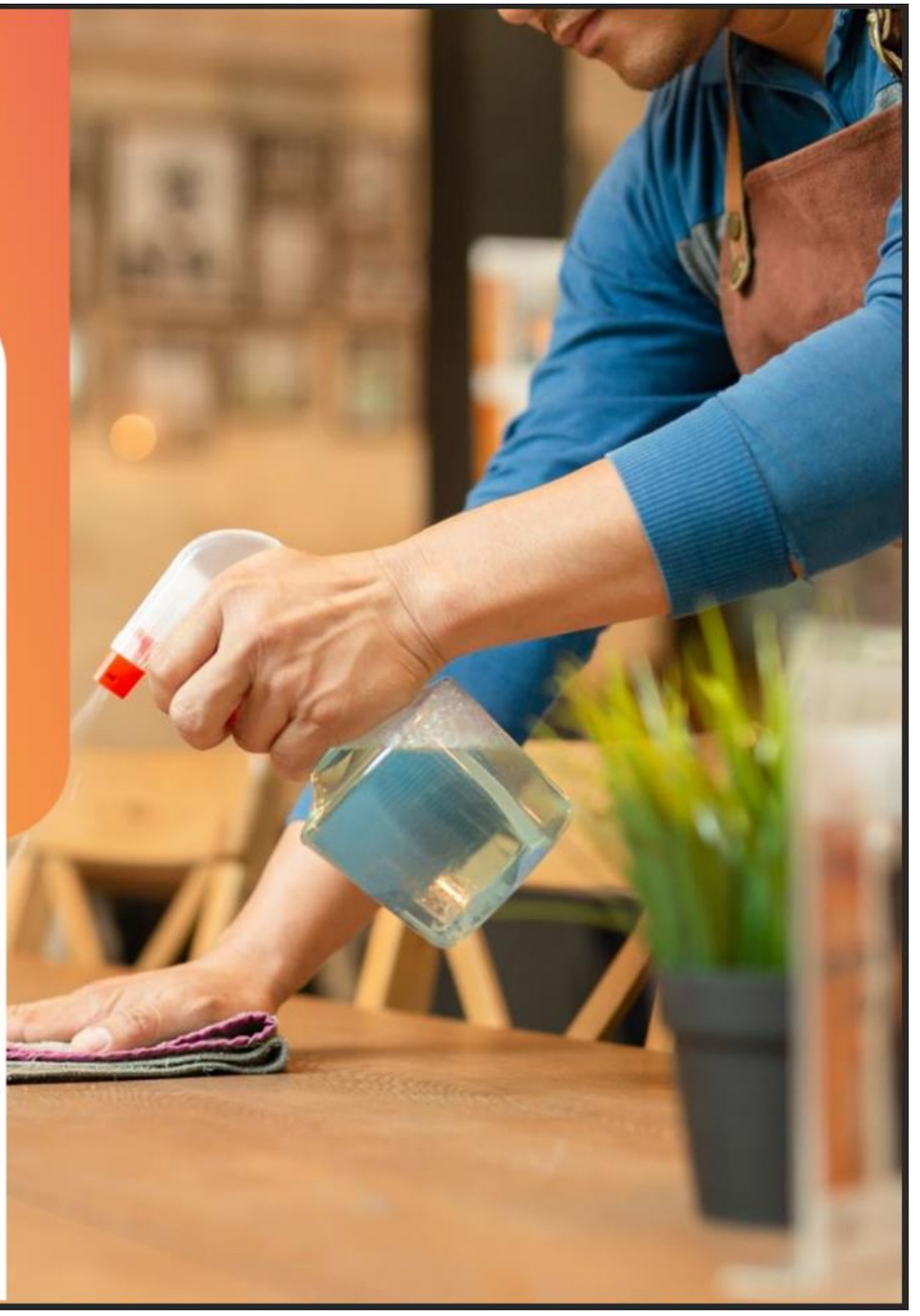
Summary

In this Chapter, you have learnt that;

- The definitions of Food Safety Management Systems and HACCP
- The basics of installing a Food Safety Management System (FSMS) based on HACCP and how hygiene is paramount for workers, equipment and premises
- The free advice available for businesses in each of the countries in the UK
- How to make your food business 'fit for purpose' by giving it proper cleaning facilities, good lighting, separate areas and equipment for each production process to avoid contamination and properly designed premises

Chapter 08:

