



FOOD SAFETY

Workbook

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Food Safety Requirements

All Queensland food premises selling food are required to comply with the Australia New Zealand Food Standards Code and the Food Act 2006. The Food Safety Standards were developed to provide more effective and nationally uniform food safety legislation for Australia. The main purpose of the Act is:

- to ensure food for sale is safe and suitable for human consumption;
- to prevent misleading conduct relating to the sale of food;
- to apply the food standards code.

Some food premises are required by local government to have a Food Business Licence (check with your local government if you are unsure). Licensable food businesses have additional responsibilities under the Act. This includes having a Food Safety Supervisor and a Food Safety Program.

Local Governments may inspect all food businesses regardless of whether they are licensed or not, to ensure they are selling safe food and are complying with legislation. Offences under the Act, including non-compliance with the Australia New Zealand Food Standards Code, carry penalties. Serious offences carry a maximum penalty of \$100 000 or two years imprisonment.

Bacteria

An estimated 5.4 million cases of food borne illness in Australia every year. Bacteria cause most food poisoning in Australia which usually arises from improper handling, preparation, or food storage.

Symptoms for bacterial infections are delayed because the bacteria need time to multiply: 12–72 hours or more after eating contaminated food Food Poisoning Symptoms:

- Nausea
- Diarrhoea
- Vomiting
- stomach pains
- sweats
- headaches

Safe food handling is important to

- Ensure food is safe for human consumption
- Prevent food poisoning and food borne illness
- Maintain good shelf life

Bacteria live all around us, they are on our bodies and on the food we eat. In small amounts they cause us no problems however when bacteria levels multiply food becomes unsafe to eat. The number of bacteria needed to make us sick depends on the type of bacteria and how healthy we are. People who are elderly, very young or who are already sick, have a greater chance of becoming sick as a result of food poisoning due to their compromised immune system.

Requirements for bacterial growth

- Moisture & Protein
- Temperature
- Time

Moisture & Protein

Moist foods containing protein are high-risk foods for food borne illness as bacteria thrive in these conditions.

Moist foods include cooked rice and pasta (dry rice and pasta are low risk foods but the addition of water makes them high risk) Protein foods include meat, dairy, seafood etc.

High risk foods:

- Meat
- Poultry - chicken and turkey
- Dairy products
- Eggs
- Smallgoods such as salami and ham
- Seafood
- Cooked rice and pasta
- Prepared salads such as coleslaw, pasta salads and rice salads

Low risk foods:

- Dried foods
- Jams, honey, confectionery

- Oils
- Pickles, chutney
- Bread

Temperature

The Food Safety Standards state that potentially hazardous foods must be stored, displayed and transported at safe temperatures and where possible prepared at safe temperatures. Safe temperatures are 5°C or colder, or 60°C or hotter.

