

## **Food Safety Guidelines for Immunosuppressed Patients**

Food borne illness is occurring with increasing frequency among the general population. A food borne illness is any illness caused by eating a food that is contaminated with a bacteria, virus, mod or parasite. Examples of organisms that can cause a food borne illness are E.coli, Salmonella and Listeria. Sources of food borne illness or “food poisoning” may be the food handler, the environment (such as a contaminated work surface) or the food itself.

Bacteria and other organisms exist in the most common foods. Most of these organisms are of little risk to the average healthy. However, persons undergoing chemotherapy, radiation, or a stem cell transplants are at increased risk for infections, including food borne illness. By following safe food practices, patients and caregivers can reduce the risk of food borne illness.

All stem cell transplant patients are recommended to follow the “*Guidelines for Immunosupressed Patients*”. In addition, it is recommended that all persons follow the food safety guidelines discussed below. If you have any questions regarding food safety and diet guidelines, talk to your dietitian.

### **Steps to Food Safety**

- Wash hands and surfaces often
- Avoid cross-contamination of foods
- Keep foods at safe temperatures

### **Tools for Food Safety**

- Food and refrigerator thermometers
- Hand soap
- Clean towels (cloth or paper)
- Bleach solution (for washing countertops, cutting boards and other items)

<b>Dilute Bleach Solution:</b> Mix 1/3 cup unscented household bleach with 3 1/3 cup water. (This will make a total of 3 2/3 cups of bleach solution.)
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### **Personal Hygiene**

- Wash hands frequently with soap and warm, running water using a rubbing motion (friction) for 15 seconds before and after every step in food preparation. This is critical before and after raw meat, seafood and poultry.
- Wash hands before eating, after using the rest room, handling garbage, and touching pets.
- Dry hands with paper towel

### **Kitchen Cleanliness**

- Replace dish cloths and towels daily. They should be laundered on the hot cycle of your washing machine.

- Sanitize sponges daily in the bleach solution (see page 1) for five minutes. Or heat them in the microwave oven on high for one minute or run them through the dishwasher.
- Use liquid dish soap and hot water when hand-washing dishes, pans and utensils. You may air-dry dishes instead of towel drying them.
- Wash counters, cooking utensils and can openers with soap and hot water immediately after use. After washing, they can be sanitized using the diluted bleach solution.
- Keep the refrigerator clean. Clean spills immediately. Wash shelves and doors weekly using the diluted bleach solution.
- Make sure food storage areas remain clean.
- Rotate food stock so older items are used first. Check expiration dates. Do not use foods past expiration dates.
- Throw away (without tasting) any bulging, leaking or cracked cans, or any cans deeply dented.
- Keep appliances free of food particles (including the microwave oven, toaster, can opener, blender and mixer blades). Blender blades and the bottom ring should be removed from the blender after each use and washed in hot soapy water.
- Do not store any food supplies under the sink. Do not store chemicals or cleaning solutions over or near food supplies.

### **Cutting Boards**

- Plastic or glass surfaces should be used for cutting raw meat and poultry. However, wooden cutting boards are considered safe if they are used exclusively for raw meat and poultry. Use different board for cutting any other foods such as produce and bread.
- Washing cutting boards with hot, soapy water after each; then rinse and air-dry or pat dry with fresh paper towels. Non-porous acrylic plastic or glass boards and solid wood boards can washed in a dishwasher (laminated boards may crack or split).
- Sanitize both wood and plastic cutting boards with the diluted bleach solution. This should be done every time the board is used for raw meat, fish and poultry. Sanitize cutting boards used for other purposes at least once weekly. Flood the surface with the bleach solution and allow it to stand for at least two minutes, then rinse and air-dry or pat dry with fresh paper towels.
- Replace worn cutting boards, including boards with cracks or grooves.

## **Safe Food Handling: From the Grocery Store to Your Home**

### **Grocery Store**

- Shop for shelf-stable items first (shelf-stable refers to unopened canned, bottled, or packaged food products that can be stored at room temperature before opening; the container may require refrigeration after opening.)
- Select frozen and refrigerated foods last, especially during the summer months.
- Check “Sell By” and “Use by” dates on dairy products, eggs, cereals, canned foods and other goods. Select only the freshest products.

