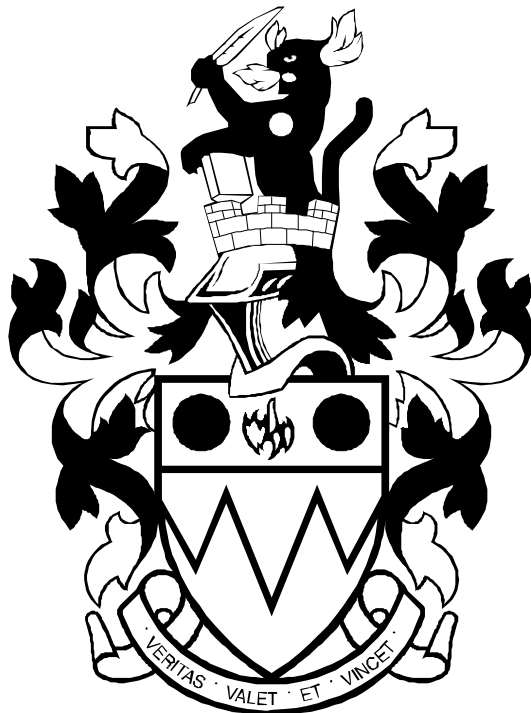


Food Safety Health & Hygiene Certificate



MacWilliam Associates
Established 1993

www.foodtrain.co.uk

FOOD SAFETY HEALTH & HYGIENE

- Module 1: Food Poisoning**
- Module 2: Bacteriology**
- Module 3: Temperature Control**
- Module 4: Personal Hygiene**
- Module 5: Delivery and Storage**
- Module 6: Cleaning and Disinfection**
- Module 7: Premises and Equipment**
- Module 8: Pest Control**
- Module 9: Allergies and Intolerances**
- Module 10: Legislation and HACCP**

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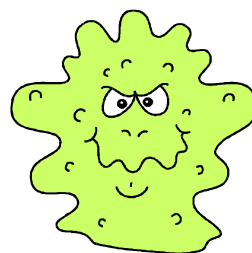
Registered training centre with the following organisations

The Chartered Institute of Environmental Health
The Royal Society for Public Health

Once complete the test paper can be downloaded at www.foodtrain.co.uk

Guidelines to using this pack are on page 30

Module 1: Food Poisoning



Food Poisoning bacteria are microscopic organisms that are found everywhere, most are harmless. However, some cause illness and these are known as Pathogenic Bacteria.

Bacteria require four things in order to grow and survive

Food	<i>Bacteria like most other living things need nutrients to survive. Food poisoning bacteria can live on a variety of foods but most prefer those that are high in protein such as meat, poultry, eggs, milk, shellfish, cooked rice, pasta and products made from them</i>
Moisture	<i>Bacteria will not multiply in dried food but once moisture is added to products such as powdered egg, milk and rice these products will provide ideal conditions for pathogenic bacteria to multiply If enough sugar or salt is added this will absorb moisture and hinder the multiplication. Bacteria will struggle to grow where there is a high acid, fat, sugar or salt content</i>
Warmth	<i>The ideal temperature for bacteria to grow is 37°C (body temperature). Below 5°C bacteria will not grow and freezing will render them dormant although bacteria will not be killed. Foods that have been thawed are susceptible to bacterial contamination Freezing will render bacteria dormant although they will survive</i>
Time	<i>In ideal conditions (37°C that's body temperature) bacteria will double in number every ten to twenty minutes</i>

How Bacteria Make you ill

Pathogenic bacteria including *Salmonella* make you ill when they have been inside your body for a while. However, some bacteria, such as *Staphylococcus aureus*, produce toxins in food even before you eat it, so you are likely to feel ill soon after eating. There are also bacteria such as *Clostridium Perfringens* that make you ill as a result of forming spores, this is a protective coating that allows bacteria to survive harsh conditions, such as cooking, that would otherwise destroy them. Bacteria require food, moisture, warmth and time to grow and will double in number every ten to twenty minutes in ideal conditions. Many cases of food poisoning are caused by preparation too far in advance

Food poisoning is an illness caused by the consumption of food containing poisonous micro-organisms or substances and there aren't many illnesses that human beings can experience that are as nasty as food poisoning

- **Stomach pain**
- **Diarrhoea;**
- **Sickness;**
- **Nausea and Fever**

Certain groups of people are more at risk including the elderly, young people, pregnant woman; nursing mothers and hospital patients. People die from food poisoning every year

Where Pathogenic Bacteria Are Found

The types of bacteria that cause food poisoning come from five main sources: -

- ⇒ *Raw foods, especially meat, poultry, eggs, shellfish and vegetables*
- ⇒ *Pests and Pets spread bacteria from fur, feathers, eggs, droppings*
- ⇒ *People from poor hygiene, cuts, boils and carriers*
- ⇒ *Air and dust carries microscopic particles of dead skin and micro organisms*
- ⇒ *Dirt and food waste carry pathogens and attract pests*

** Food and Water also carry the pathogenic bacteria and other pathogenic micro-organisms that cause food borne disease*

** Air and dust carry countless microscopic particles of dead skin, food and other debris that carry pathogenic micro-organisms which will settle on uncovered food*

There are three types of contamination

Direct Contamination Where raw food touches high risk foods

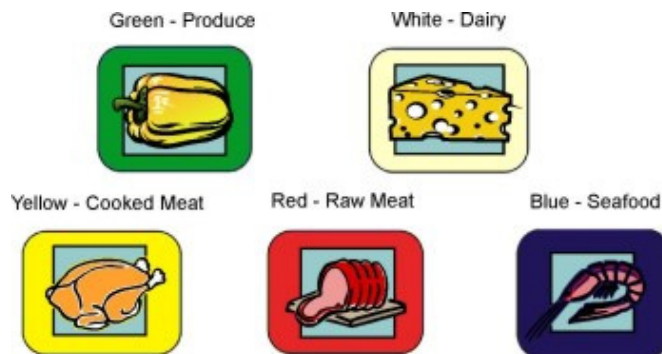
Indirect Contamination Where liquid or juices from raw foods drip onto high risk food

Cross Contamination From touching raw food then high risk or cooked food

It is particularly important to ensure that raw and high risk foods are kept apart at all times including storage, transportation, preparation, display and point of sale.