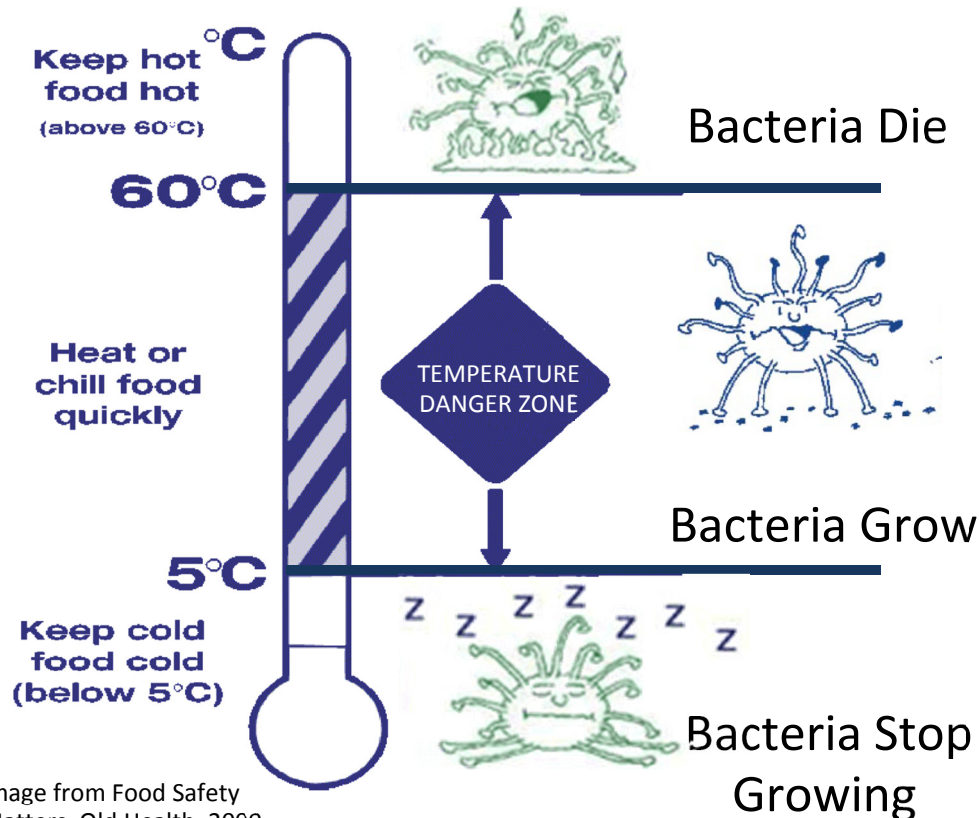


Image from Food Safety Matters, Qld Health, 2000.

Potentially hazardous foods need to be kept outside the temperature danger zone (5°C – 60°C) to prevent food poisoning bacteria, which may be present in the food, multiplying to dangerous levels. Keep cold food cold – below 5°C, therefore the refrigerator must be kept below 5°C and checked at least daily (twice a day morning and afternoon - best practice) Keep hot food hot – above 60°C, therefore when cooking and re-heating food, all parts of the food must reach 60°C or above (best practice 75°C) use a probe thermometer to check the temperature.

Time

The 2 Hour / 4 Hour rule tells you how long potentially hazardous foods can be safely held at temperatures in the danger zone (between 5°C and 60°C). If food has been left in the Temperature Danger Zone:

- for a total of less than 2 hours → it must be refrigerated immediately.
- for a total of between 2 - 4 hours → it must be used immediately.
- for a total of more than 4 hours → it must be thrown out.

It takes time for food poisoning bacteria to grow to unsafe levels. Apply the following time limits to ensure potentially hazardous foods remain safe to eat

The 2 hour/4 hour rule applies to the total accumulative time a food has been in the temperature danger zone.

Example:

- 1 hour doing shopping and driving food back to canteen to be stored in the fridge (= 1hr so far)
- + ½ hour on bench during food preparation (= 1.5hr so far)
- + 1 hour on counter waiting for purchase (= 2.5 hr in total)

So even though the food item has only been out for 1hr during service, it has been in the temperature danger zone for a total of 2.5 hours so must be used immediately and NOT put back into cold storage to use at a later time.

Food Safety Hazards

A food safety hazard is anything that is likely to cause harm to food. Types of contamination:

- Physical Contamination – injury rather than illness
- Chemical Contamination
- Bacterial Contamination – people, animals, pests
- Cross Contamination

Physical contamination

Physical contamination is caused by foreign objects entering food such as plastic and glass and causes injury rather than illness

To protect food from *Physical Contamination*:

- Replace chopping boards once cut marks appear
- Dispose of damaged containers
- Keep the work area clean
- Keep food covered

Chemical Contamination

Chemical contamination is caused by toxic chemicals in food such as pesticides, insecticides, cleaning products

To protect food from *Chemical Contamination*: Store chemicals away from food

Use chemicals carefully:

- Follow instructions on the label
- Do not use near food
- Wash hands after handling

Bacterial Contamination

Bacterial contamination is caused by people, animals or pests contaminating food.

Example:

- Poor personal hygiene – coughing, sneezing over food
- Food not being protected during serving
- Pest infestations, animals in food area
- Poor storage

To protect food from *Bacterial Contamination*:

- Wash hands or use gloves before handling food
- Ensure cooking equipment and utensils are cleaned and sanitised
- Keep food covered
- Keep pests and animals away from food area
- Store food correctly

Cross Contamination

Cross contamination is caused by the transfer of micro-organisms from raw foods (usually animal foods) to cooked or ready to eat food.