- Check packaging dates and “Use By” dates on fresh meats, poultry, and seafood. Do not purchase if the product is expired.
- Do not use damaged, swollen, rusted, or deeply dented cans. Check that packaged and boxed foods are properly sealed.
- Select fruits and vegetables that are not moldy, bruised or damaged. Fresh fruits and vegetables should look fresh. Wilted salad green may be an indication that the product is old and not properly handled.
- Avoid unpasteurized juice (unless prepared at home with washed produce).
- Choose shelf-stable salsa rather than salsa located in the refrigerated section of the grocery store.
- Avoid unpasteurized milk, yogurt, cheese, other unpasteurized milk products including Mexican style cheese made from unpasteurized milk (such as queso fresco).
- Do not use foods with any mold present.
- Avoid unrefrigerated, cream and custard-filled pastry products, such as fresh bakery cream pies, Éclairs, cream-filled doughnuts and pastries. Commercial shelf-stable items such as Danish pastries, Hostess fruit pies®, Twinkies® and Ding Dongs® are allowed. Follow the “Use By” date and store them according to the manufacturer’s guidelines after opening.
- Avoid foods from “reach in” or “scoop” bulk food containers. Avoid food from any type of bulk food container if it will not be cooked prior to consumption.
- Do not taste free, unpackaged food samples.
- Choose eggs that are refrigerated in the store. Do not use cracked eggs. Pasteurized eggs, liquid pasteurized egg products (such as EggBeaters®) and powdered egg whites may be used in recipes calling for raw eggs in foods that will not be cooked.
- Place meat, poultry and fish in plastic bags. Ask to have these items placed in separate bags from the fresh produce and ready-to-eat foods that when at the checkout stand.
- Never leave perishable food in the car. Refrigerate or freeze them promptly.

### **Your Home**

- Wash the tops of canned foods before opening. Clean the can opener after each use.
- Throw away eggs with cracked shells.
- Throw away foods older than the “Use By” expiration dates.
- Throw away entire food packages or containers with any mold present, including yogurt, cheese, cottage cheese, fruits (especially berries), vegetables, jelly, bread, cereal and pastry products.
- Children under one year of age should never consume honey or foods made with honey.

## **Fruit and Vegetable Handling**

All fresh produce (whether organic, natural or general produce) may carry dangerous bacteria or other organisms that can cause food borne illness. Bacterial contamination can occur in the fields from the use of natural fertilizers (such as animal manure) or from human contact during produce harvesting, transporting and in the grocery store. The term “organic” or “natural” refers to growing without the use of chemical fertilizers or pesticides, and has no relationship to the cleanliness of the produce.

Use the following guidelines for handling *all* raw produce, including organic, organically grown, “natural” and general produce.

- Refrigerate fruits and vegetables promptly.
- Do not purchase produce that has been cut at the grocery store (such as melon or cabbage halves). This is particularly true for produce that will **not** be cooked prior to eating.
- Rinse produce thoroughly under clean, running water just before use, including produce that is to be peeled (such as bananas, melons and oranges) or cooked. Do not wash fruits and vegetables with soaps, detergents or chlorine bleach solutions. Produce can absorb these cleaning agents.
- Commercial produce rinses (such as Fit Fruit and Vegetable Spray®) are not recommended since they have not been shown to be more effective for removing bacteria from the produce than washing under running water.
- Scrub produce that has a thick, rough skin or rind (such as cantaloupe or potatoes) or has visible dirt on the surface using a clean vegetable scrubber.
- Rinse leaves of leafy vegetables (such as lettuce, spinach, cabbage) individually under running water.
- Packaged salads, slaw mixes and other prepared produce, even when marked pre-washed, should be rinsed again under running water; a colander can be used to make this easier. Check for “Use By” dates.
- Do not eat any raw vegetables sprouts (avoid all types, including alfalfa sprouts, clover sprouts, mung bean sprouts, and so on) due to high risk of Salmonella and E.coli contamination. Cooked mung bean sprouts are acceptable.
- Throw away fruits and vegetables that are slimy or show mold.
- Review the processing procedure if preparing home-canned foods. Be sure the procedure is appropriate for the acidity of the food, size of the bottle, and elevation above sea level. Look for mold and leaks. Check seals. If you suspect a home-canned food may not have been properly processed (for example, if the lid bulges or if the food has any bad odor or unusual characteristics after opening) **THROW IT AWAY**. It is recommended to use home canned foods within one year of canning as chemical changes may occur.

### **Do Not Cross-Contaminate**

- Use a clean knife for cutting different foods (for example, use different knives for cutting meat, produce and bread).

- During food preparation, do not taste the food with the same utensil used for stirring. Use a clean utensil each time you taste food while preparing or cooking.
- In the refrigerator, store raw meats separately from ready-to-eat foods.
- When grilling, always use a clean plate for the cooked meat.

## Keep Foods at Safe Temperatures

### Proper Thermometer Use

- Insert the meat thermometer into the middle of the thickest part of the food to test for the doneness. The entire part of the stem, from the dimple to the tip, must be inserted into the food. For thin foods, insert the thermometer sideways. (Also, follow the manufacturer's instructions.)
- Test a thermometer's accuracy by putting it into boiling water. It should read 212°F.
- A refrigerator thermometer should be placed on a shelf toward the back of the refrigerator. It should read 40°F less.

