Food Handling CERTIFICATE

Module 3:
Identifying food hazards

Start Module

Learning objectives

At the end of 'Module 3 - Identifying food hazards' you will be able to:

1. Identify common food hazards

2. Describe the types of food hazards that can cause contamination

3. Explain the Hazard Analysis Critical Control Points system

Learning objectives

Food hazards can be created by:

Food that has **gone off**.
(You can smell, taste and see that the food is unfit to eat)

Food that has been **contaminated** because it has been **poorly handled, stored** or **not cooked properly**.

The food below may be contaminated.

There may be no difference in the **look, taste** or **smell** of the food.

This is why it is important to take steps to prevent food from being contaminated in the first place.

Types of food hazards

Food hazards can be broken into three distinct areas.
Click each type to find out more.

Chemical

Physical

Microbiological

Types of food hazards

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Chemical | Physical | Microbiological

- **Chemical** contamination occurs when chemicals come into contact with food.
- Common chemicals used in the food industry include:
  - detergents
  - sanitisers
  - workplace pesticides
  - medications
  - freezer refrigerants
  - contaminants from pesticides on fresh produce.

Types of food hazards

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Click each type to find out more.

Chemical | **Physical** | Microbiological

Physical hazards include dangerous physical objects that can be found in food such as:

- glass, wood, metal, plastic, dirt, paint, screws and wire
- false fingernails, jewellery, hair, buttons and soiled band-aids
- pest droppings and bodies, eggs, feathers etc.

Types of food hazards

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Click each type to find out more.

Chemical | Physical | **Microbiological**

- **Microbiological** contamination occurs when micro-organisms get into food and poison or spoil it
- Examples can include:
  - bacteria
  - viruses
  - diseases
  - parasites
  - moulds
  - yeasts
  - fungi

It is imperative to ensure all precautions are adhered to in the **food safety program** to prevent growth of these bacteria.

Spread of microbiological hazards

Microbiological hazards can be transmitted:

TO food

FROM food

Airborne

- Transmitted through the air
- Coughing, sneezing, laughing or through close personal contact
- Transfer via dust particles or small respiratory droplets

Infectious

- Transmitted by a source
- Are contagious
- Spread through air, food, skin, blood etc

Foodborne

- Transmitted through food that has been consumed

As a food handler, you must report any personal health issues and any incidents of contamination from health issues.

Types of bacteria

Bacteria are the most common form of microbiological hazard that causes food poisoning.
Let's go through the types of common bacteria that can be found in food. Click each type to find out more.

- Bacillus cereus
- Staphylococci aureus
- Salmonella
- Clostridium perfringens
- Clostridium botulinum
- Camplyobacter
- Escherichia coli
- Listeria monocytogenes

Replay Prev Page

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Bacillus cereus

- Found in the soil but can be found anywhere
- Spores can survive near boiling temperatures
- Potential sources of contamination:
  - Cereals, rice, vegetables, herbs and spices

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Staphylococci aureus

- Also known as Golden Staph
- Half of us will carry it in our skin and nasal passages and it is also found in infected cuts or sores
- Potential sources of contamination:
  - Infected skin wounds, sneezing and raw meat

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- **Salmonella**
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Salmonella

- Common food bacteria
- One of the most harmful
- Doesn't grow at temperatures below 4.5 degrees or above 60 degrees
- Most active (and most dangerous) at room temperature
- Potential sources of contamination:
  - Unwashed hands, vermin, and cross-contamination from raw meat

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Clostridium perfringens

- Common bacteria and is dangerous
- Form spores which withstand boiling, steaming, stewing or braising
- Potential sources of contamination:
  - Raw meat, soil or dust, unwashed hands and cross-contamination from raw foods

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Clostridium botulinum

- Well-known, but luckily rare
- Forms spores when it is heated
- Potential sources of contamination:
  - Canned foods and vegetables in oil

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Camplyobacter

- Similar to salmonella
- Potential sources of contamination:
  - Animals and poultry, poor personal hygiene, and cross-contamination from raw foods

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Escherichia Coli

- Come in a number of strains
- Many of which are harmless
- Dangerous strains are rare but have caused disease outbreaks
- Potential sources of contamination:
  - Faecal contamination of food and water

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Listeria monocytogenes

- Dangerous disease that can be fatal
- Particularly dangerous for pregnant women, newborn babies, the elderly, at risk people
- Potential sources of contamination:
  - Soil, dust, water, birds, fish, animals and insects
  - These can potentially contaminate raw foods which can then cross-contaminate cooked foods

Bacteria growth

Bacteria can multiply from just a few cells to millions of cells in a very short time.

