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CANADA'S

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FOODBORNE PATHOGENS



PATHOGENS ARE MICROORGANISMS SOMETIMES FOUND IN YOUR FOOD THAT CAN MAKE YOU SICK. PROTECT YOURSELF: COOK, CLEAN, CHILL, SEPARATE.

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WHAT ARE FOODBORNE PATHOGENS?

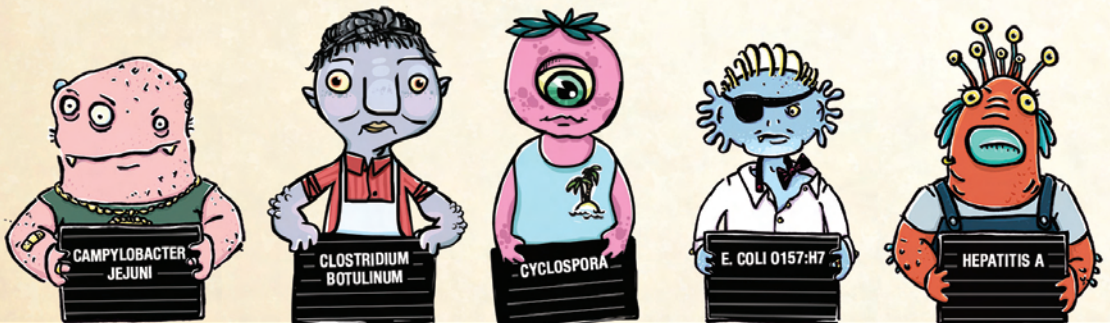
Pathogens are microorganisms sometimes found in your food that can make you sick. They include:

- bacteria such as *Campylobacter jejuni*, *Clostridium botulinum*, *E. coli* O157:H7, *Listeria monocytogenes*, *Salmonella*, *Shigella*, *Vibrio*
- viruses such as hepatitis A and norovirus
- parasites such as *Cyclospora*

You can't see, smell or taste pathogens, so you can't tell if they are in your food or not.

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WHY ARE THERE PATHOGENS IN MY FOOD?

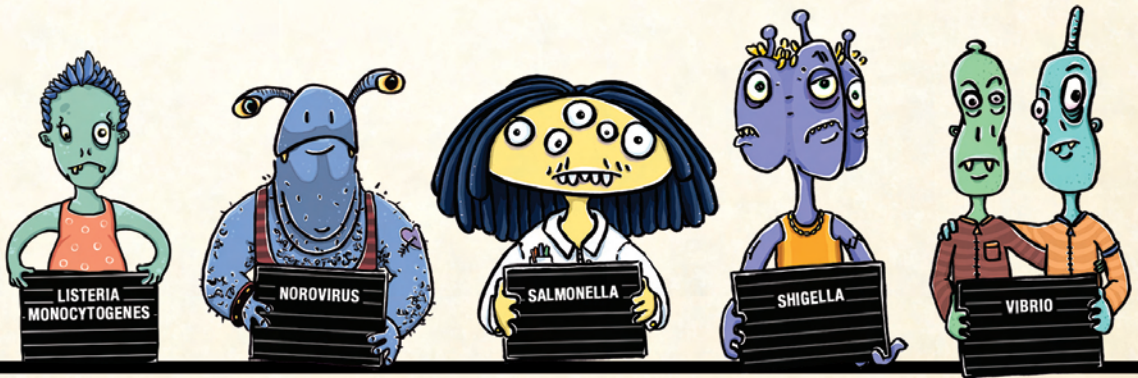
Pathogens can get into food and water in a number of ways. Food can become contaminated on the farm. For example, fruit and vegetables can become contaminated if they are washed or irrigated with water contaminated with animal feces or human sewage. Food can also become contaminated during processing, storage, transportation or preparation. Sometimes pathogens can be present in food and water naturally, without there being a human cause for contamination. For example, *Vibrio* bacteria, which is naturally present in sea water, can be found in oysters and other shellfish.

