

# Food Safety For Food Workers

**NZQA UNIT 167**

**Practice Food Safety Methods  
In A Food Business**

## Study Resource

**Name :** \_\_\_\_\_



**INNOVATIVE  
HOSPITALITY**

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# INNOVATIVE HOSPITALITY

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At the back of this Study Resource you will find our :

- Complaints and Appeals Procedures
- Behaviour Guidelines
- Disciplinary Procedures

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Assessment Appeals Procedure

Complaints Procedure

Behaviour Guidelines

Disciplinary Procedures





# UNIT 167

## Practice Food Safety Methods in a Food Business

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### Course Aim

To give you the knowledge needed to follow safe procedures and practices for handling, storing, processing, transporting and preparing food; and to identify causes of food spoilage, food contamination and food poisoning; and to apply preventative methods.

### Course Objectives

Upon completion of this course you will be able to :

- Maintain the required personal hygiene when working with food
- Demonstrate clean and safe ways of handling food
- Demonstrate hygiene practices which ensure safe food
- Demonstrate a knowledge of cleaning and cleaning materials
- Demonstrate a knowledge of the control measures which prevent food spoilage, food contamination and food poisoning
- Demonstrate knowledge of the areas of risk in food handling
- Measure, record and act on the temperature of high risk foods

### The Assessment

- The ServiceIQ, who are the Industry Training Organisation for the hospitality industry, set the Assessment (Test) for this Unit. There is a written assessment to complete which confirms your understanding of food safety practices.
- Observation of your personal hygiene and work practices by your Supervisor is also a component of this Unit Standard.

# What Is Food Safety ?

**Food safety means producing food items which are clean, safe and of good quality**

## Why is this important ?

Because of the increase in convenience and prepared food in the last 50 years it has become more important for all people involved in food handling situations to be aware of the dangers of cross contamination and food poisoning.

When you are preparing food items for a few people like your family, only a small number of people may be affected if anything goes wrong. However when you are in the situation of preparing for many people, such as a restaurant or food processing plant, this could mean hundreds of people could be affected so good food hygiene practices are vital.

In the last five years there has been a dramatic increase in the reported cases of food poisoning and the health department has become concerned enough to insist on an education programme for food workers.

**If you don't produce a clean, safe quality product you won't be able to keep your customers which will in a short time threaten your employment.**



## Food Safety and Legislation

There are 3 main Acts and Regulations that relate to cross-contamination. They are designed for the safety of both staff and customers and should be strictly adhered to at all times.

The Legislation	What it covers
Food Hygiene 1974	Provides information on personal grooming and hygiene for all food handlers
Food Act 1981 (Note 1)	Provides information about the safe service of food
Health and Safety in Employment Act	Provides information about safe working conditions and the responsibilities of employers and employees

## Who enforces New Zealand's food laws?

Food Safety Officers (FSOs), employed by the Ministry for Primary Industries, and Environmental Health Officers (EHOs) employed by local councils, are the frontline of New Zealand's food safety system. They help businesses ensure they sell and serve safe and suitable food, and along with Public Health Officers they investigate any situation where food safety may have been compromised. New Zealand's food legislation applies to all food for sale in New Zealand and food that is exported.

**Note 1** - At more than 30 years old the current Food Act 1981 is outdated. The kind of food that is available, the way we buy it, how it's produced and how it's sold has all changed significantly since 1981. A new Food Bill is before Parliament to establish a flexible, risk-based food safety system that can meet the needs of consumers as well the diversity of businesses operating in the food industry, from coffee carts and catering companies to restaurants and large industrial food manufacturers.



# Food Borne Illness (Food Poisoning)

The number of notified cases of food poisoning in New Zealand has risen in recent years and is of major concern to health authorities. Many health professionals believe that the notified food poisoning outbreaks may only be one-tenth or less of the true number of cases and that many mild illnesses never get reported and are often written off or blamed on other things.

It is estimated that the true figures for food poisoning in N.Z. last year was in fact as high as 200,000 cases.

The audit office estimates that the cost to the country could be as high as \$60-\$100 million a year in loss of work time and revenue.

Food poisoning can cause much personal suffering. All food workers, whether working in commercial food premises or the home, must be aware of their obligations to others when preparing or serving food.

## What are the most common causes of food problems?

A recent survey of all reported food poisoning cases gives us the main causes of problems;

- Poor personal hygiene of food workers
- Current or recent illness of food workers
- Inadequate temperature control of food
- Unsafe food being used
- Bad handling practices by food workers
- Food being prepared in unsafe food premises
- The presence of insects and rodents in food preparation areas



## EXERCISE 1

Has anyone you know been affected by food poisoning ?  
If so, what food was involved and what were their symptoms?

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# Common Symptoms of Food Poisoning

**Definition:** An illness caused by eating contaminated food



## Food Poisoning

An illness which can start between 1 – 48 hours after eating contaminated food.

Symptoms usually include vomiting or diarrhoea - sometimes both.

Food poisoning occurs when bacteria have been allowed to grow and multiply in the food.



Common symptoms of food poisoning are :

- Diarrhoea
- Vomiting
- Headaches
- Body fever
- Stomach cramps

Some foods carry a higher risk of allowing bacteria to grow; these foods are called high risk foods.

## High Risk Foods

Food poisoning bacteria prefer to live and grow in foods that are high in protein and moisture. These are foods such as **meat, stocks, gravies, eggs, poultry, dairy products, as well as any products made from these foods.**

When preparing high risk foods, you must ensure that:

- they are not contaminated, especially if they are eaten with no further cooking, or only lightly cooked and;
- they are not left at room temperature for any longer than necessary. Keep hot food **above** 60°C and cold foods **below** 5°C.

**When it doubt throw it out**

## Customer Complaints

Investigating complaints made by your customers will help identify and prevent further problems.

If someone suspects that they have food poisoning:

1. Advise them to see their doctor if they have any concerns regarding their health.
2. Contact the local public health service as soon as possible to advise them of the suspected food borne illness and seek further advice.
3. Keep a written record of the complaint details and your actions.

If a complaint is traced to something that has happened at the business, take steps to ensure it doesn't happen again, such as staff training, repairing or replacing equipment, reviewing or adding item to the maintenance schedule, changing suppliers.

## EXERCISE 2

List the foods you work with that would be considered 'high risk' foods.

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# How Do We Produce Safe Food ?

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There are **4** basic steps to producing safe food:



## Step 1

Start with a product that is safe. A safe product is one that has no foreign bodies in or on it and is food which will not make people sick.

All food will eventually spoil and become unsuitable to eat. Many of the micro-organisms and enzymes that are in the food and everywhere around us attach

themselves to the food and start to break it down. This is a very natural process.

We must start with food that has not gone past its safe point and food that is not contaminated naturally with harmful bacteria or a natural poison.



## Step 2

Ensure the food worker who processes the food is safe and does not pass anything onto the food that will make it unsafe.

The biggest danger to most food comes from our bodies which are a very good

breeding ground for most bacteria and viruses. If these micro-organisms can move from us onto food and are given a chance to grow they can cause food poisoning. This process is called **cross contamination**.



## Step 3

The equipment we use to process or prepare food must be safe and free from excess bacteria. It must be clean and free from bacteria before we start. Tongs and gloves can contaminate food.

The equipment must also not contaminate the food with chemicals, oils or such like, and must not be responsible for cross contamination of food from one source to another.



## Step 4

The environment in which food is prepared, processed and stored must be clean and free from rubbish, pests and excess bacteria that could contaminate the food.

The food must also be stored at a temperature that does not encourage the growth of bacteria.

# What Are Bacteria ?

Bacteria are very small living things which we cannot see with the human eye. Approximately one million bacteria clumped together would not even cover a pin head.

They are found almost everywhere; in the air, on people's noses, hair, in our intestinal tract, in our food, and on kitchen equipment. Some can move by themselves but most cannot and need to be transferred by direct contact.

Bacteria are the most important group of micro-organisms because they have both harmful and beneficial effects.

## DID YOU KNOW....

Food poisoning bacteria will die within two minutes at 75°C to 80°C

Bacteria will not grow/multiply when placed at -18°C

Bacteria will grow slowly in the refrigerator at 14°C to 5°C

## Other Food Poisoning Agents

### Micro-Organisms

#### Yeasts

Single celled organisms but much larger than bacteria. Commonly used in the manufacture of foods such as marmite, beer and bread. Some are responsible for food spoilage by both their physical presence - often producing a slimy or cloudy appearance, and by creating by-products through fermentation.

