

### Acknowledgement:

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### Bleach solution reference:

Health Canada. (2020, November 06). Government of Canada. Retrieved December 09, 2020, from <https://www.canada.ca/en/health-canada/services/drugs-health-products/disinfectants/covid-19.html>



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## GENERAL INFORMATION

# Food Safety

## For patients with weakened immune systems

When you have cancer, your immune system, which usually protects you from infection, may be weakened.

There is a greater chance that a serious illness may develop from eating food that may have bacteria or germs growing on it. Patients receiving chemotherapy, biotherapy, radiation, marrow or stem cell transplant are at higher risk for food poisoning.

### In this booklet you will find:

Useful tips and instructions that you can follow every day to lower your chances of getting food poisoning, such as:

- How to make safer food choices
- How to shop for and store food
- How to prepare and cook your food

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## Notes

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## Clean

- Clean the inside of the fridge every week.
- Clean any spills in the fridge, in the freezer, on the counter or on the floor right away.
- Keep appliances free of food particles (including crumbs)

## Foodborne Illness

### What is food poisoning?

Food poisoning, also called foodborne illness, occurs when a person gets sick from eating food that has been contaminated. Food becomes contaminated when bacteria and other organisms grow on it. Symptoms of foodborne poisoning could include some or all of the following:

- Stomach cramps
- Nausea
- Vomiting
- Diarrhea
- Fever

### Common types of food poisoning

Bacteria Infection	Types of food where bacteria may be found
<b>Listeria</b>	Refrigerated, ready-to-eat foods such as dairy products, cold cuts, and hot dogs
<b>E. coli O157:H7</b>	Raw and under-cooked ground beef, unpasteurized* fruit juice or cider, sprouts, and unpasteurized dairy products  *Pasteurization is the process of heating milk products or juices to a high temperature to kill the germs that make you sick
<b>Vibrio</b>	Raw and under-cooked shellfish, such as oysters, clams, and mussels
<b>Salmonella</b>	Raw and under-cooked chicken, raw eggs, and raw milk

## Lowering your Risk of Food Poisoning

### The 4 Basic Safety Tips

Bacteria or germs can be found in food when it is not properly stored, cooked or handled. You cannot always tell if food is spoiled by its look, smell or taste. If you are not sure about its safety, it is best to throw it out.

There are 4 basic safety steps you should always follow when handling, storing, preparing, and shopping for food:

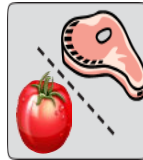
#### Clean

Wash your hands, kitchen surfaces, utensils, and reusable shopping bags often with warm, soapy water to remove bacteria and reduce your risk of food poisoning.



#### Separate

Separate raw meat, fish, seafood and eggs from other foods in your grocery cart and refrigerator to avoid cross-contamination. Cross-contamination means that germs or bacteria from raw foods are transferred to ready-to-eat foods. If ready-to-eat foods become contaminated and aren't cooked more, it can lead to food poisoning.



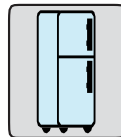
#### Cook

Always cook food to safe internal temperatures as shown on the chart on page 7. This means the thickest part of the food must reach a certain temperature before it can be safe to eat. You can check the temperature inside the meat by using a digital food thermometer that you can buy from many grocery stores.



#### Chill

Always refrigerate food and leftovers right away at 4°C or below. Check your fridge thermometer to make sure it is at or below 4°C.



## Kitchen Cleanliness Checklist

### Throw out

- Foods that have been in the freezer for more than 3 months.
- Cooked or leftover foods that have been in the fridge for more than 2 or 3 days.
- Raw fruits and vegetables that are slimy or are starting to show mold.
- Food that has mold on it. Don't take a chance!
- Food that has expired.
- Canned food that is expired. If it does not have an expiration date, throw it out if you have had it for more than 1 year.
- Canned goods that have dents, bulges, cracks or leaks. Don't taste it first!

### Dish cloths and hand towels

- Change daily or as needed during the day.
- Sanitize using the hot cycle of the washing machine.

### Cutting boards

- Wash after each use. Use hot, soapy water then rinse with hot water and let them dry very well.
- Disinfect cutting boards used for raw meat, poultry, fish and seafood after each use.
- Use a bleach solution then rinse with hot water and let it dry very well.
- Replace cutting boards when deep grooves in the surface make cleaning difficult.

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## Where to Go for More Information

Visit the Patient and Family Resource Centre on the main floor of the Simcoe Muskoka Regional Cancer Centre, and pick up “Eating Well When You Have Cancer: A guide to good nutrition” from the Canadian Cancer Society. You can also ask your healthcare team to get you a copy of this book.