Cleaning



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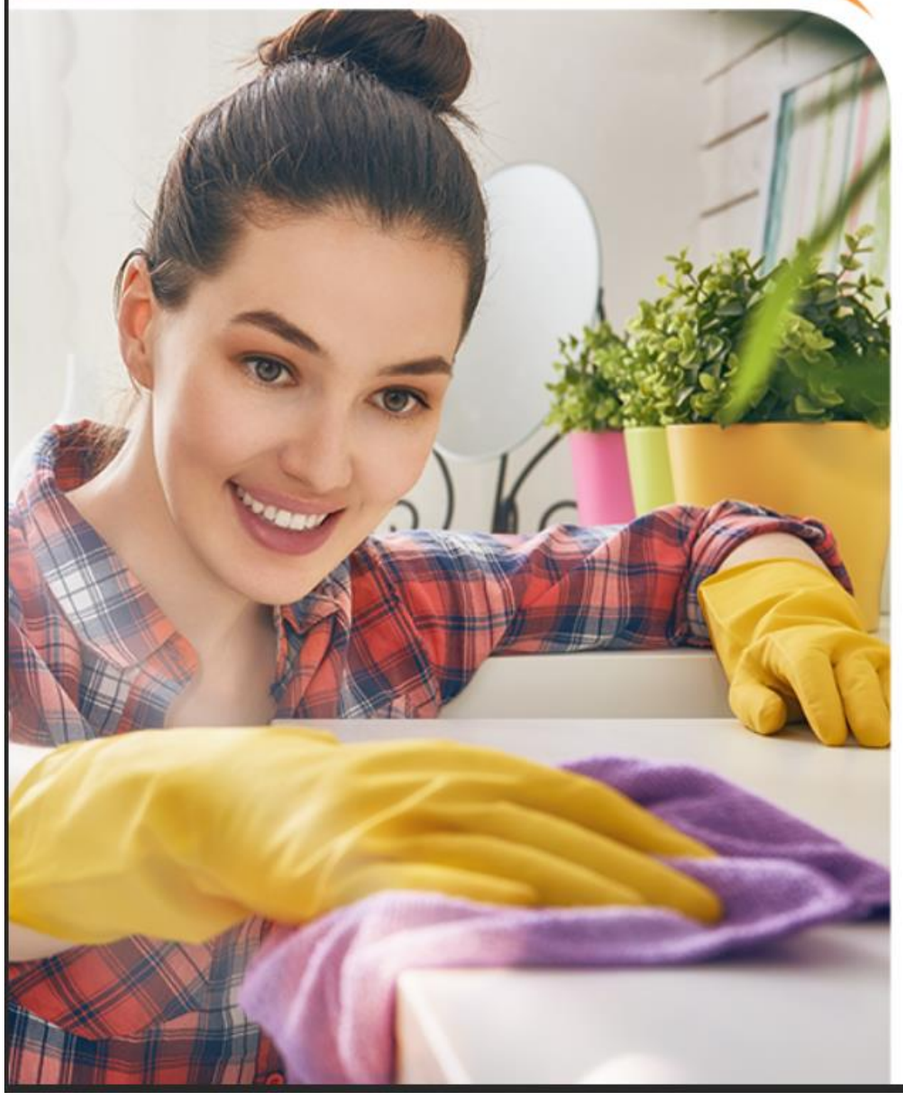
Topics to be Covered in This Module:

- The Purpose of Cleaning
- Safe Cleaning Precautions
- Detergents and Disinfectants
- Cleaning and disinfection
- Cleaning schedules
- Safe cleaning
- Six stages of cleaning
- Cleaning food storage areas and chillers
- Dishwashers
- Pests and controlling pests



The Purpose of Cleaning



The law insists that food businesses keep their premises rigorously hygienic, as well as ensuring that they clean and disinfect their equipment as often as is needed.

Regular systematic cleaning also needs to be done for several fundamental reasons - not just to comply with the law.

The main reasons you should be thoroughly cleaning your premises, equipment and utensils are:

- **To remove dirt and food particles** - dirt is physical contamination and encourages the spread and reproduction of bacteria, while food particles will soon break down to become dirt
- **To deter pest infestation** - insects and rodents are attracted to areas with food waste, so cleaning up, and regularly disturbing the areas as you do so, will discourage them from sticking around
- **To disinfect work areas and equipment** - disinfection prevents or limits the increase of bacteria

Continue...

3

The Purpose of Cleaning

- **To create a pleasant work environment** – dirt, refuse and offensive smells in the work area make for a bad atmosphere, discourage staff from working for you and decrease morale and attitudes to work
- **To increase customer confidence** – no one wants to purchase or eat food which has been prepared or kept in unhygienic conditions
- **To maintain a good reputation** – the result of poor hygiene could easily be seeing your business investigated and closed down

There are two distinct forms of controlling hygiene in a food premises:

- **Cleaning** - the removal of dirt, grease, soil, food fragments and residues and litter
- **Disinfecting** - the reduction of micro-organisms, especially bacteria, to a level which doesn't compromise food safety





Safe Cleaning Precautions

There are some primary precautions which need to be taken concerning cleaning around food:

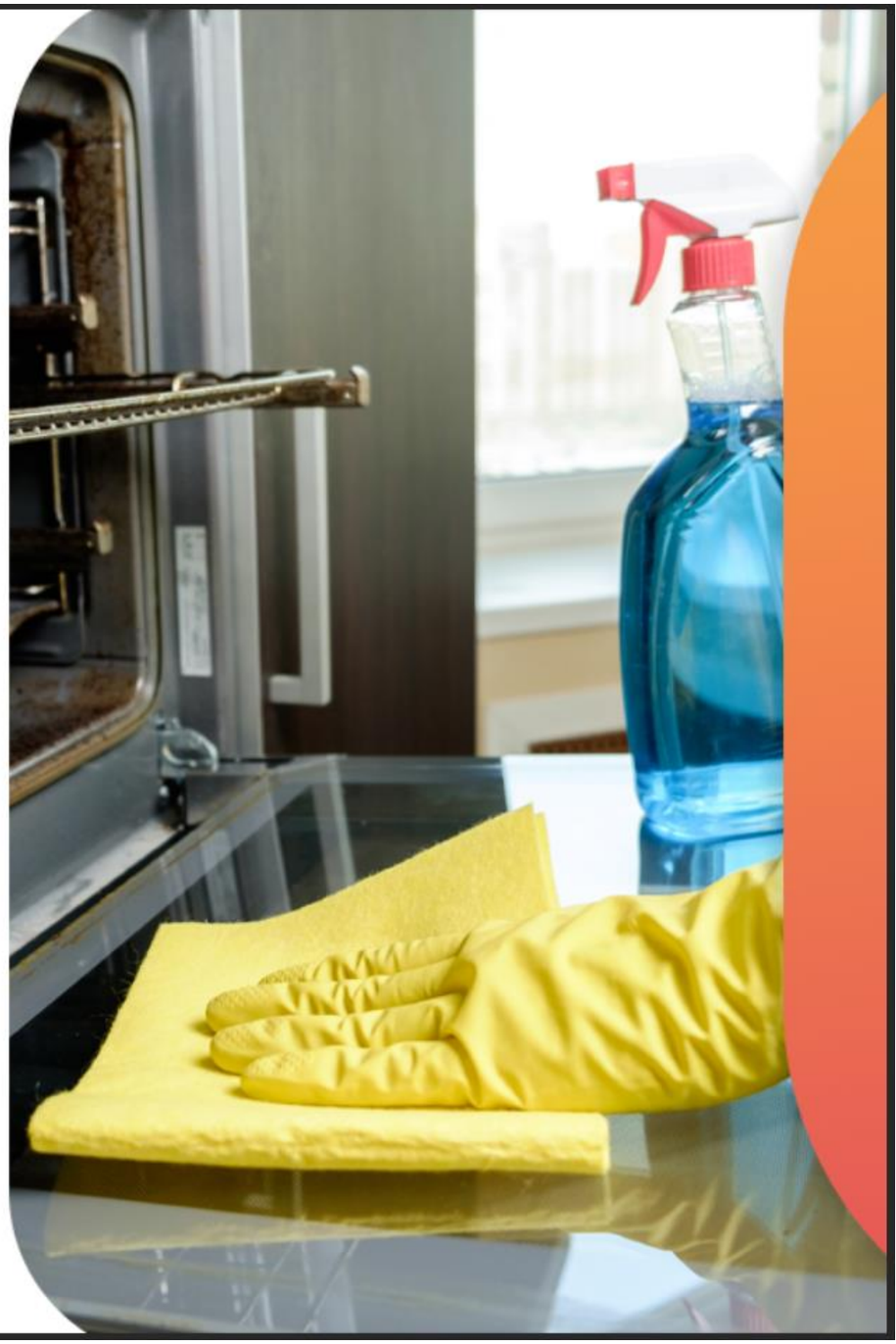
- Follow the manufacturer's instructions on any cleaning agents, equipment and tools to ensure that the product is used safely and effectively
- Ensure that all cleaning products are clearly and correctly labelled
- Instruct staff to never mix two or more cleaning chemicals, to avoid and adverse reaction
- Store cleaning chemicals away from the food, and serving and preparation areas
- Make sure that the equipment provided matches the job – this will ensure that staff are kept safe as well as performing the task competently
- Scrupulously maintain the cleanliness of both surfaces and equipment
- Make sure that staff follow instructions on how to clean up spillages
- Instituting a regular and thorough cleaning schedule to ensure that all areas of the business are cleaned or disinfected as often as they need to be
- If PPE is provided, always wear it