To protect food from *Cross Contamination*:

- Wash hands/change gloves in between preparing raw and ready to eat food
- Use different utensils and equipment or clean and sanitise them in between preparing raw and ready to eat food
- Never store raw foods above cooked food

Providing Safe Food

Safe food handling is not just important for the cook or chef, safe food handling is important for everyone involved in:

- Production
- Preparation
- Serving
- Consumption

It is the responsibility of all food handlers to take all reasonable measures not to compromise the safety and suitability of food. This can be achieved by:

- Maintaining personal hygiene
- Keeping the food environment clean

Maintaining Personal Hygiene

Food handlers must not prepare, cook or serve food when unwell

Food handlers have a legal responsibility under the food standards code not to work with food when carrying certain illnesses.

Food handlers must tell their supervisor if they have any of the following symptoms while they are at work - vomiting, diarrhoea, a fever or a sore throat with a fever. The only exception to this is if the food handler knows that he/she has these symptoms for a different reason. For example, a food handler may be vomiting at work because of pregnancy.

Food handlers must also tell their supervisor if they have been diagnosed as having or carrying a food-borne illness.

As well as reporting the food-borne illness, the food handler must not handle any food where there is a chance they might make the food unsafe or unsuitable because of their illness.

Food handlers must also tell their supervisor about any infections or conditions like a cold or other problem that may result in discharges from their ears or nose or eyes if there is any chance that they might make food unsafe or unsuitable for people to eat as a result of their condition. If they continue to handle food with such a condition, food handlers must do whatever is reasonable to make sure that they don't contaminate any food. For example, an infected sore could be completely covered by a bandage and clothing or by a waterproof covering if on an area of bare skin, and medication can be used to dry up discharges.

Food handlers must tell their supervisor immediately if they know or think they may have made any food unsafe or unsuitable to eat. For example, jewellery worn by a food handler may have fallen into food.

Grooming

Unsafe grooming practices can contaminate food:

- Hair not tied back
- Long, unclean nails
- Body odour
- Too much spray or perfume

Personal Habits

Unsafe personal habits can contaminate food:

- Touching body (rubbing nose, playing with hair etc)
- Jewellery: lots of rings – hard to clean hands thoroughly; beads (necklaces, bracelets) can break and beads can fall into food
- Placing handbag bags on food prep areas (think about all the dirty places handbags are placed eg floor, bus seats etc)
- Sitting and leaning on work surfaces
- Eating food, using same utensils, crumbs dropping back in dish

Handwashing

Washing hands thoroughly and often is extremely important to avoid contaminating food.

- Wet hands and arms with warm water
- Use soap and lather hands and arms
- Wash hands and arms thoroughly.
- Use your own nails to clean under your nails – communal nail brushes can harbour lots of bacteria
- Wash for about 20 seconds
- Rinse thoroughly under warm running water
- Dry hands with a disposable towel or a hot air dryer

Food Handlers are expected to wash their hands whenever their hands are likely to contaminate food. This includes washing hands:

- Immediately before working with ready-to-eat food or after handling raw food
- Before starting to handle food or going back to handling food after another work task
- Immediately after coughing, sneezing, using a tissue or handkerchief, eating, drinking, or smoking
- After touching hair, scalp or a body opening

Gloves don't have to be worn when preparing food as long as hands are frequently washed and are free from cuts and sores. If wearing gloves they must be used correctly to ensure they are actually preventing contamination – not causing it.

Rules for single use gloves:

- WASH and DRY hands with a good technique before AND after using gloves

- DISCARD gloves when they become soiled or contaminated
- CHANGE gloves whenever you would normally wash your hands
- CHANGE gloves after picking anything up off the floor
- DISCARD gloves when leaving the work area for any reason
- When RETURNING to the work preparation area, wash & dry hands and use a NEW pair of gloves
- DO NOT REUSE GLOVES – throw away immediately

To avoid unnecessary wastage of single use gloves consider the following:

- Where possible plan tasks – for example prepare most of the raw food first, before handling cooked / ready-to-eat food and/or complete tasks that do NOT require gloves (or that can be completed with clean tongs etc.) before moving onto tasks that do
- Use clean tongs, forks or other implements to avoid touching food when practical

What to wear

Uniforms and protective clothing such as aprons and shoes can be a great source of contamination. Ensure clothes, aprons and shoes are cleaned each day. Aprons don't have to be worn as long as clothes are clean. Aprons must be removed when using toilet, on breaks, smoking etc.