Any surface that comes into contact with raw food must be sanitized

Consider using colour coded chopping boards as detailed below



Spoilage Bacteria

*If food is not stored correctly or kept past recommended use by dates it may spoil as all food gradually goes bad through an aging process. This can be recognised from discoloration, mould, unpleasant smells and poor texture. **If in doubt chuck it out!***

*Food may be preserved by temperature control. Heat treatment, dehydration and curing are also forms of preservation * See recommended storage times*

Bacteria may be destroyed in food by thorough cooking or heat processing

Causes of Food Poisoning

- | | |
|----------------------------------|---|
| 1. Bacteria | <i>Microscopic cells that can grow on food</i> |
| 2. Viruses | <i>Smaller than Bacteria that, don't grow on food</i> |
| 3. Chemicals | <i>Insecticides, Weed Killers, Pest Bait</i> |
| 4. Metals | <i>Lead, Copper, Mercury</i> |
| 5. Poisonous Plants | <i>Toadstools, Yew Tree, Deadly Nightshade</i> |
| 6. Physical Contamination | <i>Hair; Wood; Plasters, Paperclips, Pips, String, Screws</i> |

Revision Time! Lets Re Cap on Bacteria

- 1. Which of the following does bacteria need to survive?**
 - a) Moisture
 - b) Air
 - c) Heat
 - d) recipes

- 2. What is the ideal temperature for bacteria to grow?**
 - a) 100c
 - b) 24c
 - c) 64c
 - d) 37c

- 3. In ideal conditions how often do bacteria double in number?**
 - a) 10 – 20- seconds
 - b) 10 – 20 minutes
 - c) Every day
 - d) Twice an hour

- 6. What is the purpose of a Spore?**
 - a) To multiply in water
 - b) To turn the food green
 - c) To survive high temperatures
 - d) To increase moulds

- 7. What is binary fission?**
 - a) A computer virus
 - b) A form of food borne illness
 - c) The method by which bacteria reproduce
 - d) A high risk food

- 8) What four things do bacteria need to multiply?**
 - a) Food, dryness, warmth and time
 - b) Food, moisture, cold and time
 - c) Food, moisture, warmth and peace
 - d) Food moisture, warmth and time

- 9. Which of the following is a common symptom of food poisoning?**
 - a) Sneeze
 - b) Hiccup
 - c) Cough
 - d) Nausea

- 10. Which of the following are especially vulnerable to food poisoning**
 - a) Farmers
 - b) Food Handlers
 - c) The Young and Old
 - d) Dentists

If you require help with your learning and can't find answers, have any questions or queries e mail tim@macwilliam.co.uk and we will do our best to get back to you as soon as we can

Module2: Bacteriology

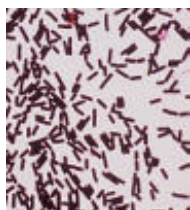
Food Poisoning Bacteria

Pathogenic Bacteria	Source and Onset Period	Typical Symptoms and Information
<i>Salmonella</i>	Cross-contamination of foods. Uncooked eggs, poultry and meats should be kept separate from produce and ready-to-eat foods. <i>Onset Time - 12-36 Hours</i>	Abdominal pain, diarrhoea, vomiting, fever Cook poultry, and eggs thoroughly before eating. Eggs should be cooked at least until the yoke is solid. Keep high standards of personal hygiene
<i>Clostridium Perfringens</i> * Spore Former	Animal and human excreta, soil, dust insects and raw meat. Can only grow in the absence of oxygen <i>Onset Time - 12-18 hours</i>	Abdominal pain, diarrhoea – Vomiting is rare Soups; Stews; Gravies and large joints of meat are vehicles of <i>Clostridium Perfringens</i> when reheated because of the spores
<i>Staphylococcus Aureus</i>	Human body especially skin nose Mouth, cuts and boils - Also raw milk <i>Onset Time - 1-6 Hours</i>	Abdominal pain or cramp, vomiting, low temperature Heat Resistant Toxin <i>Staphylococcus</i> is salt tolerant
<i>Bacillus Cereus</i> * Spore Former	Cereals (especially rice), soil and dust <i>1-5 hours or 18-16 hours</i>	Abdominal pain, some diarrhoea, vomiting. Heat Resistant Toxin Avoid re-heating rice
<i>Clostridium Botulinum (Botulism)</i> * Spore Former	Soil, raw fish and meat, vegetables, smoked fish, canned fish and corned beef, hazelnut puree. <i>Onset Time - 12-36 hours</i>	Difficulties in breathing and swallowing, paralysis. Death often follows! Toxin Destroyed by Heat

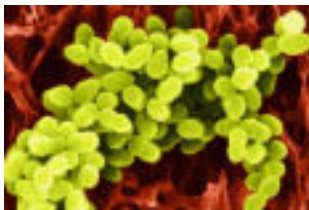
Those listed are examples only. Onset time is the period between consumption and the first symptoms of illness



Salmonella



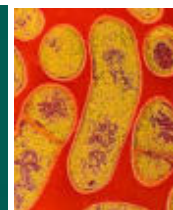
Clostridium Perfringens



Staphylococcus Aureus



Bacillus Cereus



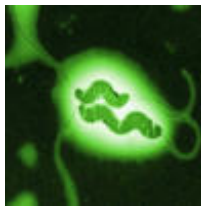
Botulism

Food Borne Diseases

Pathogenic Bacteria	Source and Onset time	Typical Symptoms and Information
<i>Campylobacter</i>	Raw poultry, raw meat, milk and animals (including pets) <i>Onset Time - 48-60 hours</i>	Diarrhoea, often bloody, abdominal pain, nausea, fever <i>Campylobacter was not recognized as a cause of human food borne illness prior to 1975. Now, the bacterial organism is known to be the most common cause of food borne illness</i>
<i>E Coli 0157</i>	Human and animal gut, sewage, water and raw meat especially minced meat <i>Onset Time - 12-24 hours +</i>	Abdominal pain, fever, diarrhoea, vomiting, kidney damage or failure <i>Never eat undercooked minced meat</i>
<i>Listeria</i>	Soft cheese, cheese made from unpasturised milk, salad, vegetables and pate. Widespread in environment. Sewage, soil and river water. Unlike other food poisoning bacteria <i>Listeria</i> can grow in the fridge! <i>Onset Time - 1-70 Days</i>	Fever, muscle aches, and gastrointestinal symptoms such as nausea or diarrhoea. If infection spreads to the nervous system, symptoms such as headache, stiff neck, loss of balance, confusion, convulsions can occur. With brain involvement, listeriosis may mimic a stroke. <i>Infected pregnant women will ordinarily experience only a mild, flu-like illness; however, infection during pregnancy can lead to miscarriage, infection of the newborn, or even stillbirth</i> There is also a possibility of Meningitis and Septicemia. <i>Listeria Can be fatal!</i>
<i>Bacillary Dysentery (Shigella)</i>	Water, milk, salad, vegetables <i>Onset Time - 1-7 Days</i>	Diarrhoea sometimes bloody, fever, abdominal pain, vomiting. <i>Shigella</i> thrives in the human intestine and is commonly spread both through food and by person-to-person contact.

Those listed are examples only. Onset time is the period between consumption and the first symptoms of illness.

Food Borne Diseases differ from food poisoning bacteria as they cannot grow on food; they need relatively few micro organisms to cause illness. The onset period is often longer.



Campylobacter



E Coli



Listeria



Bacillary Dysentery

More Re Cap on Bacteria this time we look at the actual “Bugs”

All the answers can be found in the information in this booklet

Which Bacteria Carry a Spore?

