



Is there a risk to drinking unpasteurized juice and cider?

Yes! Over 1,700 people have fallen ill after drinking juice or cider over a 20-year period (1990-2010) in North America. Most of these outbreaks involved unpasteurized juices and ciders such as apple cider, orange juice, and lemonade. Other fresh fruit juice outbreaks have included pineapple, carrot, coconut, cane sugar, banana, açai and mixed fruit juices (source: CSPI, Outbreak Alert! Database). Homemade juices are considered unpasteurized unless additional steps are taken to reduce risk.

The germs responsible for these illnesses and deaths include bacteria, parasites and viruses as well as toxic metal contaminants. The most common germs found were *E.coli* O157 and O111, *Salmonella*, *Cryptosporidium*, and norovirus. A few other outbreaks were due to *Vibrio cholerae*, *Clostridium botulinum*, yeast, and hepatitis A.

Is this a serious problem?

Yes! *E. coli* O157:H7 and *Salmonella* can make you very sick. *E. coli* O157:H7 can cause permanent kidney damage (hemolytic uremic syndrome) or death. Hepatitis A can cause liver damage. Botulism impairs nerve transmission and in severe cases causes death. *Cryptosporidium* causes prolonged diarrheal illness. **Unpasteurized fruit juices should not be consumed by people who are pregnant, immuno-compromised, very young, or elderly.**

- See HealthLinkBC File [#72 Unpasteurized Fruit Juices and Ciders: A Potential Health Risk](#) for information about what to look for on product labels when you are buying juices.
- The Government of Canada has additional safety information in the brochure [Unpasteurized Fruit Juices & Ciders: Know What You Are Drinking](#).

Because it takes only a few of these germs to make you sick, especially if you are at higher risk, washing and refrigeration alone are not enough. Pasteurization is an additional step you can take to reduce the number of harmful germs and bacteria.

Will refrigeration or washing the fruit make the juice safe?

- **Refrigeration does not destroy bacteria like *E. coli* O157:H7 or other germs.**

Refrigeration slows the growth of germs, bacteria, yeast, and mould in juices, but it will not make or keep unpasteurized juice safe. Opened juices and un-acidified juices such as carrot juice, should always be kept refrigerated.

- **Washing the fruit before you make juice will reduce the numbers of harmful germs and bacteria on the peel, but it will not remove them all.**

Wash the fruit under cool, running water before cutting, even if you plan to peel them. A produce brush can be used to scrub fruits with firm skins that may have visible soil on the surface.

- **OPTIONAL:** A weak bleach solution (1 teaspoon or 5 ml bleach to a litre of water) can help reduce the numbers of germs and bacteria present.

How do I pasteurize apple juice for home storage?

Most commercially processed juices are heated to about 85°C (185°F) for about 16 seconds to destroy germs, yeasts and moulds. These products are just as nutritious as if they were not heated. They taste good and last much longer than unheated or unpasteurized juice.

If you prepare apple juice at home, the following steps will help make the juice safer:

1. Ascorbic acid may be added to prevent the juice from darkening. Ascorbic acid and instructions for use are available from wine-making shops.
2. Remove pulp, if desired, by adding a pectic enzyme. After settling overnight, siphon the clear juice into another container for heating. Pectic enzymes are also available at wine-making shops.
3. Pasteurize the juice using a double-boiler. Heat the juice to about 70°C (158°F) by using a thermometer and stirring frequently. Keep it at 70°C for at least 1 minute. This will destroy most germs and moulds.
4. Pour the juice into clean, sterilized, and preheated bottles. Seal with new caps. The bottles must be preheated to prevent them from breaking due to heat shock.
5. All types of juices, raw or pasteurized, should be kept refrigerated to prevent spoilage. Juices that are pasteurized and poured into bottles while hot (hot-packed) should keep longer because the heat will destroy airborne yeast and mould. If the juice is bottled after it has cooled down, it will have a limited shelf-life, even if it is refrigerated.
6. Juices made from acidic fruits may be preserved by using the hot-water canning method for 5 to 10 minutes when packed into sterilized glass bottles with canning lids. When the jars are sealed they should be shelf-stable for up to a year.
 - See the [National Center for Home Food Preservation information on making Apple Juice](#) for more detailed information on using boiling water canners, sterilization of empty jars, and hot packing.
7. **Juices made from low acid fruits or vegetables, such as carrots, must be kept refrigerated after being pasteurized. This is**

needed to prevent growth of *C. botulinum* spores that are not destroyed by pasteurization and when present may lead to botulism toxin formation.

- These juices will not be safe using the hot-water canning method; they require a pressurized canner to destroy the botulism spores. *C. botulinum* is able to grow in low-oxygen environments such as home-canned goods.

For additional details about how producers of unpasteurized apple and other fruit juices help ensure safety review the "[Code of Practice for the Production and Distribution of Unpasteurized Apple and Other Fruit Juice/Cider in Canada.](#)" This resource has been prepared by the Canadian Food Inspection Agency (CFIA).

More Information

For more information about food safety, see the following HealthLinkBC Files:

[#03 Pasteurized and Raw Milk](#)

[#22 Home Canning - How to Avoid Botulism](#)

[#59a Food Safety: Easy Steps to Make Food Safe](#)

[#72 Unpasteurized Fruit Juices and Ciders: A Potential Health Risk](#)

Reference

[USFDA Guidance for Industry: Juice HACCP Hazards and Controls Guidance First Edition; Final Guidance](#)

[National Center for Home Food Preservation: Apple Juice](#)

For further information please contact Food Protection Services at 604.707.2440 or fpinfo@bccdc.ca

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