### Refrigeration

- Keep the refrigerator temperature between 34°F-40°F.
- Keep the freezer temperature below 0-2°F
- Never leave perishable food out of the refrigerator for over **two hours**. Throw away food left out of the refrigerator longer than two hours.
- Marinate foods in the refrigerator.
- Never thaw foods in the refrigerator.
- Never thaw foods on the counter outside the refrigerator.
- Thaw meat, fish or poultry in the refrigerator away from raw fruits and vegetables and other prepared foods. Place on a dish to catch drips. Cook defrosted meat right away; do not refreeze. If you are in a hurry you can thaw meat in the microwave - but the meat must be cooked immediately after thawing.
- Cool hot foods uncovered in shallow containers in the refrigerator. Cover storage containers after cooling. Make sure that covers seal tightly.
- Throw away prepared food after 72 hours (three days). Date foods placed in the refrigerator to keep track of refrigerator to keep track of their age.
- Freeze foods that will not be used within two or three days.
- **NEVER TASTE FOOD THAT LOOKS SPOILED OR SMELLS STRANGE!**

### Cook Foods Adequately

- Cook meat until it is no longer pink and the juices run clear. These are signs that the meat may be cooked to a high enough temperature. However, the only way to be sure that the meat may be cooked to the proper temperature is to use a food thermometer (See Table 1 on page 6).
- Thoroughly heat until steaming (165°F) all hot dogs and "ready to eat" luncheon meats, cold cuts and "deli-style" meats before eating.
- Do not eat raw or lightly cooked eggs or soft boiled eggs.

- Do not eat uncooked foods containing raw or undercooked eggs, such as raw cookie dough, cake batter or salad dressings containing raw or coddled eggs.
- Pasteurized eggs and liquid pasteurized egg products (such as EggBeaters®) may be used in recipes calling for raw eggs in foods that will not be cooked.
- Hold food at safe temperatures: hot food above 140°F.

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**Table 1**  
**Recommended Minimum Cooking Temperatures**

<b>Product</b>	<b>Cooking Temperatures or Visual Characteristics</b>
<b>Egg, Egg Dishes and Casseroles</b>	
Eggs	Cook until yolk and white are firm
Casseroles, foods containing eggs, custards and egg sauces.	160°F
<b>Veal, Beef, Pork, Lamb, Rabbit, Goat Game</b>	
Whole pieces of meat	160°F
Ground veal, beef, lamb, pork, rabbit, goat, game	160°F
<b>Poultry (Chicken, Turkey, Duck, Goose)</b>	
Chicken and Turkey: whole bird and dark meat (leg, thigh, wing)	180°F
Breasts, roast	170°F
Ground chicken, turkey	165°F
Stuffing (always cook in separate container outside of bird.	165°F
<b>Ham</b>	
Fresh (raw)	160°F
Pre-cooked (to reheat)	160°F
<b>Seafood</b>	
Fin fish (such as salmon, cod, halibut, snapper, sole, bass, trout)	Cooked until opaque and flakes easily with a fork
Shrimp, lobster, crayfish, crab	Should turn red and flesh should become pearly opaque
Scallops	Should turn milk white or opaque and firm
Clams, mussels, oysters	Cook until shell open ( <i>may be high risk food for people with low white count or immunosuppressed</i> )
<b>Leftovers, Hot Dogs and Luncheon Meats</b>	
Leftovers	165°F
Hot dogs, luncheon meat	Steaming hot

## **Microwave Cooking**

- Microwave cooking can leave cold spots in food where bacteria can survive. Rotate the dish a quarter turn once or twice during cooking if there is no turntable in the appliance.
- When heating leftovers, use a lid or vented plastic wrap to cover them. Stir several times during reheating. Then the food is heated thoroughly (to a minimum of 165°F), cover and let sit for 2 minutes before serving.

## **Dining Out Safely**

- Eat early to avoid crowds
- Ask that food be prepared fresh in fast food establishments (for example, a hamburger should be fresh off the grill, not one that has been sitting under heat lamps).
- Ask if fruit juices are pasteurized
- **Avoid raw fruits and vegetables when dining out.** Eat these items when prepared at home, where you can wash them, thoroughly and prepare them safely.
- Ask for single-serving condiment packages. Do not use public self-serve condiment containers, including salsa.
- Avoid salad bars, delicatessens, buffets and smorgasbords, potlucks and sidewalk vendors.
- Be sure that utensils are set on a napkin or clean tablecloth or placement, rather than directly on the table.
- Check the general condition of the restaurant. Are the plates, glasses and utensils clean? Are the restrooms clean and stocked with soap and paper towels? How clean the restaurant looks may tell the amount of care taken while preparing the food.
- If you want to keep your leftovers, ask the server to bring you a box into which you can transfer the food yourself, rather than having your food transferred into a box in the restaurant kitchen. Be sure to take home and refrigerate the leftovers immediately.