- 1.
- 2.
- 3.

Which Bacteria is often found in rice?

Which Bacteria is carried naturally on The Human Body?

What are the three main differences between Food Poisoning Bacteria and Food Borne Disease?

- 1.
- 2.
- 3.

If you require help with your learning and can't find answers, have any questions or queries e mail tutor@foodtrain.co.uk and we will do our best to get back to you as soon as we can

Module 3: Temperature Control

As bacteria and micro-organisms are an essential part of our lives. Some food and ingredients may already be contaminated when they are delivered to your work place

Food handlers must do everything possible to prevent food borne illness by controlling conditions that will encourage bacterial multiplication. By keeping food under the correct temperatures control you will destroy many micro organisms or prevent them from growing.

The Golden Rules

1. **Keep the time high risk food is kept in the danger zone (5°C – 63°C) to a minimum**
2. **Keep chilled food cold 5°C or colder**
3. **Ensure that food is the correct temperature on delivery and store immediately**
4. **A freezer should operate at -18°C to -22°C**
5. **Keep food hot at 63°C or hotter**
6. **The centre of cooked food should reach 75°C**
7. **Remember to keep records of your temperature control as part of HACCP system**

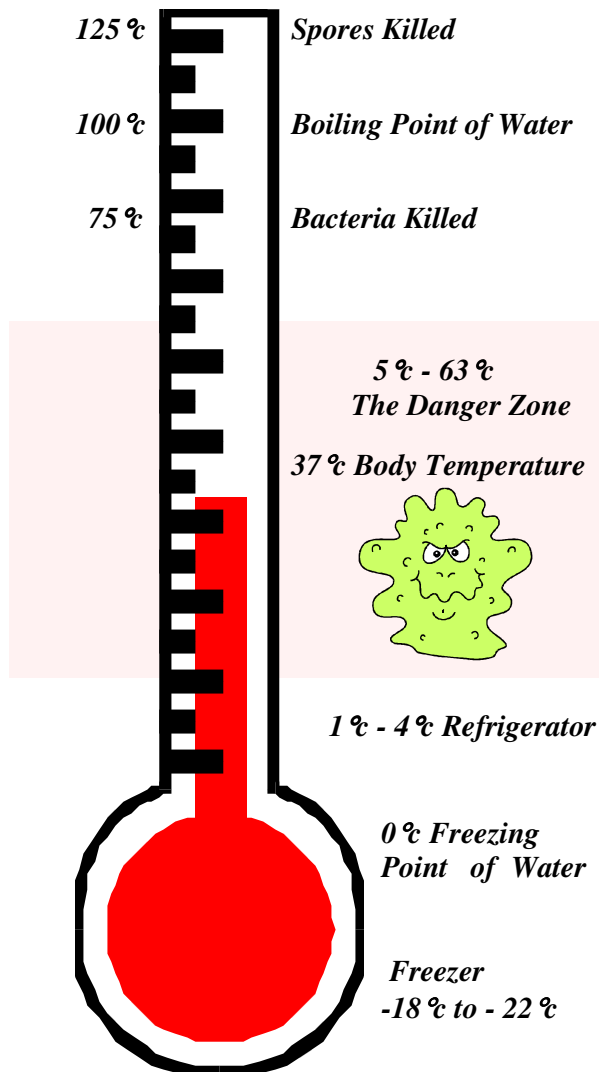
Preparation of Food

- ⇒ Always check the centre temperature of the food near the end of cooking time (with a sanitized or infra red probe) to ensure the food is cooked throughout this should read 75°C (70°C for two minutes will normally kill most bacteria)
- ⇒ Whenever practical cut large joints and poultry into smaller pieces to ensure cooking through to centre
- ⇒ Always cook stuffing separately so it does not prevent cooking
- ⇒ Stir soups, stews, gravies and casseroles to ensure there are no cool spots

Cooling of Food

- ⇒ Hot food passes through the danger zone when it cools so the temperature should be reduced as rapidly as possible
- ⇒ The easiest way to cool food is via a blast chiller as this shortens the time food spends in the danger zone. If there is no blast chiller the target should be to get the food below 5°C within 90 minutes
- ⇒ Never place hot food in the refrigerator as this will raise the temperature within the fridge and cause contamination which could contaminate other foods
- ⇒ Never use a chiller cabinet or a vending machine to reduce temperatures as these are not designed for this purpose
- ⇒ Use large shallow trays and pans for cooling food in liquid because the large surface area helps to speed up the cooling process
- ⇒ Remove cooked meat joints and whole chickens from their juices before placing them in a clean container with enough space to allow air to circulate
- ⇒ Protect all food from contamination while it is cooling
- ⇒ All foods should be properly covered or wrapped with use by dates in place

Germometer



Preventing the Growth of Food Poisoning Bacteria

Keep "High Risk" foods out of the temperature danger zone (5 °C to 63 °C) at all stages.

Inadequate temperature control is a contributory factor in about four out of every five outbreaks of food poisoning.

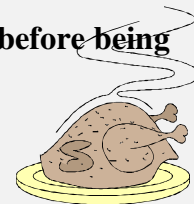
- ❖ Buy from a reputable supplier
- ❖ Keep all food, especially high risk, out of the danger zone and store correctly
- ❖ Eat within the "Use By" dates; Ensure first in first out
- ❖ Keep a high standard of personal hygiene
- ❖ If in doubt do not use
- ❖ Do not re-freeze

Food should be kept out of the refrigerator for no longer than an hour after cooking.
Keep food hot or cold

High Risk Foods!

High Risk Foods are those that require no further preparation before being eaten, such as

