Recommendations

- Follow safe food handling procedures to prevent food borne illness.
  - **Clean**: Wash hands with hot, soapy water. Clean and sanitize kitchen surfaces before and after preparing food.
  - **Separate**: Keep raw food such as meat, poultry, seafood, and eggs separate from other foods in the shopping cart, refrigerator, and before, during, and after food preparation.
  - **Chill**: Refrigerate or freeze perishable foods and leftovers within two hours of preparation. Cold foods should be kept at 4°C (40°F) or colder. Thaw foods in the refrigerator or use the microwave if preparing immediately.
  - **Cook**: Cook food to the proper temperature.

- Health professionals and the public can access information about safe food handling:
  - Alberta Health Services, Environmental Public Health Program ([www.albertahealthservices.ca/eph.asp](http://www.albertahealthservices.ca/eph.asp))
  - Fight Bac! website, from the Canadian Partnership for Consumer Food Safety Education ([http://www.canfightbac.org/cpcfse/en](http://www.canfightbac.org/cpcfse/en))

Health Benefits

Practicing safe food handling can help individuals to:

- Prevent food borne illness.
- Enjoy safe food.
- Minimize intake of harmful food contaminants.

Key Questions

**What are basic safe food handling practices?**

Safe food handling (food safety) is important when handling all food for all people. Food safety is especially important for people with weakened immune systems, seniors, and pregnant women.

Safe food handling can be divided into four areas: **Clean, Separate, Chill, Cook**. Instruct individuals to:

**Clean**: Wash hands and surfaces often

**Hands**
- Wash your hands with warm water and soap for at least 20 seconds before and after touching food, using the bathroom, changing diapers or touching pets. Twenty seconds is about the time it takes you to sing the “ABC” song.
Surfaces
- Wash cutting boards and countertops with hot, soapy water and sanitize with bleach sanitizer before and after preparing food (see Bleach Sanitizer, below). Don't forget areas like faucets, sink drains, fridge handles, and small appliances.
- Wash the tops of cans and jars before opening.
- Clean can openers, blenders, and mixer blades before/after each use.
- Wash and sanitize the refrigerator and microwave often to get rid of bacteria.
- Wash out lunch bags and boxes every day with hot, soapy water, and sanitize with bleach sanitizer.

Bleach Sanitizer
Bleach sanitizer can be made easily at home, and used to clean all surfaces used for food preparation:
Combine 1 tsp (5 mL) of bleach and 3 cups (750 mL) of water in a spray bottle. Label it “sanitizer”. Spray this sanitizer on surfaces that need to be cleaned. Let the sanitizer sit for 1 to 2 minutes, and let it air dry. Every day, throw out unused sanitizer and make a new batch.

Cloths
- Use a clean kitchen cloth every day. You can also use paper towels. Wash cloths and towels often in the hot cycle of the washing machine or in bleach sanitizer.
- Sponges are harder to keep free of bacteria. It is best not to use them.
- Wash your vegetable brush, kitchen scissors, or scouring pad in the dishwasher or in bleach sanitizer every day.

Food
- Wash fresh fruit and vegetables under running water. Wash them even if you are not going to eat their skin.
- Use a vegetable brush to rub firm fruits and vegetables like potatoes under running water.

Separate: Keep raw food such as meat, poultry, seafood, and eggs separate from other foods in the shopping cart, refrigerator, and before, during, and after food preparation.

Unsafe food handling can cause bacteria to move from one food to another.
- Don't let uncooked eggs, or raw meat, poultry, fish, or their juices touch food that is already cooked or will be eaten raw.
- In your grocery cart separate raw meat, poultry, fish, and eggs from all the other food. Put meat and fish in a plastic bag before you put it in your cart.
- Use one cutting board for raw meat, chicken, or fish and a different one for other food like fruit and vegetables. Wash cutting boards and use bleach sanitizer between each use.
- Never put cooked food on an unwashed plate that had raw food on it.
- Separate raw meat, fish, poultry, and eggs from other foods in the refrigerator. Keep them in sealed containers at the bottom of the fridge to keep juices from dropping on other foods.
Chill: Put food in the fridge right after preparing or eating

Keep cold foods cold. The cold temperature in your fridge doesn’t kill bacteria, but does keep it from growing. Use a thermometer to set your fridge temperature at 4 °C (40 °F) or lower. Set your freezer temperature at -18 °C (0 °F).