#### Moulds

Multi-cellular and generate food spoilage via rot, discolouration and the production of off flavours. Some may grow large enough to be seen. They are widely spread in nature and produce spores. They may produce toxins.



### Chemical Contamination

Food products, equipment and preparation areas can all be contaminated by chemical substances that are harmful to humans.

Most reported chemical contamination is associated with substances such as food additives, preservatives, pesticides, toxic metals and toxic cleaning products.

Symptoms of chemical food poisoning can occur within seconds of ingesting the chemical. Initial symptoms include vomiting and diarrhoea.

What are the possible areas and products in your work environment where bacteria could be found?  
Make a list; one has been done for you.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

**Food items can smell, look and taste good  
but still cause  
FOOD POISONING**

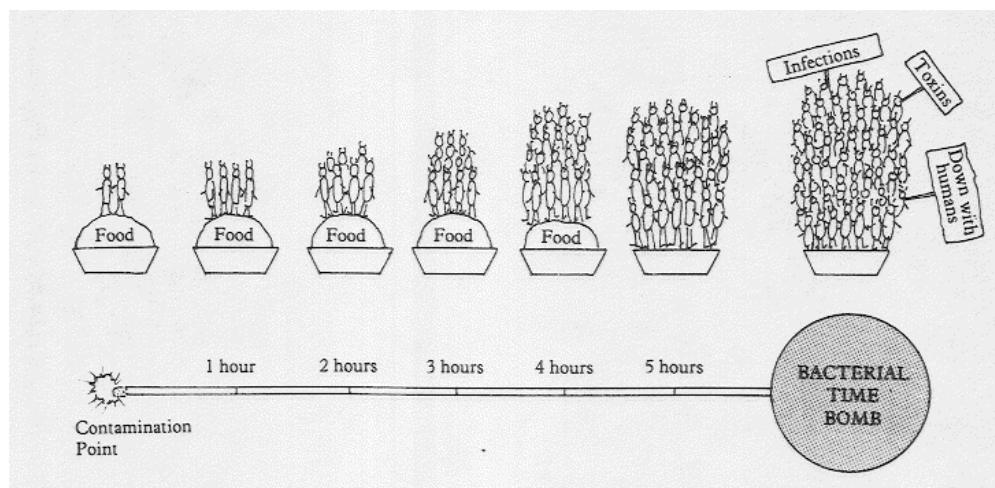
# What Do Bacteria Need To Grow ?

Quite frequently we eat food which contains a few poisoning bacteria but small numbers of most types of bacteria do not cause illness. Millions of bacteria must be present before a healthy adult will feel any harmful effects. A child under one year, an elderly person, or a sick person would be affected by the presence of far fewer bacteria than a healthy adult.

## Time

Bacterial growth relates to the increase in the number of bacteria, not in their size. **Under ideal conditions bacteria reproduce by doubling every 20 minutes.** The cell develops to its full size then divides into two. These then develop and divide into 4 then 8, 16, 32, 64, and so on. **A single cell bacterium can turn into 2,097,152 in 7 hours.**

In order to develop and divide at such a rapid rate bacteria need ideal conditions. If these ideal conditions do not exist they can still multiply but at a slower rate.



## Warmth

The bacteria that cause food poisoning prefer to live at the temperature of the human body (37° C) and it is at this temperature that they will grow and multiply at the fastest rate.

As the temperature increases from 37 to 63° C the rate of growth slows down, and at temperatures **above 63° C most bacteria are generally killed.** The length of time at this temperature required to kill off all the bacteria, will depend on the type of bacteria. If the temperature is decreased from 37 to 4° C the bacteria continue to multiply but the rate of multiplication will slow down as the temperature decreases.

**Bacteria are not killed by low temperatures, they become dormant.** This means that they stay alive but stop growing and multiplying. Bacteria remain dormant in frozen food (-18° C) but as soon as the food is thawed they will start to grow and multiply.

## Food

Like all living things bacteria need food. They will live and multiply in many foodstuffs, particularly those which are high in protein and moisture. The foods we eat most frequently that support bacterial growth are:

*Meats, poultry, stocks and gravies, milk, and egg products.*

Although bacteria thrive on food enjoyed by humans, a crumb lodged in a crack on a table, or a smear of blood on a unwashed chopping board is sufficient food for thousands of bacteria.

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## Moisture

Bacteria require moisture for growth. Most foods contain sufficient water for bacterial growth, but dehydrated products such as milk powder and dried soup powder will not allow the growth of bacteria.

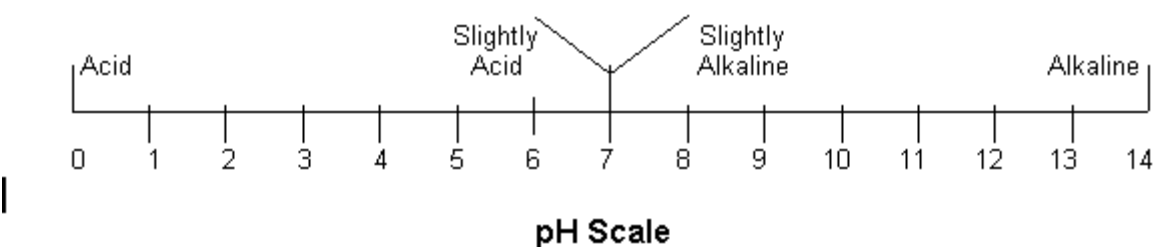
In these dried products bacteria may be present but they will remain dormant until moisture is added.

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## p.H. (hydrogen potential)

p.H. is the measurement of acidity or alkalinity. When the pH of a food is less than 7 it is an acid, when it is more than 7 it is alkaline.

Bacteria grow best when the pH is neutral (7).



### Examples of acid, neutral and alkaline foods

#### Acid

Citrus juices  
Vinegar  
Mustard

#### Neutral

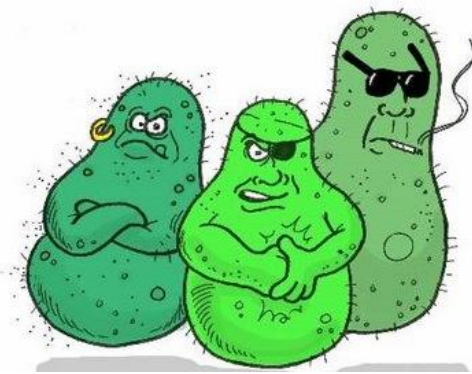
Milk  
Chicken  
Beef, fish

#### Alkaline

Egg white  
Soda crackers  
Bicarbonate of Soda  
(Baking Soda)

## Oxygen or No Oxygen

- ◆ Some bacteria need oxygen to grow and some do not.
- ◆ Vacuum packed and bottled food has the air removed, but this does not always make them safe. Always keep vacuum packed meat in the refrigerator.
- ◆ All micro-organisms, apart from viruses, respire; that is, they get energy by breaking down chemicals, usually sugars.



**AEROBIC** micro-organisms use oxygen (usually from the air) to produce energy for life and growth.

**ANAEROBIC** micro-organisms produce the energy they require for growth only in the absence of oxygen.

**FACULTATIVE** bacteria can reproduce with or without oxygen.



## EXERCISE 4

What environmental conditions can you control in your workplace that will prevent bacterial growth?

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## Common Types of Bacteria

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The bacteria most often responsible for food poisoning are



- **Campylobacter**
- **Salmonella**
- **Staphylococci**
- **Clostridium Perfringens**
- **Listeria**

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### **DID YOU KNOW....**

**Some bacteria produce spores**

**Some bacteria produce toxins**

The problem for the food industry is that **neither**  
spores nor toxins **are killed by normal cooking**

# The Source of Bacteria

The "**Source**" is the starting place of the infection.

- 1) All raw foods should be treated as sources of pathogens – therefore....

**keep cooked and raw food separate at all times, which prevents cross-contamination.**

- 2) Food workers carry bacteria on their bodies, particularly when they are ill or have just recovered from illness. They can go on excreting for days after they recover – therefore....