### Useful Websites

The Canadian Cancer Society [www.cancer.ca](http://www.cancer.ca)

The Canadian Partnership for Consumer Food Safety Education [www.befoodsafe.ca](http://www.befoodsafe.ca)

Health Canada [www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)

The Canadian Food Inspection Agency [www.inspection.gc.ca](http://www.inspection.gc.ca)

Centers for Disease Control and Prevention [www.cdc.gov](http://www.cdc.gov)

World Health Organization [www.who.int](http://www.who.int)

US Department of Agriculture [www.foodsafety.gov](http://www.foodsafety.gov)

## Kitchen Cleanliness Checklist

Post this on your fridge for an everyday reminder.

- Wash your hands with warm, soapy water for at least 20 seconds .
- Put working thermometers in your fridge and in the freezer and check temperatures regularly.

Fridge temperature - at or below 4°C (40°F)

Freezer temperature - at or below -18°C (0°F)

## How to Make Safer Food Choices

Type of Food	Food to Avoid	Safer Food Choices
<b>Hot Dogs</b>	<ul style="list-style-type: none"> <li>• Raw hot dogs straight from the package.</li> </ul>	<ul style="list-style-type: none"> <li>• Cook hot dogs until the middle is steaming 74°C (165°F).</li> </ul>
<b>Deli Meats</b>	<ul style="list-style-type: none"> <li>• Deli meats that are non-dried, like bologna, roast beef and turkey breast.</li> </ul>	<ul style="list-style-type: none"> <li>• Dried and salted deli meats, like salami, pastrami and pepperoni.</li> <li>• Non-dried deli meats heated and steaming hot.</li> </ul>
<b>Pâtés and Meat Spreads</b>	<ul style="list-style-type: none"> <li>• Refrigerated pâtés and meat spreads.</li> </ul>	<ul style="list-style-type: none"> <li>• Pâtés and meat spreads sold in cans.</li> <li>• Pâtés and meat spreads that do not need to be refrigerated until after opening.</li> </ul>
<b>Meat and Poultry</b>	<ul style="list-style-type: none"> <li>• Raw or undercooked meat or poultry, like steak tartare.</li> <li>• Rare and medium rare meat.</li> </ul>	<p>Meat and poultry cooked until the thickest part reaches a safe temperature (see the Internal Cooking Temperatures Chart on Pg. 11)</p>
<b>Seafood</b>	<ul style="list-style-type: none"> <li>• Raw seafood, like sushi.</li> <li>• Raw oysters, clams, and mussels.</li> <li>• Refrigerated, smoked seafood like smoked salmon, lox.</li> <li>• Undercooked seafood.</li> </ul>	<ul style="list-style-type: none"> <li>• Seafood cooked until the thickest part is 74°C (165° F).</li> <li>• Cook shelled seafood until the shell has opened.</li> <li>• Smoked seafood in cans that do not need to be put in the fridge until after opening.</li> </ul>

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## How to Make Safer Food Choices Continued

Type of Food	Food to Avoid	Safer Food Choices
<b>Eggs and Egg Products</b>	<ul style="list-style-type: none"> <li>Raw or lightly cooked eggs or egg products, such as salad dressings, cookie dough or cake batter sauces, and drinks such as homemade eggnog.</li> </ul>	<ul style="list-style-type: none"> <li>Egg dishes cooked until the middle reaches a safe temperature of 74°C (164° F).</li> <li>Cook eggs until the yolk is firm.</li> <li>Store bought eggnog that is pasteurized (look for the word 'pasteurized' on the package label).</li> <li>Homemade eggnog must be heated to 71°C (160°C).</li> </ul>
<b>Dairy Products</b>	<ul style="list-style-type: none"> <li>Raw or unpasteurized dairy products, such as soft and semi- soft cheese (like Brie, Camembert and blue-veined cheese).</li> </ul>	<ul style="list-style-type: none"> <li>Pasteurized dairy products.</li> <li>Hard cheeses such as Colby, Cheddar, Swiss, and Parmesan.</li> </ul>
<b>Sprouts</b>	<ul style="list-style-type: none"> <li>Raw sprouts like alfalfa, clover, radish, and mung bean.</li> </ul>	<ul style="list-style-type: none"> <li>Sprouts that are well-cooked.</li> </ul>
<b>Fruit Juice and Cider</b>	<ul style="list-style-type: none"> <li>Unpasteurized fruit juice and cider including home-made juices.</li> </ul>	<ul style="list-style-type: none"> <li>Cook unpasteurized fruit juice and cider until they reach a rolling boil.</li> <li>Store bought fruit juice and cider that are pasteurized (look for the word 'pasteurized' on the package label).</li> </ul>

## Tips for Eating Out

Choose a restaurant or food outlet that has passed its city's food premises inspection and also looks clean. Check the plates, glasses, and utensils. Take a look at the restroom – is it stocked with soap and paper towels?