## **Water Safety Guidelines**

Public water quality and treatment varies throughout the United States, so always check with the local health department and water utility regarding the safety of household and community tap water and ice for use by immunosuppressed persons.

### **Tap Water**

Water from your home faucet is considered safe if your water is from a city water supply or a municipal well serving highly populated areas.

### **Well Water**

Well water from private or small community wells is not considered safe for consumption by persons considered immunosuppressed and at risk for infection. Well water should be boiled for 15-20 minutes before consumption and should be stored in a clean, covered container in the refrigerator for 48 hours (two days).

Examples of ways well water could become contaminated.

- Construction occurs near the well
- Well depth is shallow
- Well is located near a dairy or large numbers of livestock
- Flooding has recently occurred in the well area

### **Municipal wells**

Drinking well water from municipal wells serving highly populated areas is considered safe because the water is tested for bacterial contamination more than two times each day.

### **Private wells and small community wells**

The quality of well water from these sources cannot be guaranteed unless it is tested daily and found to be negative for coliforms and Cryptosporidium organisms.

It is recommended that other approved water sources be used instead, including: boiled water or bottled water (see guidelines below).

**Not considered safe:** Common home water filtration devices do not remove bacteria or viruses. If the well water supply is chlorinated per guidelines provided by your local health department, the chlorinated water treated with one or more of the following is considered safe to consume:

- Reverse osmosis treated
- Distillation
- Filtered through an absolute 1 micron or smaller filter (NSF Standard #53 for cyst removal)
- Water Filters see “water filters” section for more information.

### **Safe Water Sources**

The following sources of water are suggested if your water is not from a city water or municipal well supply.

- Boiled Water  
At home, safe water can be made by bringing tap water to a rolling boil for one minute. After processing, the water should be stored in a clean, covered container in the refrigerator; discard water not used within 72 hours (three days).
- Distilled Water  
Water may be distilled using steam distillation system. After processing, the water should be stored in a clean, covered container in the refrigerator; discard water not used within 72 hours (three days).
- Bottled Water  
Acceptable forms of bottled water have been processed to remove organisms known to cause stomach or intestinal infection. Bottled water labels reading “well water”, artesian “well water”, “spring water” or “mineral water” does not guarantee that the water is safe to drink. Water labeled as having been treated with one or more of the following are considered safe:

- Reverse osmosis treated
- Distillation
- Filtered through an absolute 1 micron or smaller (NSF Standard #53 for cyst removal)

To be sure that specific bottled water has undergone one of the above processes, contact the International Bottled Water Association (IBWA) at 1-800-928-3711, or home page at visit [www.bottledwater.org](http://www.bottledwater.org). If the IBWA does not have information on specific brand call the bottling company directly.

Members of the International Bottled Water Association (IBWA) follow stricter manufacturing practices in their water bottling process than those practices currently mandated by the United States Food and Drug Administration. Therefore, water bottled by a member of the International Bottled Water Association may be preferable to water produced by non-members.

### **Water Filters**

*Most water filtration devices will not make the water safe if the water supply has not been previously chlorinated.* If you choose to install water filters on household water taps purchase only filters certified by NSF International. The following specifications must also be met:

- a. The filters must be designed to remove coliforms and *Cryptosporidium*. Any of the following are acceptable:
  - Reverse osmosis filter
  - Absolute pore size of filter 1 micron or smaller
  - Tested and certified by NSF Standard #53 for cyst removal
- b. The water tap filter must be installed immediately before the water tap.
- c. Manufacturer directions must be followed for filter maintenance and replacement

Portable water filters (such as Brita® or Pur® system), as well as, refrigerator-dispensed water and ice machine systems do not meet filtration standards. Portable water systems filter out chemical impurities, not bacteria. If portable water system (such as a Brita® pitcher) is used in combination with a safe water supply (to improve water flavor and remove chlorine and other impurities), it is recommended to change the system's filters frequently according to manufacturer's guidelines.

For a list of approved filtration systems, call the *National Sanitation Foundation International*, at 1-800-673-8010 or visit their home page at [www.NSF.org](http://www.NSF.org) (go to the section entitled "Home Water Treatment Devices").

Food-borne illness is occurring with increasing frequency. Sources of food poisoning may be the handler, the environment (such as contaminated work surface) or the food itself.

Bacteria and other organisms exist in most common foods. Most of these organisms are of little risk to the average healthy person. However, infection is of major concern to persons undergoing chemotherapy, radiation, or marrow or stem cell transplant. The food these persons eat must be safe.