**food workers who have been ill or are suffering from illness should not work on food premises. Food workers who have upset stomachs or have been vomiting must not work with food under any circumstances.**

- 3) Certain bacteria that cause food poisoning may live normally in our intestines; you may be a healthy worker and still carry these pathogenic bacteria on your hands – therefore....

**it is important to wash your hands after going to the toilet.**

- 4) We also can carry food poisoning bacteria on our skin, nose and nasal passages – therefore....

**food workers should be careful not to touch these areas when preparing and serving food and they must cover cuts and skin infections with a water-proof dressing.**

- 5) Domestic and wild animals, birds and insects all carry pathogenic bacteria in their intestines and on their bodies. Cockroaches and flies carry filth on their legs and bodies from other sources of pathogens – therefore....

**Domestic and wild animals, birds and insects should not be allowed in areas where food is prepared, stored, served or eaten and food workers should wash their hands if they come into contact with them.**

*(See also Pest Control section later in this Resource).*

**If bacteria or viruses are present on our bodies they can get onto the food and cause  
FOOD POISONING**



## DID YOU KNOW....

**Some people can be "carriers" of food poisoning bacteria and viruses.**

**This means they show no signs of having the illness but it is in their bodies and they can pass it onto others.**

# How Bacteria are Transported (Cross-Contamination)



## Cross-Contamination

This is the **transportation of bacteria from one place to another either by direct contact or via a third party such as hands.**

The main food safety aim of all food workers is to break the chain of bacteria spread, therefore it is important to remember that bacteria cannot move by themselves, they must be transported by a third party and hitchhike from one place to another. ***Our hands are the greatest transporters of bacteria to food and surfaces.***

Contaminated or uncooked foods can pass harmful micro organisms onto safe foods through direct contact. **When raw food items touch or drip onto cooked foods or when food contact surfaces are not kept clean and sanitised, cross contamination is likely to take place.**

Foods that are not cooked before serving or foods that have cooked and raw ingredients mixed together are frequent offenders.

Vegetables and fruits carry bacteria that grow in soil. If you use a cutting board to cut up fruit or vegetables you must clean and sanitise the board and knife before you touch other cooked foods.

Another example of possible cross contamination is when you trim raw chicken on a cutting board,; fry the chicken in a pan, then place the cooked chicken back on the unsanitised cutting board to cut it up. You have just contaminated your cooked (safe) chicken with bacteria from the raw chicken.

### DID YOU KNOW....

**all** raw products can carry harmful bacteria.

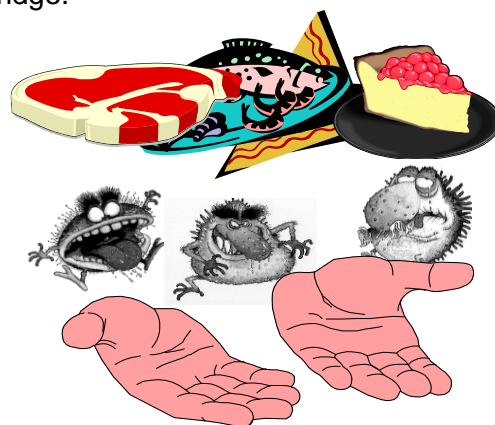
## Cross-contamination is the main cause of food borne illness.

There are many ways for bacteria to be transported around your work environment; some of these are via your tools, tea towels, tongs, equipment etc. It is therefore vital that you identify the means of transport and cross –contamination in your workplace and decide on what action that you (your employer) can take to avoid any possible contamination.

If you discover a cross-contamination source then take action to solve this problem.

## 4 simple ways to help prevent cross-contamination

- Wash your hands very thoroughly after touching raw meat and poultry
- Clean surfaces and equipment before starting food preparation.
- Use different chopping boards and knives for raw meat, poultry and cooked or ready-to-eat food.
- Keep raw meat and poultry away from or below cooked or ready-to-eat food in the fridge.





## EXERCISE 5

- How could bacteria be transported to your workplace and around it?
- What steps are you currently taking to prevent this happening and more importantly what other steps can you take?

*One has already been done for you.*

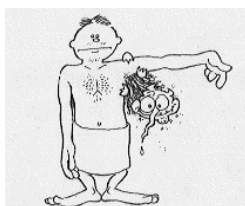
Method of Transportation	Prevention Method
<i>Hands become contaminated while trimming raw chicken. Risk of transporting bacteria on hands.</i>	<i>Wash and sanitise hands when finished and before starting the next job.</i>



## Personal Hygiene & Conduct

Personal Hygiene has a special meaning for food handlers. Normal unconscious body habits such as scratching an itchy nose, face, hair or other body part generally don't create any problems in normal life, but can lead to catastrophe when handling foods.

As our bodies are perhaps the biggest single source of bacteria in the kitchen it is important that we take our own standards of personal hygiene very seriously.



**Cross-contamination from a food worker to food is the most common cause of food borne illness.** Human skin is never free of bacteria. Skin has all the right ingredients for bacteria growth: moisture, protein, medium P.H. and warm temperature. The same statement is true for the mouth, nose, eyes, throat and ears. **For this reason the basic practice of hand washing is perhaps the most important action you can take to prevent food borne illness.**

Every food establishment is required by law to supply hand washing facilities close to the place of work. They should be conveniently located near rest rooms, next to food preparation areas and wherever they are needed. These sinks should be used for hand washing only and must have a supply of warm water, soap, a scrubbing brush and a sanitary means of hand drying, such as disposable towels or an air drying device.

**Do not dry your hands on a towel used by anyone else.**

**Do not wash your hands in a food preparation sink.**

**Gloves can cause cross contamination just like hands. Even if you wear gloves you must wash your hands thoroughly before putting on the gloves and handling or serving food and again when you take them off. Change gloves often.**

You must also wash your hands and change your gloves after any action that might cause contamination, e.g. after using the toilet, smoking, coughing, sneezing, touching your body, handling raw poultry or meat, picking up objects from the floor, answering the telephone, handling money or soiled dishes, touching animals or insects.

In addition to hand washing, be careful about touching soiled objects including clothing. **Do not wipe hands on your apron or tea towels.** Aprons are a means of clothing protection only. When you wipe your hands on the apron and leave food particles, bacteria begin to multiply on the cloth. The next time you wipe your hands on the apron, your hands become contaminated.

Hands and fingers should be kept away from faces, noses, mouths and hair. Fingernails should be kept short and clean. **No enamel fingernail polish should be worn as it can chip off and contaminate food.** Micro-organisms caught under long nails can get into food that is being prepared.

### ***DID YOU KNOW...***

Rings, bracelets, watches and other jewellery trap micro-organisms and are very difficult to keep clean. The best way to prevent contamination from jewellery borne micro-organisms is to **remove your jewellery before handling food.**

## Hand Washing vs Wearing Gloves

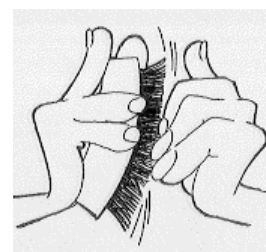
Hand washing is the best way for food workers to get rid of illness-causing bacteria and viruses so they are not transferred from hands to food.

When worn gloves can create a warm, moist environment that bacteria love. So if you wear gloves it is essential to wash your hands before putting on gloves, and change your gloves often.

As hand washing is the most important action you can take, let us examine how to carry out this simple task in an effective way.

### Steps to successfully washing hands

1. Use warm running water.
2. Wet hands up to the top of the wrists.
3. Apply soap.
4. Rub hands and forearms briskly for at least 20 seconds to build up a good lather.  
*How long is 20 seconds? try singing "Happy Birthday" twice*
5. Scrub between fingers and clean each fingernail with a brush.
6. Rinse thoroughly under warm running water.
7. Dry hands and arms thoroughly (**front, back and between fingers**) for at least 20 seconds using paper towels or air dryer.
8. If possible use a sanitiser before starting food preparation.



**Wash + Clean + Dry**

**Remember –**  
using gloves is not a substitute for hand washing



## EXERCISE 6

List 5 possible times that you should wash your hands in your particular work environment.

