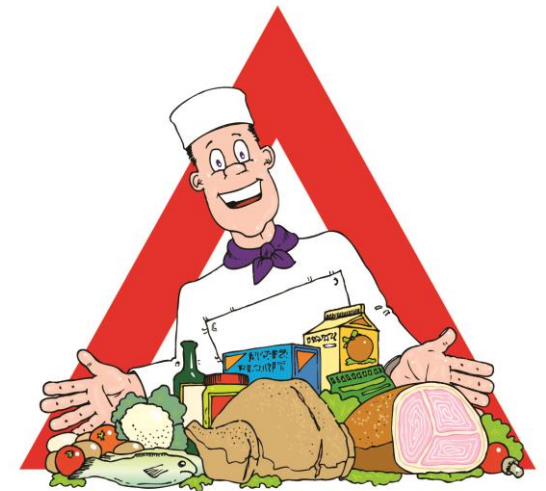
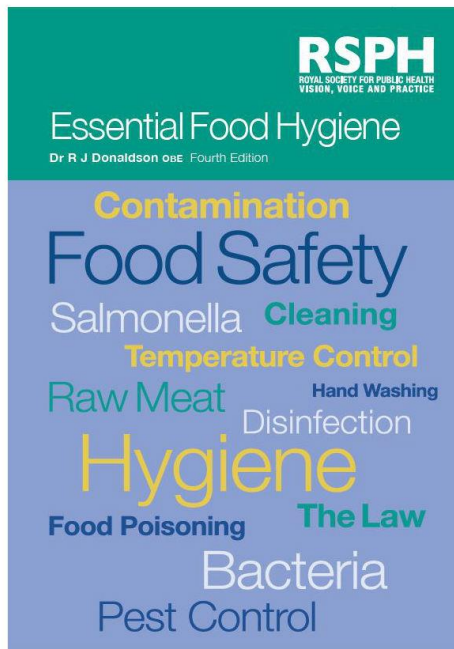


# Welcome to this course for Level 2 Food Safety

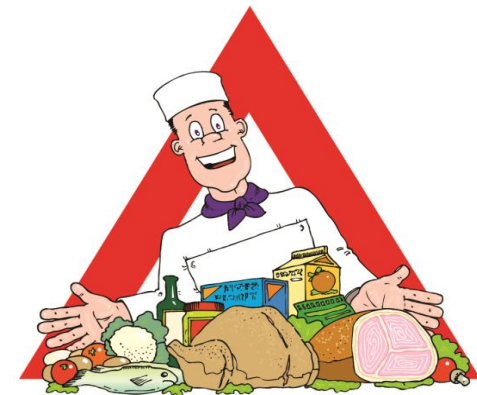


## Learning Outcomes

- Personal *responsibility* for food safety
- The importance of keeping *yourself* clean and hygienic
- The importance of keeping *working areas* clean and hygienic
- The importance of keeping *food safe*

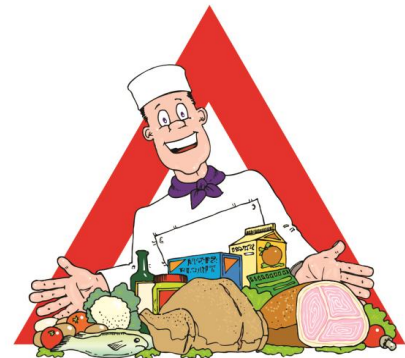


- **Session 1 – Introduction, hazards and contamination**
- **Session 2 – Bacteria growth, high risk foods and temperature control**
- **Session 3 – Cross contamination, food handler behaviour and personal hygiene**
- **Session 4 – Pest control, workflow and cleaning**
- **Session 5 – Law, food safety management systems and expiry dates**



# Session One

- **‘At risk’ groups**
- **Common symptoms of food poisoning**
- **Food contamination hazards**
- **Types of bacteria**
- **Causes of food poisoning**
- **Sources of food poisoning bacteria**



# What is the purpose of food safety training?

- **Positive culture**
- **Helps to control costs**
- **Legal requirement**
- **Prevents food poisoning!**



# Why is food safety important?

- **To prevent the risk of illness due to unsafe food**
- **Good food safety is proactive and positive**
- **Poor food safety can have a major effect on a food business**

## **What is food safety?**

The safeguarding of food from anything that could harm human health.

## **What is food hygiene?**

All the practical measures taken in keeping food safe to eat, throughout all stages of handling.

