

# FOOD HANDLER CERTIFICATION

## Student Manual



Food Safety & Hygiene Training and Consulting

Recognized by the *Ontario Ministry of Health and Long Term Care*

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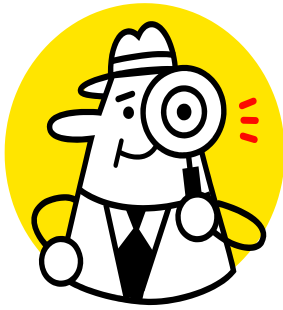
*Against the spread of germs that make people sick.*

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# **THE ROLE OF THE LOCAL HEALTH UNIT/DEPARTMENT & LEGISLATION**

## The Health Protection and Promotion Act (HPPA)



- Is a provincial legislation
- Outlines the duties of the **Board of Health**
- Gives the local Health Department the power to enforce this Act by inspecting places where health hazards may exist by issuing fines and may even close a business in severe cases
  - If Health Inspectors believe food is unsafe, they may seize, destroy or discard it
- Regulations are developed to explain what the Act means.

### Who are Ontario food establishments governed by?

- They are governed by the **Ontario Food Premises Regulation 493**.

### Ontario Food Premises Regulation 493(O. Reg. 493/17)

- Was developed from The Health Protection and Promotion Act.
- Sets out the specific standards for safe food storage, display, handling, temperatures, employee hygiene, maintenance and dishwashing in food premises.
- Every operator shall ensure that there is at least one employee on the premises that has completed food Handler training with a valid certificate.
- It is the responsibility of the operators and employees of their establishment to ensure that the premises are following the regulation.



### What is the role of the Board of Health?

- providing public health programs and services to people who live in each health unit
- identifying the health needs of their community and providing for them,

- having a board of health in each health unit
- ensuring that there is a food safety training program available to all food handlers of food premises in the health unit

### **What is your Public Health Inspector responsible for?**

- conducting routine random inspections as well as investigate complaints of all food premises to ensure that the public receives wholesome, safe food.
- enforcing the **Food Premises Regulation 493**. They may issue tickets, orders and can summon you to court if required
- the education of food handlers to ensure safe and wholesome food is being prepared and served to the public. This is done by helping them develop a food safety program for their establishment so that they can regulate themselves by inspecting themselves.
- Employees must work as team to help the premises maintain standards set out by the regulation.
- Every operator must post results of any inspection in accordance with the inspector's request.



### **What are By-laws?**

- Are laws made by municipal or regional governments to deal with important issues for a specific city or region such as garbage disposal and licensing. Not at the provincial level.
- Can be different in each municipality or region.

# FOODBORNE ILLNESS

**Foodborne illness:** is any illness resulting from the consumption of contaminated food.

This can include food contaminated by germs or microorganisms (biological contamination), chemicals, physical hazards and allergens.

Many people have had a foodborne illness without even knowing they did. They probably thought it was the flu.

**Symptoms may include the following:**

*Stomach cramps*

*Diarrhea*

*Fever*

*Nausea*

*Vomiting*



**Vomiting and Diarrhea** are the most common

Symptoms can start soon after eating contaminated food, but they can hit up to a month or more later, depending on the type of microorganisms causing the illness. For some people, especially young children, the elderly, pregnant women and people with weakened immune systems, foodborne illness can be very dangerous and can even cause death.

Food may look safe but may be contaminated with germs that can make us sick.

**A foodborne illness can cost a food establishment a huge amount of money in:**

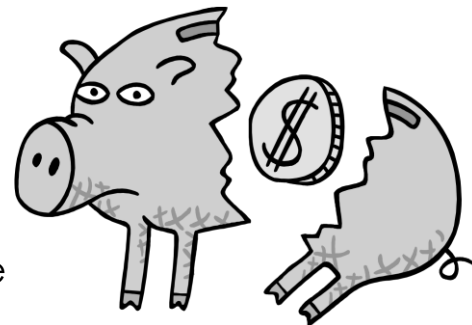
Lost business

Possible lawsuits

Lost wages if there is a closure of the establishment

Employers and workers are responsible for safe food handling.

If you receive a foodborne illness complaint do not give medical advice. Refer customer to the manager and record details of the person and food (such as time and date food eaten, type of food and symptoms).



Notify Public Health and keep a sample of the food if possible. Public health experts estimate that there are as many as 4 million people that get foodborne illness in Canada every year. Foodborne illness is preventable in most instances. As long as you use safe food handling practices and a food thermometer to make sure your food is cooked to a safe internal temperature.

## **TYPES OF FOODBORNE ILLNESS**

# ***1) Biological Contamination***

**Micro organisms**(Microbes): are tiny living germs that are too small to see

**Pathogenic**: means capable of causing disease

**Pathogens**: are micro organisms or germs that cause disease in humans

### **Where are microorganisms found?**

We live in a world with a wide variety of micro organisms, and there are many opportunities for food to become contaminated as it is produced and prepared. Many foodborne microorganisms are present in healthy animals (usually in their intestines) raised for food. Meat and poultry carcasses can become contaminated during slaughter by contact with small amounts of intestinal contents (poo). Similarly, fresh fruits and vegetables can become contaminated if they are washed or irrigated with water that is contaminated with animal manure or human sewage.



Later in food processing, other foodborne microorganisms can be introduced from the environment of the food processing line. They may also be introduced by infected humans who handle the food, or by cross contamination between raw and cooked or ready-to-eat products. The unwashed hands of food handlers who are infected can introduce bacteria and viruses.

The way that food is handled after it is contaminated can also make a difference in whether or not an outbreak occurs. Many bacteria need to multiply to a larger number before enough are present in food to cause a foodborne illness.

The **most common** organisms associated with foodborne illnesses are:

- a) Bacteria
- b) Parasites
- c) Protozoa

- d) Viruses
- e) Fungi

### a) Bacteria

**Bacteria** can be beneficial: example we have bacteria in our intestines which help us digest our food. Bacteria can be used in wastewater treatment to break down sewage and bacteria can be used in the food industry for the production of yogurt.

Bacteria unfortunately can also be of a major concern in the food industry as it can affect the odour, taste and texture of food and more importantly bacteria can also be **pathogenic**, which means they are capable of causing disease.

**Pathogenic Bacteria** can cause two types of foodborne illness:

### 1) Foodborne Infection (Food Poisoning)

- Is caused when eating a food or beverage that contains living bacteria which then multiply in the human intestines causing illness.

#### Symptoms of Foodborne Infection:

- diarrhea
- Stomach cramps
- Fever,

#### Examples:

- Salmonella
- Campylobacter
- E. Coli
- Shigella

Bacteria	Source	S y m p t o m s & O n s e t	Prevention
Salmonella	Raw poultry products, eggs, pork, processed meats. People(contaminated faeces)	Illness may begin between 7hrs to 3 days after eating contaminated food. Fever, cramps, diarrhea and sometimes vomiting. Can cause death.	Cook poultry pieces to an internal temperature of 74 C(165 F) and whole poultry to 82 C(180 F). Avoid cross-contamination of ready-to eat foods with raw meat or their juices. Wash hands thoroughly after using toilet or handling raw poultry
Campylobacter	Raw chicken and raw milk.	Illness begins between 2-5 days after eating contaminated food. Similar to Salmonella.	See Salmonella
E.coli E.coli 1057:H7 bacteria are the most harmful strain of E.coli bacteria known.	Feacally contaminated water and food, raw meats, undercooked ground beef, ham, turkey, roast beef, sandwich meats, raw vegetables, unpasteurized milk and apple cider, raw milk cheeses, soft cheeses, mayonnaise, poor food handling practices. Sewage contaminated shellfish.	Symptoms occur 3 to 10 days after eating or drinking contaminated food. Bloody or watery diarrhea, abdominal cramps, nausea, sometimes vomiting-lasting several days or weeks. Some people (especially the very young and very old ) with E.Coli 0157:H7 develop hemolytic uremic syndrome with possibly permanent kidney damage, even death.	Cooking food thoroughly. Proper handwashing. Drinking only pasteurized milk. Drinking water from safe water supply.
Shigella	Highly contagious. A few organisms required to spread the disease. People, indirectly through food, water or milk that was contaminated by man.	Symptoms occur in 1 to 3 days. Diarrhea, fever, nausea, vomiting and abdominal cramps. Bowel movements may contain blood, mucus and pus. Children may also experience convulsions.	Employee hygiene rules.

