

# Refrigerator and Freezer Safety

*Susan Bauer, M.A., C.F.C.S., L.D., Extension Agent Associate Professor*  
*Traci L. Henderson, B.S., Dietetic Intern, Virginia Tech*  
*Sally Summers, M.S., C.F.C.S., L.D., Extension Agent and Associate Professor*  
*Guendoline Brown, Ph.D., Extension Nutrition and Health Specialist and Professor*

## Why do we refrigerate food?

Food is refrigerated to slow bacterial growth. Bacteria grow rapidly when they have food, moisture, and favorable temperatures. Amazingly, bacteria can double in numbers in as little as 20 minutes. The most favorable temperatures for bacterial growth are in the range of 40° to 140° Fahrenheit (F). Therefore, food must be kept refrigerated at temperatures below 40° F.

Food will gradually spoil if left in the refrigerator for an extended period. Spoilage can be seen when foods develop an uncharacteristic odor or color, and they may become slimy or sticky. Some bacteria will cause molds to grow and become visible. Keeping your refrigerator at the recommended temperature will help control rapid growth of bacteria.

## Why do we freeze food?

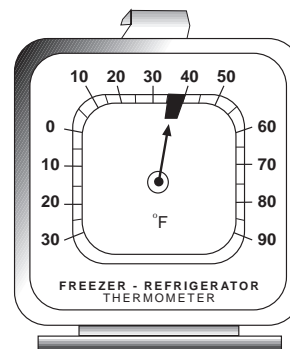
Freezing slows the movement of molecules, which causes bacteria to enter a dormant stage. This is good while the food is frozen; however, once food is thawed, the bacteria can resume growth. This is why it is important to remember to never refreeze a food item. Food in the freezer does not spoil as quickly as food in the refrigerator, but the food product will lose quality and flavor if stored too long.

## Food storage in the refrigerator

**Temperature:** The temperature in your refrigerator should stay in the range of 34° to 40° F (1 to 3° C) or colder. If the temperature in your refrigerator goes above 40° F, there is a greater chance of rapid food spoilage and bacteria growth.

**Monitor the temperature:** A thermometer is important in monitoring the temperature in your refrigerator. Refrigerator thermometers are relatively inexpensive and are specifically designed to be accurate at cold temperatures. Place the thermometer in different locations throughout the refrigerator to test each area for temperature. Make a habit of checking the temperature regularly, preferably at least once a week.

**Maintain the temperature:** Find the refrigerator setting that keeps the temperature within the range of 34° to 40° F throughout the refrigerator. Be sure that the refrigerator doors are closed tightly at all times. Do not open the



doors more often than necessary and close them as soon as possible. Also, it is important to remember that cool air in the refrigerator moves downward and forces warmer air near the bottom to rise. This circulation of air is

essential in maintaining the appropriate temperature throughout the unit. Therefore, the placement of food is also important for refrigerator safety. Do not overpack the shelves with food. The refrigerator air needs to circulate to keep every food item at its optimum temperature.

**Food storage:** Cover foods to retain moisture because the air circulating in the refrigerator will dry out any uncovered or unwrapped food items. This also prevents them from picking up odors from other foods. Raw meat, poultry,

and seafood should be in a sealed container or wrapped securely to prevent raw juices from contaminating other foods. Do not overpack the shelves with food so that the air can move throughout the unit.

**Keeping the refrigerator clean:** Wipe up spills immediately, clean surfaces throughout with hot, soapy water, and rinse. Regularly throw out perishable foods that should no longer be eaten, preferably once a week. (A general rule of thumb for cooked leftovers is four days.) To keep the refrigerator smelling fresh and help eliminate odors, place an opened box of baking soda on a shelf. The exterior may be cleaned with a soft cloth and mild liquid dishwashing detergent or cleansers and polishes made for appliance use. The front grill should be kept free of dust and lint to permit free air flow to the condenser. Several times a year, the condenser coil should be cleaned with a brush or vacuum cleaner. This will remove dirt, lint, or other accumulations to ensure efficiency and top performance.

### **Freezer temperatures**

Frozen foods should be kept at **0° F (-17° C)**. The temperature in the freezer should not reach higher than 5° F (-15° C). If your freezer cannot keep ice cream brick-solid, then the temperature is above the recommended level.

Place a thermometer in your freezer to test the temperature. Checking the temperature of your freezer frequently will alert you to any thawing problems with your frozen food. It's a good idea to purchase a second refrigerator/freezer thermometer to leave in the freezer section so you will develop the habit of regularly monitoring the temperature. Refrigerator/freezer thermometers are relatively inexpensive and are a good food safety measure.

A freezer unit that does not have a separate outside door will not keep food at the optimum freezing temperature. In this case, keep frozen foods no longer than a week. A freezing unit that has a separate door will have lower temperatures, and food can be stored for longer periods.

Use freezer wrap, freezer bags, aluminum foil, or other moisture- and vapor-proof packaging to overwrap meat and poultry packages for the freezer. This will prevent freezer burn and protect the food. Date food packages with an expiration date according to maximum storage time recommended. Flavors and textures will deteriorate with prolonged storage.

Place foods to be frozen in the coldest part of the freezer. Freeze no more than 3 pounds per cubic foot of freezer space within 24 hours. Keep the freezer full for best results.