# Who is most at risk?

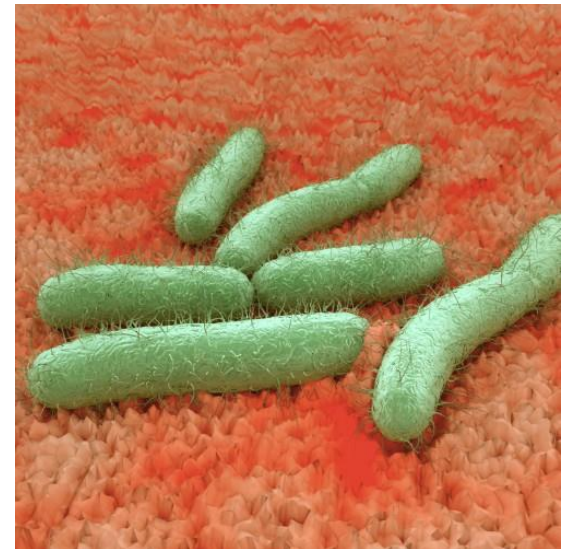
- **Infants**
- **Pregnant women and new mothers**
- **Elderly people**
- **People with weakened immunity**





# Common symptoms of Food Poisoning

- Nausea
- Vomiting
- Diarrhoea
- Stomach pain
- Dehydration



# Contamination?

Presence of any **harmful** substance or object in food

(something in food that should not be there)

Contamination causes illness, injury or makes the food *unfit* for consumption



# What is harming us? HAZARDS!

- Physical
- Chemical
- Microbiological
- Allergenic



# Contamination of food - hazards to consumers

## Biological

Bacteria and their toxins

Viruses

## Chemical

Chemical poisons such as bleach and insecticide

Poisonous plants and poisonous toadstools

## Physical

Undesirable substances in food such as bone, glass, stones, hair

## Allergenic

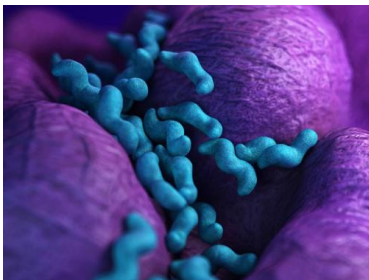
Some people are highly sensitive to certain foods

Food allergens can cause illness or death



# Bacteria

- *Good* **bacteria**
- *Food spoilage* **bacteria**
- *Pathogenic* **bacteria** – can we detect them?



# Contamination of food - hazards to consumers

The main cause of food poisoning is pathogenic bacteria.



## Sources of Food Poisoning Bacteria



**Rats**



**Raw meat, poultry, eggs and shellfish**



**Waste food and dirt**



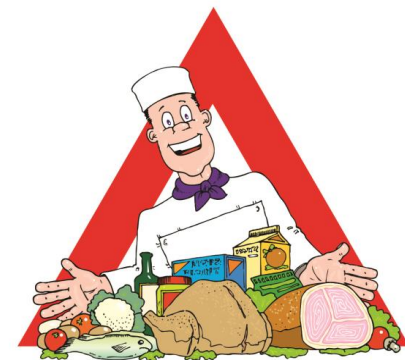
**Soiled fruit and vegetables**



**Human handlers**

# Summary Of Session One

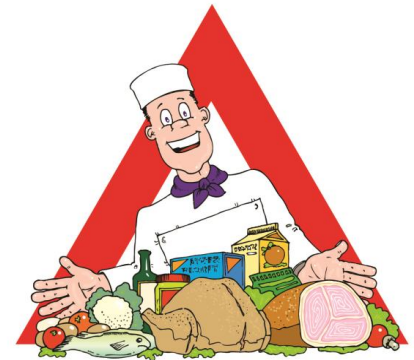
- **‘At risk’ groups**
- **Common symptoms of food poisoning**
- **Food contamination by biological, physical, chemical and allergenic hazards**
- **Types of bacteria - harmless, spoilage and pathogenic**
- **Bacterial contamination as the main cause of food poisoning**
- **Sources of food poisoning bacteria**





# Session Two

- Bacteria growth needs
- How bacteria grows
- Spores
- High-risk foods
- Safe temperatures
- The temperature danger zone



## Conditions for Bacterial Growth

Food

Moisture

Warmth

Time

## High Risk Foods

Ready to eat meat and poultry;  
ready to eat meat products;  
gravy, soup and stock