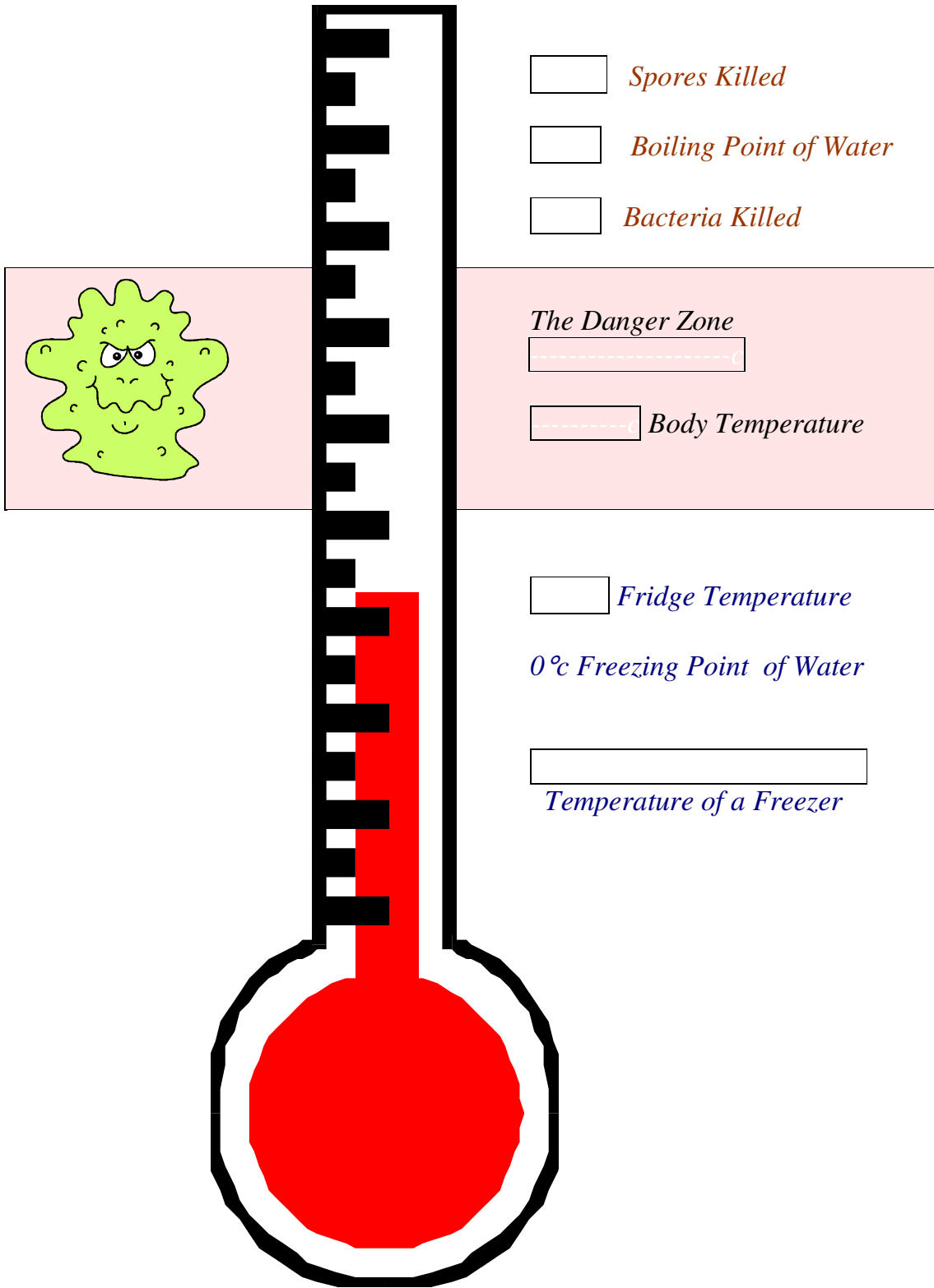
Cooked Meats and Poultry
Cooked Rice; Custards & Egg Dishes
Gravy; Fish and Shell Fish



These foods will support the growth of pathogenic bacteria

Remember! High risk foods are nearly always cooked foods, not raw, as it is assumed that raw food will be cooked before being consumed

Germometer – Can You Fill in the Blanks?



Time to Re Cap on Temperature Control

All the answers can be found in the information in this booklet

1. **The easiest way to cool bacteria is**
 - a) **Blow on it**
 - b) **Allow to cool naturally**
 - c) **Dipping in cold water**
 - d) **A blast chiller**

2. **At a core temperature of 70c what happens to most bacteria**
 - a) **They are destroyed**
 - b) **They are active**
 - c) **They get moody**
 - d) **They are dormant**

3. **Large joints and poultry should be cut into smaller portions to**
 - a) **Make them easier to carry**
 - b) **Make them easier to carve**
 - c) **Ensure they are cooked evenly throughout**
 - d) **Increase profit**

4. **Never place hot food in a refrigerator as it will**
 - a) **Taste awful**
 - b) **Cause condensation and possible contamination**
 - c) **Take up too much space**

Module 4: Personal Hygiene

Good personal hygiene is, we are told, a matter of common sense, yet it remains a major reason for the spread of bacteria and potential illness. So, is there a lack of common sense, are corners being cut or is it a matter of being reminded about the basics on a regular basis?

Illness

*If you are ill with a cold, cough, skin infection, septic cuts or those with discharge; a sore throat, nausea, or upset stomach you **must** phone in sick. If you become ill during service you **must** report to your supervisor who will send you home. You should not return to work until you have been given medical clearance.*



Washing Hands

Use comfortably hot water in a basin (used only for hand washing). Liquid, anti bacterial soap should be used (bars of soap may carry bacteria) - Don't forget your nails, wrists and between fingers. Rinse your hands before drying with a paper towel, air dryer or continuous clean roll towel.

When to Wash Your Hands

Before starting work; Between touching raw or high risk food; After handling raw food; After visiting the toilet, After handling raw eggs; Coughing or sneezing; Touching your face; Using cleaning chemicals; Eating drinking or smoking.

Avoid touching food whenever possible - 40% of the human race carry Staphylococcus Aureus naturally on their body skin, nose and ears.

Always cover cuts and spots with a blue waterproof, detectable plaster and change regularly, consider suitable protective gloves or finger stools. Ensure your uniform is clean, suitable for the job and light coloured. Do not wear nail varnish or jewellery, leave it at home as it may collect dirt and or fall into the food. Wash regularly and often avoiding strong smelling deodorant or perfume. Ensure long hair is tied back and if necessary covered. Always wear appropriate overalls

Never!

- ⇒ Cough, spit or sneeze over food
- ⇒ Touch your face or pick spots
- ⇒ Test food with fingers
- ⇒ Eat or smoke in food areas
- ⇒ Blow or breath onto utensils such as cutlery or glass



What would happen if your business displayed poor hygiene standards?

Can you give three benefits of good hygiene

- 1.
- 2.
- 3.

Module 5: Delivery and Storage

From the moment food is harvested it is a race against time to be correctly stored. Food needs constant care until it is sold or served including the time during delivery and storage. It is important to Handle and store food in the best way possible such as in the right conditions, at the correct temperature and for a safe length of time

Dealing with Food Deliveries

Delivery vehicles should be specifically designed for the purpose and kept clean. If carrying high risk or perishable foods they should be refrigerated

Deliveries must be checked as soon as they arrive and the food must be stored immediately

When accepting a delivery the food should be fresh, at the correct temperature with packaging clean and undamaged – If the food does not adhere to this criteria it should not be accepted or destroyed

Also reject the food if it

- X** *Has high risk or perishable foods delivered at a danger zone temperature*
- X** *Frozen food or partly thawed*
- X** *Packaging dirty, wet or damaged*
- X** *Cans dented, bulging, rusty or leaking*
- X** *Signs of mould or spoilage bacteria*
- X** *Food with expired date coding*

General Rules for Safe Storage

- √ *Store food immediately after delivery*
- √ *Keep high risk and perishable foods out of the danger zone*
- √ *Follow storage instruction*
- √ *Always store food off the floor, on shelves or pallets*
- √ *Use dry, clean containers*
- √ *Do not overload – allow air to circulate*
- √ *Clean up spillages immediately*
- √ *Check food before you use it*