## 2) Foodborne Intoxication (Food Poisoning Intoxication)

- Is caused when a food or beverage is eaten which contains toxins (poisons) that have been produced by **pathogenic bacteria**.
- The bacteria multiply in the food or your body and a by-product is **toxin**. The toxin is what causes the illness.
- Not all toxins are destroyed by cooking

### Symptoms of Foodborne Intoxication:

- Most common is vomiting

## Examples:

- Staphylococcus aureus
- Bacillus cereus
- Clostridium botulinum

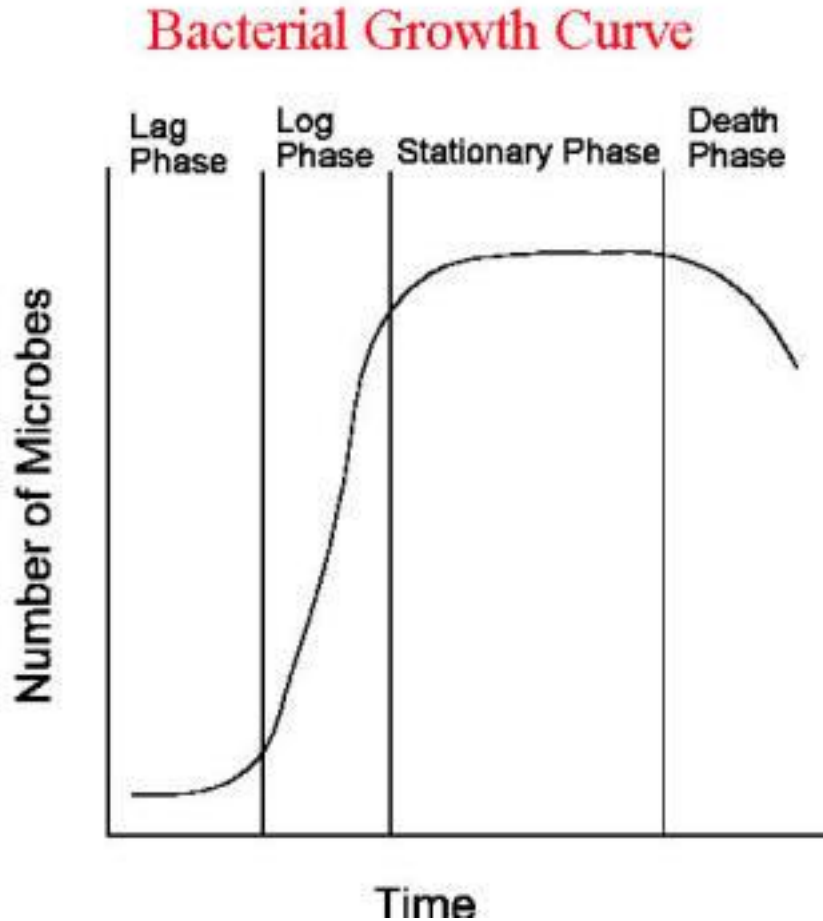
Bacteria	Source	Symptoms & Onset	Prevention
Staphylococcus aureus	Infected cuts, burns, boils and pimples. Coughing and sneezing onto food. Unwashed hands.	Vomiting and abdominal cramps and diarrhea. 30 min. to 8 hours after eating contaminated food.	Employees with infected cuts, burns or boils must make certain their injuries are properly bandaged and an effective barrier such as disposable gloves are worn when handling food. Refrigerate potentially hazardous foods. Wash hands prior to preparing any hazardous foods.
Bacillus cereus	Found everywhere in the environment especially in the soil.	Usually mild symptoms: nausea, abdominal cramps & vomiting within 30- 60 minutes Diarrhea within 3 to 5 hours.	Cook foods thoroughly and do not allow toxins to form. Keep hot food hot. (>60°C/140° F). Keep cold food cold (<4°C/40° F).

## Spore Forming Bacteria

- Some types of bacteria are able to form **spores**.
- **Spores** are thick, very resistant bodies that develop within the bacterial cell.
- When **spore forming bacteria** are exposed to very hot or very cold temperatures, they can protect themselves by changing into a **spore** state which protects the bacteria from being killed.
- **Most spores can survive boiling for hours, chemical disinfection and drying.** The bacteria will begin to grow again when the food goes back into an environment of favourable conditions to the bacteria.

Bacteria	Source	Symptoms And Onset	Prevention
Clostridium perfringens Produces a toxin in the intestinal tract when people eat food containing many of the bacteria.	Found in soil, dust, sewage and intestinal tracks of animals and humans. Meats and gravy dishes. Improperly handled leftovers.	Intense abdominal cramps and very gassy diarrhea. 8 to 24 hours after eating contaminated food.	Do not leave food out on the table, or warming in the oven for more than 2 hours. Freeze or discard leftovers after four days. Serve hot food immediately or keep it above 60°C/140°F. Cool foods rapidly. Reheat leftovers to 74°C/165°F.

# How do bacteria grow?



From this Bacterial Growth Curve Chart we can see that there are four stages of growth. On the left side we see the number of microorganisms or microbes as they increase. On the lower portion we can see the time.

**Lag Phase:** Where bacteria are becoming acclimated to the environment in which they are in (getting used to it) and there is hardly any reproduction.

**Log Phase or Growth Phase:** There is logarithmic growth or very rapid growth. Bacteria are single celled organisms that reproduce by dividing. Bacteria will begin to grow once they get used to or are comfortable in their surroundings.

**The bacteria divide exponentially every 20 minutes in perfect conditions:**

1 becomes 2, in 20 minutes

2 become 4, in 40 minutes

4 become 8, in 60 minutes

After 2 hours that 1 bacteria has become 64 bacteria

Guess how many bacteria after 8 hours??

**16,777,216** (sixteen million, seven hundred and seventy seven thousand, two hundred and sixteen) bacteria from just **ONE** bacteria!!

But in cases of even the slightest contamination it is likely that tens of thousands of bacteria are involved at the start- not only one...so you can imagine to what numbers they can grow to!

**Stationary Phase:** Bacteria stop growing because they have depleted pretty much all their nutrient supply and have contaminated their environment with the waste they expel through their cell membrane. (same number dying as are multiplying-plateau)

**Death Phase:** This is where the bacteria begin to die-off

***So which phase of growth should we be eliminating????***

## **The Log Phase**

According to our Bacterial Growth Curve Chart it takes about **two** hours for bacteria to get used to their surroundings (in the **Lag phase**) before they start to grow rapidly in the **Log phase**.

Therefore when we look at time as a control, we want to set a **two hour time limit** in the **Lag Phase** so that we can prevent the bacteria from entering the **Log Phase**.

**Infectious Doses (ID):** The amount of pathogen required to cause an infection. It depends on the health of an individual.

ID for Salmonella:	100,000
ID for Shigella:	10
ID for E.coli:	1,000,000 - 100,000,000
ID for E.coli 0157:H7:	< 10

### ***What do pathogenic bacteria need to grow?***

Bacteria need pretty much the same things we need.

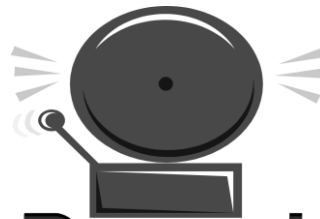
**Nutrients (food)**  
**Proper pH**  
**Time**  
**Proper Temperature**  
**Presence or absence of Oxygen**  
**Water Activity(moisture)**

These will all be discussed in more detail:

- I. **Temperature**: Is the easiest and most effective factor in controlling **pathogenic** bacterial growth.

**Pathogenic** bacteria grow best in the temperature range between:

**4°C (40°F) and 60°C (140°F)**



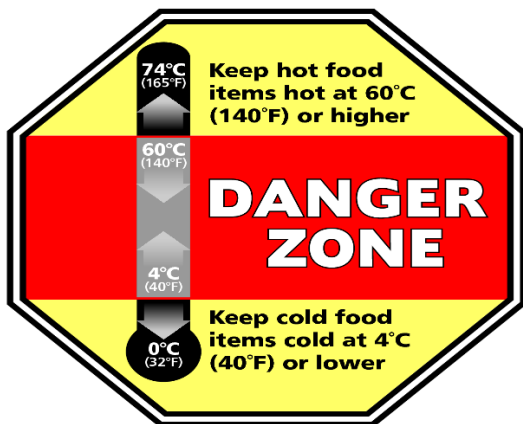
This is known as the **Danger! Zone**

***Do not allow hazardous food to be in the Danger Zone for more than 2 hours.***

- Temperatures 4°C (40°F) or below will not kill **pathogenic** bacteria but will not allow them to multiply enough times to cause an illness. (**Cold Holding**)
- Temperatures between 60°C (140°F) and 74°C (165°F) may not kill **pathogenic** bacteria but will not allow them to grow. (**Hot Holding**)
- Temperatures at 74°C (165°F) will kill most pathogenic bacteria. (**Cooking**)
- Freezer Temperatures which keep food frozen with no signs of thawing will stop bacterial growth but will not kill the bacteria already present. (**Freezing**)

Move hazardous food through the **Danger Zone** as quickly as possible!

- The only time hazardous food is allowed in the danger zone is when preparing it (for only up to 2 hrs) or serving it. Otherwise keep it hot (60°C (140°F) and above) or keep it cold (4°C (40°F) and below).
- Most food poisonings are caused by temperature abuse during the storage of hazardous foods.



Pathogenic bacteria will not multiply fast enough to cause food poisoning outside the **Danger Zone** but will multiply fast enough in the **Danger Zone**.

- II. **Time:** Additionally **pathogenic** bacteria need time to grow. If foods are kept in the **Danger Zone (between 4°C and 60°C)** for more than two hours that is enough time for them to multiply enough times to cause food poisoning. If we keep the time the food is in the **Danger Zone** to a minimum, this keeps the bacteria in the Lag Phase or No growth phase. **Remember bacteria double every 20 minutes in perfect conditions.**



III. **Nutrients: Pathogenic** bacteria need nutrients to grow. They grow fast in **potentially hazardous foods**. These foods are high in **protein** which is the best nutrition for bacteria. While other foods, like vegetables and fruits still offer nutrients to pathogenic bacteria they don't grow quite as quick as they do in high **protein** food.