Milk and eggs,  
and products  
made from them



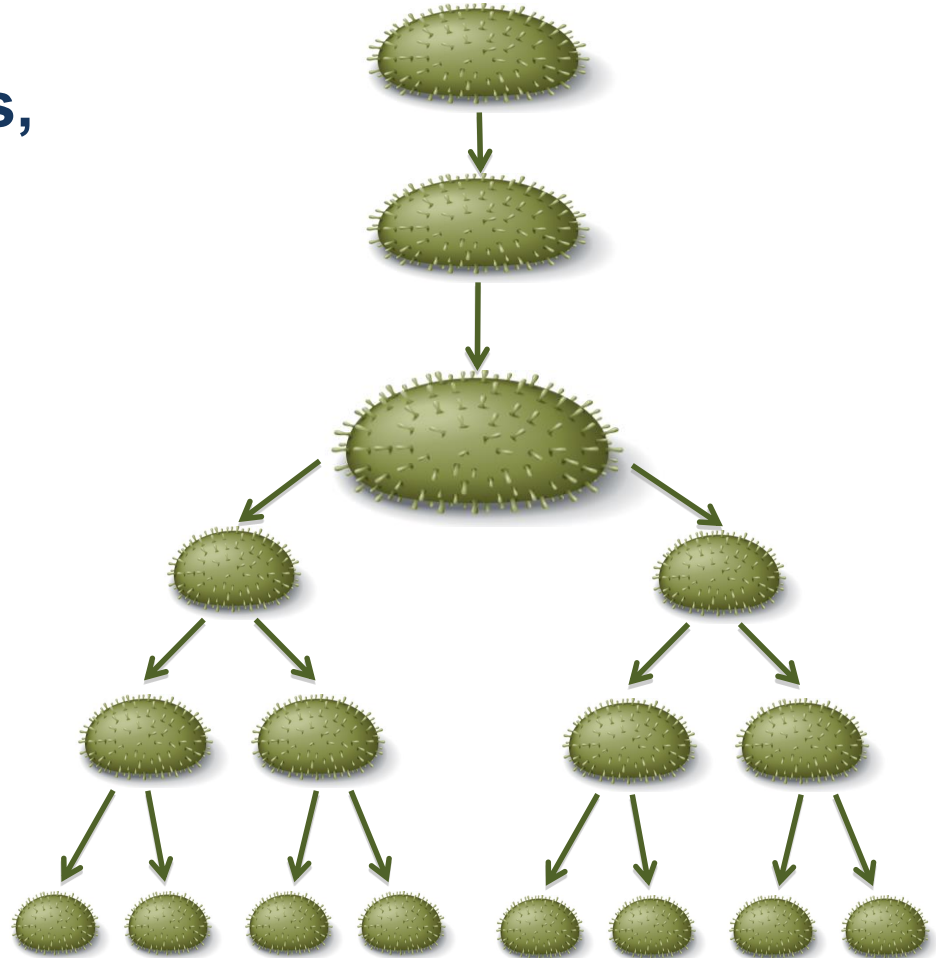
Fish and  
seafood



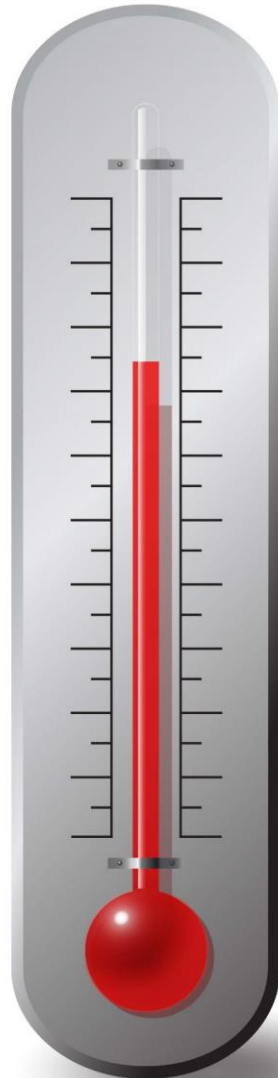
Cooked rice

# Binary Fission

Under the right conditions, each bacterium can multiply as quickly as once every 10-20 minutes