Some pathogens are more likely to be found in certain foods. For example, disease-causing strains of *E. coli* can be found in beef, whereas *Salmonella* is more often found in poultry and eggs. These pathogens are destroyed by cooking food to a safe internal temperature (refer to the chart on page 9).

You can spread pathogens or they can multiply if you do not follow safe food-handling practices. These include the four rules: cook, clean, chill and separate.

CAN PATHOGENS MAKE ME SICK?

Food or drink that has pathogens can cause foodborne illness, also known as “food poisoning.” Some people can have foodborne illness with mild symptoms and not even know they have it. Although most people fully recover, some people may have more severe and possibly long-term or permanent consequences and they will need to visit a doctor. In some cases, foodborne illness can cause death.



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WHAT IS FOODBORNE ILLNESS?

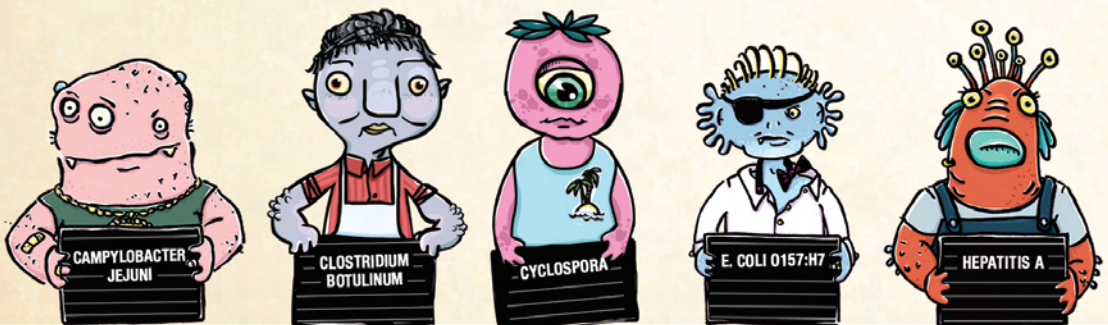
Symptoms of foodborne illness can begin within hours or days after consuming contaminated food or drink. The time depends on the type and amount of pathogen you've consumed, and your general health. Many people experience nausea, vomiting and diarrhea.

WHAT SHOULD I DO IF I THINK I HAVE A FOODBORNE ILLNESS?

You should see a doctor as soon as possible if you think you have a foodborne illness and you are experiencing the following symptoms:

- fever above 38.5° Celsius
- blood in your stool
- vomiting so much that you cannot keep liquids down (which can lead to dehydration)
- dehydration (decrease in urination, dry mouth and throat, feeling dizzy when standing up)
- diarrhea that lasts more than three days

Also, it is always a good idea to get plenty of rest and stay hydrated by drinking lots of fluids.



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HOW MANY PEOPLE EXPERIENCE FOODBORNE ILLNESS IN CANADA?

The Government of Canada estimates that there are about 11 million cases of foodborne illness in Canada every year. Many foodborne illnesses can be prevented by following these safe food-handling practices: cook, clean, chill and separate.

WHAT IS THE GOVERNMENT OF CANADA DOING ABOUT FOOD SAFETY?

The Government of Canada is committed to food safety. Health Canada sets the regulations and standards for the safety and nutritional quality of food sold in Canada. The Canadian Food Inspection Agency verifies that food sold in Canada meets Health Canada's requirements. It does this through inspection and enforcement activities. The Public Health Agency of Canada conducts national laboratory-based surveillance, coordinates national outbreak response, provides expertise to public health officials and builds capacity for responding to foodborne illness outbreaks.



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WHO'S AT RISK FOR FOODBORNE ILLNESS?

Everyone is potentially at risk for foodborne illness. However, some people are more likely to get a foodborne illness because of their age or underlying medical conditions. They may also be more likely to experience severe illness. These high-risk groups include young children, adults 60 years and older, pregnant women and people with weakened immune systems.