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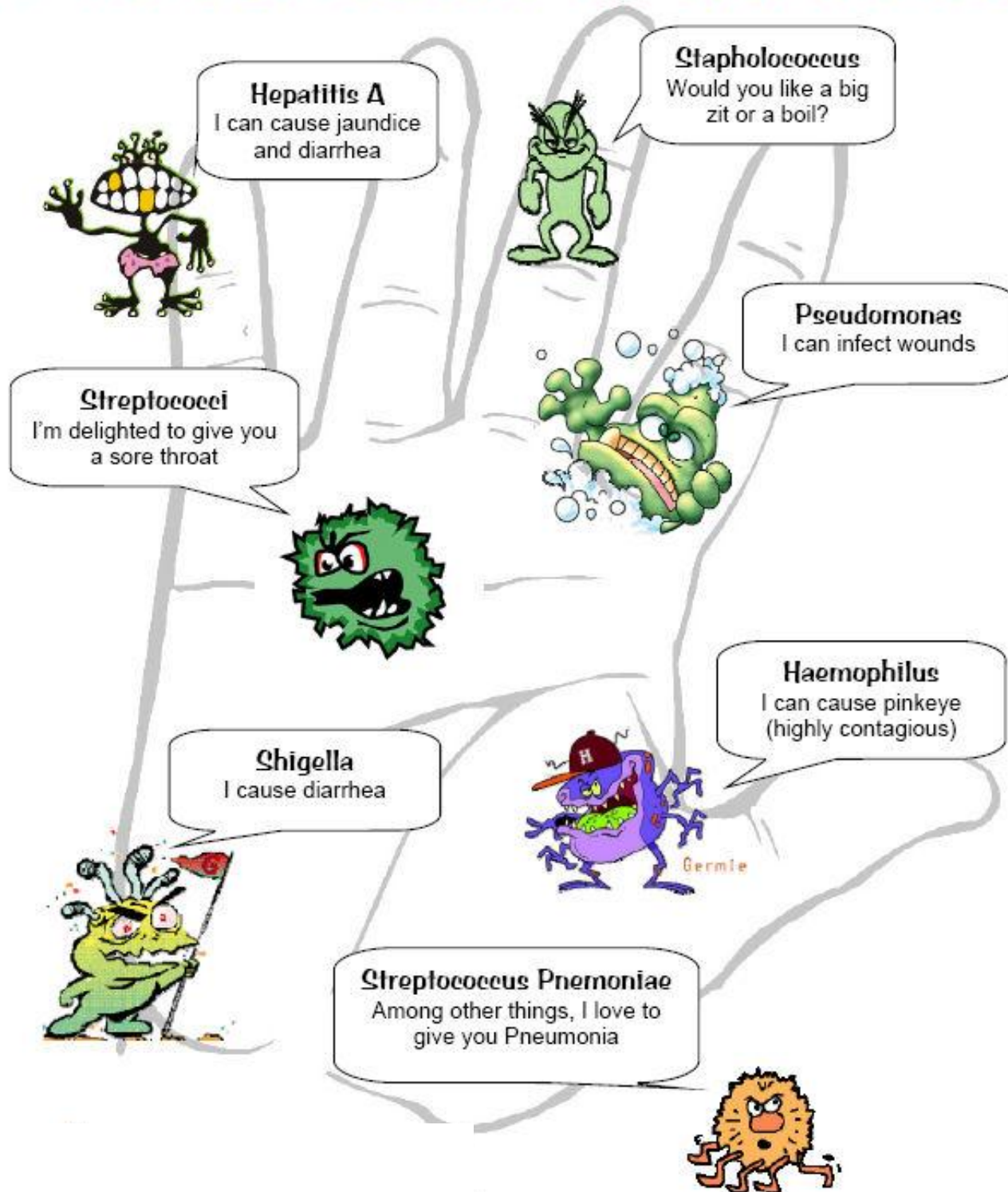
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# What GERMS Are On Your Hands?





## **WASH YOUR HANDS!**



— BEFORE STARTING WORK



— AFTER USING TOILET



— AFTER ANY WORK BREAK



— WHEN SOILED BY WORK



— BEFORE PUTTING ON CLEAN GLOVES

**PROTECT YOUR FELLOW WORKERS,  
YOUR CUSTOMERS, YOUR JOB**



# Employee Health & Sickness

Everyone who handles food should be healthy.

Food can become contaminated by people who are unwell with certain infections or are carrying the organisms in or on their body.

Harmful microbes can be transmitted through a sick person's faeces, vomit and in some cases other body fluids.

## Definite "Nos"

- Food service employees must **not** be on duty when they have symptoms of diseases that can be transmitted through direct contact with food or other persons.
- Anyone with jaundice, who is suspected of, or has, Hepatitis A must **not** be allowed in food handling areas.
- Anyone with scaly, weeping or infected skin that cannot be totally covered during food handling must **not** be allowed to handle food.

## Vomiting and Diarrhoea

No-one including contractors, visitors etc should be permitted in a food handling area if suffering from vomiting <sup>(Note 1)</sup> or diarrhoea <sup>(Note2)</sup>.

*Note 1 – **vomiting** in the absence of other obvious clauses such as a morning sickness or alcohol poisoning.*

*Note 2 – **Diarrhoea** other than that associated with conditions such as irritable bowel syndrome, Crohn's disease or ulcerative colitis.*

If you have had diarrhoea in the 24 hours before going to work you must report it to your Supervisor.

If you have had diarrhoea 2 or more times, or any vomiting within a 24-48 hour period you must seek medical advice and have a faecal specimen tested to identify the cause of illness.

Your employer must make sure that you are not allowed on the premises until you meet the appropriate clearance criteria. Your employer can determine if you can

be given safe alternative work that does not involve direct contact with open food or surfaces and equipment in any food area.

## What To Do If you Get Sick

**If you show signs of illness when not at work** such as; cold or flu symptoms, sinus infection, Hepatitis A, vomiting or diarrhoea:



1. Call your supervisor, tell them you are sick and can't work with food.
2. Do not return to work until you are no longer sick and do not risk passing along the illness.

**If you start to feel sick or experience diarrhoea or vomiting while at work:**



1. Stop work immediately.
2. Tell your supervisor and if symptoms persist go to the doctor.
3. Any food that may have become contaminated must be disposed of and your employer must ensure that this is done.
4. The affected area and all contaminated surfaces, including equipment and utensils, must be cleaned and sanitised.  
*Your workplace should have a "Vomit Kit" (disposal apron & gloves, bleach etc) handy to safely clean up any vomiting that may occur.*
5. Do not return to work until you are cleared.

## Keep a Record of Sickness

Your Supervisor should write down in the "Staff Sickness Record" when employees or others who visit the premises are unwell and what action has been taken.

## Cuts and Sores

A fresh cut or a sore can be a possible source of contamination from blood and other bacteria or viruses. Blood will contaminate food and any food contact surface it touches. The wound is also at risk of becoming cross-contaminated with bacteria from raw food etc, which can lead to serious infection and time off work.

Workers who have cuts or sores and continue to work must cover the wound with a water resistant bandage/dressing. Dressings on fingers are difficult to keep clean and can hold micro-organisms from raw foods that will cross-contaminate cooked foods, therefore the dressing should be changed often and covered with a plastic glove. If a cut or sore is weeping or infected and cannot be totally covered you **must not** handle food.

Food exposed to blood must be thrown out and the surface must be sanitised before being used.

### If you cut yourself while preparing food

1. Clean the wound and dress it immediately with a blue (*or brightly coloured*) water-proof dressing.
2. Wear a disposable glove over the dressing as added protection.
3. Clean and sanitise all equipment / surfaces being used or in the area at the time of the accident.
4. Dispose of the food you were preparing as there is a risk it has been contaminated.
5. Inform your supervisor of the accident
6. Fill in the accident register if required by your workplace policy.

## Personal Conduct

Practising good health habits is the first step in staying healthy.

- **Avoid touching your nose, mouth, hair and skin** during food preparation as these may pass bacteria onto food. In fact your hair should be tied back or covered and this will prevent the spread of bacteria, either by direct contact or via your hands.
- **Do not spit, sneeze or cough over food.** Cover your mouth and nose when coughing or sneezing and then wash your hands before handling food. This helps reduce the spread of disease by droplet contamination.
- **Use disposable tissues** to blow your nose; wash your hands afterwards.
- **Do not smoke, eat or drink in the food preparation area** and this hand to mouth contact leads to contamination of food. These activities are sources of droplet contamination. You should eat, drink and smoke in designated areas. No worker should resume work after such a break without washing their hands.
- **Be careful not to drip sweat onto equipment or food preparation surfaces.** Do not wipe sweat with your hands and then touch food. Do not use wiping cloths or tea towels which are used on food preparation surfaces to wipe away sweat. Use a disposable towel or napkin and then wash your hands.