# Temperatures and bacteria growth



**100° TO 130°C SPORES KILLED**

**100°C BOILING POINT OF WATER**

**70°C MOST BACTERIA KILLED**

**37°C BODY TEMPERATURE**

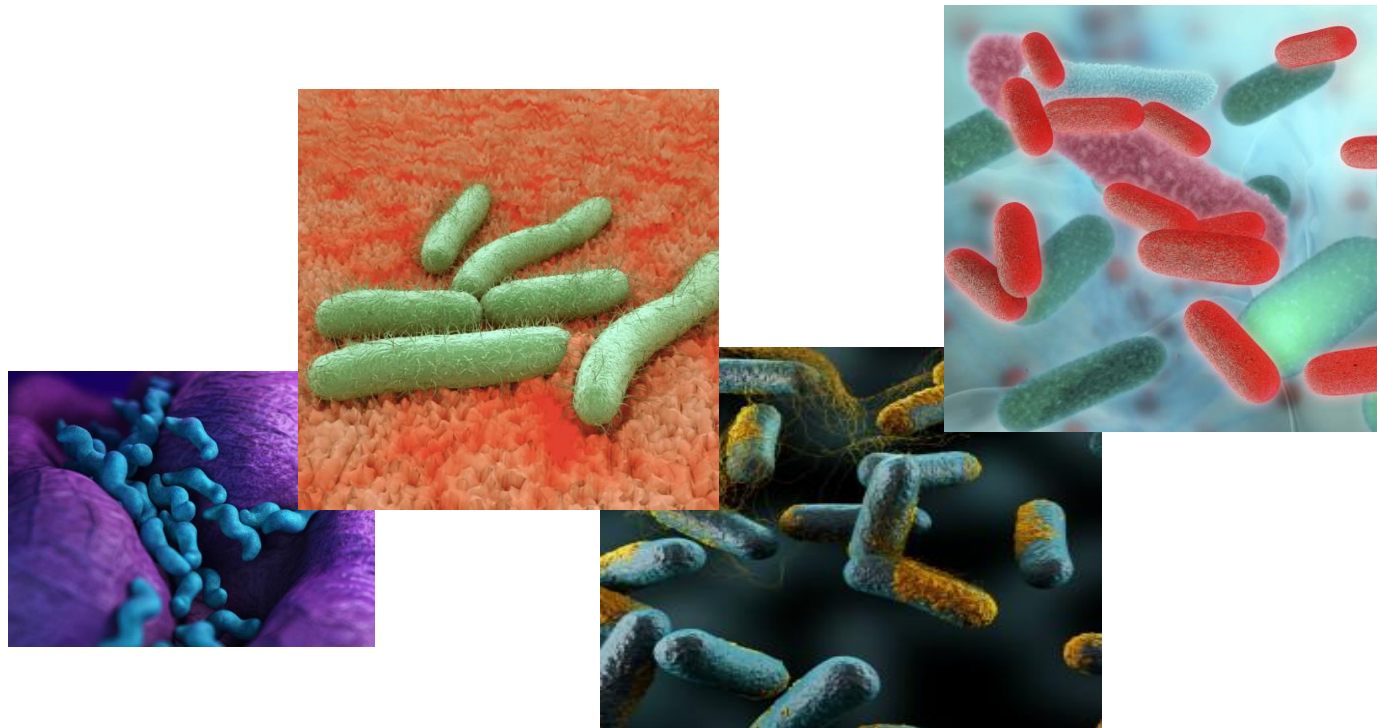
**17° TO 20°C ROOM TEMPERATURE**

**1° TO 4°C REFRIGERATION TEMPERATURE**

**0°C FREEZING POINT OF WATER**

**-18° TO -25°C FREEZER TEMPERATURE**

# Bacteria will multiply rapidly when all the conditions for growth are present



# Keep cold food cold

## Cold food / fridges:

- ✓ best practice: 5°C or below
- ✓ legal maximum: 8°C

## Frozen food / freezers:

- ✓ -18°C to -25°C



# Is Your Fridge Safe?

- **Check the temperature is ideally 1 – 4°C**
- **Maximum fridge temperature 8°C**
- **Store raw and cooked foods in separate fridges, if possible**
- **Don't overload the fridge**
- **Store raw foods below cooked foods**
- **No hot food in the fridge**
- **Cover all food in fridge**





## Safe defrosting

- ✓ Always defrost in a cool place
- ✓ Cover the defrosting food
- ✓ Ensure other foods are protected
- ✓ Once thawed, **never refreeze**



# Ensure **hot food is hot**

## Cooking & reheating

- ✓ best practice: core temperature of 75°C for 30 seconds or 70°C for 2 minutes
- ✓ legal minimum: 63°C (82°C in Scotland)



# Keep **hot food hot**

## Hot holding (hot storage)

- ✓ **63°C or above in England, Wales & Northern Ireland**
- ✓ **Above 63°C in Scotland**



## Reheating

- Reheat food quickly to a high core temperature (rapid journey through the danger zone)
- Reheat food only once
- Food must have been in chilled storage, prior to reheating



## Cooling down **hot food**


- ✓ Do this quickly
- ✓ Portion food to disperse heat
- ✓ Put food in cold containers
- ✓ Rinse under cold water
- ✓ Stir cooling food frequently
- ✓ Cool from 55°C to 20°C within two hours
- ✓ Keep food covered



# Spores

- **The spore is similar to a coat or shell that protects the bacteria**
- **Spores survive heat and normal cooking**
- **Spores survive dehydration**
- **Some bacteria can protect themselves from high temperatures**
- **Spores survive disinfection**
- **Spores are only killed in canning process**
- **Spores germinate during long, slow cooling**

# Significant Temperatures

- 
- **121°C** - temperature which is needed to kill spores
  - **82°C** - temperature for reheated foods in Scotland
  - At least **70°C** for 2 minutes / **75°C** for 30 seconds – **recommended to** ensure thorough cooking or reheating of food
  - **63°C** - minimum temperature at which cooked foods must be kept hot until serving
  - **37°C** - temperature at which most bacteria can grow very quickly
  - **5 – 63°C** - Temperature Danger Zone
  - **1 – 4°C** – best practice temperature range for a refrigerator
  - **-18 to -22°C** - temperature range for a freezer