- Eat early to avoid crowds.
- Ask that foods be prepared fresh in fast food outlets.
- Ask if juice is pasteurized.
- Avoid raw fruits and vegetables. Save these items for home where you can wash them very well and prepare them safely.
- Do not eat salsa and other condiments that are not refrigerated. Use single serving condiments instead of bottles when possible. Examples are ketchup, mustard and relish.
- Avoid:
  - Salad bars
  - Buffets
  - Delis
  - Dim sum
  - Sidewalk vendors
  - Soft-serve ice cream
  - Potluck meals
  - Milkshake, yogurt and iced coffee machines

## What to do with Leftovers

### Timelines:

- Eat leftovers within 2-3 days.
- Place leftovers that you do not plan to eat within 2-3 days in the freezer.
- Throw out food that has been sitting at room temperature for more than 2 hours. If it is a hot summer day, throw it out after 1 hour.

### Containers:

- Place leftovers in a clean, covered container and put in the fridge right away.
- If there are large amounts of food left over, divide into small, shallow containers first. This will make sure the food cools down quickly. Cover containers after the food has cooled.
- Place leftover canned food into a glass or plastic container. The container should be covered, labeled, refrigerated and used within a few days.

### Reheating:

- Reheat soups, stews and sauces very well. Stir often while heating. Make sure that the temperature reaches 74°C (165°F) throughout.

## Shopping

Safe eating begins with the food you buy.

### 1. Check:

- Check 'best before' dates. Choose dates that are far into the future, like foods with a "best before" date are milk, cheese and eggs.
- Check 'packaged on' dates. This is the day the food was wrapped, like raw meat will have a date stamped on its package. This date should be the day of your shopping trip and not a day or two before.

### 2. Buy:

- Eggs that are refrigerated and have no cracks.
- Frozen foods that are solid and have no ice crystals on the outside of the package. This may be a sign that the food was thawed and refrozen.
- Packages that are properly sealed and cans with no dents, bulges, cracks or leaks.
- A 1-week supply of raw fruits and vegetables at a time. Avoid buying fruits and vegetables that are bruised, damaged or overly ripe. Do not buy raw vegetable sprouts such as alfalfa sprouts, bean sprouts and clover sprouts.

### 3. Do Not Buy:

- Products from open bins and foods that are displayed without a package. Examples of foods to avoid are: bulk food items, unwrapped bakery products and items from the deli counter.
- Meat that is displayed raw, unwrapped and touching other raw or cooked meats.

### 3. Store:

- Meat, poultry and fish in plastic bags to limit cross contamination. Tell the check out clerk to place these items in separate bags from ready-to-eat foods and fresh produce.

### Helpful Notes:

- Wash reusable shopping bags regularly with warm soapy water.
- Put refrigerated foods into your shopping cart last. This will limit the amount of time the food sits at room temperature.

## Storage

- Store foods that need to be refrigerated or frozen as soon as you return home from grocery shopping. Do not leave them at room temperature.
- Label frozen food with the date of purchase or preparation.
- Separate the raw foods from the ready-to-eat foods.
- Wrap opened dry goods before you store them.
- Rotate food that is in the fridge or in the cupboard so the older items are used first.
- Do not store any food supplies under the kitchen sink.
- Place raw meat, fish and seafood on the bottom shelf of your refrigerator so raw juices won't drip onto other food.

## Preparation

### Clean your hands, kitchen items and food

- Wash your hands often and dry hands with a paper towel or cloth hand towel that is changed daily. Don't forget to wash your hands after using the washroom, taking out the garbage or touching your pet. This is one of the best ways to reduce contamination of food and the spread of illness.
- Use warm and soapy water to clean kitchen surfaces, dishes, utensils, can openers, the inside of the microwave and reusable shopping bags.
- This will lower the chance of bacteria and germs spreading from one surface to another.

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## Tips for microwave cooking continued

- Cover foods with a lid or paper towel.
- Follow standing times in the recipe or package directions. Food needs this time to finish cooking.
- Measure the internal temperature at the end of the standing time. Remember to insert the thermometer properly.

