



Don't drink it raw - how to pasteurize juice and cider safely

Is there a risk to drinking unpasteurized juice and cider?

Yes! In the last decade in North America over 1,700 people have fallen ill after drinking juice or cider. Most of these outbreaks involved unpasteurized juices and ciders such as apple cider, orange juice and lemonades. Other fresh fruit juice outbreaks included pineapple, carrot, coconut, cane sugar, banana, acai and mixed fruit juices (source: CSPI, Outbreak Alert! Database).

The germs responsible for these illnesses and deaths included bacteria, parasites and viruses as well as 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 can cause liver damage. Botulism impairs nerve transmission and in severe cases causes death. *Cryptosporidium* causes prolonged diarrheal illness. The people most at risk of serious illness are those who are immuno-compromised, very young, the elderly and pregnant women.

Will refrigeration or washing the fruit make the juice safe?

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

Refrigeration does slow 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. Check the label instructions on the juice.

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.

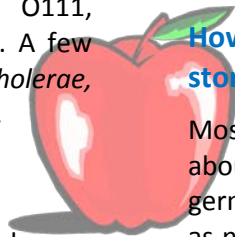
Using a mild soap and/or a weak bleach solution (1 teaspoon or 5 ml bleach to a litre of water) will help when you wash the fruit. **Because it takes only a few of these germs to make you sick - especially if you are at higher risk - washing alone is not enough.**

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 juice.

If you prepare juices at home, the following steps will help make the juice safe:

1. Read through the safety advice from Health Canada at www.hc-sc.gc.ca/fn-an/securit/facts-faits/unpast_fruit_juices-jus_fruits_cidre_nonpast-eng.php
2. When making your own juice from fresh apples or fruits using a home juicer, follow the "Code of Practice for the Production and Distribution of Unpasteurized Apple and Other Fruit Juice/Cider in Canada." This resource has been provided by the Canadian Food Inspection Agency (CFIA) and can be found at www.inspection.gc.ca/english/fssa/protra/code_e.shtml. This code should also be followed if you purchase unpasteurized juice from places such as roadside stands.



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3. Ascorbic acid may be added to prevent the juice from darkening. Ascorbic acid and instructions for use are available from wine-making shops.
4. 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.
5. Pasteurize the juice using a double-boiler. Heat the juice to about 70°C (158°F), stirring frequently. Keep it at 70°C for at least 1 minute. This will make sure that all *E. coli* O157:H7 bacteria, and other germs such as mould, are destroyed.
6. Pour the juice into clean, sterilized preheated bottles. Seal with new caps. The bottles must be preheated to prevent them from breaking due to heat shock.
7. This juice should keep a fairly long time if poured into bottles while it is still hot. 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.

Less acidic juices - such as carrot juice or high-pulp juices - should also be pasteurized by heating to a temperature of at least 70°C for 1 minute.

These juices must be kept refrigerated to prevent the growth of *C. botulinum* spores that are not destroyed by pasteurization and which may lead to botulism toxin formation in the juice.

Unpasteurized fruit juices should not be consumed by at-risk populations.

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: Ten Easy Steps to Make Food Safe](#)

[#59b Food Safety for Fresh Fruits and Vegetables](#)

[#59c Food Safety: Instructions on Food Labels](#)

[#72 Unpasteurized Fruit Juices and Ciders A Possible Threat to Health](#)

Reference

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

For further information please contact the Food Safety Specialist at 604.707.2440

September 2013