# Microwave Cooking

- The main *food hygiene hazards* relate to insufficient or uneven heating of food:
- Domestic microwave ovens are not suitable for commercial catering - commercial models are designed to withstand continuous use
- Beware of hot/cold spots in food - if necessary, turn, stir or rearrange food during cooking
- Follow manufacturer's instructions for safe thawing, allowing for sufficient 'standing time' to ensure even heat distribution
- Ensure food is thoroughly cooked or reheated before serving

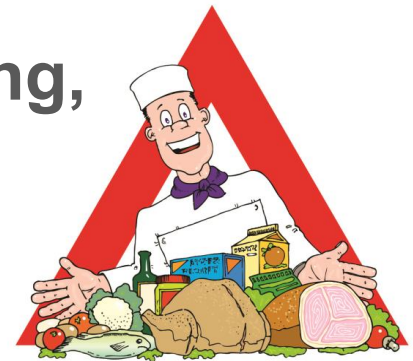


# Your role in food safety?

- ✓ Keep hot food hot
- ✓ Keep cold food cold
- ✓ Wear the appropriate protective clothing
- ✓ Report any risks to food safety
- ✓ Report if you or anyone in your family is ill
- ✓ Keep the required food safety records
- ✓ Keep your workplace clean
- ✓ Keep yourself clean
- ✓ Follow the rules of your workplace

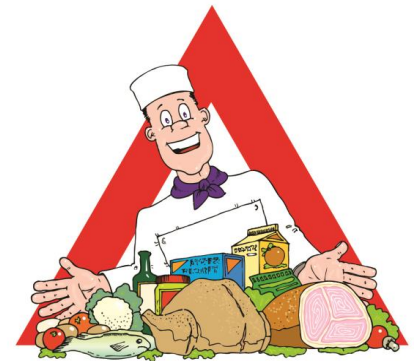
# Summary Of Session Two

- **Bacteria growth needs – food, moisture, time and warmth**
- **Binary fission – how bacteria multiply and grow**
- **Spores**
- **High-risk foods**
- **Safe temperatures for cooking, cooling, reheating and defrosting food**
- **The temperature danger zone**



# Session Three

- **Cross contamination**
- **The prevention of cross contamination**
- **Personal hygiene**
- **Food handler behaviour**
- **Protective clothing**
- **Reporting illness**



## Sources of contamination



**Rats**



**Raw meat, poultry, eggs and shellfish**



**Waste food and dirt**



**Soiled fruit and vegetables**



**Human handlers**

## Ways in which *you* can contaminate food

Smoking

Eating while

Biting

Preparing food

Fingernails

Coughing

Tasting food  
with fingers

Sores

**CAN YOU ADD TO THIS  
LIST?**

**Another way in which *you* can  
contaminate food:**

**...from your gut due to  
handling food after using  
the toilet,  
without washing your  
hands**

# Cross contamination

The transfer of harmful bacteria from dirty or uncooked food to clean or cooked food

**...such as moving from handling raw food to handling cooked food without washing your hands**



# Cross Contamination Risk!

The transfer of food poisoning bacteria  
from contaminated food to an  
uncontaminated (clean) food

**Prepare and store raw meats separately  
from cooked food**





## Other Ways of Contaminating Food

**Flies, waste food and  
uncovered food  
left out in a warm place**

**Equipment-to-food  
contamination**

**Poor storage  
in the fridge**

## Vehicles & routes of cross contamination

**Hands!**

**Chopping boards**

**Wiping cloths**

**Knives**

**Hand contact surfaces**

## Avoiding cross contamination

- Avoid handling food with your bare hands, where possible
- Use tongs, where possible
- Use colour coded equipment or thoroughly wash dual use equipment
- Consider vehicles and routes of contamination

# Personal hygiene

- Hand washing
- Protective clothing
- Jewellery
- Plasters
- Reporting sickness



## Hazardous hands are:

- **Dirty hands**
- **Hands with long nails**
- **Hands with nail varnish and false nails**
- **Hands wearing jewellery (with the exception of a plain wedding or civil partnership ring)**
- **Hands with cuts and wounds that carry germs**

# Hand Washing

Requirements for hand washing:

- Washbasins
- Hot and cold (or appropriately mixed) water
- Materials for cleaning the hands
- Materials for hygienically drying hands



## Always wash your hands:

- Before handling food
- After using the toilet
- After handling raw foods
- After cleaning
- After handling rubbish
- After blowing your nose or coughing/sneezing into your hands
- After a break
- And when they look dirty!