The main factors that affect the growth of bacteria are:

Temperature of food

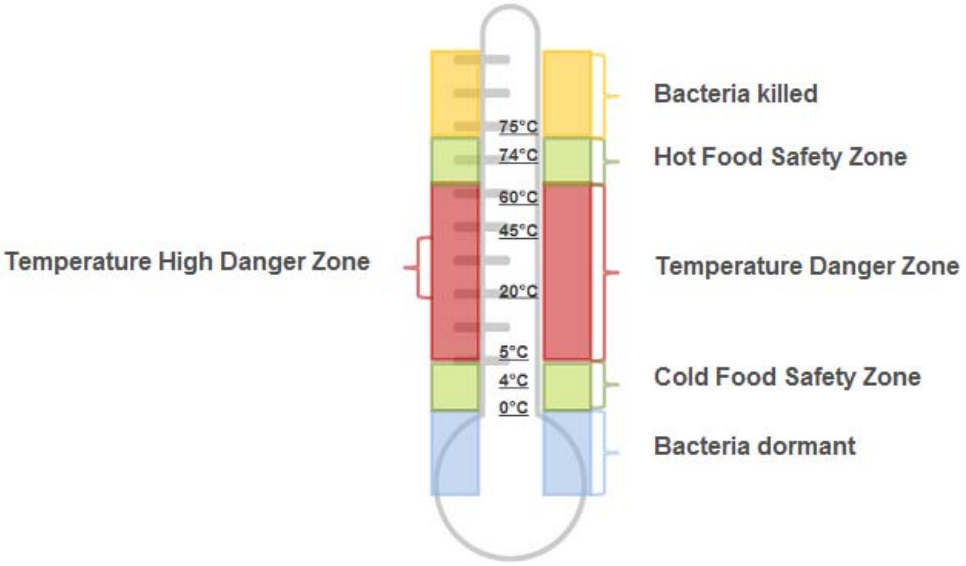
Moisture content of food

Time

Exposure to air

It is important that all foods are prepared, processed, cooked and stored in a way that does not allow for bacteria to remain in the foods or to grow to the dangerous levels that can cause food poisoning.

Bacteria growth – Temperature danger zones



Food in the 'Temperature Danger Zone'

Less than 2 hours at 5 to 60C — Refrigerate or use immediately

Between 2 & 4 hours at 5 to 60°C — Use immediately after proper cooking

More than 4 hours at 5 to 60°C — Thrown out

High and low risk foods

There are high and low risk foods where bacteria can multiple quickly given the right conditions.

High risk foods:

- dairy products
- meat and poultry
- seafood
- cooked rice or pasta
- sliced delicatessen meats
- ready to eat foods containing raw eggs
- prepared salads and fruit salads

Low risk foods:

- cereal, flour and sugar
- confectionary
- dry biscuits
- spices and uncooked grains

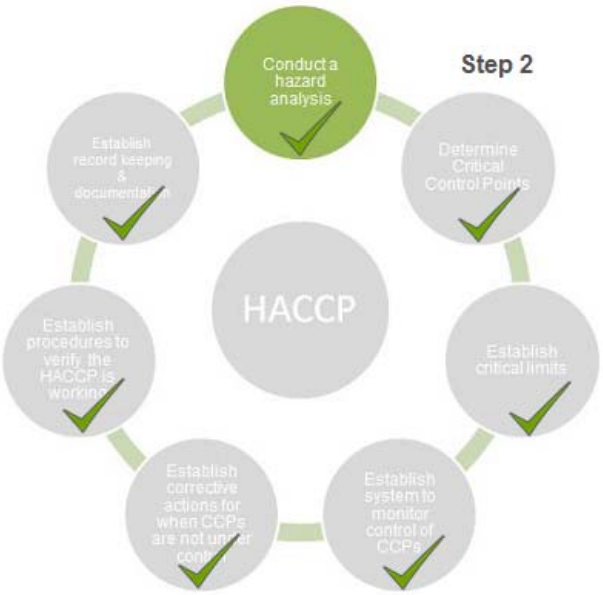
Hazard Analysis and Critical Control Points (HACCP)