**Potentially Hazardous Foods:** are defined as foods which are capable of supporting the growth of micro-organisms which can potentially cause foodborne illness. They are mostly high **protein** foods:

- ◆ meat, poultry, seafood, shellfish(raw or cooked)
- ◆ cooked vegetables, peas or beans
- ◆ custards, puddings and whipped cream
- ◆ milk and milk products (except hard cheese)
- ◆ homemade dressings and gravies
- ◆ garlic in oil, bean sprouts
- ◆ processed meats (ham, bologna, wieners)
- ◆ soft cheese
- ◆ meat sandwich spreads
- ◆ eggs, egg products and egg salad
- ◆ sliced melon
- ◆ cooked rice
- ◆ sliced fruit and vegetables

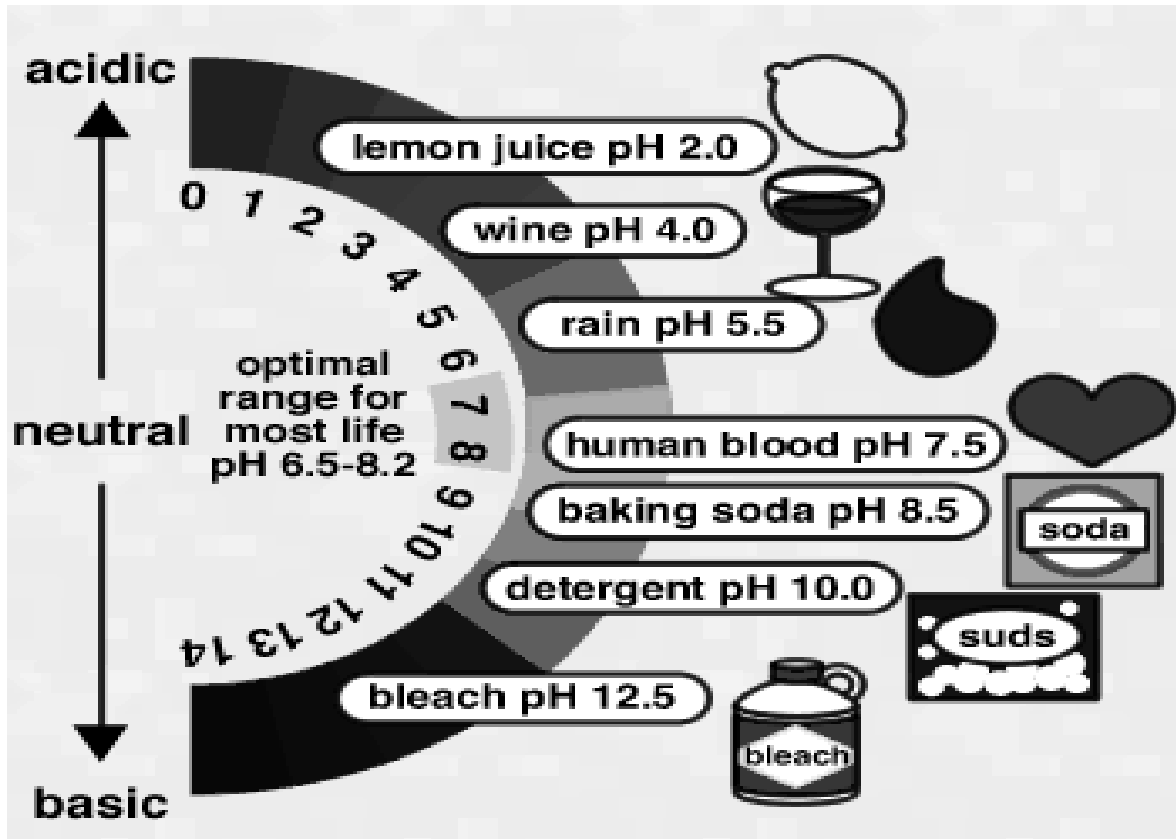


**Potentially Hazardous Foods** require refrigeration!

IV. **pH:** Measures the acidity or basicity of a solution with a range from 0 to 14.

- Pure water is neutral with a pH of 7.
- Solutions with a pH of less than 7 are said to be acidic.
- Solutions with a pH greater than 7 are said to be basic (or alkaline).

**Pathogenic bacteria grow best at a neutral pH of 7.**  
Most bacteria will not grow at a pH lower than 4.6



V. **Water Activity( $a_w$ )**: is the amount of moisture that is available to micro organisms. It refers to the availability of water in a food or beverage.

- The moister the food is, the faster the pathogenic bacteria multiply.
- The water activity level for water is **1.0** and is the highest water activity level.
- The amount of water in food can be reduced by smoking, drying, freeze drying or adding salt, pectin or sugar.
- Lower water activity will not kill pathogenic bacteria but it will not allow them to grow and once moisture is added these dry foods can become potentially hazardous



So when looking at Water activity , the dryer foods such as crackers, cookies, milk powder and egg powder have no potential for growth of micro organisms as compared to vegetables, meat, liquid milk, cheese etc. which all have a higher water activity.

VI. **Oxygen:** Depending on the ***pathogenic bacteria***, some require oxygen (air) to grow called aerobic bacteria and some grow with the absence of oxygen (air) called anaerobic bacteria such as in cans or jars.

- Most **pathogenic** bacteria need oxygen (air) to grow and therefore by removing the oxygen (air), those bacteria will stop growing.



We have discussed the 6 requirements bacteria need to grow:

**Temperature**  
**Time**  
**Nutrients**  
**pH**  
**Water Activity**  
**Oxygen**

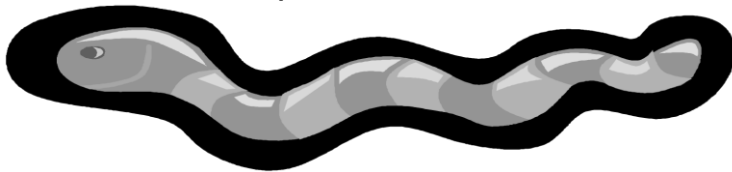
When these **6** requirements are combined **pathogenic bacteria** will multiply enough times to cause food poisoning!!

If we remove one of the 6 requirements bacterial growth can be delayed or even stopped.

**The most effective factor in controlling pathogenic bacteria is:**

### **TEMPERATURE**

**b) PARASITES** are different from bacteria because they need a living host to complete their life cycle. (They need a living person, animal or plant.)



- Generally, parasites are host-specific.
- Parasites can be acquired through drinking water contaminated with feces, eating food and through contact of a contaminated surface.
- People handling food can have intestinal parasites without symptoms and can contaminate food if they do not wash their hands properly after using the washroom!!!
- Parasites are also spread if raw fruits and vegetables are washed with contaminated water

Examples of parasites:

**Worms:**

- Trichinella spiralis in pork and game animals that are undercooked.
- Anisakis worm in salt water fish or squid that is not cooked and raw fish such as sushi, sashimi or salmon.

**c) PROTOZOA** are microscopic parasites

- Live in the digestive tract of humans and animals
- Can be spread to other food through cross contamination

Examples of protozoa:

- Cryptosporidium from untreated water supplies
- Giardia lamblia from recreational water

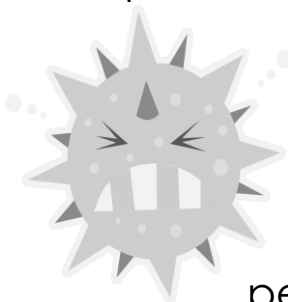
**How to kill parasites, protozoa and their eggs:**

a) **Cook** pork or game meats to an internal temperature of **71°C (160°F)**

Seafood to a minimum internal temperature of **70°C (158°F)**

b) Freeze food to a temperature of **-20°C (-4°F) for at least 7 days** or **-35°C (-31°F) for at least 15 hours** or **-18°C (0°F) for at least 21 days**

**d) VIRUSES** are different from bacteria because they do not reproduce in the food and they require cells like the ones in people to replicate or grow.



Viruses replicate by entering the cell of the host and taking over the genetic material responsible for reproduction.

- They can infect all types of cells, including bacteria, fungi, plants, animals, and living cells within people and therefore people who are infected with the virus can spread it to food.

- Viruses can be found in the environment, in water and in air.
- Viruses can cause viral diseases such as Hepatitis A and Norovirus. (there are others as well)
- Viruses can be found in a person's feces or urine.

### **How to avoid viral contamination:**

- Wash hands properly using soap and warm water after using the washroom.
- Cook food if possible.
- Clean and sanitize all counters and surfaces as viruses can survive on surfaces for a long time.

**e) FUNGI** reproduce via spores. They come in a variety of sizes and shapes and can include **yeasts** and **moulds**.

- Yeast cells look round or oval and you need a microscope to see them but they can be seen if they are in large clusters
- Yeast can be used to make bread and alcohol but it also spoils food by slowly eating it
- Moulds are food spoilage organisms that you can see such as fuzzy and discoloured surface when they grow in large clumps
- Moulds can be used to make wines, antibiotics and blue cheese
- Moulds can create toxins that are very poisonous

## ***2) Chemical Contamination:***

Occurs when poisons or chemicals are accidentally added to food.

- Examples are cleaners, pest control chemicals and excessive addition of food additives such as MSG.
- Some chemicals that are of benefit are also a food poisoning risk.
- Acidic foods such as fruit juice and tomatoes should never be stored in metal containers because the acid may cause the container to dissolve into the food.