5

Detergents and Disinfectants

There are five major chemicals used for cleaning and disinfection:

- **Disinfectant**s kill pathogens and lower their numbers to a safe level; you will need to clean each area before they are used, because otherwise dirt is likely to remain and may hide or trap bacteria
- **Detergent**s such as soap and washing-up liquid remove dirt and oils by dissolving them and suspending them in solution; they don't destroy pathogens
- **Sanitiser**s are available in spray, liquid and 'wipe' forms and act as both detergents and disinfectants – there are several different types which are appropriate for different tasks
- **Steriliser**s – sterilising can be done using either chemicals or extreme heat, particularly in the form of boiling, though it is not usually used as a cleaning method
- **Bactericide** – a catch-all term to describe the disinfectants, antiseptics and antibiotics which kill bacteria





Cleaning and Disinfection

The purpose of disinfection is to ensure that the numbers of bacteria are continually reduced to a safe level by chemicals or hot water. This means that work surfaces and equipment will always be safe for food preparation.

Many disinfectants and sanitisers (which partly contain a disinfectant) have a recommended 'contact time' which should be strictly adhered to when in use. If you exceed the recommended contact time, then the bacteria in your workplace can build up a local resistance and will be much harder to control.

Similarly, if the product is not used for long enough, too many bacteria will survive the cleaning process and will be able to multiply afresh.