## EXERCISE 7(a)

Which symptoms of illness have a high risk of contaminating food?

*On has been done for you.*

Coughing

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**(b)**

Name at least 3 illnesses that will prevent you from working with food.

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**(c)**

Explain below what you should do with the food that a bandage from a cut finger has fallen into.

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## Clothing

**Dirty clothing or uniforms present two problems: odour and contamination by bacteria.** Every effort must be made to reduce the risk of passing contamination from clothing to food or food preparation surfaces.

**Dirt can enter the kitchen on workers shoes or street clothing.** Ordinary dirt contains many micro organisms from the street, car, other people and any area that the worker has been in.

**Workers who wear uniforms while at work should change into that uniform when they get to work** and should not wear any part of that uniform on their way to work or outside the kitchen area. They must be provided with a separate changing area away from the food preparation area. This area must be kept clean and sanitised as if it was a food preparation area.

### When dressing for work

- Have a shower or bath as close as possible to the start of your shift.
- Arrive at work in clean clothes so that you are not transporting bacteria into the food preparation area.
- Cover your hair.
- Remove hand jewellery.
- Clean hands and nails thoroughly.
- Cover cuts, burns & skin conditions.

## EXERCISE 8

Design a set of guidelines for a food worker's personal hygiene requirements.

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# Killing & Controlling Micro-Organisms

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As we have discussed micro-organisms are very small living organisms and they require certain conditions in order to survive and multiply.

All micro-organisms need food, moisture, warmth, time and the correct pH to survive.

If we alter any of these conditions and make them unfavourable, we can prevent food spoilage and food poisoning.

How do we create unfavourable conditions for bacteria?

## Cooling and Freezing

The most common way of controlling bacteria growth is to lower the temperatures of the food to below 5°C; this slows the rate of growth for most micro-organisms.

**Chilling or freezing food does not destroy micro-organisms, they just experience slow growth or lie dormant until conditions improve.**

The safest way of defrosting food is to place the frozen food in the refrigerator and allow it to slowly defrost therefore avoiding the temperature danger zone of 5°C – 60°C.

## Removing Moisture

Removing the moisture in food can be achieved by several methods.

Drying in the sun; such as with herbs, dried fruit, vegetables and some meats.

A modern technique is a process called freeze drying. This is where the food is frozen and the air is removed, the resulting ice crystals are vaporised and the ice is turned to steam without going through the water stage.

Once water is added back to the food it is again at risk of micro-organism growth.

## Smoking

Smoke contains toxic substances which inhibit the growth of micro-organisms.

## Bottling and Canning

Certain foods can be preserved by sealing in an air-tight tin or bottle which is then heated to high temperature to kill micro-organisms. Once opened or dented with a hair line fracture the food is at risk of spoiling quickly if not stored in the right conditions.

## Salting

An ancient method of keeping food safe. Micro-organisms cannot grow in high concentrations of salt. Basically salt attracts the water and prevents the micro-organism utilizing the water to multiply. This method is used to preserve meat and fish.

## Irradiation

By exposing certain foods to high frequency radio waves or ultra violet light micro-organisms are killed.

Many pre-packed foods are preserved by this method including vacuum packed soups and sauces.

## Addition of Sugar

A high concentration of sugar prevents the growth of some micro-organisms. Like salt, sugar draws the moisture out of the food item, not allowing the moisture to be available to the micro-organisms.

## Altering Acidity

Micro-organisms can be inhibited by increasing the acidity of food. This can be achieved by the addition of vinegar such as in gherkins and pickled onions.

## Vacuum Packing

By removing air the shelf life of certain foods can be prolonged. Micro-organisms which require air, such as moulds, cannot grow in vacuum packed foods.

## Quality Checks on Food Items

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From the moment food is harvested or killed it starts to change, and goes on changing until it finally decays. It is up to us, to slow this natural breakdown by correct storage.

Food storage in your premises starts at the point of delivery when the food arrives. The food worker must make sure the food is safe and clean on arrival and quickly stored in the appropriate area. If the food is not safe or clean on arrival it should not be accepted!

### Purchasing & Receiving Goods

You need to ensure ingredients and supplies are obtained from reputable suppliers, and to check that they are transported appropriately and arrive in good condition. Food may be contaminated with harmful microbes, chemicals or physical objects during processing or delivery. Harmful microbes can grow if readily perishable food is not kept cold during delivery. Readily perishable food should only be accepted if there is someone on site to check the condition of the delivery.

When food is delivered check:

- packages are free of damage;
- packages are properly labelled with the name and address of the manufacturer or supplier/importer and have a batch code or date mark;
- food is not past its expiry date;
- the vehicle and delivery person are clean and food has not been exposed to any hazards (chemicals, machinery etc) during transportation;
- frozen food is frozen solid when delivered with no sign of defrosting;
- readily perishable food is delivered chilled (cold to touch – if in any doubt, the temperature is checked using a thermometer to confirm it's at 5°C or below) or at the temperature recommended by a manufacturer;
- hot deliveries of perishable food are kept at 60°C or above.

**Food that does not meet the above requirements should be rejected and sent back to the supplier.**

After food arrives and checked as above:

- High risk foods must be placed in the refrigerator.
- Dry foods should be removed from boxes if possible, and placed in the dry store. Your dry store should be a well ventilated area with good air circulation and remember to keep all food off the floor, on clean shelves.
- Frozen foods must be immediately placed in the freezer at minus 18°C.

### Constant Checking Food Quality

When handling food constant checks should be made on the quality of the food. You should always be asking yourself the question: **“Is this food safe to use?”**

- Check expiry dates
- Is the food free from soiling?
- Is the packaging intact?
- Is the food wilted or stale?
- Has it been stored properly and at the correct temperature?

**DID YOU KNOW.....**

**It is important to use a good method of stock rotation to ensure**

**“first in, first out”**

# The Importance of Correct Temperature

Our biggest weapon against bacterial growth is the temperature control of food. It is therefore vital that the correct storage temperatures are maintained and checked on a regular basis. It must be remembered that many food spoilage bacteria are able to multiply in the refrigerator but at a much slower rate than at room temperature.