- Put raw food, leftovers, and prepared foods in the fridge or freezer within 2 hours. If food has been sitting out longer than 2 hours, throw it away.
- Don’t defrost food at room temperature. Thaw food in the fridge, in cold water or in the microwave. If you thaw food in cold water or in the microwave, cook it right away. Replace the cold water used to thaw food every 30 minutes.
- Put leftovers into small, shallow containers so they cool faster in the fridge. Place leftovers near the top of the fridge so they don’t warm the food above.
- Do not overload your fridge. Cold air must be able to move around to keep food safe.
- Keep raw meats on the bottom shelf in sealed containers to prevent juices from dripping.
- Marinate meats in the fridge.
- Follow the food storage recommendations at the Canadian Fight Bac! and Food Safety and You websites in the Recommendations section.

Cook: Cook food to the right temperature

Cooking food to the right temperature kills bacteria. Use a clean food thermometer to make sure food is cooked to the safe temperatures in the chart below. Serve food right after cooking and always keep hot food hot. Use a food thermometer to ensure internal temperatures are as follows:

<table>
<thead>
<tr>
<th>Food</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef, veal and lamb, pieces and whole cuts (like steaks and roasts)</td>
<td>63°C (145°F) – medium-rare</td>
</tr>
<tr>
<td></td>
<td>71°C (160°F) – medium</td>
</tr>
<tr>
<td></td>
<td>77°C (170°F) – well done</td>
</tr>
<tr>
<td>Ground meat and meat mixtures including burgers, sausages, meatballs, meatloaf, casseroles</td>
<td>71°C (160°F) – beef, veal, lamb, pork</td>
</tr>
<tr>
<td></td>
<td>74°C (165°F) – poultry</td>
</tr>
<tr>
<td>Pork chops, ribs, roasts</td>
<td>71°C (160°F)</td>
</tr>
<tr>
<td>Poultry (chicken, turkey, duck)</td>
<td>74°C (165°F) – pieces</td>
</tr>
<tr>
<td></td>
<td>85°C (185°F) – whole bird</td>
</tr>
<tr>
<td>Egg dishes</td>
<td>74°C (165°F)</td>
</tr>
<tr>
<td>Fin fish (like halibut, salmon, trout)</td>
<td>70°C (158°F) – can’t see through the flesh (opaque)</td>
</tr>
<tr>
<td>Others: seafood (shrimp, lobster, crab), stuffing, leftovers, hot dogs</td>
<td>74°C (165°F)</td>
</tr>
</tbody>
</table>

Source: [www.inspection.gc.ca](http://www.inspection.gc.ca)
Nutrition Guideline
Safe Food Handling
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- Cook eggs until the yolk and white are firm, not runny. Don’t use recipes where eggs stay raw or are not fully cooked. Pasteurized egg products can be used.
- Cook fish to the temperatures in the chart above. Fin fish should be opaque and flake easily with a fork.
- Clams, oysters, and mussels are cooked when they open. Throw away ones that don't open.
- Boil gravy, soups, or sauces when cooking them. Reheat leftovers only once, bringing the food to a boil.
- When using a slow cooker, keep the lid tightly sealed. Don't lift the lid to check on the food.
- Cook stuffing separately from the chicken or turkey
- Read the food package for instructions on how to prepare and store it.
- Reheat leftovers only once and to at least the temperature in the chart above. Throw away any leftovers after they’ve been reheated once.

Microwave cooking:
Microwaves sometimes leave cool spots in food where bacteria can live. Cover the food with a microwave-safe material that does not touch the food. Stir the food a few times during cooking. If there is no turntable, turn the dish once or twice during cooking. After cooking, check the temperature of the food with a clean thermometer.