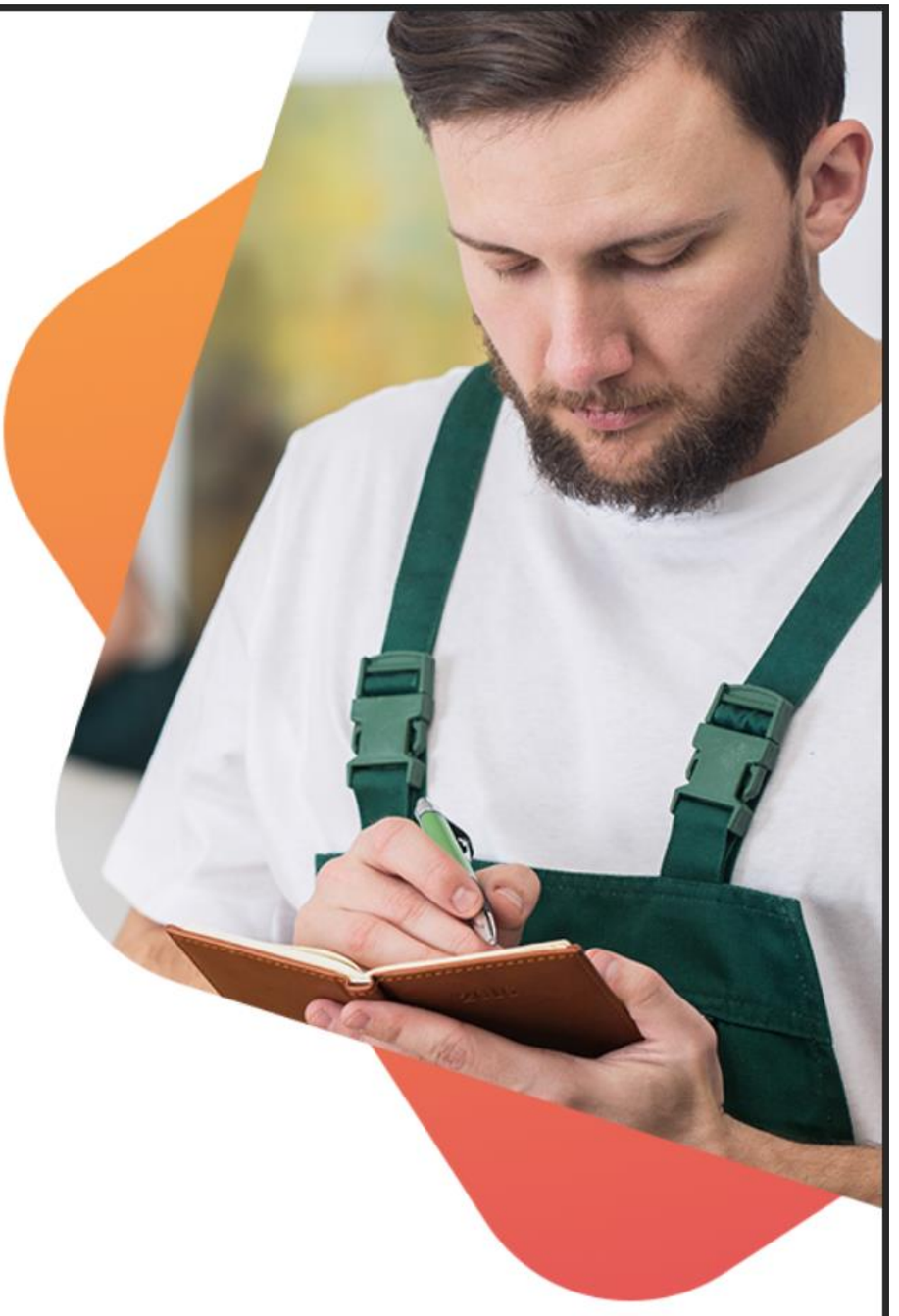
7

Cleaning Schedules

Cleaning should also take place as a regular structured and scheduled process to make sure that all areas which need cleaning are sufficiently attended to.

Such a process should take two consecutive forms:

- The removal of dirt, grease and food particles using a detergent
- The prevention or reduction of bacterial multiplication with a disinfectant and hot water



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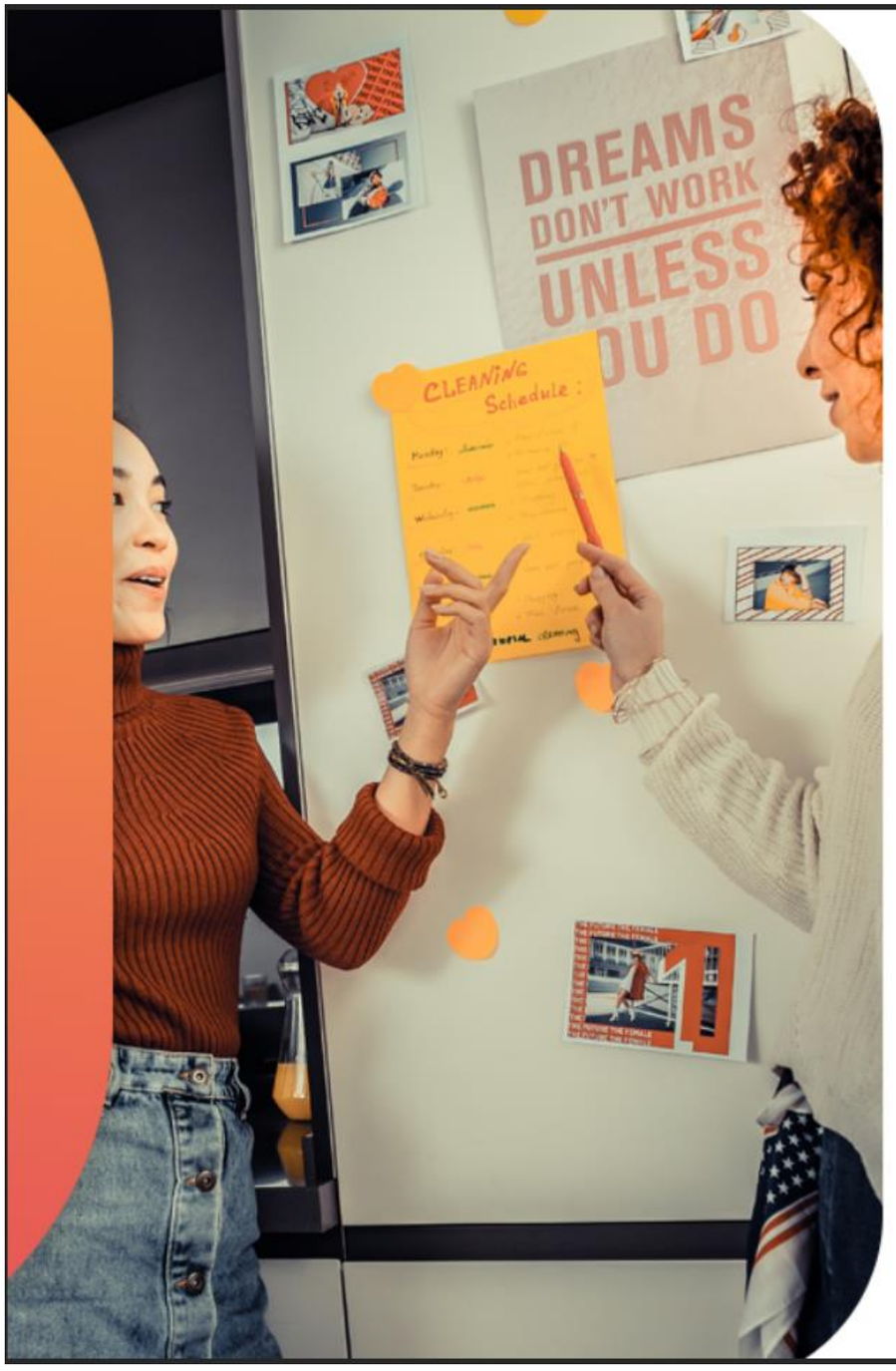

Cleaning Schedules

Every food business needs its own custom-designed cleaning schedule to ensure that it is appropriate to its needs.

