

Food Safety in Transplant

Every year, about 48 million Americans are victims of foodborne illness. Most are the result of food prepared in the home. Safe steps in food handling, cooking and storage are important in preventing these illnesses. This guide can help keep you and your loved ones safe from the factors that can cause illness. You can't always see, taste or smell harmful bacteria, viruses or mold that may make you sick. Knowing how to prevent foodborne illness is the first step in making sure that your food is safe!

Common High Risk Foods

- Raw or undercooked meat or poultry; use a food thermometer and follow guidelines below
- Any raw or undercooked seafood or fish such as sashimi, sushi or ceviche
- Unpasteurized/raw milk
- Raw eggs (homemade Caesar dressing, raw cookie dough, homemade egg nog); undercooked or runny eggs
- Raw sprouts
- Unwashed fresh vegetables
- Soft cheeses (feta, brie, camembert, blue-veined, queso fresco)
- Hot dogs, deli meats and luncheon meats that have not been reheated
- Unpasteurized, refrigerated patés or meat spreads

Clean

You can't see, taste or smell them, but bacteria can spread throughout the kitchen and get on hands, knives, utensils, cutting boards, countertops and food. Frequent cleaning can keep that from happening.

- Wash your hands with warm water and soap for at least 20 seconds before and after touching food.
- Wash dishes, knives, cutting boards, utensils and counter tops with hot soapy water after preparing each food item and before going on to the next food.
- Think about using paper towels to clean up surfaces in the kitchen. When done, throw the paper towel away. If you use cloth towels, make sure to wash them often in your washing machine using the hot cycle.
- Carefully rinse fresh fruits and vegetables under running tap water – including those with skins that are not going to be eaten. Never use laundry soap or bleach to wash fresh fruits or vegetables. These products are not intended to be eaten.
- Rub fruits and vegetables with firm skin under running tap water or scrub the skin with a clean vegetable brush while rinsing with running tap water.

Wash

Wash your hands with warm water and soap. For best results, use warm water to get hands wet, then apply soap and rub hands together for 20 seconds before rinsing thoroughly. Make sure to wash the front and back of hands up to wrists, between fingers and under nails.

Wash:

- Before handling food
- After handling food
- After using the bathroom
- After changing a diaper
- After tending to a sick person
- After blowing nose, coughing, or sneezing
- After handling pets
- After touching dirty laundry

Separate

Bacteria spread through cross-contamination. Improper handling of raw meat, poultry and seafood can create a perfect environment for this. To keep harmful bacteria from spreading to food and throughout the kitchen, be sure to keep raw meat, poultry, and seafood (and their juices) away from ready-to-eat foods.

- Use one cutting board for fresh produce and a different one for raw meat, poultry and seafood.
- Separate raw meat, poultry, seafood and eggs from other foods in your shopping cart at the grocery store, in grocery bags and in your refrigerator.
- Never place cooked food on a plate that previously had raw meat, poultry, seafood or eggs.
- Place raw meat, poultry or seafood into sealed containers or in plastic bags on the bottom shelf of the refrigerator to stop juices from dripping onto other foods in the refrigerator.
- Sauce that is used to marinate raw meat, poultry or seafood should not be used on cooked food unless it is boiled first.

Cook

Improper heating and preparation of food means that bacteria can survive – even for the most skilled cooks. Foods are properly cooked when they reach a high enough internal temperature to kill the harmful bacteria that cause foodborne illness.

- Use a food thermometer to measure the internal temperature of cooked foods. Make sure that meat, poultry, casseroles, egg dishes and other foods are cooked to the correct internal temperature. See the “Safe Cooking Temperatures” table for appropriate temperatures.
- Cook ground meat or ground poultry until it reaches a safe internal temperature.
Remember: color is not a reliable sign that foods are cooked to the correct temperature.
- Cook eggs until the yolk and white are hard. Only use recipes where eggs are cooked or heated to 160°F.
- When cooking in a microwave oven, make sure there are no cold spots in food because bacteria can survive there. For best results, cover food, stir and turn for even cooking. If there is no turntable, turn the dish by hand one to two times during cooking.
- Bring sauces, soups and gravy to a boil when reheating.

Safe Cooking Temperatures

Food Category	Food Item	Internal Temperatures
Ground meat and meat mixtures	Beef, pork, veal, lamb, turkey, chicken	165°F
Beef, veal, lamb, chops, steaks, roasts	Medium rare Medium Well done	145°F with 3 minute rest time 160°F 170°F
Poultry	Chicken, turkey, duck	165°F
Pork	Medium Well Done	145°F with 3 minute rest time 170°F
Ham	Fresh (raw) Pre-cooked (to reheat)	165°F 145°F with 3 minute rest time
Egg	Eggs Egg dishes	Until yolk/white firms 160°F
Seafood	Fish Shrimp, lobster, crab Clams, mussels, oysters	145°F Turns red/flesh is pearly opaque Until shells open
Casseroles	Sauces, soup, gravy	165°F
Other meat	Hot dogs, lunch meat, bologna, deli meats	165°F

Chill

Bacteria spread fastest at temperatures between 40°F and 140°F. Chilling food properly is one of the most effective ways to decrease the risk of foodborne illness.