- Vomiting usually occurs within 1 hour after eating the contaminated food as the body will immediately reject the poison.

### **How to eliminate Chemical Food Poisoning:**

- It is very important to label all chemicals such as pest control sprays and cleaners and keep away from food.
- If space is limited store below food to prevent spillage into the food.
- Chemicals must be stored in their original containers or in clearly labeled containers.
- Never store chemicals in food containers as people will mistakenly think the chemical is a food.



## ***3) Physical Contamination:***

Occurs when foreign objects not normally found in food such as hair, paint chips, grease, metal, gum, glass, bones, wood, plastic, insects, fingernails and jewelry end up in the food.

- Finding these objects may cause illness (including psychological trauma) or injury such as cuts, bleeding, choking, broken teeth, and in some cases surgery to remove the object.

**May be added inadvertently:** employee carelessness, poorly maintained facility, use of broken or worn out utensils, improperly cleaned vents can blow debris onto food, gems from jewelry, artificial nails may break off, broken dishes, machinery, packaging can fall into food .

**May be added intentionally:** sabotage



## 4) Allergies:

Some people will have an **allergic reaction** to specific food. An **allergic reaction** is the body's way of responding to a foreign substance or "invader". When the body senses a foreign substance the immune system is triggered. The overreaction of the immune system is called an **allergic reaction**. This causes the body to release a chemical called histamine which can produce the following symptoms:

- Flushed face, hives or a rash, red and itchy skin
- Swelling of the eyes, face, lips, throat and tongue
- Trouble breathing, speaking or swallowing
- Anxiety, distress, faintness, paleness, sense of doom, weakness
- Cramps, diarrhea, vomiting
- A drop in blood pressure, rapid heart beat, loss of consciousness

This allergic reaction may result in **anaphylaxis** which is a severe, life threatening reaction

**Anaphylaxis** can start within minutes of contact with the food to which a person is allergic and must be treated immediately.

Because an anaphylactic reaction can be severe, people who may have this type of reaction often carry **an epinephrine autoinjector (e.g., EpiPen® )** which should be administered at the **first sign of a reaction**. Epinephrine will help reverse the symptoms of the reaction, such as helping with a person's breathing. The person must be transported to the hospital immediately.



**If a customer is having a severe allergic reaction Call 911 and notify management!**

In Canada the 10 most common food allergens are:

Milk

Eggs

Tree nuts (almonds, Brazil nuts, cashews, hazelnuts or filberts, macadamia nuts, pecans, pine nuts, pistachios, walnuts) eggs

Sulphites (a food additive)

Sesame seeds

Seafood (fish, crustaceans and shellfish)

Peanuts

Mustard

Soy

Wheat & Triticale

**MSG** (a flavour enhancer and cooking aid) and **sulphites** (used to keep fruit and vegetables looking fresh are food additives that can cause a food intolerance with similar symptoms

People with heightened sensitivity to these substances can experience allergy like symptoms.

**Ingredient Lists:** of all food items and from packages of all prepackaged foods should be kept and readily available



-Ingredient lists should be up to date, complete and accurate and available

-If you change the ingredients in any of your recipes, be sure to update your allergy charts, binders or menus.

-If you are not sure of the ingredients of a certain food, tell the customer you are not sure. Do **not** take guesses.

Do not cross-contaminate food: this could result in an allergen getting into a customer's food without even realizing it.

Try to not use food items that can cause allergic reactions. For example instead of using peanut oil switch to vegetable oil.

**Latex Gloves:** Many people have an allergy to latex and if latex gloves are used to prepare food the protein from the gloves can end up in the food and cause an allergic reaction.

**Education:** All staff should be aware of food allergies and understand how important it is that the ingredient information is accurate.

- Food service staff are sometimes not aware of how dangerous food allergies can be.
- Staff need to be trained about the health effects of allergic reactions and that they can be potentially life-threatening.
- They need to know that it's very serious and it isn't just about a person liking or not liking an ingredient. They need to understand the premises' policy on handling questions about ingredients and food preparation processes (e.g., potential for cross-contamination).
- Kitchen staff need to know they must follow written recipes exactly when preparing and cooking food. If a recipe needs to be changed, management must be told and all employees involved in preparing and serving the food need to be told as well.

**Have a policy:** that is based on making sure customers are kept safe and are given the right ingredient information.

- An employee on each shift would be designated to answer customers' questions. This employee would need direct access to the recipes and kitchen staff, and a clear understanding about the importance of ingredient information. Servers would then have all questions answered by this employee.
- Check with guests in advance about any food allergies.
- The organizer of a catered event should ask if any of their guests have special dietary needs or food allergies.

# **SAFE FOOD HANDLING**

## **Maintenance of Food Premises**

- no room shall be used for sleeping (no pillows, mattress, etc)
- keep personal items away from food prep areas
- floors or floor coverings are tight, smooth and non-absorbent
- no pooling water
- remove unused equipment
- live birds or animals not allowed (except service animals)

## **Cross- Contamination**

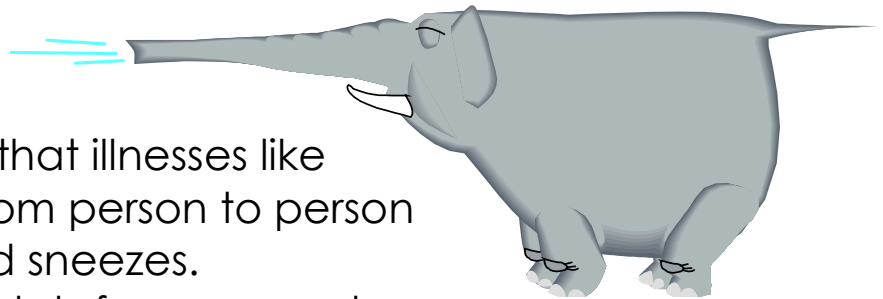
**Cross-Contamination**-occurs when germs, chemicals, physical hazards or allergens are transferred onto food either:

**Direct**- when raw food or its juices and cooked food come into direct contact

- or sneezing or coughing into food

which is also the main way that illnesses like colds and flu are spread: from person to person when someone coughs and sneezes.

This can happen when droplets from a cough or sneeze of a sick person move through the air and end up on the mouth, nose or eyes of people nearby. Or sometimes germs can be spread when a person touches a droplet from a sneeze or cough from another person that landed on a surface such as a desk and then touches his or her own eyes, mouth or nose.



**Indirect**- via a vehicle such as from dirty utensils, pests, hands etc.

**You must prevent Cross Contamination!**

Prevent raw food and its juices from coming into contact with ready to eat food:

- Clean and sanitize knives, cutting boards and equipment after coming into contact with hazardous food.
- When cooking meat use separate utensils to handle raw and cooked meat.
- Do not brush marinade you have been using on raw meat on the last 10 minutes of cooking so that the cooked meat does not get contaminated by the marinade.
- Do not place cooked meat on the same plate that you used for the raw meat unless it is washed and sanitized first.
- Do not taste food directly. Use the two spoon method. The first spoon takes a sample of the food and places it onto the second spoon. You can taste the food using the second spoon.

Prevent juices from raw food from dripping onto cooked or ready to eat food by proper refrigerator storage:

- Store cooked or ready to eat food above raw food or in a separate refrigerator.
- Cover all food stored in the refrigerator to protect from contamination.
- Do not store food on the floor in walk-in –refrigerators to avoid contamination from the floor.
- Practice **FIFO (First In First Out)** to ensure food does not sit too long before being used.

Ensure chemicals and pesticides don't end up in the food:

- All chemicals and pesticides must be labeled and stored separately away from food.
- Mops, brooms and brushes must be stored in a separate room.

Cover your mouth and nose when coughing or sneezing.

- Cough into a tissue and then throw it away. Don't put it in your pocket and save it until next time.
- If you do not have a tissue or not enough time to get one then cough or sneeze into your sleeve.

Prevent cross contamination or spreading germs from employees hands:

- Think about all the things that you touch everyday.
- Many of the things we touch are covered with microorganisms or germs. (**pathogens**) Germs that we cannot see.
- When you have germs on your hands you can pass them on to food without even knowing it, or you can get sick yourself by those same germs when you touch your own food, put your hands in your mouth or rub your eyes or nose because that gives them a way to get inside your body.

### **You must stop the spread of germs!**

One of the most important things to remember which is very simple is:

***Wash your hands!!!***



**Washing your hands is the best way to stop the spread of germs.**

# WHEN TO WASH YOUR HANDS:



## BEFORE:

**Before** starting work,  
**Before** handling food



## AFTER:

**After** using the washroom  
**After** coughing or sneezing in your hands or blowing your nose  
**After** touching something contaminated (soiled objects)  
**After** smoking  
**After** touching money  
**After** handling hazardous food  
**After** clearing tables



## AFTER AND BEFORE:

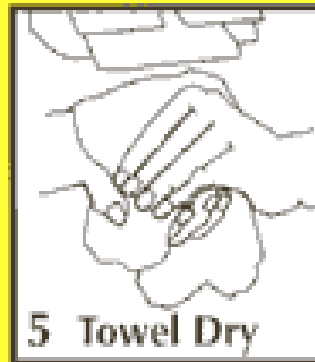
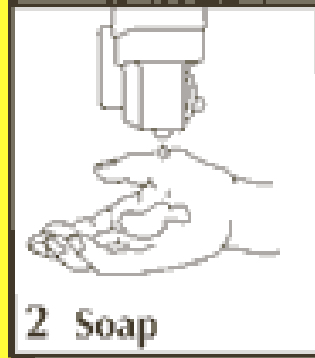
**After** finishing one task and **before** beginning another task

## ANYTIME YOUR HANDS LOOK DIRTY

## D) THE PROPER WAY TO WASH HANDS

To wash hands properly you need to follow the following steps:  
**(See attached poster)**

# Handwashing



LAKE CHARLOTTE

Most people do not know the proper way to wash their hands.