At the grocery store:
- Don’t buy food that has a “Best Before” date that has passed or is close to expiring.
- Don’t buy cans or jars that have dents, cracks, or bulging lids.
- Pick up refrigerated or frozen foods last. Take them home right away and put them away first.
- When you’re finished grocery shopping, go home right away to store food properly.

What are the recommendations for pasteurized and unpasteurized foods?

Pasteurization uses heat or ultraviolet light to kill organisms that can cause food borne illness, while the quality and nutritional content of the product is maintained. Common foods that are pasteurized include juice and cider, milk, liquid eggs, and honey.

Juice
Most juices and ciders sold in Canada are pasteurized—juice sold in refrigerated display cases, juice made from concentrate, and all shelf-stable juice products (cans, bottles and juice boxes) found unrefrigerated on grocery store shelves. Unpasteurized juice products can be contaminated with harmful bacteria, viruses or parasites. Although fruits don’t naturally contain harmful bacteria, viruses or parasites, they can become contaminated at the farm where they are grown, or during handling, processing or transportation. Contaminated unpasteurized juice and cider could pose a health risk to individuals.

Most people can drink unpasteurized fruit juice and cider with no harmful effects. However, children, pregnant women, older adults and people with a weakened immune system should not consume unpasteurized juice and cider. These individuals should read labels carefully to ensure they are buying pasteurized products.
Milk
All milk and milk products sold in Canada, with the exception of cheeses, must be pasteurized.

Raw (unpasteurized) milk is not safe to drink. Health Canada advises all individuals not to drink raw milk. Raw milk can contain a variety of bacteria, including *Salmonella*, *Escherichia Coli*, *Campylobacter* and *Listeria*. These bacteria can cause serious illness, ranging from fever, vomiting, and diarrhea to kidney failure, miscarriage, and death.

Children, pregnant women, older adults, and people with a weakened immune system should not drink unpasteurized milk because they are more vulnerable to food-borne illness. There are some individuals who continue to prefer raw milk because they believe it provides health benefits. Any perceived benefits of raw milk are out-weighed by the high risk of food borne illness.

In Alberta, all milk that is sold at farmers' markets and community organization functions must be pasteurized; milk products sold in these situations must be made with pasteurized milk. In other locations or situations where milk or milk products are sold individuals should ask if the product has been pasteurized before buying it. If unsure whether the product is pasteurized, it is best to avoid the product.

Raw Milk Cheese
Raw (unpasteurized) milk is not allowed to be sold in Canada, but raw milk cheese is allowed to be sold. This is allowed because the manufacturing process for raw milk cheeses helps destroy harmful bacteria that may be present in the raw milk.

Children, pregnant women, older adults and people with a weakened immune system should avoid raw milk cheese, especially soft and semi-soft cheeses (Brie, Camembert and blue-veined cheeses). These people should try pasteurized milk cheeses instead of raw milk cheese.

All individuals should read the labels of cheese to make sure it has been pasteurized. If unsure, ask the store for more information.

Is it safe to eat raw eggs?
Although *Salmonella* is not very common in Canadian eggs, young children, the elderly, pregnant women, and people with weakened immune systems are more susceptible to food-borne illness. Therefore, it is recommended that for these people eggs and egg-based foods be cooked thoroughly, to at least 74°C (165°F), before eating.

Pasteurized egg products are available. Use these pasteurized products when preparing foods that normally have raw or lightly cooked eggs, such as eggnog, mayonnaise, salad dressing, ice cream, and raw cookie dough.
Do pre-washed, bagged vegetables and lettuce need to be washed before using?  

Many fresh precut and bagged vegetables, such as lettuce, are washed before processing. This produce can be washed again before using; however the extra washing is not necessary. Pre-cut or pre-washed vegetables and fruit that are sold in open bags or containers should be washed before eating.

Are raw sprouts safe to eat?  