- A **logical** and **systematic** approach to identify, assess, prevent and control hazards
- Allow management and staff to **identify** and **control** potential food hazards **before** they arise
- Processes and procedures must be **documented** and **adhered** to
- Form a major part of any **Food Safety Program**

HACCP is an **internationally recognised system that follows seven set principles** for food safety.

Click each step to find out more.

Hazard Analysis and Critical Control Points (HACCP)



- **Identify** the potential chemical, physical or microbiological **hazards**
- **Identify** preventative measures that can **control** each of the hazards

Hazard Analysis and Critical Control Points (HACCP)

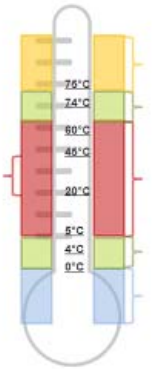
Step 3

- Any **step** in the food lifecycle where a control can be applied that will help to:
  - prevent
  - eliminate
  - reduce an identified food hazard

Hazard Analysis and Critical Control Points (HACCP)

Step 4

- The **maximum** or **minimum** value to which a hazard must be controlled
- Example:
  - Keeping food within the safe temperature range
- Need to be **documented**



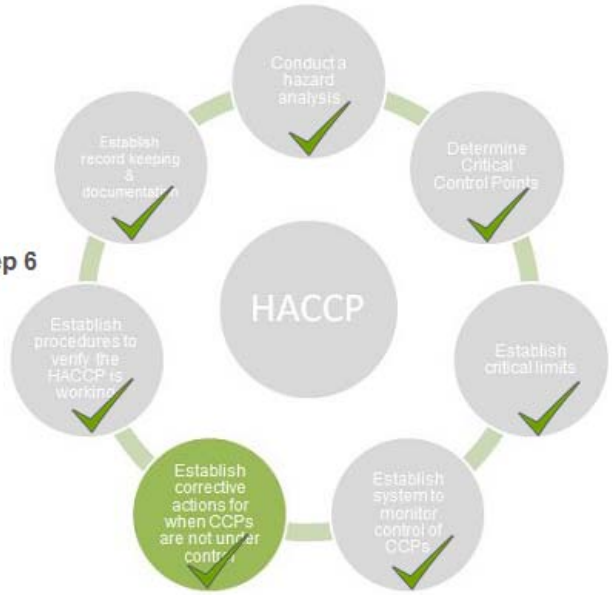
Hazard Analysis and Critical Control Points (HACCP)

Step 5

- Ensure that the process is **under control** at each critical control point
- A **documented** monitoring system is developed
- May involve **actions** such as:
  - observing the procedure
  - using your sense of smell and taste
  - visually checking the colour and texture of food

Hazard Analysis and Critical Control Points (HACCP)

Step 6



- When a critical control point is found to be **not** under control
- Corrective actions are **appropriate**, **timely** behaviour that will ensure critical limits are met
- Any **breaches** should be **documented**

Hazard Analysis and Critical Control Points (HACCP)

Step 7

- Procedures to verify that the HACCP system is **working as intended**
- Tasks that confirm that:
  - hazards are being detected
  - critical control points are being identified
  - critical limits are being imposed
  - corrective actions are being taken when necessary.

Hazard Analysis and Critical Control Points (HACCP)

- Establish a **record keeping** and **documentation** process for all HACCP procedures:
  - The hazard analysis and controls
  - The written HACCP plan (including critical control points and critical limits)
  - Records of the monitoring of critical control points and any corrective actions taken
  - Records of verification activities

Summary

Congratulations! You have now completed Module 3 – Identifying food hazards.

You should now be able to:

- Identify common food hazards
- Describe the types of food hazards that can cause contamination
- Explain the Hazard Analysis Critical Control Points system

You can now return to the home page and proceed to the next module which will look at controlling and eliminating general food hazards.