## **Using soap and water**

- 1) Wash your hands with warm water.
- 2) Use any soap you like. Antibacterial soap is O.K. to use but it is not required as regular soap works just as well.
- 3) Work up some lather on both sides of your hands, your wrists, and between your fingers. Don't forget to wash around your nails as germs love to hide there.
- 4) It should take you about 20 seconds to wash your hands or as long as it takes to sing the "HAPPY BIRTHDAY" song twice.
- 5) Rinse with running water.
- 6) Dry your hands with dry single use paper towel or hot air.  
*Do not wipe hands on clothes, cloths, or aprons*

## **Handwashing Sinks**

- Separate sinks must be used for handwashing only and are required by legislation.
- There must be hot and cold running water, soap in a dispenser and paper towels (Bar soap is not recommended as it can carry germs).
- Separate sinks are required for dishwashing and food preparation to prevent cross-contamination.
- Hand washing sinks must be easy to get to so that employees are encouraged to wash their hands often.

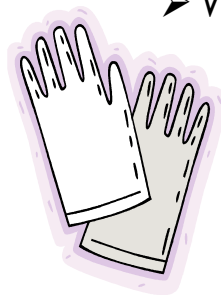


## **When Using Gloves**

- Wearing gloves is not required by law in Ontario.

Wearing gloves does not replace handwashing.

- Hands must be washed thoroughly before and after wearing gloves.



- Wearing gloves can be used to prevent cross-contamination when there is a cut or a wound that is properly bandaged on a hand:
  - Gloves must be replaced after each task
  - Gloves must be properly stored to protect them from contamination

## **EMPLOYEE HYGIENE**

- Smoking is not allowed in the kitchen area to ensure ashes and butts do not end up in the food as well as employees will not need to touch their mouth
- Chewing gum is not allowed in the kitchen area so that gum or saliva (spit) will not accidentally fall into the food
- Employees must be clean and wear clean clothing and uniforms
- Change uniforms when necessary
- Uniforms must not be worn outside the establishment.

- Clothes must be changed and hung in a change room and not in the kitchen or food storage areas.
- Clothes should be comfortable so that you don't need to adjust them while working with food
- Head gear that confines hair must be worn by food handlers
- Hair nets, chef's hats and baseball caps are acceptable. This will prevent employees from touching their hair to move it out of their face and also prevent hair from falling into food as hair carries micro organisms



- Don't touch body such as: nose, hair, mouth etc.
- Don't open bags by blowing into them
- Use proper tasting methods e.g. 2 spoon method



- Do not work when ill such as with flu, diarrhea, coughing, sneezing and infections
- Advise management if suffering from a communicable disease and/or common symptoms
- Employees may show no signs of disease but may be a carrier without even knowing it themselves
- Do not work with food if you have a skin disease unless you have an approval from the medical office of health in writing.
- Do not work with injuries to hands (i.e. with band-aids) unless wearing gloves and following proper procedures.
- Food handlers must have trimmed nails and wear no jewellery when preparing food.
- Employees must be aware of their bad habits such as biting nails, touching face, especially around the mouth, nose and eyes



## Serving Food

- When serving food be sure handles of serving utensils do not touch food
- Use disposable plastic bags, wax paper, or non-latex gloves
- Do not touch surfaces that come into contact with mouths or food
- Cover cutlery and invert glasses and cups
- Use trays to serve
- Hold plates underneath with thumb on rim



## Discarded Food and Single-Service Items

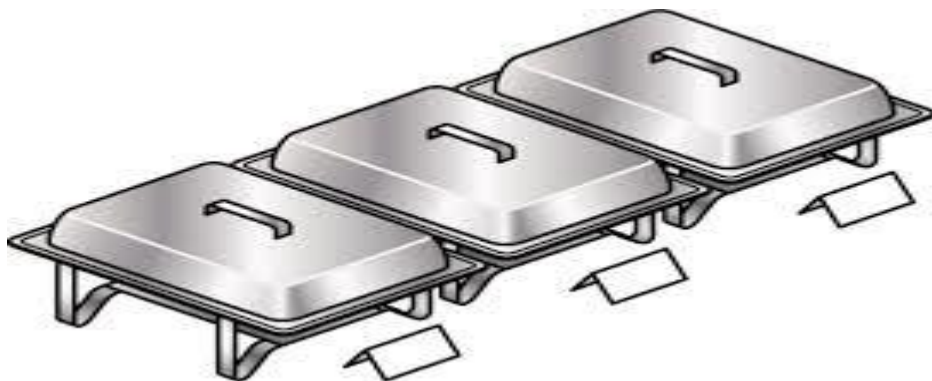
- Food served but not eaten must be discarded unless it is low risk that was previously served in packaging or a container that protects the food from contamination and the packaging was not compromised
- Discard single-service items such as plastic cutlery and chopsticks after one use



## Holding Foods at Self Service Areas

Salad bars, buffets and cafeterias where customers, either help themselves or are served by attendants, often display hazardous foods for long periods of time.

- Check hot and cold temperatures every 2 hours.
- Protect self-serve food from contamination with sneeze guards, covers or wraps
- Provide properly washed long handled spoons with the handles facing out so that anyone serving food will not touch it
- Ensure there is potable water available for drinking
- Provide a clean plate each time the customer returns for additional helping
- Discard any product that has been in the **Danger Zone** for more than 2 hours.
- Discard old food before replacing it with fresh food.



## Room Temperature Holding

- Potentially hazardous food that will be eaten right away can be kept at room temperature for only up to 2 hours. The time should be noted on the food.

**Cooking Food Safely:** Food must be cooked according to this temperature chart:

## HAZARDOUS FOOD TEMPERATURE CHART

### MINIMUM REQUIRED INTERNAL FOOD TEMPERATURES

*(Check internal temperatures with probe thermometer)*

#### COLD HOLDING

Refrigerated Foods	<b>4 °C / 40° F or colder</b>
Frozen Foods	<b>-18°C / 0°F or colder</b>

#### COOKING

All temperatures to be maintained for a minimum of **15 seconds**

<b>Whole Poultry</b> chicken, turkey, duck, etc	<b>82°C /180°F</b>
<b>Ground/ Cut Poultry</b> wings, breasts, legs, etc.	<b>74°C /165°F</b>
<b>Food Mixtures</b> stews, soups, casseroles, gravies containing poultry, egg, meat, fish or other hazardous food	<b>74°C /165°F</b>
<b>Pork / Pork Products</b>	<b>71° /160°F</b>
<b>Ground Meat</b> other than poultry (e.g. beef, lamb)	<b>71° /160°F</b>
<b>Game Meats</b>	<b>74°C /165°F</b>
<b>Fish</b>	<b>70°C /158°F</b>
<b>Shellfish</b> (shrimp, lobster, crab, scallops, clams, mussels and oysters)	<b>74°C /165°F</b>

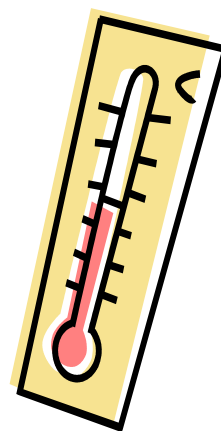
#### HOT HOLDING

After cooking, all hazardous foods must be held at a minimum temperature of **60°C / 140°F.**

#### REHEATING

All temperatures to be maintained for a minimum of **15 seconds.**

All **poultry** must be reheated to at least **74°C /165°F.**



**Hot Food:** should be kept at **60° C (140 °F) or above**

- Check the temperature of the food on the steam table and the stove
- Food should be covered to keep the heat from escaping and to avoid contamination
- The temperature should be checked every to 2 hours

**Cold Food:** Should be kept at **4°C (40°F) or below**

- The temperature of the refrigerator should be checked daily. (there should be a thermometer in a visible location in or on the refrigerator so that the temperature can easily be monitored)
- Be sure air can circulate around the food freely so that it can be refrigerated properly.

**Cooling Food:** Should be done quickly using shallow pans with a partial cover (to protect contamination) in a refrigerator or an ice bath before the food enters the **DANGER ZONE.**

- Within **first 2 hours** food temperature should drop from **60°C(140°F) to 20°C (68°F)**
- Within **next 4 hours** food temperature should drop from **20°C(68°F) to 4°C(40°F)** or less
- Date containers to keep track of food.

**Reheating Food:**

Should be done quickly and take less than 2 hours to at least the **original cooking temperature**(See Temperature chart) or **74 °C (165 °F)** for a minimum of 15 seconds.