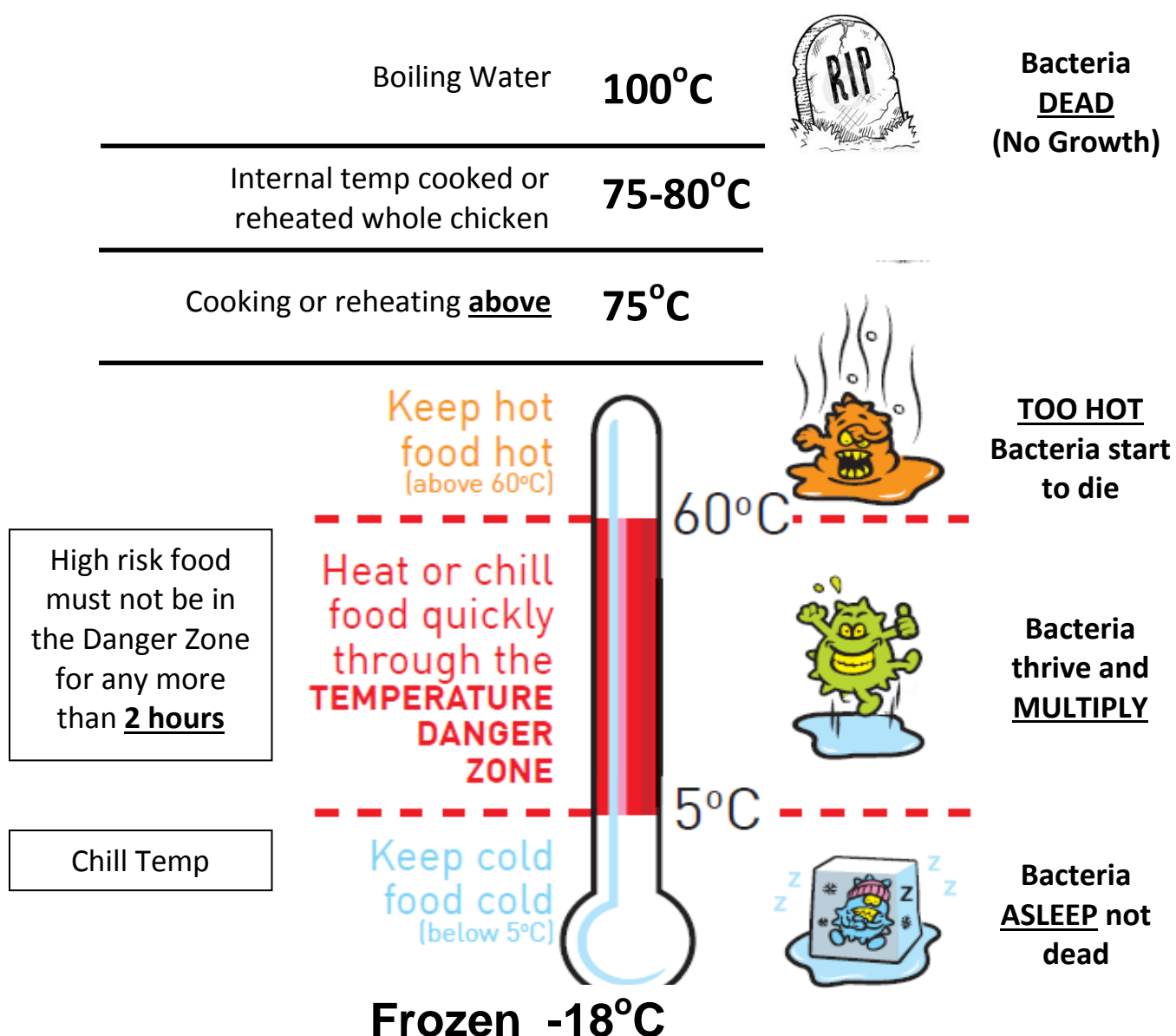
## Correct cold storage

Before storing, all food should be: Covered, Labelled, Dated.

This enables you to keep a visible check on food and its age. It also stops contamination and aids the stock rotation process.

## What if food has NOT been kept at the correct temperature?

If food has been left out at room temperature, or if your freezing, chilling and holding equipment is not working effectively, refer to your HACCP Plan or tell your Supervisor. All the items will have to be disposed of and a contractor will have to repair the equipment before it can be used again.



# Monitoring Food Temperatures

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Regular checks of readily perishable food will show whether or not it is being kept at a safe temperature.

**Thermometers must be used to check temperatures in many situations:**

## Incoming goods

Check temperature of goods arriving to make sure they are still within acceptable limits. These limits will differ depending on the type of food.



## Food temperatures in the fridge

Chilled food must be held **below** the critical limit of 5°C. **If not, it is unsafe to use and must be disposed of.** The problem should then be corrected immediately and double checked.



## Final cooking temperatures

Check food has reached the required temperature in order to render it safe - **above 75°C** for chicken.



## Reheating food

Check when reheating food (especially a high risk food) that it has reached a temperature **above 75°C**.

## Food in hot holding situations

Food in hot holding situations should be monitored to check that the food is being held at the right temperature. That is a temperature that will not allow bacterial growth - **above 60°C**.

## Critical Limits

The critical (unsafe) limits for food lie between 5°C and 60°C. All food that has a **high risk** of bacterial growth should be stored carefully **outside** these limits. **High risk food that is left within these limits for more than 2 hours should be disposed of.**



## Record temperature readings

In most cases, the temperatures of key areas are taken on a regular basis and recorded. This allows a clear and accurate record of the shelf life of products and from this record we are able to ascertain if there has been any deviation from the acceptable limits. If there is a problem with food poisoning the records help to pinpoint the problem.

## Basic Advice on Thermometers

A thermometer that is not correctly calibrated may provide inaccurate temperature readings. Therefore check the accuracy of thermometers at least every 12 weeks. If the thermometer doesn't reach 0°C (plus or minus 1°C) in the ice point check or 100°C (plus or minus 1°C) in the boiling point check, then the thermometer must be either replaced or sent for servicing.

A dirty thermometer can transfer microbes onto food that could make people ill. Therefore **clean and sanitise thermometers before and after each use to avoid the risk of cross-contamination.** Use an approved sanitizer. Clean and sanitise thermometer cases on a regular basis.

Never use glass or mercury filled thermometers as they could break and contaminate food. Use only bi-metallic stemmed or laser thermometers for checking food temperatures.

Use probe thermometers that are at least 300mm long. **Insert the lower 150mm into the food. This enables a true or core temperature to be obtained.**

Use thermometers that can measure the required range of food temperatures needed for your food premises.



## How to use a thermometer to check cooked food and hot-held food temperatures

When checking cooking and hot holding temperatures, the probe thermometer is inserted into the centre of the thickest piece of the meat or part of the dish.

When cooking batches of food, a sample of items is probed rather than every single item. Items are probed from different parts of the oven to check that heat is being distributed evenly and that all foods have been cooked properly.



## EXERCISE 9

Using a temperature probe, check the following temperatures in your work area.

*Check your answers off against the correct temperature range in the answer section at the back of this Booklet.*

The cool room or fridge \_\_\_\_\_ °C

The freezer \_\_\_\_\_ °C

Meat in the cool room \_\_\_\_\_ °C



Any food in a pie warmer \_\_\_\_\_ °C

Any food served hot \_\_\_\_\_ °C

Inside of a cooked chicken \_\_\_\_\_ °C

## EXERCISE 10

Why should you wash and sanitise a temperature probe before you use it?

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# Food Preparation and Service

## General Hygiene Practices

**A high standard of personal hygiene** should be observed. Avoid unnecessary human contact with the food by using tongs, forks or disposable gloves as a barrier between the food and the food handler.



**Clean and sanitise as you go** rather than leaving for the end of the day, as bacteria grow continually on food particles at room temperature and can be transferred onto other food being prepared (cross-contamination).

**Do not use the same equipment or surfaces** e.g. knives and cutting boards for both raw produce and cooked produce; or even for different food items, as cross-contamination will occur. Work quickly at room temperature, returning perishable ingredients to the refrigerator immediately after they have been used. If you are unsure of the quality of the food, remember – if in doubt, throw it out!

**Store raw and cooked product in separate areas** or cooked at the top of the fridge and raw at the bottom. When storing food it should always be **covered, labelled and dated**.



### Other important points:

- Keep pets/animals away from food processing areas at all times.
- Don't put tasting utensils back into the food.
- Be very conscious of body habits and don't smoke around food.
- Do not sit on food preparation surfaces.
- Wash your hands often.
- Keep food covered while on display and check temperatures regularly.
- Avoid touching food with unprotected hands. Use clean tongs or utensils for service. If using disposable gloves, wash hands before and after use and change them often.
- Use disposable paper towels or an air dryer to dry hands. Don't wipe them on tea towels or wiping cloths.



### Note

Disposable gloves are only as good as you are. If you're wearing gloves and touch your body or raw food, bacteria will be on the gloves and can be transported to the next food product you touch. Gloves should be changed often and used with care.

High risk foods must be prepared quickly, and either cooked and served immediately or refrigerated until cooked or served.

The risk of cross contamination while food is being prepared is high, so all care must be taken. Prepare food as quickly as possible and as close to the serving time as possible. Raw food can easily contaminate cooked food.



# The Importance of Cleaning & Sanitising

Cleaning removes dirt and grease.

Sanitising kills bacteria and stops the growth of bacteria.

Dirty premises can attract pests like mice, rats and cockroaches, that can spread disease.

Un-sanitised premises and equipment will enable bacteria to grow which, if they contaminate food, can make people sick.

Safe food service is only possible with a clean and sanitary environment in which to store, process and serve foods. Keeping equipment utensils and work areas cleaned and sanitised is an important part of preparing safe food. Proper housekeeping practices reduce the risk of both chemical and physical contamination. Cleaning and sanitising procedures reduce the risks of biological contamination.

Cleaning alone is not enough to maintain a healthy food service area. Even when the dirt, grease and food particles have been removed from food contact surfaces they are not ready to use. You must sanitise to stop the growth of bacteria that could contaminate foods you prepare and serve. Washing with a detergent and hot water helps destroy some bacteria, but sanitising with heat or chemical agents after cleaning does much more.