## Good Hygiene Practice – Protective Clothing

- You should wear a suitable head covering which prevents hair falling into food
- You must wear the protective clothing provided by your employer
- Wearing protective clothing is only effective if it is kept clean and always worn on entering the food handling areas
- Follow company rules on ‘barrier hygiene’

*Someone you know?*





## Protective Clothing should:

- **Be clean**
- **Have no external pockets**
- **Cover all of the food handler's own clothes**
- **Not be worn outside**



## Food handler bad habits!

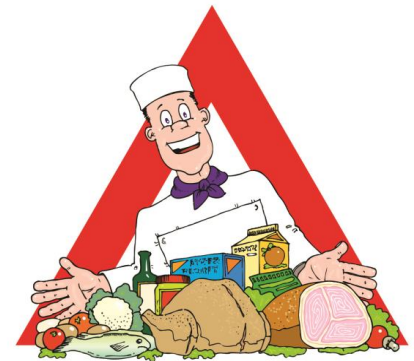
- X Coughing or sneezing over food**
- X Using fingers to taste food**
- X Blowing into bags to open them**
- X Using the same spoon to taste food**
- X Touching face, hair, ears, etc.**
- X Biting nails or fingers**
- X Chewing gum, eating or drinking in food areas**

## **Sickness conditions to *report*:**

- **Nausea, vomiting, diarrhoea, stomach pains**
- **Rash, skin conditions, skin wounds**
- **Contact with ill family members**
- **Any unusual symptoms following visits abroad**

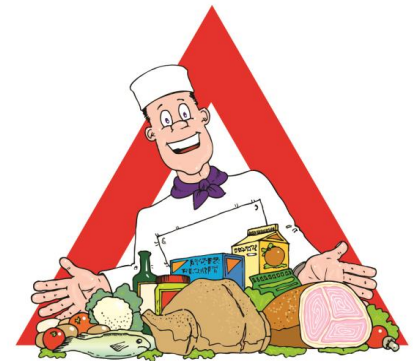
# Summary Of Session Three

- **Cross contamination routes and vehicles**
- **The prevention of cross contamination**
- **Personal hygiene**
- **Food handler behaviour**
- **Protective clothing**
- **Reporting illness**



# Session Four

- **Pest control**
- **Linear workflow**
- **Cleaning**



# Common Pests

Pharoah ants

Rodents

Birds

Cockroaches

Stored product pests

Flies

Domestic Pets

## Pests contaminate food by:

- **Urinating on food**
- **Defecating on food**
- **Rubbing against food: bacteria on body**
- **Eating food: bacteria in saliva**



# Pest Control: Three Point Strategy

- Preventing access
- Denying pests favourable conditions
- Reporting signs of pests





# Pest Control: Preventing Access

- Keep doors and windows closed
- Use fly screens on windows
- Check deliveries for pests
- Find the ways by which pests gain access then prevent entry





## Finding Pests

Always look for the following signs:

- Droppings and greasy trails
- Marks on food
- Small mounds of food debris
- Pest carcasses
- Unusual smells and noises
- Nibbled wrappings, holes in cardboard containers
- Damage to woodwork - mice and rats gnaw



# Denying Pests Favourable Conditions

- **Clean-as-you-go**
- **Keep all areas, utensils and equipment clean**
- **Cover any food that needs to ‘stand out’**
- **Do not leave food out overnight**
- **Store foods properly**
- **Regularly check all food storage areas**
- **Regularly remove rubbish**



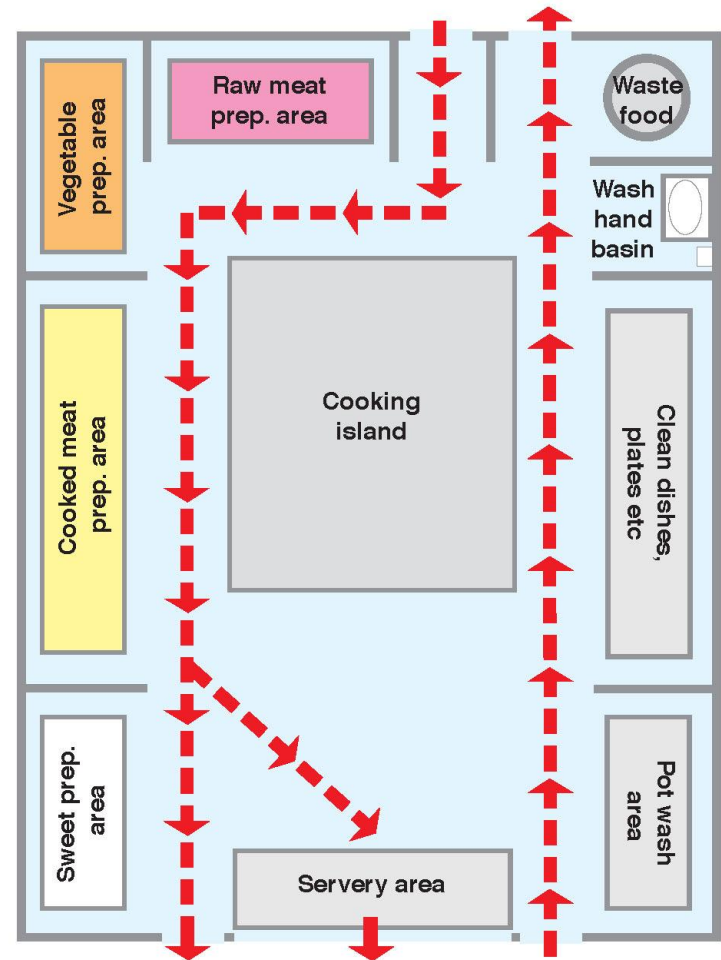
**Ensure pests cannot access food, water and harbourage**