Sources of contaminations

- Lockers - do not leave damp and dirty clothes in lockers overnight as this will provide ideal conditions for bacterial growth
- Pockets - do not place items such as dirty tissues or food in pockets, as bacteria on these can multiply quickly and be transferred to your hands when you put your hands in your pockets
- do not place small items in pockets above the waist — this removes the chance of these items accidentally falling into the food
- do not place additional gloves in your pockets for later use,
- do not dry your hands, benches, or equipment like knives on your uniform or apron

Keeping the Food Environment Clean

Maintaining a clean workplace will help to prevent food safety hazards. All surfaces need to be cleaned. Only food contact surfaces need to be sanitised.

Cleaning

Cleaning removes visible dirt and soil from surfaces.

- Cleaning should be carried out prior to sanitising. Cleaning and sanitising must be a 2-step process
- Cleaning can be effectively achieved by use of water and detergent
- Clean items should look, feel and smell clean
- Cleaning cloths should be discarded for washing after each cleaning task
- Appliances such as refrigerators, ovens and microwaves should be cleaned regularly
- Floors must be cleaned regularly to discourage pests
- Ensure that all equipment used for cleaning (e.g. mops, buckets, cloths etc) are also kept clean

- Air drying is preferable, but if tea-towels are used they should be discarded for washing immediately after each load of dishes or similar task. Tea-towels should not be used to dry wet hands or mop up food spills

Sanitising

A process that eliminates or reduces the presence of bacteria to a safe level.

- The 3 methods of sanitising are:
 - Steam
 - Hot water (at least 77°C)
 - Chemical sanitiser
- Sanitising is necessary for utensils, equipment and surfaces used for eating or food preparation
- Dishwashers are recommended as they both clean and sanitise
- To sanitise utensils and equipment after handwashing, soak them for 30 seconds in very hot water (>77°C) or in a chemical sanitiser solution (follow manufacturer's instructions for preparation)
- Equipment may be rinsed or double rinsed to remove the sanitiser as per manufacturer's instructions or if preferred
- Equipment and utensils should be allowed to air dry whenever possible

Handle and Store Equipment safety

Equipment:

- Do not contaminate sanitised items when putting them away – ensure hands are clean or new gloves worn
- Avoid contact with areas of equipment that will come into contact with food – end of utensils, inside cups or containers
- Store equipment in clean, tidy areas to prevent contamination
- Dispose of chipped or cracked items – other than possibly causing physical injury, they chips and cracks are hard to clean thoroughly and harbour bacteria
- Linen:
 - Have a container to collect used tea towels, cloths etc. Ensure this is separate from clean linen storage
 - Empty daily
 - Handle and store clean linen carefully to prevent it becoming contaminated

Disposing of Waste

- Remove food scraps from kitchen daily
- In warm climates, store food scraps in sealed containers/bags in fridge until waste collection
- Keep waste collection areas clean
 - Waste storage facilities:
 - Must be suitable for volume and type of waste
 - Must not provide a breeding ground for pests

- Must be capable of being easily any and effectively cleaned

Rules for handling waste

- Clean rubbish bins daily
- Always use bin liners

Separate waste (rubbish or recyclable)

- Wrap broken glass in thick paper
- Always keep lids on bins
- Wash hands after handling bins or rubbish

Pest Control

Types of common pests found in food preparation areas:

- Rats
- Mice
- Cockroaches
- Flies
- Ants
- Weevils

Prevent pests from coming into food preparation areas by:

- Checking incoming stock for pests or signs of pests such as gnawed packages or droppings – if a food item is delivered with signs of pests do not accept it
- Store food in sealed containers off the floor
- Remove packaging cartons such as cardboard boxes
- Ensure bins lids are tight fitting and away from food
- Shut unscreened doors and windows
- Ensure safe use of pest control chemicals – keep away from food and after pest control ensure food preparation areas and equipment are cleaned and sanitised

Food Safety at all Stages

Food hazards can occur at all stages. Anyone involved at any stage must follow safe food handling practices.