## **You can reduce bacteria to safe levels using proper cleaning and sanitising techniques.**

Equipment and food surfaces come into contact with bacteria and dirt all day long. Wash rinse and sanitise equipment and surfaces thoroughly and often, usually every time they are used.

## **General cleaning requirements**

- ◆ Equipment and surfaces that come into contact with food (e.g. chopping boards, utensils, pots, tongs, crockery, work surfaces etc) must be cleaned with hot water and detergent and sanitised.

- ◆ Other items that may contaminate food indirectly (e.g. by contaminating a food worker's hands) must also be cleaned and sanitised (e.g. door handles, taps, hand washbasins etc).
- ◆ You must give special attention to rough surfaces, open seams and sharp angles. Make sure that mincers and meat slicers get special attention.
- ◆ Chipped, cracked or damaged crockery must not be used as they cannot be cleaned satisfactory.
- ◆ Use the dishwasher/steriliser to clean any small equipment and utensils.
- ◆ All equipment should be left to air dry in drying racks. If drying cloths are used they must be changed often and washed in hot water on a daily basis.
- ◆ Used towels (e.g. ones used for floor cleaning) are stowed for laundering and not mixed with in-use cloths
- ◆ The manufacturer's instructions must be followed when using chemicals and cleaning equipment.
- ◆ Food must be appropriately protected or removed before cleaning or sanitising begins.
- ◆ Cleaning should occur between tasks ("clean as you go").

## **EXERCISE 11**

What is the difference between cleaning and sanitising?

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# Cleaning Products

Detergent compounds are usually added to aid removal of soil. They make the process of cleaning easier and faster by reducing the physical effort of scrubbing and by attacking stubborn types of soil.

Detergents are designed to loosen grease and oil, deposits of minerals, protein based stains caused by eggs or meat, and dirt that has been baked onto food contact surfaces. The amount of detergent must be measured carefully according to the manufacturers' instructions.

The detergent aids in loosening the food particles but the surfaces still have to be brushed either by machine or by hand.

- **After scrubbing and washing everything has to be thoroughly rinsed.**
- **The surfaces must be clean before sanitising.**
- **Any residue of detergent left on surface can interfere with proper cleaning.**

Use the right cleaning agent for each job and use the product correctly. Choose a product that will do the job thoroughly, economically and safely in the recommended concentrations.

There are three main groups of cleaning products used for loosening and removing dirt.

- ◆ Detergents
- ◆ Acid cleaners
- ◆ Abrasive cleaners

## Detergents

Synthetic detergents are used with water to break down dirt. All detergents contain agents called surfactants that dissolve in water and spread by means of suds. They work by loosening the dirt, making it easier to remove. Detergents are usually not very expensive. They are also among the most effective all-purpose cleaning products.

Detergents, if rinsed properly, do not leave a soapy residue and make it easier to clean a surface. They also work well with chemical sanitisers. Detergents can be used to clean food contact surfaces.

### Examples of detergent cleaners:

Sunlight dishwashing liquid  
Palmolive dishwashing liquid



## Acid Cleaners

Acid cleaners work by loosening the heavier dirt that alkaline based detergents cannot remove. The product labels will say which jobs and surfaces these acid cleaners are designed for and what strength that they should be used at.

### **"Follow the instructions for these products carefully"**

Acid cleaning agents, even when used in low concentrations, may cause damage to work surfaces and cause chemical burns on the skin.

### Examples of acid cleaners:

Caustic Soda, White Vinegar

## Abrasive Cleaners

Be cautious when using abrasive cleaners. The scrubbing power is provided by finely ground minerals that scour the surface to remove encrusted soil. Food contact surfaces made of soft plastic can scratch easily and become less resistant to bacteria.

When abrasive cleaners are used, care must be taken to rinse away all of the scouring agent after the scrubbing.

### Example of an abrasive cleaner:

Jif

# Sanitising Products

**Sanitising is a most important step in protecting the kitchen or food preparation area.** Equipment, utensils and surfaces are sanitised after cleaning and rinsing to kill bacteria that may still be present on food contact surfaces. Equipment and surfaces may be sanitised either by using hot water or chemical compounds.

## Hot Water Sanitising

When using hot water as a sanitiser, the water must be at the required temperature of at least 77° C. All small equipment should be put through the dishwasher. All large equipment should be placed in hot water (77° C) for at least 30 seconds to sanitise. Care must be taken to avoid burns.

## Chemical Sanitising

Sanitisers are chemicals designed to destroy micro-organisms. Chemical sanitisers are frequently used for sanitising, then hot water. Sanitising solutions contain bacteria killing chemicals and are used after the equipment has been cleaned and rinsed. Staff must be trained how to use chemicals safely.

An approved chemical sanitizer is:

Chlorine

### Chlorine Compounds

Chlorine compounds usually work well in soft or hard water. They are relatively non-irritating when used in the proper concentrations but they can cause damage to metal equipment. Thorough rinsing before using chlorine compounds is important because their effectiveness is reduced by alkaline substances left behind by detergents. Water temperatures should always be high when using a chlorine compound.

**"When using chemicals it is very important that all directions and instructions are followed carefully"**

## Frequency of Cleaning & Sanitising

All equipment, utensils and preparation surfaces should be cleaned and sanitised after each use. Micro-organisms can survive on unclean tableware and utensils as well as in food. Washing rinsing and sanitising utensils after use is the first step. Equipment must be protected from contamination when in storage and in use.

Routines should be established for cleaning all areas of the kitchen and surrounding areas, these routines should be followed and checked by a supervisor.

### ***Areas such as:***

#### Floors

- ✓ Swept on a regular basis
- ✓ Cleaned and sanitised daily

#### Walls and doors

- ✓ On a regular basis as required

#### Dry store

- ✓ Cleaned daily
- ✓ Cleaned and sanitised weekly

#### Cool store

- ✓ Cleaned daily
- ✓ Cleaned and sanitised weekly

## Equipment used for cleaning

- Cleaning materials should be stored in a separate area away from food.
- Cleaning equipment should be kept in good repair and must not be used for any other purpose.
- Cleaning equipment should be cleaned and sanitised.
- Chemicals must be clearly labelled.
- Chemicals must never be stored in a food container.

## Cloths & Wiping Supplies

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Cloths and sponges used for wiping certain equipment, utensils and food contact surfaces should not be used for any other purposes. **These cloths should be kept separate from other wiping cloths.**

- Use only clean dry cloths for wiping food spills on tableware such as plates or bowls being served to the customer.
- Wipe food spills on kitchenware and food contact surfaces of equipment with moist cloths. They must be rinsed frequently in a sanitising solution during use.
- Wash and rinse cloths that are used on non-food contact surfaces or equipment such as counters and dining table tops, then rinse them in a sanitising solution.
- Outside tables etc are cleaned using cloths designated for these tasks only.



### Single Use Cloths vs Re-usable Cloths

- Use single-use cloths whenever possible and thrown away after each task.
- If using reusable cloths/sponges make sure they are thoroughly washed, sanitised and dried between tasks, and discarded as soon as they show signs of wear.
- A new or freshly cleaned cloth must always used to wipe surfaces that come into contact with ready-to-eat food.

## Dishwashers

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Where dishwashers are used make sure they are operated and serviced according to the manufacturer's instructions.

*Warning : When operating correctly, items in the dishwasher will be too hot to handle immediately after the rinse cycle.*

### For items that can't be put through the dishwasher

1. Pre-clean – remove visible dirt and food residue.
2. Main clean – wash with hot water and the correct amount of detergent.
3. Rinse with clean, hot water.
4. \*Sanitise with a food-safe sanitizer.
5. \*Final rinse (see sanitizer instructions as required).
6. Air dry or use a single-use drying cloth.

\*Only required where equipment or surfaces come into contact with food.

# Rubbish Removal

Rubbish and recyclable material that is not stored appropriately and collected regularly can:

- prevent effective cleaning
- encourage pests - rubbish is a big source of bacteria and attracts flies and rodents
- contaminate food and food-handling areas

## In General

- Waste and recycling material should be stored so that it is clearly identifiable and cannot be mistaken as usable.
- Bins and other equipment used for waste and recyclable material must not be used for any other purpose.