Correct storage will help to

Prevent food borne illness

Preserve the foods quality including taste and professional

Keep within the law

Food stores should be designed to conserve foods in the best possible way

Dry Stores (ideally cool and dry at around 10°C)

For short or long storage of canned and bottled food, cereals, grains, tea, coffee and spices

Refrigerators & Cold Stores (Operating temperature of below 5°C)

For storing perishable foods for short periods of time

Freezers (Operating temperatures at -18°C to -22°C)

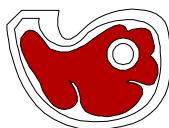
For storing high risk and perishable foods for short periods of time. Freezing does not improve the quality of food. Defrost foods at the bottom of a fridge in a sealed container away from high risk foods further information www.food.gov.uk/multimedia/pdfs/sfbbfreezing.pdf

There should also be a separate store for cleaning chemicals well away from any foods

Examples of Refrigerated Storage Times

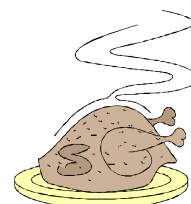
Uncooked Meats

<i>Poultry</i>	<i>2 Days</i>
<i>Joint</i>	<i>3 Days</i>
<i>Minced</i>	<i>1 Day</i>
<i>Sausages</i>	<i>3 Days</i>



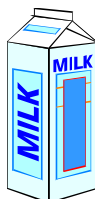
Cooked Meats

<i>Joint</i>	<i>3 Days</i>
<i>Sliced</i>	<i>2 Days</i>
<i>Pies</i>	<i>2 Days</i>
<i>Gravy</i>	<i>2 Days</i>



Dairy

<i>Milk</i>	<i>4 Days</i>
<i>Hard Cheese</i>	<i>10 Days</i>
<i>Soft Cheese</i>	<i>2 Days</i>



Fruit and Vegetables

<i>Soft Fruit</i>	<i>2 Days</i>
<i>Salad Veg</i>	<i>5 Days</i>
<i>Greens</i>	<i>5 Days</i>



Date Coding

All foods and many drinks have a date code on the packaging.

Be certain to check the Use By or Best Before Dates before serving or consuming food.

Use By

For highly perishable foods which could become a food safety risk such as meat products and ready prepared foods. "Use By" does not necessarily mean "Eat By" because cooking or freezing the food before its "Use By" date can extend its life. It is illegal to sell food after its "Use By" date (although not a point of sale offence)

Best Before

This is the date up to and including which the manufacturer or retailer expects the food to remain at peak quality, providing it has been stored correctly. Food may still be edible after the "Best Before" date, however its appearance and quality could suffer.

Have a look at the grid below and find which of the following should have a "Use by Date" and which a "Best Before"? Find the answers in your food stores

	<i>Use By</i>	<i>Best Before</i>	<i>No Code Required</i>
<i>Cooked Ham</i>			
<i>Biscuits</i>			
<i>Scotch Whiskey</i>			
<i>Fresh Eggs</i>			
<i>Bottled Beer</i>			
<i>Ice Cream</i>			
<i>Frozen Fish Fingers</i>			
<i>Fresh Minced Lamb</i>			
<i>Ready Salted Crisps</i>			
<i>Bread Rolls</i>			
<i>Cornflakes</i>			
<i>Double Cream</i>			
<i>Chocolate Bar</i>			
<i>Ice</i>			
<i>Apples</i>			
<i>Tin of Baked Beans</i>			

Now it's time for a case study – Have a look at the incidents below then answer the questions –

Case Study A - Dodgy Bakery

After consuming meat pies that were purchased from a local bakery several people were struck down with illness, later diagnosed as salmonella. Following further investigation and the testing of stool samples given by the bakery staff it was revealed that one of the employees was a symptomless excreter of *Salmonella* organisms. The employee had the habit of eating raw meat gelatine used for the filling. A mouse trapped in the bakery and specimens of other pies were proved negative. It was also found that the Butcher who supplies meat for your pies had a poor standard of hygiene.

You are the Bakery owner

- Q1. What action would you take against the employee, if any?*
- Q2. What action would you take against the Butcher, if any?*
- Q3. What can you do to stop mice re-entering your premises?*
- Q4. What action will you take with regard to your customers who were affected?*

CASE STUDY B; Anyone for Salmonella?

One hot day in June a suburban club held a Tennis tournament. A tea of cold roast chicken, salads, cakes and fruit jelly was served. Early the next day several of those who ate the food were ill with vomiting, diarrhoea and stomach pains. When investigated *Salmonella* was diagnosed.

Q1 Which food from the tea was most likely to have caused the food poisoning?

The investigation showed that the raw meat had been uncovered and stored above cooked meat with the juices dripping down on to the cooked meat. The temperature of the fridge was 11c. The chicken had been frozen then defrosted at room temperature for half an hour before cooking. The chicken was then left for two hours before refrigeration. All food was then placed on the buffet tables in a warm room an hour before being eaten.

Q2 What action should have been taken to avoid the bacteria multiplying and causing the illness? (list the mistakes and how they could be avoided)

Q3 Who could check that you or your staff are not healthy carriers of Salmonella?

Module 6: Cleaning and Disinfection

The process of cleaning ensures that something is free from dirt and contamination. This may take energy in the form of scouring, scrubbing, brushing and sweeping
Cleaning should be uppermost in the minds of food handlers in order to keep the workplace safe. Reasons for cleaning include *Producing a Pleasant and Safe Environment; Impress Customers; Reduce Contamination; Legal Requirement; Allows Disinfection; Discourage Pests; Remove Possible Foreign Matter*

Cleaning aims to –

- ✓ Protect food from microbial contamination
- ✓ Reduce opportunity for bacteria to grow
- ✓ Protect food from contamination
- ✓ Maintain a safe working environment
- ✓ Comply with legislation

Detergents

Detergents help to dissolve grease and remove dirt. With the use of some energy a detergent with hot water may kill some pathogens but generally the detergent kills no bacteria at all. Ensure equipment is disinfected after use

Disinfection

Disinfection can reduce bacteria to a safe level by the use of hot water (82c for thirty seconds); Steam; Chemical disinfectants

Heat disinfection may be mixed with chemicals to produce a dual action process
Disinfectants must be used after cleaning because disinfectant cannot remove grease and dirt

If a disinfectant is mixed with a detergent (by a chemical company) this produces a **Sanitizer** which both cleans and disinfects

Bactericides

Bactericides are often used in dish washers or spray form. Unless industry standard they will only kill some bacteria and not necessarily to a safe level

Anything that touches food should be disinfected/sanitized these include -

- Chopping boards, work surfaces, slicers, mixers, mincers, knives, tongs, containers,
- Contamination and bacterial multiplication hazards such as
- Cloths and mops
- Waste bins and their lids

Clean as You Go!