- Temperatures of foods reheated in a microwave oven should be taken in many spots.
- Use stove tops, ranges and microwaves for reheating foods. Boil and stir stews, soups, gravies\***Do not reheat food in a hot holding unit or a steam table or soup urns.**

**Defrosting Food:**



- **Refrigerator Method:** Allow one day or more for large items such as turkeys or roasts to thaw in refrigerator (**4°C/40°F** or less). Make sure they do not come in contact with ready to eat foods.
- **Cold Running Water Method:** Place food in an air tight bag and submerge in cold running water. The product should thaw within 2 hours. Clean and sanitize the sink used for thawing before and after.
- **Microwave Oven Method:** After using the defrost selection on the microwave, cooking should be followed immediately.  
***Never defrost at room temperature!***

**Frozen Food:** Should be kept frozen with no signs of thawing.

- Freezing **does not kill pathogenic bacteria**, it only makes them inactive

Parasites and their eggs will be killed if frozen (**-20°C/ -4°F**) for at least 10 days or **-35° C for at least 15 hours** or (**-18°C/ 0°F**) for at least 21 days.

- Do not refreeze previously frozen food without cooking first.

## How do you make sure that you are taking accurate temperatures?

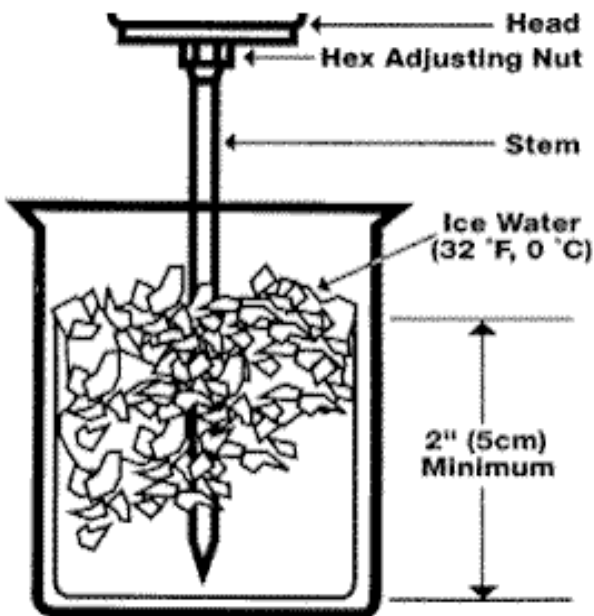
### **You need an accurate thermometer**

Thermometers are used to verify temperatures. They must be accurate and staff must be knowledgeable about using, reading and maintaining different types of thermometers.

- Food thermometers should be able to measure temperatures from -18 C(0 °F) to 100°C(220 °F)
- Thermometers must be calibrated and clean.
- Remember to sanitize the stem before and after every use---alcohol swabs are best
- Metal Stem Thermometers are the most common type used.
- They measure temperature through a metal stem with a sensor in the lower end.
- The thermometer can be inserted directly into the food products



### **How to Calibrate a Metal Stem Thermometer:**



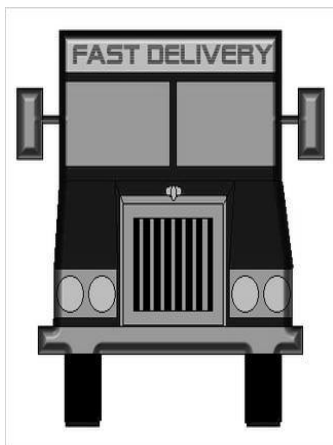
- 1) In a large cup make an ice and water slurry with approximately 50 % water and 50 % ice.
- 2) Insert the metal tip of the thermometer into the ice water without touching container and wait until the needle stops.
- 3) The thermometer should read exactly 0 °C (32 °F). If the thermometer does not read exactly 0 °C (32 °F), use a small wrench to turn the calibration nut until the dial reads correctly.

There are many types of food thermometers available and they should be calibrated according to manufacturer's instructions.



# RECEIVING AND STORAGE

## Receiving Products



- All incoming items must be inspected for torn, damaged, stained, dented, and leaking packaging and for best before dates
- The delivery truck should be sanitary and in good condition.
- Labeling should be intact and correct.
- Products which are contaminated or damaged should **not** be accepted
- All foods must come from approved sources.
- All suppliers must be licensed and therefore government inspected.
- This means that operators must purchase food commodities such as meat, milk products, and eggs only from inspected sources.
- Records must be kept of all food used for **one year**.
- Public Health Inspectors will review purchase records and receipts during your regular inspections
- Temperatures should be taken of all incoming foods and food should not be accepted if it has not been transported at the required temperature therefore the truck temperature should also be taken
- Refrigerated food temperatures must be **4°C(40°F) or below.**
- Frozen products should be checked carefully to make sure they haven't thawed and been refrozen. Look for large ice crystals, solid areas of ice, discoloured or dried-out food.
- Any food that looks like it may have been thawed and refrozen should **not** be accepted. If a product you receive is thawing, it should **not** be refrozen. Put it in the refrigerator, date it and continue the thawing process – or reject it.
- All rejected food must be documented on invoice or a log book

## Storage

- Be sure storage facilities are kept clean.
- Place received foods in the appropriate storage facilities as soon as possible and according to Best Before Dates.

- Be sure there is adequate amount of space and shelving
- Racks, shelves and pallets must be designed to protect food from contamination and must be readily cleanable
- Do not overstock.
- Use the **FIFO** principle (First In, First Out) in all storage areas. Store and use the foods in the order in which they are received.

### **Refrigerated Storage:**

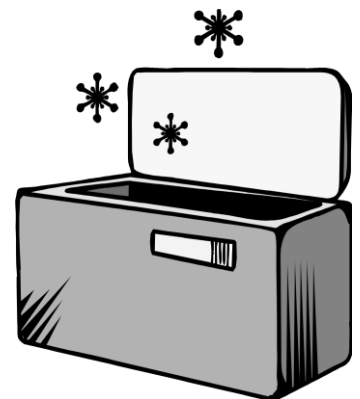
- Ready to eat foods should be stored **ABOVE** raw foods to prevent cross contamination
- Maintain refrigerators at **4°C (40°F) or below** and check temperatures daily on a visible and accurate thermometer.
- Date must be added to unmarked containers
- Become knowledgeable about the length of time foods can be kept in the refrigerators

### **Dry Storage**

- Keep dry storage areas cool and dry.
- Bulk foods or ingredients which are not easily identified should be stored in covered, labeled containers.
- Keep chemicals in separate storage location

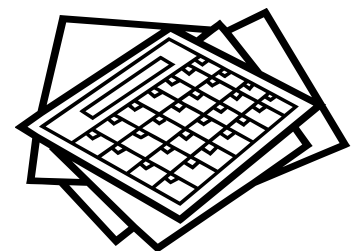
### **Freezer Storage**

- Frozen foods must be frozen solid with no signs of thawing.
- A visible and accurate thermometer must be in or on the freezer and temperatures should be checked daily
- Keep foods wrapped or covered to prevent contamination and freezer burn.



### **Best Before Dates**

- Are recommended storage times for foods.
- They indicate the date until which the unopened product will retain its durable life and must be accompanied by proper storage instructions.
- Best before dates must be checked before using food.
- When the best before date of a food has passed:



- The food may lose some of its nutritional value, such as vitamin C content.
- The food may lose some of its flavour.
- The texture of the food may change.
- Your senses of sight, smell and taste and common sense will tell you whether the quality of the food has decreased.

➤ ***'When in doubt, throw it out!'***

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# **CLEANING AND SANITIZING**

## Cleaning and Sanitizing

All utensils, multi-service articles, equipment and food contact surfaces must be cleaned and sanitized after each use so that the potential for cross contamination will be reduced.

**Cleaning:** removes visible dirt using chemical components.

**Sanitizing:** reduces the number of both pathogenic and spoilage organisms to safe levels by using very hot water of at least 77°C/170° F for at least 45 seconds or chemical sanitizing solution.

There are **3 types of Approved Chemical Sanitizers:**

<b>Chlorine</b> (sodium hypochlorite)	100 ppm at 24°C/75°F for at least 45 sec
<b>“QUAT”</b> (quaternary ammonium)	200 ppm at 24°C/75°F for at least 45 sec
<b>Iodine</b>	25 ppm at 24°C/75°F for at least 45 sec

\*Other sanitizing agents may be used if they are approved for use by Health Canada, the Canadian Food Inspection Agency or the medical officer of health and are used in accordance with the manufacturer's instructions and a test reagent to determine concentration is available and is used



**Chlorine (sodium hypochlorite 5.25%)**  
***is the most popular choice for sanitizing.***

To make a sanitizing solution of 100 ppm:  
Mix 2mL of household bleach for every 1 litre of water.

Test strips must be used to verify concentrations of all sanitizing solutions.

### Examples of test strips:



## Ongoing cleaning and sanitizing

- Floors, walls, ceilings, equipment and washroom fixtures must be cleaned and sanitized on a regular basis.
- Equipment, tables and work surfaces that come into contact with food must be cleaned and sanitized as often as necessary to ensure surfaces remain in a sanitary condition.
- Equipment used continuously at room temperature must be cleaned and sanitized at minimum every 4 hours
- Garbage containers and garbage areas must be cleaned and sanitized on a regular basis in order to reduce odours and the spread of harmful micro-organisms.
- Mechanical ventilation hoods, filters and vent pipes that remove heat, steam and odours must be cleaned often. A clean ventilation system will help prevent infestations and fires.