Receiving Goods

When goods are delivered it is important to inspect immediately for:

- Signs of damage or deterioration
- Broken or damaged packaging
- Signs of pests
- Use by dates/best before dates
 - o **Use by dates** - The date by which the food should be eaten and still be safe. Food may not be sold beyond its use by date, as it may not be safe to eat.
 - o **Best before dates** - The date the manufacturer recommends that the food be eaten to be in best quality condition. A food may be sold beyond its best before date provided it is still safe to eat.
- Temperature compliance

If goods do not comply do not accept them.

Always organise for deliveries to occur at a suitable time to ensure you have sufficient time to check goods and put them in to storage as soon as possible.

Storage

Dry storage

- Low risk foods such as dry rice and pasta
- Store in sealed containers with packaging information such as use by date
- High risk foods
- Food must be kept above 60°C
- Move deliveries of high-risk foods, to hot storage as quickly as possible
- High risk foods
- Cold food must be kept below 5°C (fridge)
- Frozen foods must be kept below -18°C (freezer)
- Move deliveries of high-risk foods, to cold storage as quickly as possible
- Avoid overloading storage areas
- Limit time refrigerator doors are left open
- Ensure refrigeration units are well maintained and calibrated
- Do not place hot foods directly in the fridge or freezer - once food has stopped steaming it can be placed into cold storage
- Do not re-freeze foods that have thawed or partially thawed. If frozen items have slightly begun to thaw – they must be put into the fridge and used within 24hrs – not re-frozen

Defrost/Thaw food Safety

- Always thaw food in the refrigerator or cool room, NOT at room temperature
- Place food on rack, with a tray/dish underneath to catch any juices released while thawing
- Check foods are thoroughly defrosted before cooking - if foods are not thoroughly defrosted before cooking they will require extra time to heat to the correct temperature – always use a probe thermometer to check internal temperature
- Some processed foods can be cooked from a frozen state. Leave frozen until you are ready to use them
- Thawed foods must be consumed or discarded within 24 hours of thawing
- **Do not refreeze** any foods that have partially or fully thawed
- If you are short of time, a microwave oven can be used on defrost function to defrost food but defrosted food must be used immediately – not put into the fridge for use at a later time

Food Preparation and Processing

Safe practices for preparing and processing food:

- Minimise exposure to the danger zone (5°C-60°C)
- Avoid unnecessary contact and over-handling of food
- Avoid cross-contamination
- Wash raw fruit and vegetables
- Follow personal hygiene and cleaning and sanitising procedures
- Cover prepared foods when storing

Cooking

The Food Standards Code states that high risk foods need to be heated to over 60°C, however we state that 75°C is best practice especially when preparing food for children or the elderly as they are a vulnerable population due to their less developed or compromised immune system.

To ensure food remains safe when cooking, remember the following tips:

- Preheat cooking equipment
- Do not overload cooking equipment
- Whole muscle meat can be cooked to preference
- Minced/formed meat and poultry must be cooked to at least 60°C (75°C best practice) in the middle to kill bacteria o Always use a probe thermometer to test the internal temperature
- Ensure products are fully thawed before cooking unless food is intended to be cooked from frozen
- Ensure all equipment and utensils are cleaned and sanitised prior to use

Cooling

For food to cool within the required time limit below, it must be reduced in volume and placed in cold storage once steaming has stopped – do not leave on bench until cool, as cooling this way is too slow.

- Food must be cooled to less than 5°C:
 - o within two (2) hours — from 60°C to 21°C o within a further four (4) hours — from 21°C to 5°C
- Reduce cooling time of large volumes of wet dishes
- DO NOT place very hot foods in cool room, refrigerator or freezer. Wait until food stops steaming
- Cover cooling food with a loose cover

- Ensure all equipment and utensils are cleaned and sanitised prior to use

Packaging

- Store food in sealed containers or with plastic wrap
- Always label and date packaged food, include what the food item is, when it was made
- Package high-risk food in small batches and return to refrigerated storage within 20 minutes
- Store packaging products in a clean environment and protect from contamination
- Freeze in small quantities to ensure food freezes quickly
- Do not overload freezer units to ensure air can circulate

