



# Food Safety Summary for Food for Learning

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# Introduction

Food safety is about preventing food borne illness. Some people are more vulnerable to food borne illnesses including the elderly, young children and those who are immuno-compromised (those with existing health problems).

The prevention of food borne illness is about risk management. These slides will briefly summarize some of those risks and how to manage them.

To learn more, visit [yourhealthunit.ca](http://yourhealthunit.ca) to expand your understanding of food safety.



# Whose job is it to prevent food borne illness?

Anyone who handles food is responsible for preventing food borne illness.

The Health Unit is responsible under the [Health Protection and Promotion Act](#) for the following roles in preventing food borne illness:

- educating food handlers
- inspecting food premises
- enforcing the [food safety regulation](#)

The role of the Food for Learning staff is to be familiar with the food safety rules and to follow them.



# Understanding Food Borne Illness

Food borne illness is acquired from eating or drinking contaminated food or water.

Symptoms of food borne illness can include stomach cramps, fever, headache, vomiting or diarrhea. These symptoms usually start anywhere from half an hour to 5 days after eating the contaminated food. The illness can become severe enough to require hospitalization, and in some cases death.

The contamination can either be chemical or microbiological. Microorganisms included are bacteria, parasites, viruses, molds and yeast. Not all are harmful to humans, many are beneficial to humans. The harmful ones that will cause disease in humans are called pathogens. The most common microorganisms involved in food borne illnesses are bacteria.



# Understanding Bacteria

Bacteria are the most common microorganisms involved in food borne illnesses. To prevent food borne illness, it is important to understand how bacteria grow.

Bacteria need the following: water, a good pH balance, oxygen, protein (hazardous foods\*), comfortable temperatures and time. When bacteria have all the things they need, they grow rapidly. This rapid growth of possible pathogens is what food handlers want to minimize.

Of the six things that bacteria need to grow, food handlers have the most control over two of them: temperature and time.

Preventing cross-contamination, ensuring proper hand-washing, cleaning and sanitizing are other key steps in minimizing the spread and growth of pathogens.

\* Hazardous foods are foods that are able to support the growth of pathogens. These typically include: poultry, meat, eggs, seafood, and dairy products.



# Understanding Bacteria

There are two kinds of bacterial food borne illnesses: bacterial infection and bacterial intoxication.

**Bacterial infection** is when you have eat food contaminated with a pathogen. That pathogen passes through the intestinal tract where it has everything it needs. (The human body has plenty of water, oxygen, good pH balance, great temperature, and protein for the pathogen along with time to grow and reproduce.) When there are enough pathogens to set off the body's immune system, the person develops symptoms such as stomach cramps, diarrhea, and fever. Since the bacteria need time to grow inside, symptoms usually take time to appear – sometimes as long as five days or more.

**Bacterial intoxication** is when the pathogen has an opportunity to grow on the food and produces a by-product that is poisonous. Some of these poisons are heat resistant. So, while cooking something might kill the pathogens that have grown, the poison they made will still be there. When a human then eats the food with the pathogen by-product, their body reacts as if they have been poisoned. The first symptom is usually vomiting and it usually occurs fast, sometimes as fast as half an hour.

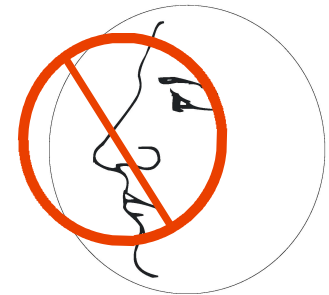
Depending on what was eaten, food borne illness may or may not be caused by the last thing you ate. It could be something you ate three days ago (bacterial infection) or an hour ago (bacterial intoxication).



# Safe Food Handling

Now that you have some understanding of how bacteria grow, you can apply that to some basic food safety rules. Another very important thing to remember about bacteria and pathogens is that we cannot see, smell, or taste them. Since we cannot detect them with our regular senses, we need to follow certain food safety rules to be confident that the food we have prepared is unlikely to cause a food borne illness.

Key areas of safe food handling are: cleaning and sanitizing, temperatures, and separation.





# Safe Food Handling – Cleaning and Sanitizing

Cleaning and sanitizing are important for reducing the number of bacteria on hands and food contact surfaces.

Hand-washing is very important because many pathogens are passed through improper hand-washing. Be sure to wash your hands frequently and thoroughly to decrease the chance of spreading pathogens to the food you are handling.

Food contact surfaces need to be cleaned and sanitized regularly. Sanitizing is when a chemical solution is used to kill 99% of pathogens. Common sanitizing chemicals include bleach, quaternary ammonia, and iodine. Know the product you are using and be sure to use the right amounts. Too little will not kill the pathogens you want, too much might be a poison hazard.





# Safe Food Handling - Temperature

Temperature abuse is the leading cause of food borne illness. Knowing and following your temperatures is very important for restricting the growth of pathogens. When preparing food, keep the following in mind:

- Remember to keep hazardous foods out of the Danger Zone (4°- 60°C) as much as possible. This is the temperature range that pathogenic bacteria thrive at. The maximum time that hazardous foods can be left within this temperature range is 2 hours.
- Remember to either keep your food cold (4°C or below) or hot (60°C or above). At these temperatures, pathogen growth is slowed. Hot holding is for cooked foods that may not be served right away like at a buffet. Food that will not be eaten right away needs to be cooled quickly and refrigerated.
- When cooking hazardous foods, be thorough. It is important to use a probe thermometer to check the internal temperature. Become familiar with the recommended internal cooking temperatures and be sure to use a thermometer.
- Frozen foods need to be kept at -18°C. When defrosting food it is best to do it in the refrigerator as this keeps the food out of the Danger Zone.



# Safe Food Handling - Separation

To further minimize the chance of pathogens getting on food and growing, it is important to not cross-contaminate. Cross-contamination is when ready to eat food comes into contact with pathogenic bacteria, chemicals or unwanted items making the food unsafe to eat. This can be prevented in the following ways:

- Always practice proper hand-washing to keep contaminated hands from touching food
- Clean and sanitize cutting boards, knives and equipment after they come into contact with hazardous foods
- Store ready to eat foods above raw foods so the juices from raw foods cannot drip onto ready-to-eat foods
- Be sure to label and properly store chemicals in a separate location from food
- Be aware of allergies and take care to not cross-contaminate with them



# Summary

As Food for Learning participants, you work to provide your students with proper nutrition to ensure their optimal growth. By learning about and following food safety rules, you are further protecting your students' health.

As these slides only briefly discussed food safety rules, please keep in mind that the Health Unit is here to help should you have any questions. To speak with a Public Health inspector, contact the Environmental Health Department at 613-966-5513 ext.677.

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