Items and areas where there are likely to be food poisoning bacteria such as chopping boards and preparation areas must be clean and disinfected frequently throughout a work period – also known as “Clean as You Go” For example you should clean and disinfect work surfaces after handling raw meat. Each individual is responsible for cleaning as they go.

Some areas such as behind a cooker or fridge may be done less frequently depending on your schedule

Cleaning Schedules

Your cleaning schedule should show the following –

Method including chemicals to be used

Protective clothing to be worn

Staff involved and Supervisor responsible for checking

Relevant to *COSHH* data sheet

The cleaning schedule may include the names of cleaning contractors who carry out specialist tasks such as moving or dismantling machinery or using particularly hazardous techniques

Wet Cleaning and Disinfection

Pre-clean Remove loose and heavy soiling, e.g. scrape plates, chopping boards or pans

Main Clean Wash with hot water and detergent

Rinse Remove any traces of detergent or food particles with clean hot water

Disinfection Use chemical disinfectant (ensure correct contact time but no longer)

Final Rinse Use clean hot water

Dry If possible leave to air dry as cloths may spread bacteria

Cleaning a Work Surface

Protect food from contamination

Remove any loose dirt

Wash surface with hot water and detergent using appropriate cloth

Rinse with hot water and clean cloth

Use chemical disinfectant (follow manufacturers guidelines)

Rinse with clean water

Air dry or use clean absorbent paper

Washing Up

Dishwashers provide an effective way to clean and disinfect items used in the preparation of food. Rinse cycles usually run at 82oc to 89oc. Always follow manufacturers guidelines making sure the machine is stacked without blocking the cleaning jets and is filled with the right amount of cleaning chemicals.

Washing by Hand

Wherever possible use two sinks side by side. Wear rubber gloves to protect you from hot water and chemicals. Remove particles of food, scrape and rinse if necessary. Wash the items, ideally in the first sink with hot water (at about 55oc) and detergent using a cloth or a brush. Replace the water if it becomes dirty or greasy. Rinse in very hot water 82oc is ideal, using a second sink if possible. Use a purpose made basket to lower the items into very hot water. Leave to air dry safe from contamination.

Safety Points

! *Always turn off electrics and unplug before cleaning*

! *Wear appropriate Personal Protective Equipment*

! *Never mix chemicals*

! *Leaving chemicals too long in disinfectant may lead to bacteria becoming resistant*

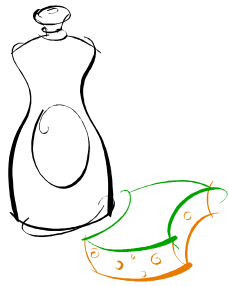
! *Store all chemicals away from food in correct containers*

! *Only start cleaning once food is safely stored away before cleaning*

! *Never use tainting chemicals in food area*

! *Clean the high risk area then the raw food area*

What Effect Do the Following Chemicals Have on Bacteria?

<i>Tick the box in the column for the answer you think is correct</i>		<i>Destroys all Bacteria</i>	<i>Reduces Bacteria to a Safe Level</i>	<i>Destroys Some Bacteria</i>	<i>Destroys No Bacteria</i>
	BACTERICIDE				
	DETERGENT				
	DISINFECTANT				
	SANITIZER				
	STERILIZER				
	WATER at 82°c for 30 seconds				

Put the following processes in the right order

Wet Cleaning and Disinfection

- Dry
- Disinfection
- Pre-clean
- Rinse
- Final Rinse
- Main Clean

True or False ?

Hot water at 82°c will reduce bacteria to a safe level

Which do you clean first?

- a) The raw food area
- b) The high risk food area
- c) It doesn't matter

True or False?

It is more hygienic to use a tea towel than to air dry

The Top Ten Reasons for Food Poisoning

*Listed below are the top ten main reasons for food poisoning they have been shuffled in no particular order – **What do you think is number one?** There is further information and access to an interactive learning module on www.foodtrain.co.uk/toptenhygiene.htm or find the answer on the previous page*

- ⇒ *Cooked food already contaminated with bacteria*
- ⇒ *Not thawing poultry sufficiently*
- ⇒ *Cross contamination*
- ⇒ *Preparation too far in advance*
- ⇒ *Cooling food too slowly before refrigeration*
- ⇒ *Poor use of leftovers*
- ⇒ *Infected food handlers*
- ⇒ *Storing food below 63°C (in the danger zone)*
- ⇒ *Undercooking*
- ⇒ *Not re-heating food to a high enough temperature*



Want to see a Food Hygiene Video?

Take a break from the paperwork and go to the web address below

www.flyonthewall.com/FlyBroadcast/FSA/BacteriaBiteBusiness



This 8-minute video has been produced by the Food Standards Agency. It demonstrates the importance of good food hygiene, focusing on the 4 Cs (Cleaning, Cooking, Chilling and Cross-contamination)

Module 7: Premises and Equipment

The design of food premises, equipment and operations ensures that food stays safe. Food Handlers play a vital role in food safety by following company rules about access to different parts of the building and processes and by looking after food areas, utensil and equipment.

All premises must be suitable for the type of food involved and the preparation and processes being carried out. There are some important principles including those detailed below –

- ⇒ Prevent contamination, such as allowing for a safe working environment with enough room for the separation of raw and cooked foods and the separation of clean and dirty processes*
- ⇒ Provide good safe waste disposal areas*
- ⇒ Ensure that staff have adequate facilities for thorough cleaning*
- ⇒ Provide facilities for personal hygiene*
- ⇒ Prevent pest infestation by proofing the building, installing door and window screens and having a pest control system*
- ⇒ Provide means for staff to control the temperature of food, including; providing adequate ventilation to stores, food preparation, rooms, refrigerators and freezers*
- ⇒ Provide chilling equipment away from direct sunlight*

The most suitable materials for the structure of a food premises are

- ⇒ Durable*
- ⇒ Impervious*
- ⇒ Smooth*
- ⇒ Light coloured so that dirt can be seen and easily cleaned*
- ⇒ Easy to clean – steel or plastic cladding is ideal*
- ⇒ Heat resistant*
- ⇒ Floors should be slip resistant*
- ⇒ Wall and ceiling surfaces should be smooth, without joints or cramps which could harbour bacteria or pests*
- ⇒ Walls, ceilings and floors should be grease resistant to prevent contamination*
- ⇒ Doors and windows should have fly screens*
- ⇒ Woodwork must be smooth and sealed without flaking paint*
- ⇒ Work surfaces should be smooth without joints or cracks and heat resistant where appropriate*

Utensils and Equipment

The best materials for food equipment and utensils are easy to clean, durable, smooth, non absorbent, durable corrosion resistant and resistant to chipping or cracking non toxic and resistant to rust; Tableware should have no chips or cracks that might harbour bacteria Use colour coded equipment such as chopping board

Plant and Equipment

Processing machinery should be designed to provide easy access for cleaning and maintenance. Large cookers, fridges and freezers should be mobile so that they can be cleaned underneath.