Reheating

- Reheat small quantities thoroughly and quickly
- Stir wet dishes to make the process quicker and more even
- Foods must reach 60°C or above (75°C best practice) within 1hour
- Use probe thermometer to check temperature
- Never freeze reheated foods
- Reheat foods once only
- Discard all leftover foods that have been reheated
- Do not use a bain-marie or pie warmers for reheating – these are hot holding devices not heating devices. If using bain-marie or pie warmers the device must be heated to the correct temperature first then any food being placed in them must first be heated to the correct temperature before being put in, to keep warm

Cold Holding

- Pre-chill refrigerated cabinet before filling it with food for holding
- Food must be pre-chilled at or below 5°C before being placed in the refrigerated cabinet for holding
- Use separate service utensils for each food item in the cabinet
- Do not overload
- Do not mix new batches of food with old batches

Self Serving

- Ensure adequate supervision
- Remove and discard any food that becomes contaminated
- Ensure you supply enough tongs, spoons etc
- Remove serving utensils contaminated during service and replace with clean, sanitised utensils
- Protect cutlery, serviettes and single use items from contamination
- Do not re-use items intended for single use
 - o Disposable cutlery, plates etc
 - o Individually packed sugars, sauces, jams, tea, coffee, sugar o Serviettes

- Discard any leftover food

Displaying/Handling Food

- Unwrapped food should be served using tongs
- If serving straight to customers hands, don't let them touch the end of the tongs
- Wash hands (or change gloves) between handling money and unwrapped food
- Consider having a dedicated money handler who does not serve food
- If using crockery – ensure it is not chipped or cracked
- Hold plates by base, cups by the handle, glasses by base and cutlery by handles
- Disposable items such as straws and plastic cutlery should be stored and displayed so they are protected from contamination before use

Transportation

Control and monitor the temperature of foods for transport

- Keep cold food below 5°C
- Keep hot food above 60°C
- Keep frozen food, frozen solid below -18°
- All containers used to carry food must be fully enclosed and have a closefitting door or lid
- Drivers of vehicles used for food delivery must not smoke while making deliveries
- When unloading perishable food, move it to cold or hot storage immediately

Disposal

Food must be disposed of when it is:

- Recalled or contaminated
- Carefully package in a sealed container or plastic bag
- Clearly label
- Separate from food: rubbish bin, separate room, separate shelf Follow manufacturers instructions
- Unsafe and unsuitable
- Damaged cans, mouldy products
- Passed it's use by date
- There has been a food complaint
- Hair in food

Quiz

Name: _____ Date: _____ Club/Association: _____

1) What are the 3 requirements for Bacterial Growth?

2) Complete the following sentence

—The temperature danger zone is ____°C to ____°C||

3) Complete the following sentence:

The 2 Hour / 4 Hour states:

If food has been left in the Temperature Danger Zone:

- for a total of less than 2 hours → it must be _____ immediately.
- for a total of between 2 - 4 hours → it must be _____ immediately.
- for a total of more than 4 hours → it must be _____.

4) What should you do to protect food from cross contamination?

5) True/False

Food handlers have a legal responsibility not to work with food when carrying certain illnesses.

6) True/False

When using disposable gloves you must wash and dry your hands before AND after using them.

7) What are the 3 method of sanitising?

8) Complete the following sentence

—The fridge must be kept at a temperature of less than ____°C||

9) Multiple Choice

Food must be cooked or heated to 60°C or more (best practice is 75°C). How do you test if food has reached a temperature of above 60°C?

- a) You know because it is hot to handle
- b) You know because it is steaming
- c) You know because you followed the recipe and it said it would be cooked through
- d) You know because you use a probe thermometer to test the temperature

10) Multiple Choice

To ensure a large pot of cooked food cools to a safe temperature for storage (less than 5°C) what would you do to speed up cooling time?

- a) Put the pot in the fridge as soon as you have finished cooking
- b) Leave the pot on the bench, loosely covered until it reaches room temperature then place in fridge
- c) Portion contents of pot into smaller containers, leave on bench loosely covered until it stops steaming then cover and place in fridge
- d) Leave the pot on the bench, loosely covered until it stops steaming then place pot in fridge