## Internal Cooking Temperature Chart

Use this chart to know what temperature cooked food should be at to ensure it is not contaminated and safe to eat. Checking for internal cooking temperature means checking the temperature at the thickest part of the food.

Type of Food	Temperature Reading for Safe Eating
Beef, Veal, Lamb (pieces and whole cuts)	71°C (160°F) medium 77°C (170°F) well done
Ground Meat and Meat Mixtures (i.e. burgers, sausages, meatballs, meatloaf, casseroles)	71°C (160°F) beef, veal, lamb, pork 74°C (165°F) poultry
Poultry (i.e. chicken, turkey, duck)	74°C (165°F) pieces 82°C (180°F) whole
Pork (pieces and whole cuts)	71°C (160°F)
Egg dishes	74°C (165°F)
Other (i.e. hot dogs, stuffing, leftovers, seafood)	74°C (165°F)

Source: Health Canada and the Canadian Food Inspection Agency



## Cooking

- Thaw frozen meat by placing it on a tray on the bottom shelf of the fridge. Do not let it drip on other foods, especially ready-to-eat foods. Never thaw food at room temperature.
- Read the manufacturer's instruction of your food thermometer carefully. For most thermometers, simply insert it into the thickest part of the food, away from fat, bone or gristle. Food is ready to eat when it has reached the proper internal temperature. See table on page 11.
- Use different plates and utensils for raw food and cooked foods.

### Cook:

- Food until the thickest part reaches a safe temperature and check by using a digital food thermometer. You cannot depend on look, texture and colour to check if the food is cooked properly.
- Note: Clean the digital thermometer in warm, soapy water between temperature readings to avoid cross-contamination.
- Eggs until the white and yolk are completely firm.
- Stuffing separately from the poultry. Place the poultry and the stuffing in separate dishes so you can measure the internal temperature of both items.
- Measure the internal temperature at the end of the standing time. Remember to insert the thermometer properly.

### Tips for microwave cooking:

- Stir and turn food several times during cooking so you do not get cold spots that bacteria can still survive in.

- Wipe dust or dirt off the lids of canned goods with a clean, damp towel before opening. Do not use cans that spurt when opened, look bubbly or have a bad smell.
- Avoid home-canned foods as they may contain harmful bacteria. Use only store bought canned products.
- Use a clean utensil (spoon or fork) each time food is tasted during preparation. Do not taste foods that contain raw eggs before cooking.

### Cutting boards

- Use at least 3 separate cutting boards. One for cooked foods, one for vegetables and one for raw meat, poultry, fish and seafood.
- Wash the boards with hot, soapy water then rinse with hot water after each use and let them dry very well.
- Disinfect boards used for raw meat, poultry, fish and seafood with a bleach solution and rinsed with hot water after each use (see below).

**Note:** Non-porous acrylic (not made from natural fibers), plastic, or glass boards and solid wood boards can be washed in a dishwasher (laminated boards may crack and split).

#### Bleach Solution for Disinfecting:

1 tsp (5 mL) bleach

1 cup (250 mL) water

Mix bleach with water and store in a spray bottle. Make sure it is clearly labeled. You can use this bleach solution to clean hard surfaces such as cutting boards. Do not use this bleach solution to wash food. Do not ingest this solution. Keep it in a handy place away from food and from children. This recipe makes a 0.1% bleach solution.

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## Tips for washing fruits and vegetables

- Wash fruits and vegetables very well under cold, running water before peeling or cutting.
- Scrub fruits and vegetables that have a thick, rough skin or have dirt on the surface with a clean vegetable scrubber.
- Throw out the outside leaves of leafy vegetables and wash each inside leaf separately.
- Rinse packaged and prepared fruits and vegetables even if it is marked 'pre-washed'. Do not use soap as this can be absorbed into the fruits and vegetables.

## The Temperature Danger Zone

Bacteria that cause food poisoning grow the quickest when the temperature is between 4°C and 60°C (40°F and 140°F). This is called the temperature danger zone. Cooking foods to the safe internal temperature will kill the bacteria in the food. Keeping foods in the fridge or freezer will stop (or slow) the bacteria from growing to dangerous levels.

### How to avoid the temperature danger zone:

Follow the 2 hour rule: refrigerate, freeze, or consume high risk foods within 2 hours of purchase or preparation.

High risk foods left in the danger zone (between 4°C and 60°C, or between 40°F and 140°F) for less than 2 hours can be safely put in the fridge or used right away. If high risk food is left in the danger zone for 2 or more hours, bacteria can continue to grow and make the food not safe to eat.

## The Temperature Danger Zone