There should be enough refrigerator space to store raw and cooked food separately. If there is not enough fridge space to store food separately. Extra care must be take to sore food correctly. Services and Facilities; Suitable lighting and ventilation must be provided plus hot water and basins. Basins for hand washing must be provided in the toilet area and at least one hand wash basin in every food preparation area. These basins should not be used as or near to washing up and food washing sinks.

Requirements for Refuse Storage

Food waste and other rubbish such as food packaging can be a source of bacterial and physical contamination and can attract pests. If not disposed of properly. Food premises require inside and outside bins

Inside bins near food preparation areas

The inside bins should be within the food handlers easy reach but they must not be so close as to create a risk of contamination. Lids must be tight and well fitting and have a polythene disposable sack. Open bins allow bacteria to flow freely and attract pests. They must be emptied and cleaned regularly. By using two liners (double bagging) the likelihood of attracting pests is reduced

Foot operated bins are best as the operator does not have to contact the bin by hand

Always leave bin lids closed unless throwing something away (of course!)

A bin in constant use, such as one used for the waste from plates before they go into the dishwasher, may be used without a lid provided that it is emptied as soon as the task is finished. Remove rubbish throughout the day as soon as each bag becomes full. Tie the bag securely, take it outside and put it into a dustbin with tight fitting lids or waste skip with a lid

Never let a bin overflow or leave rubbish inside a food premises overnight as it is likely to attract pests. Keep bins, their lids and areas around them clean and tidy at all times and always empty and clean bins at the end of the working period (away from food)

Always wash your hands after dealing with refuse and waste food

Outside bins in special refuse areas - Refuse Areas

Keep bins and refuse areas clean. Always put the rubbish bins in the bins, making sure that the bin lids are on securely to protect from scavengers such as rats, birds, cats and foxes.

If your bins are often overflowing you may need additional bins or extra collections

Where possible recycle refuse

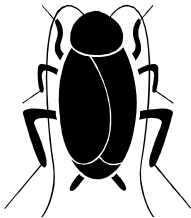
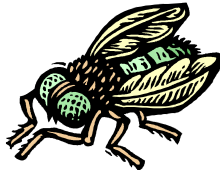



Module 8:

Pest Control

A food pest is any creature that lives on, or in human food, causing damage or contamination or both. Pests are a serious source of food contamination.

Pests are attracted to places where food is stored, prepared, sold, served or thrown away and to where there is warmth and shelter. They can enter buildings through open windows and doors, or through the tiniest cracks in walls and around windows and pipes.

Food Pest	Contaminant	Treatment	Gallery
<p>Cockroaches There are two sorts of cockroach The Oriental Cockroach which is dark brown to black. They like areas of high temperatures such as a kitchen 20-30mm long</p> <p>The German Cockroach is Brown and found in warm dark places 12-15mm Long</p> <p>Sightings are rare as Cockroaches don't like the light</p>	<p>Bacterial Contaminants</p> <p>Cockroaches live in sewers and feed off the rotting carcasses of other insects and their excrement</p>	<p>If Cockroaches are sighted you will need professional help to rid yourself from this pest.</p> <p>Fumigation is normally the most effective way</p>	
<p>Flies</p> <p>When a fly lands on your food it may have already visited animal excrement, raw food, dirt or all three; they will then vomit on your food and regurgitate a number of times. Probably go to the toilet (the female may lay a few eggs) and then when they fly off it's your turn</p>	<p>Dead bodies and larvae</p> <p>Bacterial contamination</p>	<p>Erect fly screens and suitable electronic fly killer</p> <p>Keep rubbish covered in a suitable closed bin</p>	
<p>Rodents Rats and Mice</p> <p>Rats carry harmful bacteria including Weil's disease which is carried in their urine. This is fatal in a significant number of cases</p>	<p>Droppings</p> <p>Damage from gnawing</p> <p>Spillage</p> <p>Rodent runs and smears</p> <p>Visual sightings</p> <p>noise and smell</p>	<p>Keep everything clean</p> <p>Deny the pests access; Place food in rodent proof containers</p>	

Further details on pests and pest control can be found at www.the-piedpiper.co.uk

Problems from Pest Infestations

- Damage to the business' reputation and profit.
- Food contamination and wastage.
- Damage to buildings, equipment and electrical cables, causing fire and other safety hazards.
- Non-compliance with the law:
- The spread of food poisoning and food-borne disease.

Pets

Dogs, cats, hamsters and other pets can contaminate food if they are allowed into food areas. Food poisoning may occur where someone has contaminated food after handling pets.

Unhealthy Habits of Animals

Many pests inhabit unhealthy places where they pick up pathogenic bacteria on their bodies and legs. For example rats live in sewers, while flies live on food found on rubbish tips, dustbins, drains and animal droppings

Some pests also have pathogenic bacteria living inside their bodies and these can be spread to food from their droppings or through their saliva as they eat.

Contamination may also be spread via food poisoning bacteria, pests can spread food-borne diseases such as dysentery and other illness such as Weil's disease otherwise known as Rat borne Leptospirosis (from water contaminated by rat urine).

Pests also cause physical contamination with their droppings, eggs, fur, nesting material, mites, parasites and their own dead bodies

Signs of Infestation

- Dead bodies - mainly insects, rodents and birds.
- Droppings.
- Unusual smells.
- Scratching pecking or gnawing sounds.
Gnawed pipes, cables and fittings.
- Torn or damaged sacks or packaging, sometimes surrounded by spilled food.
- Eggs, larvae, pupae, feathers, fur, nesting material. Paw or claw prints.
- Smears and rat runs (rodents).

It is important to remember that food premises are attractive to pests because they contain everything most pests need to survive, such as:

- **Food** - in storage, under preparation or as waste.
- **Moisture** - as condensation from cooking activities, from dripping taps or from stored liquids.
- **Warmth** - from heating systems or from processing activities.
Shelter for sleeping or nesting including any undisturbed areas, such as under a refrigerator that has not been regularly moved for cleaning or the back of a store that has not been checked often enough.

These procedures may also help reduce problems from pests

Always check deliveries for pests.

Erect fly screens and insect killers

Proofing the area

Cover foods and deny pests access

Keep everything clean and tidy

Employ a specialist pest control company

Deny pests access

Report any signs of pests immediately

Revision Time Lets Re Cap on Pests

- 1. What is the best way to keep flies out of a kitchen?**
 - a) Signs
 - b) Fly Spray
 - c) Fly Screens
 - d) Fly Paper

- 2. What is the best way to keep vermin away from the premises?**
 - a) Proof the area and keep everything clean
 - b) Putting poison down
 - c) Keeping a cat
 - d) Regular dusting

- 3. What is the name of the disease that many rats carry in their urine?**

- 4. True or False – Cockroaches prefer the dark to the light?**

- 5. Name one control measure that management may put in place in relation to pest control**

If you require help with your learning and can't find answers, have any questions or queries e mail tim@macwilliam.co.uk and we will do our best to get back to you as soon as we can

Module 9: Allergies and Intolerances

Food Allergy

With food allergy the body sees an otherwise harmless food as unsafe and activates the body's defence mechanism or immune system.