- Chill leftovers and takeout foods within two hours. Keep the refrigerator at 40°F or below. You can use an appliance thermometer to check the temperature.
- Divide large amounts of leftovers into shallow containers for faster cooling in the fridge.
- Do not overstuff the refrigerator! Cold air must flow to keep foods safe.
- Refrigerate or freeze meat, poultry, eggs and other fresh food items as soon as you get them home from the grocery store. Never let raw meat, poultry, eggs, cooked food or cut fresh fruits and vegetables sit at room temperature more than two hours before putting them into the refrigerator or freezer. Decrease that time to one hour when the temperature outside is above 90°F.
- Never defrost food at room temperature. Food must be kept at a safe temperature during thawing. There are three ways to defrost food: in the refrigerator, in cold running water, and in the microwave. **Remember:** Foods thawed in cold water or in the microwave should be cooked right away.

Cold Storage Chart

Product	Refrigerator (40° F)	Freezer (0° F)
Eggs		
Fresh, in shell	3-5 weeks	Do not freeze
Hard cooked	1 week	Does not freeze well
Liquid egg substitutes - opened	3 days	Does not freeze well
Liquid egg substitutes - unopened	10 days	1 year
Deli and Vacuum Packed Products		
Egg, chicken, ham, tuna, and macaroni salads	3-5 days	Does not freeze well
Hot dogs - opened package	1 week	1-2 months
Hot dogs - unopened package	2 weeks	1-2 months
Luncheon meat - opened package	3-5 days	1-2 months
Luncheon meat - unopened unpackage	2 weeks	1-2 months
Bacon and Sausage		
Bacon	1 week	1 month
Sausage - raw	1-2 days	1-2 months
Ground Meat		
Hamburger, ground beef, turkey, lamb, veal and pork	1-2 days	3-4 months
Beef, Veal, Lamb, Pork		
Steaks	3-5 days	6-12 months
Chops	3-5 days	4-6 months
Roasts	3-5 days	4-12 months
Poultry		
Chicken or turkey - whole	1-2 days	1 year
Chicken or turkey - pieces	1-2 days	9 months
Seafood		
Lean fish (flounder, halibut, etc)	1-2 days	6-8 months
Fatty fish (salmon, tuna, etc)	1-2 days	2-3 months
Leftovers		
Cooked meat or poultry	3-4 days	2-6 months
Chicken nuggets or patties	3-4 days	1-3 months
Pizza	3-4 days	1-2 months

At the Grocery Store

- Buy refrigerated and frozen food items last. Go through the aisles first, and then go to the deli, meat, dairy and frozen food cases last.
- Put raw meats into plastic bags to prevent their juices from spilling onto ready-to-eat or other raw foods. For added safety, separate the raw meat, poultry and seafood from the ready-to-eat and raw foods in your grocery cart.
- Don't buy dented, leaking, bulging or busted cans, or torn or damaged boxes.
- Buy refrigerated eggs only. Make sure to look for cracks – do not buy cracked eggs.
- Do not buy food past its "Sell By" or "Use By" date. Usually, stores will place older items at the front of the case or shelf.
- Drive straight home from the grocery store.
- Refrigerate cold and frozen foods as soon as you get home. Wrap them well to prevent their juices from spilling, as well as to keep their quality.
- Fresh ground meats, poultry and seafood should be cooked or frozen within two days; beef, veal, lamb and pork should be cooked or frozen within three to five days.

In Your Pantry and Refrigerator

- Put older foods up front to be used first.
Remember: FIFO – first in first out!
- Use well-sealed containers to keep out bugs and to prevent foods from absorbing odors of other foods.
- Keep food away from chemicals and trash.
- Keep foods off of the floor.

What About Food Poisoning?

Foodborne illness often shows up with flu-like symptoms such as nausea, vomiting, diarrhea or fever. Age and physical condition put some people at higher risk than others for any type of bacteria. Very young children, pregnant women, the elderly and people with compromised immune systems (such as people undergoing cancer treatments, or who have kidney disease, AIDS, diabetes, transplant, etc.) are at greatest risk from any harmful bacteria. Symptoms usually occur from one hour to up to three weeks after eating contaminated food, but most cases of food poisoning occur between four and 48 hours. If you suspect you have a foodborne illness, consult your health care provider.

If you would like additional information, please request a copy of the USDA's *Food Safety for Transplant Recipients* or contact your transplant dietitian.

Adapted from USDA's *Food Safety for Transplant Recipients*.