When designing this, all of the following points should be considered and incorporated where necessary:

- What needs to be cleaned?
- Who will be responsible for the cleaning?
- How will the cleaning be performed?
- How long is the cleaning likely to take?
- Which chemicals and equipment will be needed?
- Which safety procedures will need to be observed?
- How often will the cleaning needs to take place?
- Will staff be encouraged to 'clean as they go' as well as perform regularly scheduled cleaning?
- Who will be responsible for checking that the cleaning has been performed to the appropriate standards?

9

Safe Cleaning

There are five basic but strict rules to follow when cleaning food premises. Some of these we have touched upon previously, but they will need stating baldly to ensure that they are followed:

- You must remove or securely cover all food in the areas to be cleaned; this will make sure that the cleaning products do not contaminate it.
- Separate cleaning equipment should be used to clean toilets and other non-food areas.
- Protective clothing may be specified by the manufacturer of the cleaning chemicals; this clothing must be worn in all circumstances where the product is being used.
- In raw or high-risk food areas, colour coded cleaning equipment must be used and kept separate from equipment used in other areas.
- If a thorough 'deep clean' of the premises is to be performed, the electricity supply must be disconnected at the mains and the electrical equipment isolated to prevent shocks.

Continue...





Safe Cleaning

- Most cleaning products are hazardous substances and should only be used according to their manufacturer's instructions.
- If necessary, PPE should be issued to you by your employer before cleaning ensues, at no cost to yourself; this can include gloves, overshoes and boots, hats, goggles and gloves.
- If the manufacturer's instructions say so, rinse the cleaned area with water after the product has been used.

Continue...

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Safe Cleaning

- All cleaning equipment should be properly cleaned, disinfected and dried after use, before being stored safely in a tidy, clean and dry space.
- Storage of cleaning equipment should be away from food preparation areas, doorways and walkways, and held in a lockable storeroom or cupboard.
- Cleaning chemicals should never be mixed, as they might produce noxious gases or even cause explosions.
- Chemicals should never be poured or emptied into unmarked containers in case they are misused or consumed accidentally.
- The chemicals' original containers should not be reused or used to store other substances.
- Brooms, brushes and mops should be stored off the floor in cupboards or rooms in which no food is kept.





Clean as You Go

One of the best philosophies to adopt while working in a food business and being conscious of hygiene is to **'clean as you go'.**

Work areas should always be kept clean and tidy, and waste food and rubbish should never be allowed to build up or linger; the same applies to dirty equipment.

Here are a few tips regarding ongoing cleaning equipment maintenance:

- Brushes, buckets and sinks need to be cleaned regularly throughout the day
- Fresh disposable cloths should always be used in food areas to avoid cross-contamination
- Any reusable cloths should be washed, cleaned and disinfected often during the working day, as well as at the end of each day

13

The six stages of cleaning

Every scheduled cleaning session in a food business premises should follow the six stages of cleaning. These are:

1. **Pre-clean** – Remove loose food particles and other debris by sweeping, brushing, wiping with a disposable towel or rinsing and allowing to air dry.
2. **Main clean -** Use hot water and detergent to loosen, dissolve and remove surface grease and grime.
3. **Rinse** – Wipe away any remaining dirt and detergent by rinsing with clean, hot water.
4. **Disinfect** – Use a chemical disinfectant or hot water to destroy bacteria, microbes and viruses (remember to observe the manufacturer's recommended contact time).
5. **Final rinse** – Remove any remaining disinfectant with clean hot water.
6. **Dry** – Allow any remaining water to evaporate by air drying; if cloths are used, make sure that they are single-use or disposable – do not reuse them as they will retain small particles of dirt or food which will encourage bacterial multiplication.

Stages 2 and 4 (the 'main clean' and 'disinfection' stages) can be combined if a sanitiser is used.





Cleaning Food Storage Areas and Chillers

In a food business, storage areas and units need to be thoroughly and regularly cleaned and disinfected.

Such areas are magnets for dirt and bacterial build-up, and the cleaning schedule should make sure that these are regularly cleaned from floor to ceiling. This process must include the shelving, floors, doors and walls using appropriate cleaning equipment and chemicals.

You should also clean the inside and outside of storage units such as chill cabinets, fridges and freezers, and make sure that the door handles, mechanical parts and hard-to-reach places are all cleaned as thoroughly as other parts. However, never use strong chemical agents that leave smells and chemical traces - these might taint the food, making it inedible.

The final stage before the cleaning job is finished should always be to wash away any remaining residues with clean, fresh water before air-drying and restocking.

15

Dishwashers

It is easy to become a little lazy when regularly using a dishwasher. For this reason, it is always a good idea to rinse anything you are placing in the dishwasher first to remove the worst of the pieces of dirt and food.

Do this every time you use the machine and it will ensure that the dishwasher and its parts are kept free longer from lingering food particles, which can encourage persistent pathogens.

Never overload a dishwasher – allow space around the utensils and crockery for the hot water to find its way to all surfaces, as well as ensuring that the water jets are not covered and are free to spray hot water on everything in the machine.



Continue...



Dishwashers

To be effective, a dishwasher wash cycle should run on at least 60° C, while the rinse cycle should operate at between 82° C and 88° C; these temperatures effectively disinfect the machine's load.

Always follow the manufacturer's instructions and recommended procedures and use suggested cleaning products.

Dishwashers allow you to combine the main cleaning and disinfection parts of the 'six stages', as long as the rinse cycle is run at 82°C or above.

Another preventive tip is to allow the dishwasher's freshly washed contents to air dry, rather than risk bacterial contamination with a tea towel or dishcloth.

Continue...

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Controlling Pests

Pests in the context of a food business are those animals which have adapted to exploit food sources for their own ends. Unfortunately, such creatures also contaminate these foods with food-borne illnesses, and destroy stock and make it unusable at the same time.

