

#5 Food Safety



Goals:

- 1) Clean hands, food contact surfaces, and fresh produce. To avoid spreading bacteria to other foods, meat and poultry should not be washed or rinsed.
- 2) Separate raw, cooked, and ready-to-eat foods while shopping, preparing, or storing food.
- 3) Cook foods to a safe temperature to kill microorganisms.
- 4) Chill (refrigerate) perishable food promptly and defrost foods properly.
- 5) Avoid unpasteurized milk or any products made from unpasteurized milk; raw or partially cooked eggs or foods containing raw eggs; raw or undercooked meat and poultry; unpasteurized juices; and raw sprouts.

Steps for Proper Hand Washing

1. Use soap and warm running water
2. Rub your hands vigorously for 20 seconds
3. Wash backs of hands, wrists, between fingers and under nails
4. Rinse well
5. Dry hands with a paper towel
6. Turn off the water using a paper towel



Which is best: Wood or Plastic?

In the home it really doesn't matter whether you have wooden, plastic or glass chopping boards as long as they are kept really clean and in good condition. Use plastic or glass chopping boards for raw meat, poultry and seafood, and another board for ready to eat food, like vegetables.

All chopping boards should be scrubbed with hot water and detergent after preparing raw foods. Replace any board when its surface becomes scratched because bacteria can hide in the scratches.



How to Wash Fresh Produce

- Wash fresh produce under cold running tap water to remove any lingering dirt.
- If there is a firm surface, such as on apples or potatoes, the surface can be scrubbed with a brush.
- Do not wash fruits and vegetables with detergent or soap. These products are not approved or labeled by the Food and Drug Administration for use on foods. You could ingest residues from soap or detergent absorbed on the produce.
- When preparing fruits and vegetables, cut away any damaged or bruised areas because bacteria that cause illness can thrive in those places.
- Immediately refrigerate any fresh-cut items such as salad or fruit for best quality and food safety.



Melons & sprouts are famous for causing food borne illnesses.



Cross-Contamination

Occurs when bacteria and viruses are transferred from a contaminated surface to a one which is not contaminated. (Example: Raw fish → Fresh carrots)
The bacteria on the raw food are killed when the food is cooked, but the ready to eat food gets eaten without further cooking: bacteria and all.



How should food be stored?

Raw food: Meat, poultry or fish, should be stored at the **BOTTOM** of the fridge to prevent meat juices from dripping onto other food.

Ready-to-eat food: Covered in the fridge to further reduce the risks.

Temperature



Keep hot foods hot and cold foods cold!

- **Don't thaw** meat and other frozen foods at **room temperature**. Instead, defrost by moving them from the freezer to the refrigerator for a day or two; by submerging in cold flowing water; or by defrosting in the microwave.
- **Use a thermometer** to ensure that meats are completely cooked. Don't eat poultry that is pink inside.
- Seafood should be thoroughly cooked. (Fish is done when the thickest part becomes **opaque** and the fish flakes easily when poked with a fork.)
- Eggs should be cooked until the white and the yolk are **firm**.
- If a dish is to be served hot, get it from the stove to the table as quickly as possible. Cooked foods should not be left standing on the table or kitchen counter for more than **two hours**.
- Keep cold foods in the refrigerator or on a bed of ice until serving – especially in summer.
- Refrigerate leftovers as soon as possible, and use within **three days**.

Did you know? *Refrigeration does not prevent bacterial growth; it only slows the process!*

Hot foods should be kept above 140°F and cold foods should be kept at 40°F or below.

40°F to 140°F = **Danger Zone**

When chilling food, separate large quantities into smaller, shallow containers for quicker cooling. Do not "over-stuff" your refrigerator. The cool air needs room to circulate!

Pasteurization

The process of pasteurization was named after **Louis Pasteur** who discovered that spoilage organisms could be inactivated in wine by applying heat at temperatures below its boiling point.

What is pasteurization?

The heating of every particle of milk or milk product to a specific temperature for a specified period of time without allowing recontamination of that milk or milk product during the heat treatment process.

Purpose:

1. **Public Health Aspect** - to make milk and milk products safe for human consumption by destroying all bacteria that may be harmful to health (pathogens)
2. **Keeping Quality Aspect** - to improve the keeping quality of milk and milk products. Pasteurization can destroy some undesirable enzymes and many spoilage bacteria. Shelf life can be 7, 10, 14 or up to 16 days.



All milk, eggs, and juice bought in stores are pasteurized to meet government regulations. There is no need to worry about pasteurization unless you are drinking milk directly from the cow or raising your own chicken eggs!

Common Sources of Food Borne Illness

Source of illness: Raw and undercooked meat and poultry

Symptoms: Abdominal pain, diarrhea, nausea, and vomiting

Bacteria: *Campylobacter jejuni*, *E. coli* O157:H7, *L. monocytogenes*, *Salmonella*



Campylobacter

Source of illness: Unpasteurized milk and dairy products, such as soft cheeses

Symptoms: Nausea and vomiting, fever, abdominal cramps, and diarrhea

Bacteria: *L. monocytogenes*, *Salmonella*, *Shigella*, *Staphylococcus aureus*, *C. jejuni*

Source of illness: Raw or undercooked eggs. Raw eggs may not be recognized in some foods such as homemade hollandaise sauce, Caesar and other salad dressings, tiramisu, homemade ice cream, homemade mayonnaise, cookie dough, and frostings.

Symptoms: Nausea and vomiting, fever, abdominal cramps, and diarrhea

Bacteria: *Salmonella enteritidis*



E. coli

Source of illness: Raw or undercooked shellfish

Symptoms: Chills, fever, and collapse

Bacteria: *Vibrio vulnificus*, *Vibrio parahaemolyticus*

Source of illness: Improperly canned goods, and smoked or salted fish

Symptoms: Double vision, inability to swallow, difficulty speaking, and inability to breathe (seek medical help right away!)

Bacteria: *C. botulinum*



C. Botulinum

Source of illness: Fresh or minimally processed produce

Symptoms: Diarrhea, nausea, and vomiting

Bacteria: *E. coli* O157:H7, *L. monocytogenes*, *Salmonella*, *Shigella*, *Yersinia enterocolitica*, viruses, and parasites