## Equipment

- Must be made of food-grade materials
- Must be sufficient in quantity and capacity
- properly designed, constructed, located , operated, maintained and cleaned to prevent contamination

## Clearing and Cleaning

- Discard used food
- Use a clean damp cloth or paper towel with sanitizer to clean tables.
- Change table linens between every sitting



## Dishwashing

- Dishes should be scraped and pre-soaked
- Wash in a detergent solution capable of removing soil
- Detergents should be thoroughly rinsed off before sanitizing.
- Sanitize with very hot water 77°C (171°F) or with chemical sanitizer.
- Air dry. Do not towel dry.
- Hands should be washed properly before handling clean dishes, utensils and other serving equipment.
- Washed items should be dry and cool before storing.
- Ensure cloths and towels used for washing, drying or polishing utensils or cleaning tables are in good repair, clean and used for no other purpose

### 2 Types of Dishwashing Methods: Manual and Mechanical

#### 1a) Manual Dishwashing

This method uses the **3 compartment sink method.**

All utensils, dishes and other serving equipment which are to be used again by a customer must be **washed, rinsed and sanitized** in three separate sinks.

##### Sink 1

W A S H

Use hot soapy water and friction

##### Sink 2

R I N S E

In clean hot tap water with a minimum temperature of 43°C(110°F)

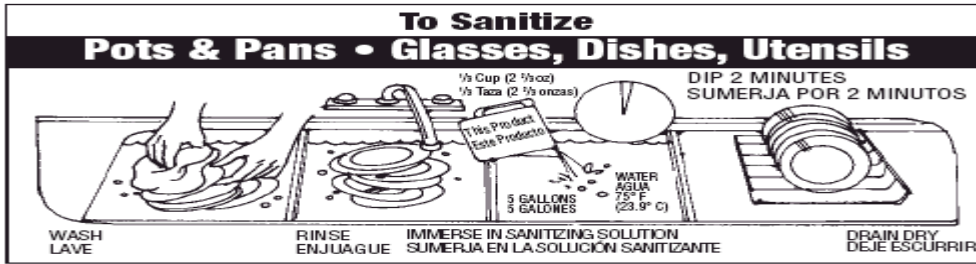
##### Sink 3

S A N I T I Z E

For **45** seconds in: **\*\***

- \*\*** Clean **hot water** (minimum temperature of 77°C /171°F)
- OR** 100 ppm **chlorine solution** (minimum temperature of 24°C /75°F)
- OR** 200 ppm **"quat"** (minimum temperature of 24°C /75°F)
- OR** 25 ppm **iodine** (minimum temperature of 24°C /75°F)
- OR** an **\* approved sanitizer**(see previous section)

**Air dry** on clean, non-porous, sloped drain boards.



**Thermometers must be used to test the temperature and test papers to test the sanitizing solution.**

### 1b) Manual Pot And Oversized Utensil Washing

This method uses the **2 compartment sink method.**

(Should only be used for washing pots and pans and utensils that are not used by the customer.) (O. Reg. 562/90 s.71(1)(b)(ii),74(b))

#### Sink 1

**WASH**

Use hot soapy water and use friction

**RINSE**

In clean water with a minimum temperature of 43°C (109°F)

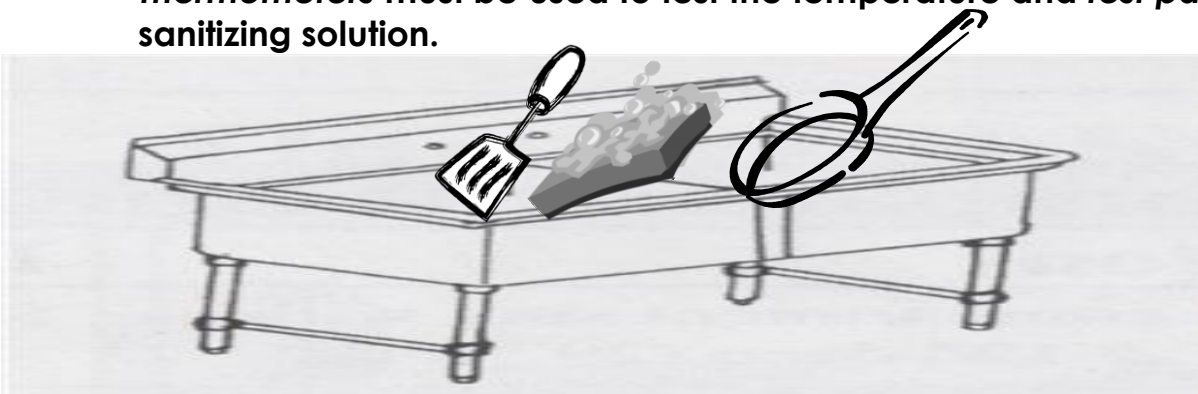
#### Sink 2

**SANITIZE**

For 45 seconds in: **\*\* (see above)**

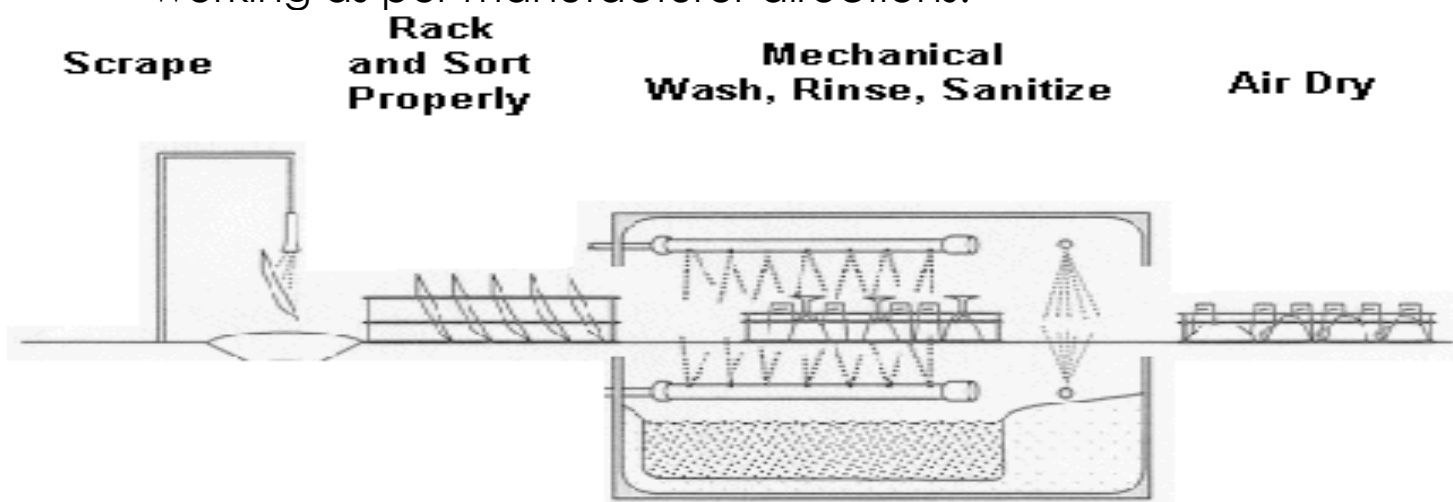
**Air dry** on clean, non-porous, sloped drain boards.

**Thermometers must be used to test the temperature and test papers to test the sanitizing solution.**



## 2) Mechanical Dishwashing

- Follow manufacturers' and chemical suppliers' instructions.
  - Temperature during washing should be at 60°C (140°F) minimum.
  - Do not overcrowd so that all items can be washed properly.
  - Invert cups, bowls and glasses.
  - Presoak cutlery and mix to stop nesting
  - Clean and maintain washing equipment paying special attention to jets and strainers
- a) High temperature Machine: uses hot water 82°C (180°F) for 10 seconds in the rinse cycle.
- b) Low Temperature Machine: uses a chemical sanitizer in the rinse cycle. (follow supplier's instructions for proper concentration and contact time) Chemical sanitizer to be chlorine, quaternary ammonium compound, or iodine and the temperature should be minimum 24°C (75°F) for at least 45 seconds or an \*approved sanitizer.
- c) NSF approved dishwashers may also be used in a food premises. They may have different time/temperature settings for washing and sanitizing. Operators must ensure that they working as per manufacturer directions.



All machines must have gauges that show wash and rinse temperatures.

# **THE HACCP SYSTEM**

# *HACCP (HAZARD ANALYSIS CRITICAL CONTROL POINT)*

## Question? **What is food Safety?**

Making food that doesn't make people sick

### **Benefits of Food Safety**

Safe food

Happy and satisfied customers

Good Reputation

More business

Good working conditions and therefore staff feel good and have a good attitude

Less turnaround staff leaving

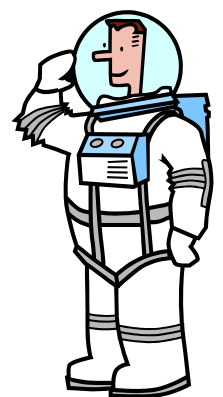
Good reports from public health audits

### **A system designed to focus on food safety is:**

#### **The HACCP system**

#### **Hazard Analysis Critical Control Point**

- It was developed by Pillsbury Co. in the 1960's for NASA to ensure astronauts did not get food poisoning while in space.
- Can you imagine being sick inside a space suit!!
- They required an absolute assurance of no **pathogens** or biological toxins.
- A case of foodborne illness in a space capsule would be catastrophic!
  
- HACCP is based on **prevention** rather than inspection.