# Protect your food!

- ✓ Store food carefully
- ✓ Remove food waste quickly
- ✓ Keep outside and inside bins covered
- ✓ Remove any sources of water
- ✓ Remove any sources of bedding – avoid paper or cardboard
- ✓ Rotate food stocks and check storage areas
- ✓ Keep equipment and appliances clean



# Example of the Layout of a Hygienic Catering Kitchen



## Linear work flow:

- food prepared in a continuous flow from its raw stage to cooked stage
- also known as 'dirty to clean'

The overall aim is to prevent contamination



## Design of food premises:

- ✓ **raw/dirty processes separated from cooked/clean**
- ✓ **facilities for personal hygiene**
- ✓ **capable of being cleaned**
- ✓ **pests denied access to food, water & harbourage**

## Dry Stores

- Storage areas should be cool, dry, clean and ventilated
- Check deliveries on arrival
- Store food off the floor
- Follow date-marks and rotate stock: First In, First Out (FIFO)
- Keep food covered
- Do not use damaged tins
- Dispose of unfit food safely
- Check storage areas regularly



## Types of Cleaning

Cleaning-out-of-place

Cleaning-in-place

Scheduled cleaning

Clean-as-you-go

## You Must Clean-As-You-Go

**You must remember that  
cleaning is a very important part  
of any food handler's work  
and is **YOUR RESPONSIBILITY****

***Working surfaces and equipment used for preparing food must be thoroughly cleaned to avoid contamination...***

# Cleaning and Disinfection Chemicals

- Detergents
- Disinfectants
- Sterilisers
- Sanitisers



**Always follow the manufacturer's instructions**

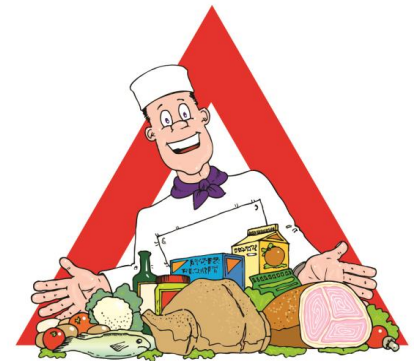
## Rules for using cleaning chemicals:

- Follow the manufacturer's instructions
- Use fresh, hot solutions
- Wear protective clothing if necessary
- Store chemicals safely
- **NEVER** mix chemicals



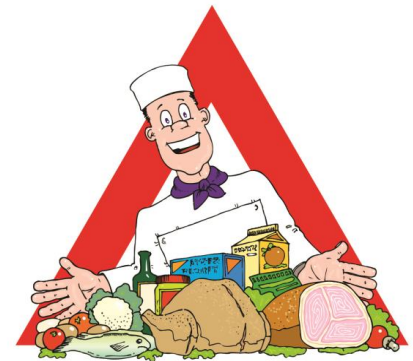
# Summary Of Session Four

- **How pests can contaminate food**
- **Protecting food from pests**
- **Discouraging pests**
- **Linear workflow**
- **Types of cleaning**
- **Cleaning chemicals**
- **Effective cleaning**



# Session Five

- **Food Safety Law**
- **Food Safety Management Systems**
- **Recording, monitoring and reporting**
- **Expiry date labelling**



# Food Safety Law

- EC Directive 853/2004 on the *Hygiene of foodstuffs*
- The Food Safety and Hygiene (England) Regulations 2013
- The Food Hygiene (Scotland) Regulations 2006
- The Food Hygiene (Wales) Regulations 2006
- The Food Hygiene (Northern Ireland) Regulations 2006

**LAW!**



# Food Safety Law

- **Production and service of safe food**
- **‘Fit for human consumption’**
- **Powers of Environmental Health Practitioners and other authorised personnel**
- **Penalties**
- **Defence of ‘Due Diligence’**

**LAW!**

# Food Premises

**A food business must not be carried on in insanitary premises**

- Large fines and even imprisonment for breaking the law

**Proprietors and owners must ensure that premises are:**

- Registered with the local authority
- Properly maintained
- Adequately supplied with clean water
- Well lit and well ventilated
- Supplied with suitable facilities for personal hygiene
- Provided with suitable facilities for washing utensils, equipment and food
- Equipped with first aid materials

**LAW!**

# Enforcing the law

- **Food Standards Agency (FSA)**
- **Local authority – Environmental Health Practitioner (EHPs)**
- **Food Hygiene Rating (‘Scores on the doors’)**
- **Trading Standards**