Sprouts are the first plant parts that grow from germinating seeds and beans. Sprouts can sometimes carry bacteria that cause food borne illness.

Sprouts are often eaten raw, so harmful bacteria are not destroyed by cooking. Young children, older adults, pregnant women, and people who have a weakened immune system should not eat uncooked or undercooked sprouts because they are at increased risk for serious food borne illness.

Healthy individuals can reduce risk of food borne illness by:

- Ensuring sprouts are always stored in the refrigerator, or at constant temperatures at or below 4°C (40°F).
- Buying sprouts that look fresh. Avoid sprouts that look dark or smell musty, even if it is only part of the package.
- Not using bare hands to place sprouts into a clean plastic bag when buying sprouts from a bulk display.
- Avoiding cross-contamination by keeping sprouts separate from raw meat, poultry, and seafood.
- Following the best before date on prepackaged sprouts. Sprouts that are not prepackaged should be eaten within a few days.
- Throwing away sprouts that are past their best before date, or sprouts that look dark, smell musty, or are no longer crisp, even if it is only part of the package.
- Washing hands, preparation surfaces, and utensils before and after handling or preparing sprouts; following the tips in the ‘Clean’ section above.
- Rinsing sprouts in cool, running water before eating or cooking them.
- Knowing that the safest practice is to cook sprouts thoroughly before eating.

Is it safe to eat raw fish?  

Raw and undercooked fish and shellfish can carry harmful bacteria, viruses or parasites. Seniors, pregnant women, young children and people with weakened immune systems should avoid eating raw or undercooked fish or shellfish, including sashimi, and sushi made with raw fish. Sushi made with cooked fish (properly handled) is safe for everyone.

How can food be kept safe while travelling?

When travelling with food, bringing lunch, or bringing food for someone in the hospital, always keep cold food cold.
- Keep food in the freezer or refrigerator until just before leaving home
- If travelling a long distance, don’t pack hot food
Nutrition Guideline
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- Frozen containers of milk or juice help chill other food, and will thaw in time to drink at lunch. A freezer pack will also keep other foods cold.
- Pack cold or frozen food in a cooler with ice or cold packs. A full cooler will stay cold longer than one that is partly filled.

What about people at higher risk of food borne illness: older adults, pregnant women, young children, and people with weakened immune systems?

The foods below can cause food-borne illness. They should be fully cooked before being eaten by older adults, pregnant women, young children, and people with weakened immune systems. See the section Cook your food to the right temperature, above.

- Smoked meat or seafood
- Raw meat, poultry, fish (sushi), shellfish (like oysters, clams, mussels)
- Deli meats like hot dogs, bologna, roast beef, and turkey breast, unless cooked before eating; cook to steaming hot or 74°C (165°F)
- Use packaged deli meats, or deli meats sliced at the grocer, within 2-3 days after opening

Older adults, pregnant women, young children, and people with weakened immune systems should avoid the foods below:

- Raw or unpasteurized milk, like cow and goat milk, and any foods made from unpasteurized milk
- Soft and semi-soft cheeses such as Brie, Camembert, feta, and blue-veined cheeses
- Raw or partly cooked eggs or egg products like cookie or cake batter, salad dressings, sauces, homemade eggnog
- Raw sprouts like alfalfa, mung bean, or radish
- Unpasteurized fruit juice or cider

Where can health professionals and the public get more information about safe food handling?

- Health professionals and the public can access Canadian recommendations about safe food handling:
  - Alberta Health Services, Environmental Public Health Program (www.albertahealthservices.ca/eph.asp)
  - Fight Bac! website; from the Canadian Partnership for Consumer Food Safety Education (http://www.canfightbac.org/cpcfse/en)
  - Food Safety and You website; from the Government of Canada (http://www.healthycanadians.gc.ca/init/sfh-msa-eng.php)

Are there any handouts on safe food handling I can use with my clients?

Refer to approved provincial Alberta Health Services nutrition handouts to support patient education. For more information, contact Nutrition.Resources@albertahealthservices.ca
References