## Food preparation areas

- An adequate number of watertight waste bins with fitted lids should be provided for waste.
- Where appropriate, bins with foot-operated lid openers are best.
- Bins must be emptied when full, and at least daily, but if it cannot be removed on a daily basis it should be kept at a temperature below 5°C.

## External storage areas

- External waste bins should be pest proof and easily cleaned.

## Cleaning

- Rubbish bins and other receptacles should be cleaned regularly - washed and sanitised and the container left upside down to air dry.
- An area must be provided where this type of operation can take place safely.

## Grease traps and converters

- Grease traps and converters must be used in accordance with the manufacturer's instructions.
- Waste from grease traps should be collected regularly.

## Waste water

- The sewage and waste-water system on the premises should be adequate and managed so that it doesn't contaminate food.



## EXERCISE 12

Why is it important to keep rubbish covered and to empty the containers regularly?

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## Pest Control

Domestic animals like cats and dogs, and pests such as mice, rats, birds, cockroaches and flies, carry microbes that can cause illness if these microbes come into contact with food.

Faeces and urine from pests, such as rats and mice, can contaminate food and cause illness.

Pests can damage stock.

### Keep Pests Out

The best way to prevent pest infestations is to keep them out, however since pests have many ways of getting into food premises, the task of controlling them is endless.

- Give pests no reason to enter. Eliminate their food water and shelter by keeping the kitchen area well organised, clean and sanitised. Store food in the proper manner (sealed containers etc).
- Check your building for entry points. Small holes in doors or larger than necessary holes for pipes etc, will provide access to all sorts of pests.
- Check the outside of the building for breeding grounds. Keep it clean, as dry as possible and well maintained. Keeping the weeds and rubbish controlled will also help minimise rodent and insect infestations. Keep all rubbish cans closed and have them emptied frequently.
- Always check incoming goods and deliveries for possible contamination, refuse contaminated food.
- Do not allow domestic animals in any area where food is stored, prepared or plated-up.

### Remove things that attract Pests

- Keep rubbish bins covered and remove regularly, Store food in pest-proof containers. Clean up spills immediately and clean in general as you go.



### Keep a look out for Pest Activity

Protecting food from rats, mice and insects needs constant attention. All multiply quickly and spoil far more food than they eat, because they are carriers of pathogenic bacteria. They harbour bacteria in their mouths and intestinal tracts, and carry them on their feet and bodies, eventually putting them on food and equipment.

- Check the premises at least weekly for signs of pests.
- Check any traps and bait stations regularly.

### If you discover a pest infestation or domestic animal or birds on the premises

- Tell your supervisor immediately and refer to your HACCP Plan if available.
- Throw out any food that has potentially been contaminated or looks like it has been damaged by pests..
- Clean and sanitise all the affected equipment and areas, and any areas where unwrapped food is handled or prepared.
- Eliminate the pest(s) and ensure their access routes are removed.
- In the case of a severe pest infestation, or an infestation of cockroaches call in a Pest Control Company.

### Pesticides and Pest Control Equipment

- Pest control equipment, such as bait stations, electric insect killers, traps etc, should be installed and located so that they do not cause contamination.

### Disability Assist Animals

- Sight and hearing-assistance animals are permitted in customer areas, provided food on display is protected from contamination.



# A Food Safety Programme

Most food businesses will be required to have some sort of food safety programme in place as part of their food registration with the local authorities. This requires thought and consideration. A food safety programme is a written programme designed to manage the safe arrival, processing, storage and sale of food from your premises. It involves setting up basic systems which record what you do and allows for some checks to be made. It allows you to predict risks that your food may be exposed to, and set practices in place to prevent these risks from happening.

## **“Prevention is better than cure”**

In the long run a good and well based food safety programme will not only satisfy your local environmental health officer but will help you save time and money.

## **HACCP (pronounced ‘hassip’)**

The most common food safety programme is called HACCP. It is basically a quality assurance programme in brief it allows you to

- identify where hazards could occur
- put in place control methods/points to make sure that those hazards are eliminated
- set up systems to monitor those control points and take corrective action if they’re not working
- record in writing whether the control points are working
- gives you a chance to look back over and assess what you are doing

### **What does HACCP stand for?**

<b>H</b>	<b>Hazard</b>
<b>A</b>	<b>Analysis</b>
<b>C</b>	<b>Critical</b>
<b>C</b>	<b>Control</b>
<b>P</b>	<b>Point</b>

Let’s take these terms and see what they mean:

### **Hazard Analysis**

This simple task is a matter of working through your production steps to identify what hazards there are and where they occur. A hazard is something that can cause food to be unsafe for human consumption.

A good way to do this is to draw up flow charts which define all steps in the process from raw material through to sale or eating. This way you can identify any possible hazards at each step.

### **Critical Control Points**

These are points along the production line that must be controlled in order to avoid the food being contaminated. An example might be: “Before you start work you must wash and sanitise your hands. This helps to control the cross-contamination of bacteria via your hands onto food that you are preparing”.

***It can be as easy as that!***

**Please Note** – everyone working with food should have a constant awareness of hazard detection at all times. You should be thinking about what you are doing and looking for ways that hazards can occur and then putting control points into action if you find a hazard.

**The best and most common critical control point is**

### **Washing Your Hands Often**



# More about Food Safety Plans

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## A Food Safety Plan should have 7 basic steps:

### 1. Conduct a hazard analysis

Draw up flow charts of your food production and identify all possible hazards at each stage.

### 2. Identify the critical control points

Once the hazards have been identified you need to put into place control measures that stop things going wrong.

### 3. Determine preventative measures

After control points are identified, put checks into place to make sure they are working, for example; appearance and texture can easily be observed. Use measurements for temperature and time.

### 4. Monitor critical control points

Once all staff have been trained in the control procedures, it is important to monitor and record the control points. We have included some examples in the back of this book.

### 5. Establish corrective actions

Decide what you will do in advance, if you discover that something has gone wrong.

### 6. Establish record keeping procedures

Check that the system works and ensure all staff are trained in the system.

### 7. Analyse the success of the system

Although most food preparation areas have good systems in place, these are not always recorded. Under a HACCP plan it is vital that these systems are recorded and reviewed often.

# Example Answers to Workbook Exercises

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## EXERCISE 2

- Raw meats
- Egg products
- Raw vegetables

## EXERCISE 3

- The toilet and washroom area
- Rubbish area
- Uncooked meat
- Dirt on vegetables

## EXERCISE 4

- Temperature (of fridges, coolrooms & freezers and cooked and reheated food)
- Time food left out in danger zone

## EXERCISE 5

Method of Transportation	Prevention Method
Utensils	Clean and sanitise as you go
Tea towels	Change often
Chopping board	Clean and sanitise as you go, especially between cooked & uncooked products and after vegetables
Outsiders in the kitchen area	Control the flow of people into the area

## EXERCISE 6

- After going to the toilet
- Before starting work
- After smoking
- After a break
- When dirty
- After touching your body
- After touching sweat
- After coughing and sneezing
- Before putting on gloves and after removing them
- After touching raw foods (meat, vegetables etc)
- Before touching unwrapped ready-to-eat foods
- Before entering any area where unwrapped ready-to-eat food is handled

## EXERCISE 7

( a ) Diarrhoea, Vomiting, Coughing, Sweating, Sneezing, 'Runny' nose.

( b ) Jaundice, Hepatitis A, illness with vomiting or diarrhoea.

( c ) Food must be thrown out.

**EXERCISE 8**

- Shower daily, before starting work
- Wear a clean uniform every day (don't change into uniform until at work)
- Clean teeth before starting work
- Wash hands on a regular basis
- If unwell, don't work with food
- Cover all cuts and abrasions with water-proof dressing and a disposable glove
- No smoking in food preparation area
- Tie hair back or under a hat

**EXERCISE 9**

- Cool room or fridge - 1 to 4° C
- Freezer -18° C
- Meat in the cool room: 1 - 4° C
- Food in a pie warmer - above 60° C
- Food served hot - above 75° C
- Inside cooked chicken - above 75° C

**EXERCISE 10**

- To prevent cross-contamination

**EXERCISE 11**

- Cleaning – removes dirt
- Sanitising – kills bacteria

**EXERCISE 12**

- To prevent infestation and contamination via odours or contact
- Removes potential breeding area for bacteria