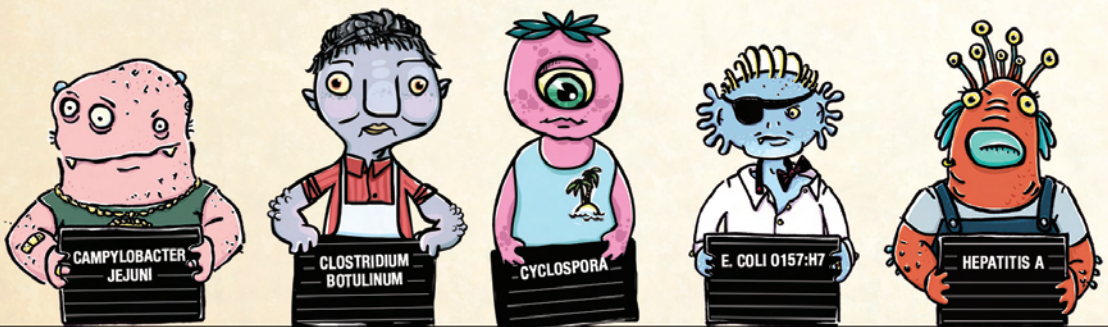
Infants and young children:

Infants (zero to one year old) have an underdeveloped immune system. This makes them more vulnerable to harmful bacteria, which can result in foodborne illness. Young children (one to five years old) may be more susceptible to foodborne illness and may take longer to recover. Also, infants and young children may suffer from other complications from foodborne illness, such as kidney failure.

A bottle-fed infant may be at a higher risk for severe infection from foodborne illness. For example, bacteria can grow in a bottle of warm formula that has been left at room temperature for more than one hour, or breast milk that has been left at room temperature for more than four hours. Always wash your hands and always clean and disinfect your baby's bottle before use.

Adults 60+:

As you age, it becomes harder for your immune system to ward off harmful foodborne pathogens. While most people affected by foodborne illness can recover completely, as you age, you are more likely to experience complications and some longer-term health effects, such as kidney failure and anaemia, from foodborne illness. If you have chronic diseases, such as diabetes and kidney disease, it can be even more difficult for you to fight off infections.



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Pregnant women:

If you are pregnant, foodborne illness can cause serious health problems for you and your unborn baby. During pregnancy, both you and your baby are at an increased risk for foodborne illness and, in particular, dehydration. This is because all the changes taking place in your body during pregnancy, including a weakening of your immune system, make it more difficult to fight off infections.

Sometimes, a pregnant woman may experience only mild symptoms of foodborne illness. Nevertheless, certain dangerous pathogens, in particular *Listeria*, can cross the placenta. This can increase the chance of your unborn baby becoming infected. In addition, your unborn baby's immune system is not developed enough to fight off harmful foodborne pathogens.

People with weakened immune systems:

Some illnesses and chronic medical conditions, as well as treatments for certain illnesses, can affect your immune system. This can make it difficult for you to fight off harmful foodborne pathogens. If you have a weakened immune system, you may experience more severe symptoms of foodborne illness and it may take longer for you to recover from an illness.

Some examples of conditions that can affect your immune system are:

- alcoholism
- cancer (especially for people receiving chemotherapy)
- diabetes
- HIV/AIDS
- organ transplantation



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HOW CAN I PREVENT FOODBORNE ILLNESS AT HOME?

Follow these safe food-handling practices to reduce the likelihood of you and your family getting sick from foodborne illness.