**Food  
Standards  
Agency**  
food.gov.uk



# Monitoring, Recording and Reporting

**Monitoring**

**Recording**

**Reporting**

# What should I monitor and record?

- ❖ Food purchases
- ❖ Stored cold food temperatures (fridges)
- ❖ Served cold food temperatures (chilled display units)
- ❖ Stored frozen food temperatures (freezers)
- ❖ Cooking temperatures
- ❖ Stored hot food temperatures (hot holding cupboards)
- ❖ Served hot food temperatures (hot display units)
- ❖ Staff training
- ❖ Staff sickness
- ❖ Cleaning schedule
- ❖ Pest control

# What should I report?

- ❖ Food at an incorrect temperature
- ❖ Faulty equipment
- ❖ Out of date food stock
- ❖ Signs of pests
- ❖ Unsafe behaviour or practices
- ❖ If I - or someone in my family - is ill

# Prevention of Contamination of Food by Food Handlers

## **Food handlers must:**

- Avoid exposing food to the risk of contamination
- Report if suffering upset stomachs, colds or coughs
- Keep cuts covered with suitable waterproof dressings
- Not smoke or spit in the food area
- Keep themselves and their protective clothing clean

**LAW!**

# Food Safety Management Systems

The law states that all food businesses must have ‘food safety management procedures’.

This should be:

- ✓ Based on the principles of a system called HACCP (Hazard Analysis and Critical Control Points)
- ✓ Designed to reduce or eliminate hazards
- ✓ Put in place permanently
- ✓ Reviewed as a result of any changes to products or procedures
- ✓ Recorded and kept up to date



# What is HACCP?

## Hazard Analysis Critical Control Points

Originally designed to protect astronauts from food poisoning

HACCP consists of documented procedures that:

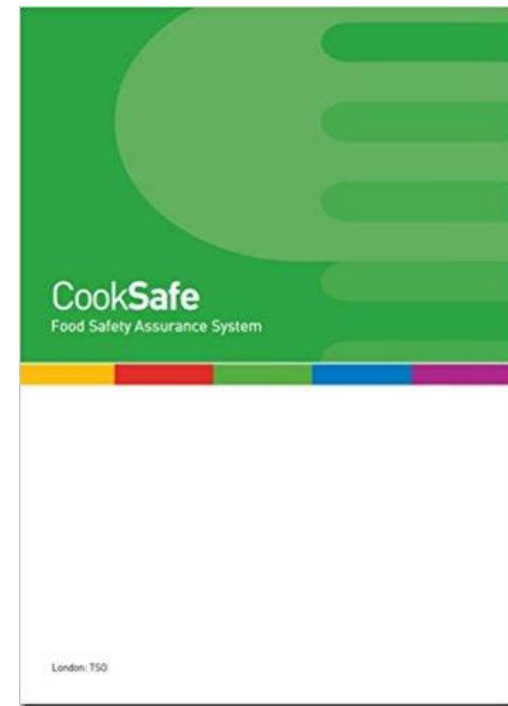
- Cover all food safety hazards
- Cover all the required controls to reduce or limit the hazards

# How does HACCP work?

1. The food business *identifies* hazards
2. The food business *analyses* these hazards
3. The food business takes *preventative actions* to reduce the risks
4. These are Control Points
5. The Control Points which are *critical* to leading to an unacceptable risk to food safety are known as Critical Control Points
6. The system relies on accurate record keeping by all involved

# Other Food Safety Management Systems?

*Safer Food Better Business* and *Cooksafe* are examples of food safety management systems based on HACCP principles



# Date of expiry marking

All pre-packed food should come with an expiry date on the label.

‘Use by’ or

‘Best before’

## **‘Use by’**

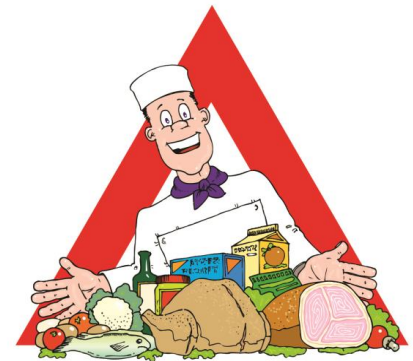
- **high risk / highly perishable foods**
- **It is a legal offence to sell or ‘Use by’ foods beyond the specified date**
- **A significant food safety risk if eaten after date expiry**

## **‘Best before’**

- **Foods with longer shelf life**
- **Applies to canned, dried or frozen foods**
- **Not an offence to sell or eat these foods beyond the specified date**
- **No food safety risk after date expiry - but affects quality**

# Summary of Session Five

- **Food Safety Law**
- **Food Safety Management Systems**
  - **HACCP / ‘Safer Food, BetterBusiness’**
- **Expiry date labelling**
  - **‘Use by’ / ‘Best Before’**



## Conclusion

**You have a legal duty to  
make sure food is safe  
and does not cause harm  
or injury to the consumer**