- HACCP educates employees about food safety
- HACCP is designed to make food that is not hazardous.
- The HACCP system will help reduce the risk of illness, related to food safety, from occurring in your establishment.
  
- The HACCP system is designed to identify and prevent possible food safety problems (hazards) that relate to the purchase, receiving, storage, preparation, cooking, packaging, transport or display of food.
  
- The HACCP system includes a record keeping system to aid in the event of a food borne illness or product recall
  - Can the food be tracked in case of a recall?
  - What records are available?
  - Is there a plan in place?

### **Steps in a HACCP Audit System:**

(Reference: Peel Public Health- INFECTION PREVENTION AND CONTROL RESOURCE GUIDE, FOOD SAFETY)

- 1) Assessing Food Safety Hazards
- 2) Identifying Critical Control Points
- 3) Establishing Standard Operating Procedures
- 4) Monitoring Critical Control Points
- 5) Taking Corrective Action
- 6) Setting Up an Effective Record-Keeping System
- 7) Verifying Your System is Working

## Step1 ⇒ ASSESSING FOOD SAFETY HAZARDS

Question? *Where are food safety problems most likely to occur?*

### **A) Identify menu items that contain hazardous foods.**

**Hazardous foods** are the foods usually implicated in food borne outbreaks:

Examples: cooked poultry, beef, veal, pork, ham, fish, other seafood, mixed salads, cooked rice, egg dishes and pureed foods.

**Hazardous ready-to-eat foods** are considered to be especially high risk if they have been mixed, sliced, or blended in the same equipment used for the preparation of raw food products, even if the equipment is adequately cleaned and sanitized between food preparations.

### **B) Draw a flow chart for that menu item:**

This is a diagram of the steps specific food items take as they move through your facility from receiving food at delivery to serving food.

The internal temperature of the food, duration of the process, potential points for cross contamination, methods of cleaning and sanitizing and hygiene observations could be included in the flow chart.

### **C) Identify food safety concerns (hazards) that could develop in your recipe ingredients during each part of the flow of food.**

Potential food hazards can generally be grouped under three categories:

- I. Lack of personal hygiene
- II. Cross contamination
- III. Time/temperature abuse

The identification of unsafe food temperatures, unhygienic practices and situations that could lead to cross contamination such as improper cleaning and sanitizing of food contact surfaces must be corrected.

## **Step 2 ⇒ Identifying Critical Control Points (CCPs)**

CCP (Critical Control Point): Is any step in preparing food where failure to do that step properly could result in a food borne illness. At these steps corrective measures can be taken to prevent food poisoning from occurring.

Examples of critical control points:

- final internal cooking temperature
- final internal reheating temperature
- final cooling temperature
- hot and cold holding temperatures

Question? *Can a food handler control or eliminate the food safety hazard?*

- If you can answer “yes” to this question, then it is a CCP.
- A CCP must be something you can measure or observe such as a final food cooking temperature.
- CCPs usually involve food cooking time and temperature as well as food handler health and hygiene, cross-contamination and cleaning and sanitizing.

## **Step 3 ⇒ Establishing Standard Operating Procedures (SOPs)**

These are your procedures to ensure safe food handling in your facility.

Standard operating procedures should be based on food safety facts and laws and be as specific as possible.

Think of SOPs as the requirements that must be met to keep food safe at each step in the flow of food.

SOPs that can be measured:

- cooking
- cooling
- reheating
- holding temperatures and times

SOPs that can be observed:

- hand washing
- cleaning and sanitizing of equipment and food contact surfaces

#### **Step 4 ⇒ Monitoring Critical Control Points (CCPs)**

Monitoring involves checking to make sure that your CCP standards are being met.

#### Questions?

- *What food will be monitored?*
- *How will the food be monitored?*
- *Who will monitor the food CCPs?*
- *How often will the food CCPs be monitored?*
- *What food temperatures, cooking, cooling, reheating and holding times need to be recorded?*
- *Where and when should CCPs be recorded?*

Example: monitoring hot holding of beef stew

**What food:** *beef stew in the steam table*

**How to monitor:** *with a clean and sanitized probe thermometer*

**Who:** chef or prep cook

**How often:** every half hour while food is in the steam table

**What to record:** temperature and time of beef stew to be recorded on log sheet

### **Step 5 ⇒ Taking Corrective Action**

If a CCP standard is not met, corrective action must be taken.

Question? What should a food handler do if the critical control point limit or standard operating procedure is not met?

A corrective action must be established for each critical control point and standard operating procedure.

Examples of corrective actions:

- Rejecting a shipment
- Calling a supervisor or manager for advice
- Cooking food longer
- Moving or covering the food to prevent cross-contamination
- Discarding the food
- Washing the hands at critical times
- Reducing the time the hazardous food is in the temperature danger zone
- Sanitizing work surfaces and utensils at critical stages of food preparation

### **Step 6 ⇒ Setting up an Effective Record Keeping System**

Question? What records are needed to show that food is being prepared safely:

Records should show that critical control points and standard operating procedures are being monitored.

Written records should be:

- simple
- easy to understand
- easy to use
- within reach

Charts may be used for recording:

- Refrigerator temperatures at specific times
- Final cooking temperatures and time
- Holding or displayed food temperature and time
- Cooling temperature and time
- Reheating temperature and time

## **Step 7 ⇒ Verify the Food Safety System is Working**

### Questions?

- *Is the HACCP system working for you?*
- *Is it helping to identify, prevent and correct problems with food handling?*
- *Is it helping with employee training?*
- *Does anything need to be changed?*

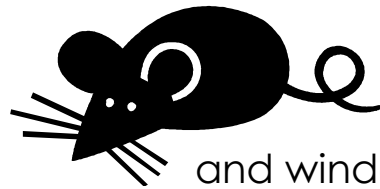
It may help to review your records, review public health inspection reports, review customer complaints and listen to employee concerns when deciding what needs to be changed.

**Customer complaints:** Should be handled carefully because they reflect possible problems that may be overlooked by the management during food production and amendment by the management to the HACCP plan should be made where necessary.

# PEST CONTROL

## PEST CONTROL

A good pest control program includes:



### A. Pest Proofing Your Building

- Keep pests out by screening doors and windows
- Caulk and fill all holes with steel wool including pipe and drain openings in the walls and floors as pests use these as pathways. Mice can squeeze through openings as small as 6mm in diameter.
- Check deliveries for infestations. Look for mouse droppings and gnawing on packaging. Look for live or dead cockroaches and other insects. Look for damaged product or packaging.

### Bait Stations:

- Use covered bait stations to protect the bait and your food products from contamination.
- Place covered bait stations along walls out of harms way.
- Know where the bait stations are located and check them regularly to ensure bait is fresh.
- Poison bait must be labeled and stored in an area separate from food to prevent accidental chemical poisoning.
- Check surrounding areas for dead pests regularly and properly dispose of dead pests immediately.

### B. Good Housekeeping Practices

- Eliminate nesting areas by removing unused equipment, boxes, paper products, clothing and rags and by keeping all areas clean, especially behind equipment and shelving.
- Eliminate any food and water sources. The lack of food supply will make the poison bait more effective as they will be hungry and eat more of the poison bait.
- Store garbage in pest proof containers and keep these areas clean. Garbage should be removed from premises at least 2 times each week or more often if necessary.

### C. Having a Licensed Pest Control Company On Contract

- These are professionals that can help you control your infestations.

\* Records of all pest control measures that are undertaken in the premise must be kept for at least **one year**.

## GLOSSARY

Best Before Dates: are recommended storage dates for foods.

Cleaning: Cleaning removes visible dirt using chemical components.

CCP (Critical Control Point): Is any step in preparing food where failure to do that step properly could result in a food borne illness. At these steps corrective measures can be taken to prevent food poisoning from occurring.

Chemical Food Poisoning: occurs when poisons or chemicals are accidentally added to food.

Chlorine (sodium hypochlorite): The most popular choice for sanitizing.

Cross-Contamination: Occurs when bacteria, chemicals or unwanted items are transferred onto food either directly or indirectly.

Danger Zone: The temperature range in which bacteria grow the best between 4°C (40°F) and 60°C (140°F)

FIFO (First In First Out): Use the foods in the order in which they are received.

Foodborne illness: is any illness resulting from the consumption of contaminated food. This can include food contaminated by germs or microorganisms, chemicals, allergens, and physical hazards.

**HACCP (Hazard Analysis Critical Control Point):** is a systematic approach to food service preparation designed to focus on factors that can lead to foodborne illness.

Hazardous foods: are the foods usually implicated in food borne outbreaks. Examples: cooked poultry, beef, veal, pork, ham, fish, other seafood, mixed salads, cooked rice, egg dishes and pureed foods.

Micro organisms(Microbes): are tiny living germs that are too small to see.

Pathogens: are micro organisms or germs that cause disease in humans.

pH: Measures the acidity or basicity of a solution with a range from 0 to 14.

Physical Contamination: occurs when foreign objects not normally found in food such as hair, paint chips, grease, metal, gum, glass, bones, wood, plastic, insects, fingernails and jewelry end up in the food.

Sanitizing: reduces the number of both pathogenic and spoilage organisms to safe levels by using very hot water or chemical sanitizing solution.

Spores: are thick, very resistant bodies that develop within the bacterial cell.

Spore Forming Bacteria: bacteria which are able to form **spores**.

For more information contact:



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