CLEAN

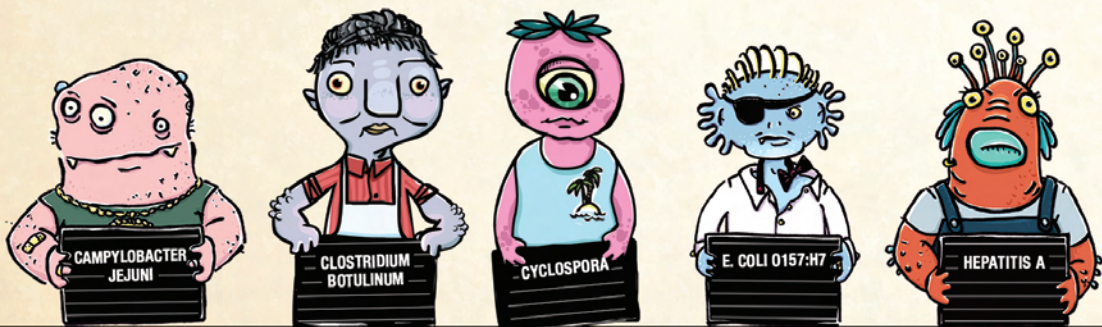
- Wash your hands for at least 20 seconds with soap and warm water, before and after handling food.
- Thoroughly clean, rinse and sanitize countertops, cutting boards, utensils and dishes after each use by using hot soapy water or a bleach sanitizer. Do this after preparing each food item and before preparing the next food.
- Wash raw fruits and vegetables with clean, running water before you prepare and eat them. Use a brush to scrub produce that has firm or rough surfaces, such as cantaloupes, carrots, oranges, and potatoes.

WHY? If you don't keep your hands, food, work surfaces and utensils clean, harmful pathogens can easily spread.

CHILL

- Keep cold food cold at or below 4°C (40°F).
- Thaw food in the refrigerator, where the food will stay at a safe, constant temperature of 4°C (40°F) or below.
- Do not keep food in the danger zone for longer than two hours. Foods that need to be refrigerated or frozen should be stored immediately.

WHY? Bacteria can grow in the danger zone between 4°C and 60°C (40°F to 140°F).



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SEPARATE

- Use one cutting board for raw meat, poultry and seafood. Use a different cutting board for food that is ready-to-eat or cooked.
- Keep raw food away from other food while shopping, and while storing, preparing and serving foods.
- Place raw meat, poultry and seafood in containers on the bottom shelf of the refrigerator. This will prevent raw juices from dripping onto other food or touching other food.

WHY? Raw food and their juices can contain harmful bacteria. These bacteria can be transferred from raw food to cooked food.

COOK

- Keep hot foods at or above 60°C (140°F).
- Use a digital food thermometer to check that cooked food has reached a safe internal temperature (refer to the chart on page 9).

WHY? In most cases, heat will kill harmful pathogens. Cooking food to the right internal temperature can get rid of these pathogens.



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INTERNAL COOKING TEMPERATURES

You can't tell by looking. Use a digital food thermometer to be sure!

FOOD	TEMPERATURE
Beef, veal and lamb (pieces and whole cuts) <ul style="list-style-type: none">• Medium-rare• Medium• Well done	63°C (145°F) 71°C (160°F) 77°C (170°F)
Pork (pieces and whole cuts)	71°C (160°F)
Poultry (for example, chicken, turkey, duck) <ul style="list-style-type: none">• Pieces• Whole	74°C (165°F) 85°C (185°F)
Ground meat and meat mixtures (for example, burgers, sausages, meatballs, meatloaf, casseroles) <ul style="list-style-type: none">• Beef, veal, lamb and pork• Poultry	71°C (160°F) 74°C (165°F)
Egg dishes	74°C (165°F)
Others (for example, hot dogs, stuffing, leftovers)	74°C (165°F)

Where can I get more information?

For more information on food safety, please visit the following websites:
The Government of Canada Food Safety web portal: www.foodsafety.gc.ca
The Canadian Food Inspection Agency: www.inspection.gc.ca
Health Canada: www.hc-sc.gc.ca
The Public Health Agency of Canada: www.phac-aspc.gc.ca
The Canadian Partnership for Consumer Food Safety Education's Be Food Safe program: www.befoodsafe.ca



Scan this code from your smart phone to sign up for food recalls and allergy alerts.

1 800 0-Canada (1-800-622-6232) TTY: 1-800-926-9105