It is this activation of the immune system that causes the symptoms of food allergy.

There is a wide range of symptoms for food allergies including those similar to the symptoms of food poisoning. Other allergy symptoms include rashes, swelling of the throat and mouth, difficulty in breathing, collapse and unconsciousness.

Allergic reactions can occur within minutes of eating just a small amount of a food or ingredient and may be life-threatening.

Among the foods that have been linked to illness are

- ⇒ *Nuts and seeds and products made from them, such as*
- ⇒ *Salad dressings*
- ⇒ *Cakes*

The following food may also be associated with allergy or intolerance –

- ⇒ *Shellfish*
- ⇒ *Food colourants and*
- ⇒ *Flavour enhancers*
- ⇒ *Milk*
- ⇒ *Dairy products*
- ⇒ *Chocolate*
- ⇒ *Fruit*
- ⇒ *Flour*

Food Intolerance

With food intolerance, the body reacts whenever a particular food or food ingredient is eaten, but the body's immune system is not involved.

Food intolerance can be caused by a number of things, such as a defect in how the body processes food. Certain types of food intolerance are linked to specific conditions.

For example, lactose intolerance is when the body is not able to digest lactose (milk sugar) because of low levels of the enzyme needed for this (lactase).

Lactose intolerance causes abdominal symptoms such as bloating and diarrhoea, and is more common in older children and adults.

Most people who have a food allergy or intolerance know what to avoid, but they often need help in identifying exactly which ingredients have been used.

Where appropriate suitable information should be detailed on a menu notifying customers that foods may have traces of nuts

Further information can be found at www.foodallergy.org and www.food.gov.uk

Module 10: Legislation

Food hygiene legislation affects all food businesses, throughout the food process from the farm to the fork

In this section you will find general information regarding food hygiene legislation, which are relevant to all food businesses. You can also find information for different sectors from the links below. You can also find more information

<http://www.food.gov.uk/foodindustry/regulation/hygleg/>

Controlling Food Safety

The laws relating to food safety are designed to protect consumers from harm and to help businesses to comply with the law.

Food Handlers must -

- ⇒ Keep themselves clean
- ⇒ Keep workplaces clean
- ⇒ Confirm to workplace rules
- ⇒ Wear suitable protective clothing
- ⇒ Inform employer if you are unwell
- ⇒ Do not sell food that appears unfit for human consumption or past use by date

Every person that deals with food as part of his or her work has a legal responsibility to safeguard food.

Failure to comply can lead to fines, imprisonment, a criminal record, paying civil compensation and the closure of the business

The Food Safety Act 1990

If the premises are unsatisfactory an **Improvement Notice** may be issued specifying defects, measures to be taken to comply with the law and time period for the work to be done.

If a premises are an Imminent Health Risk then an **Emergency Prohibition Notice** may be issued requiring -

- ⇒ Closure of all or part of the premises
- ⇒ Prohibition of a process
- ⇒ Prohibition of use of equipment.

In addition an Environmental Health Officer (EHO) may enter a premises at any reasonable time, take samples and offer advice. An individual as well as a business may be prosecuted resulting in fines or imprisonment.

Food premises must be:

- ⇒ Registered with the local authority and Properly maintained
- ⇒ Adequately supplied with clean water
- ⇒ Well lit and well ventilated
- ⇒ Provided with suitable facilities for washing utensils, equipment and food
- ⇒ Supplied with suitable facilities for personal hygiene and first-aid materials
- ⇒ Overalls should be clean, light coloured and washable (or disposable)

Management of Food Safety

All food businesses are required to have a system of food safety management

The "Safer Food, Better Business" pack is available from the Food Standards Agency and may be ordered by e mailing foodstandards@ecgroup.co.uk This is normally suitable for smaller organisations, you can of course draw-up your own system. The important thing is that it is written, it works effectively and you have records of your checks.

There are five sections -

- ⇒ **Cross Contamination**
- ⇒ **Cooking**
- ⇒ **Chilling**
- ⇒ **Cleaning**
- ⇒ **Management**

If the checks reveal problems steps must be taken and records kept of the problems and any action taken – Ensure everyone is suitably trained in your system

Food Management System

Hazard Analysis and Critical Control Point

From 1 January 2006 all food businesses were required to have a written system of food safety management. The law also requires full implementation of the system and businesses need to keep records of their checks.

The “Safer Food, Better Business” pack is available from the Food Standards Agency foodstandards@ecgroup.co.uk and you can of course draw-up your own system. The important thing is that it is written, it works effectively and you have records of your checks.

HACCP is a written system that involves:-

- *Knowing what can make food unsafe (hazard analysis),*
- *Making decisions on how food can be produced and sold safely,*
- *Putting these into practice (controlling hazards at critical points in the process),*
- *Carrying out checks to make sure it all works well.*

If the checks reveal problems you must take action, and keep records of the problems and the action taken.

HACCP follows the principal of:

- *Assessing the potential food safety hazards in the work activities. Identifying the points where hazards occur and deciding which are critical for food safety, (these are known as ‘critical control points’)*
- *Implementing appropriate controls for eliminating or reducing hazards.*
- *Using a monitoring system to ensure the controls are effective. Checking that safety measures used are working properly. Establishing procedures to correct any problems.*
- *Reviewing the system from time to time and whenever operations change.*

There are eight main stages of HACCP –

- 1) *Purchase, Receipt/Delivery or Collection*
- 2) *Storage*
- 3) *Preparation*
- 4) *Cooking*
- 5) *Hot Holding*
- 6) *Cooling*
- 7) *Storage*
- 8) *Reheating*
- 9) *Service*

Food should be safe throughout the food chain from the “Farm to the Fork”

The Food Hygiene (England) Regulations 2006 provide the framework for the EU legislation to be enforced in England. There are similar regulations in Wales, Scotland and Northern Ireland.

For further information on implementing a HACCP system at your premises or to arrange training tim@macwilliam.co.uk

Guidelines to this Training Pack

This pack is designed for you to work through at your own pace as fast or as slowly as you like. You can also research from a number of sources including the links given within this document

When it is complete and you feel confident you will be ready to take the test this can be downloaded at www.foodtrain.co.uk You can send the completed exam papers to

MacWilliam Associates 16 Holly Court Wymondham Norfolk NR18 0HG or fax to 01953 603445. You may also scan the papers and send in an e mail to tim@macwilliam.co.uk

Unless you have already paid, please enclose a cheque made payable to MacWilliam Associates for £15.00 per person you can also pay via your credit card through Paypal (www.paypal.co.uk) to tim@macwilliam.co.uk for a certificate

If you need help at any time just send an e mail to tim@macwilliam.co.uk

Further information may be found at

www.food.gov.uk

www.foodtrain.co.uk

www.hse.gov.uk

www.the-piedpiper.co.uk

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