Most emergency closures of food business premises by Environmental Health Officers are due to pest infestations. **Because of this, the law says that food businesses and premises must have food hygiene protocols which include effective pest control.**

To prevent pests from getting out of hand, they must be detected quickly.

Thereby, the food handlers must report any signs of food pests to their supervisors or managers. The supervisors must then act rapidly and seek expert help to eradicate the pests and make sure they don't return.



Continue...



Controlling Pests

Pests cause a great many health problems in humans, which is why they must be controlled immediately. Some of the problems caused by pests include:

- Spreading disease and bacteria
- Damaging and contaminating food
- Gnawing through electric cables and cause fires (in the case of mice and rats)
- Making the premises unpleasant to work in
- Illegality - it's against the law to have a pest-infested workplace

It is also against the law to keep or allow pets and domestic animals in food premises for the same reasons. The days of kitchens keeping a cat as a 'good mouser' are long gone. Keep them away from your food preparation areas!

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Controlling Pests

All pests must be got rid of in a food-handling business. To do this, they must be prevented from obtaining warmth, food and shelter they need to survive.

Here are the most common methods of preventing pest survival in your food workplace:

- Follow 'best practice' design, maintenance and pest-proofing in your premises.
- Make sure you keep windows and doors closed or screened with fine, insect-proof mesh.
- Use hanging strips or 'air curtains' across open doorways.
- Protect the bottoms of doors with metal or plastic plates and sealing strips
- Check for possible access holes and block any that you find.



Continue...



Controlling Pests

The signs of rodent infestation include:

- An actual living organism
- The dead bodies of rats or mice
- An unpleasant smell, which could be the dead bodies of the animals or their urine
- Small droppings
- Loose fur
- Chewed wood, paper or food packaging materials (this can also be an indication of wasps' nests)
- Signs of your food stock having been eaten – holes in bags and droppings in the food, for instance

Continue...

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Controlling Pests

Insect infestation is highly likely if you find:

- The living organisms
- Their dead bodies
- Their eggs or egg cases
- Their larvae – for example, maggots or chrysalids
- An unpleasant smell – the 'mildewy' smell of cockroaches is particularly distinctive
- Smaller holes in food



Continue...



Controlling Pests

You will undoubtedly want to get rid of any pests, but prevention is the best technique; there are three basic kinds:

1. **Environmental controls** - the denial of food, shelter and warmth
2. **Physical controls** - mouse and rat traps, electric fly killers and fly swatters, all effectively stop the pest in its tracks, though the results can be messy and unhygienic in themselves. Proper disposal of the bodies and cleaning of the areas around them should be done every time one of these methods is used
3. **Chemical controls** - poisons in the form of chemical-laced bait and pesticide sprays. If used, you must make sure that none of the substance comes into contact with food or utensils. Equipment, cabinets and anything else in which the chemical controls have been used must be thoroughly cleaned and disinfected before continuing their use



Chapter 09: Reopening and Adapting Your Food Business during COVID-19

Introduction to the Chapter

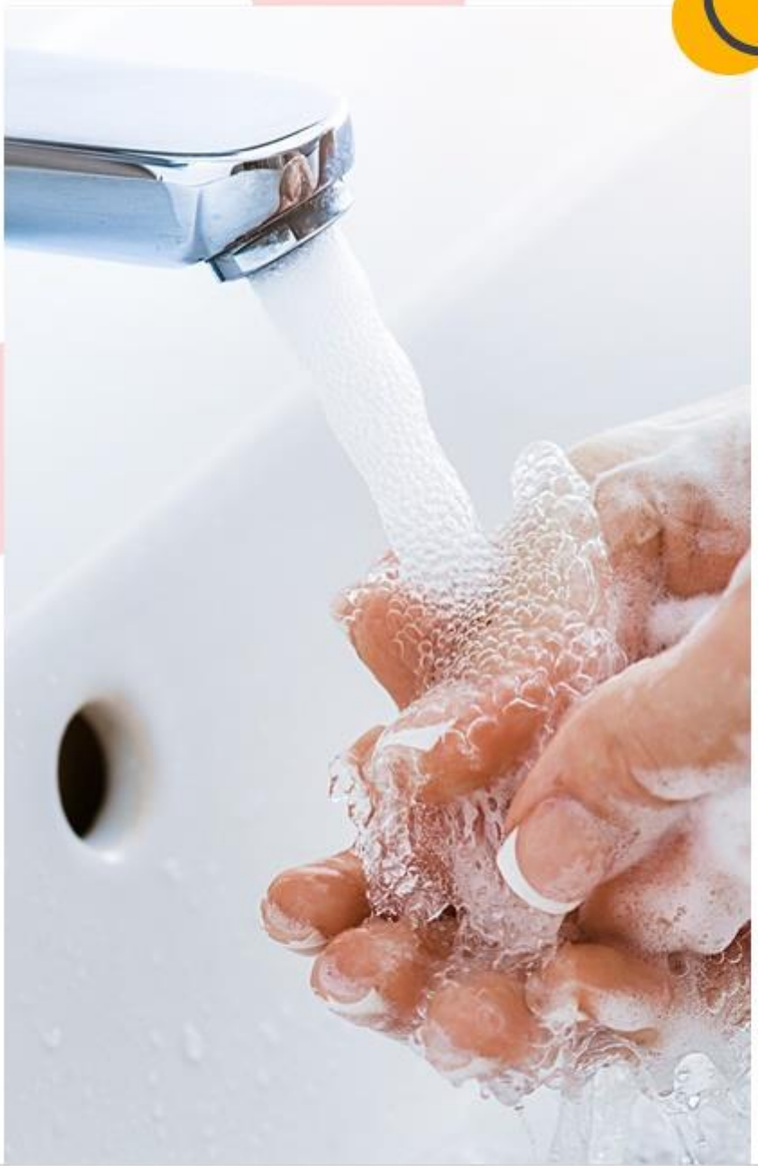
This Chapter will teach you about how to reopen your food business safely during the COVID-19 pandemic. We will teach you how to keep yourself and your customers safe so that your business can operate as usual once again.

