

## Pasteurized and raw milk

### How is pasteurized milk different from raw milk?

Pasteurized milk is raw milk that has been heated to a specified temperature for a specified amount of time to kill pathogens that may be found in the raw milk.

Pathogens are microorganisms such as bacteria that make us sick. Raw milk can contain pathogens such as *Campylobacter*, *E. coli* O157:H7, *Salmonella*, *Listeria* and other bacteria. Raw milk includes milk from cows, goats, buffalo, sheep and other dairy animals.

By law in Canada, all milk sold to the public must be pasteurized and packaged in a licensed dairy plant. Only vitamins A and D may be added to the milk for health benefits; no other additives or preservatives can be legally added to milk. Vitamin A improves eyesight, helps you to see better at night or in dim light, and helps you to tell colours apart. Vitamin D helps your body absorb calcium and reduces the risk of osteoporosis.

### What are the risks of drinking raw milk?

According to a US Centre for Disease Control and Prevention study, the rate of outbreaks caused by raw milk and products made from it was 150 times greater than outbreaks linked to pasteurized milk. Children and younger adults were found to be more affected by the illnesses.

Some argue that because they grew up consuming raw milk without falling ill, that raw milk is safe for consumption. Despite this, the consumption of raw milk raises urgent public health concerns due to its association with numerous outbreaks

caused by enteric organisms. Mandatory pasteurization of milk has eliminated large outbreaks of milk borne disease in Canada. However, outbreaks arising from raw milk still occur and remind us of the hazards of drinking raw milk.

### Who is at risk of getting sick?

Anyone can get sick from pathogens that may be found in raw milk.

Infants, children, pregnant women, seniors, and people with certain chronic diseases are more vulnerable to infection and have higher risk of getting sick from drinking raw milk due to having weaker or developing immune systems.

### What can you do to protect yourself and your family?

Purchase milk products from your grocer or other commercial stores. Always check the label on the milk product for assurance that it is pasteurized. Milk that you buy must be pasteurized and packaged at a licensed dairy plant. Be cautious of raw milk from farm gate sales or from “cow shares” as it is not approved, inspected, or monitored by the government.

If you live in a rural area and cannot buy commercially pasteurized milk, you can reduce the risk from disease by following 5 easy steps for home pasteurization:

1. **Clean and sanitize milk bottles:** Clean empty glass milk bottles and tops with warm dish soap. Rinse and inspect containers to ensure that all visible soil and soap residue has been removed. Next, sanitize bottles using either of the heat or chemical methods, as follows:

- Heat method: Immerse the containers in hot water (77°C / 171°F or hotter) for at least 2 minutes. Remove with sanitized tongs and allow containers to drain, cool and air dry
  - Chemical method (200 ppm no-rinse sanitizing solution): Mix 15 mL (1 tablespoon) of household bleach into 4 litres (1 gallon) of water; or mix 5 mL (1 teaspoon) of household bleach into 1 litre (4 cups) of water. Allow the sanitizer to contact the surface or utensil for at least 1 minute before allowing to air dry
  - Use B.C.'s FOODSAFE Chlorine Dilution Calculator tool to make up the proper sanitizer strength based on the concentration of your bleach product [www.foodsafe.ca/dilution-calculator.html](http://www.foodsafe.ca/dilution-calculator.html)
2. **Pasteurize milk in a double boiler:** Place the raw milk in the top part of a double boiler. Gradually raise the temperature of the milk to 74°C (165°F) or hotter and keep it at this temperature for at least 15 seconds. Stir often to keep all the milk at the same temperature. Note: Overheating may cause milk flavour to change. Note: Do not use a microwave oven to pasteurize milk at home due to uneven heating of the milk
3. **Ensure temperature reaches 74°C:** Check the temperature of the milk often with a clean and sanitized food thermometer. Put the thermometer about two-thirds of the way into the milk; do not rest it on the side or the bottom of the container. If you find the temperature has fallen below 74°C (165°F), raise the temperature to 74°C (165°F) or hotter and start the 15 second timer over again
4. **Cool the milk:** Cool the milk quickly by putting the top part of the double boiler in an ice water bath. Stir often to help it cool faster until it reaches 20°C (68°F) or colder
5. **Bottle the milk:** Pour the cooled milk into the sanitized bottles. Promptly put them in a refrigerator to further cool the milk to 4°C (40°F) or colder. Under ideal conditions, home pasteurized milk can keep in the refrigerator for up to 2 weeks

### For more information

For more information on milk safety, visit [www.bccdc.ca/health-info/prevention-public-health/dairy-safety](http://www.bccdc.ca/health-info/prevention-public-health/dairy-safety) or contact BCCDC Food Safety and Environmental Health at [fpinfo@bccdc.ca](mailto:fpinfo@bccdc.ca).