Topics to be covered in this Chapter are:

- Food Production during COVID-19
- Staff Hygiene and Infection Control
- Risk Assessment and Managing Risk
- Decontamination of the Premises and Equipment
- Maintaining Social Distancing in Restaurants
- Keeping Employees and Customers Safe
- Contact Free Delivery
- Summary

Continue...





Food Production during COVID-19

While it's not very likely that COVID-19 can be transmitted through food, it's still important to practice good hygiene in the workplace. You should wash your hands:

- before and after handling food
- before touching items that customers might use, such as cutlery and glasses
- after handling items that have been used or are dirty
- after handling money
- after touching surfaces that are frequently touched by others, i.e. door handles
- when transferring between different work areas
- after being out in public
- after coughing or sneezing

Continue...

Food Production during COVID-19

Cooking Temperatures, Chilling, Freezing and Defrosting

- Always try to cook things until they've reached a temperature of 70 degrees celsius for at least two minutes
- Cold food must be kept at a temperature of 8 degrees celsius, but it's recommended to set your fridge to 5 degrees celsius
- Always store frozen food in freezers soon after they've been delivered and change the use-by date to a best before date
- Always try to defrost food in the fridge or a container with cold water





Staff Hygiene and Infection Control

Here's what you can do to prevent the spread of COVID-19:

- **Wear personal protective equipment (PPE) and gloves –** if you were using PPE in the workplace before COVID-19 you should continue doing so, and wear gloves while preparing food
- **Wear a face mask or a face covering –** Face masks and face coverings should be worn when the standard 2-metre distance cannot be kept
- **Maintain social distancing –** keep a distance of 2 metres between employees, where this isn't possible, ensure that there's at least 1 metre of distance

Risk Assessment and Managing Risk

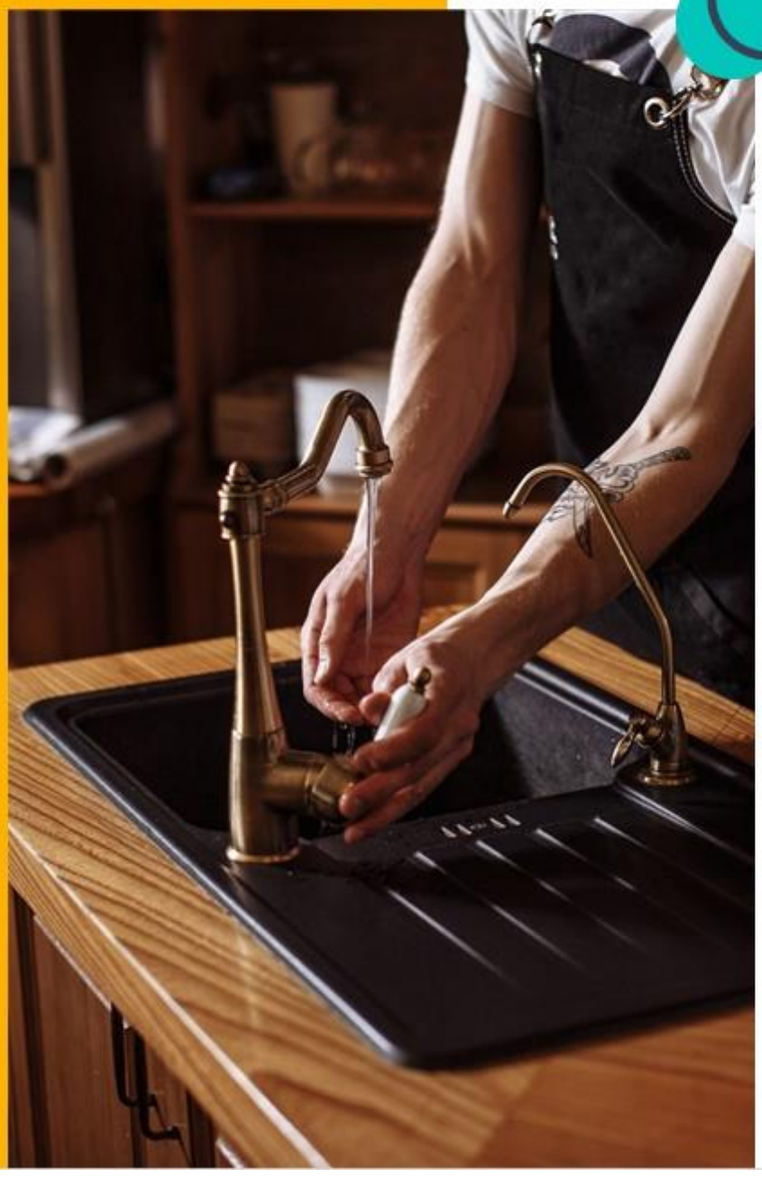
As a business, you must include COVID-19 in your risk assessments as failure to do so could be a breach of health and safety laws. Severe breaches can be considered a criminal offence.

You should:

- Consider the government's guidelines on reopening your business during COVID-19 and implement changes to ensure everyone is kept safe
- Encourage employees, where necessary, to self-isolate and follow the government's policies on this



Continue...



Risk Assessment and Managing Risk

Managing Risk

To manage risk, you should:

- Ensure ill employees stay at home
- Increase handwashing in the workplace
- Use protective screens and barriers
- Make employees work back to back or side to side
- Reduce the number of people an employee works with

Cleaning the Premises and Equipment

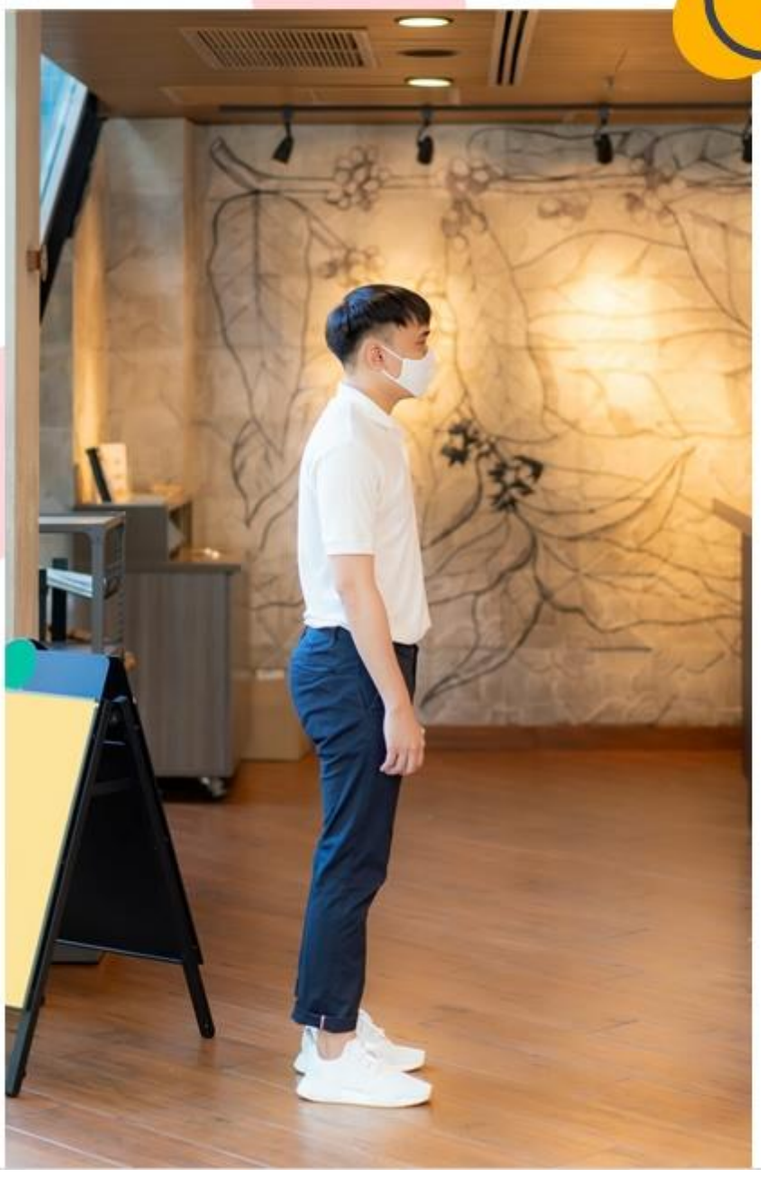
To keep the premises clean and reduce the spread of COVID-19, you should:

- Always follow the advice set out by the government
- Prop doors open to reduce touchpoints
- Clean objects and surfaces more frequently
- Clean work areas using your usual cleaning products after they've been used
- Provide additional bins for employees to dispose of face masks and PPE

To maintain the cleanliness of kitchens you should:

- Consider whether more stringent cleaning and disinfection is required
- Providing bins for staff to dispose of used towels and overalls
- Wash your hands more frequently, especially when handling plates and cutlery





Maintaining Social Distancing in Restaurants

In restaurants, there must be a distance of 1 metre between all customers and staff at all times.

Here are some social distancing measures you can take:

- Restrict the number of people permitted to enter at any one time
- Control the queue outside of your restaurant
- Encourage contactless or card payments as money can carry COVID-19

Continue...

Maintaining Social Distancing in Restaurants

- Accept telephone orders and make suitable arrangements for collection
- Help customers maintain social distance by putting markings on the floor
- Don't allow customers to stay longer than necessary, request them to leave after they've collected their order
- Provide hand sanitiser to customers as they enter
- Close the seating areas either inside or outside
- If you're a takeaway restaurant, don't let customers use a toilet because you're not required to provide this service





Keeping Employees and Customers Safe

To keep employees and customers safe, you should:

- Ensure that employees are knowledgeable about the latest updates to government guidelines
- Make sure that no more than 30 people are on your premises at one time – ensure that people are from no more than two households
- Upon arrival, ask customers how many households are within their group
- Implement a one-way system in your venues
- Advise customers to avoid overly crowded areas

Contact Free Delivery

Contact-free delivery is about minimising your physical contact with people when you're delivering things to their house

To respect contact-free delivery, you should:

- Observe a 2-metre distance between you and the person you're delivering to
- Minimise physical contact by placing the order on their doorstep
- After placing the order on their doorstep, knock the door and step back
- Wait until they answer the door and take the order inside, and leave afterwards



Assessment

Q 1.What is the distance you must maintain to ensure safety?

- 1 metre
- 2 metres
- 0.5 metres
- 3 metres



Submit

Correct	Choice
	1 metre
X	2 metres
	0.5 metres
	3 metres

Assessment

Q 2. Which of the following mustn't you do during a contact-free delivery?

- Knock the customer's door
- Leave the order at the doorstep
- Hand the order to the customer directly
- Touch things



Submit

Correct	Choice
	Knock the customer's door
	Leave the order at the doorstep
X	Hand the order to the customer directly
	Touch things

True or False

Q 3.Customers must use hand sanitiser before they enter your venue; otherwise, they shouldn't be allowed in. True or false?



○ True ◉ False

Submit

Correct	Choice
	True
X	False

Summary

In this Chapter, you have learned:

- To help minimise the spread of COVID-19, you should wash your hands more frequently and observe social distancing
- To keep your employees safe, you should encourage them to use PPE, gloves and a face covering
- You should always encourage a distance of at least 1 metre in your restaurants
- Contact-free delivery exists so that physical distance can be maintained and contact is minimised