



University of California, Merced Environmental Health and Safety

Guidelines for Food Service

There are over 250 different illnesses caused by contaminated food or drink, which results in millions of food borne outbreaks and thousands of deaths. A food borne illness outbreak occurs when a group of people develop the same illness after ingesting the same type of food. In many cases, contaminated foods look, smell and taste normal. In order to prevent food borne illness, microorganisms such as bacteria, viruses or protozoa, must not be given the chance to grow and multiply or contaminate foods.

The following guidelines were designed to assist in the prevention of food borne illnesses.

1) Wash Your Hands

Wash your hands with soap and water:

- Before and after preparing food, especially after handling raw meat, fish or poultry and before handling ready-to-eat food.
- After using the restroom or other activities that interrupt you while preparing food.

2) Prevent Cross Contamination

- Keep raw meats, fish and poultry separate from other foods. Don't allow their juices to drip on other foods.
- Cover all food in the refrigerator.
- Thoroughly clean all fruits and vegetables as soon as possible after purchase to remove surface contamination.
- Safely handle ready-to-eat foods during all phases of food handling. Ready-to-eat foods are food products that will be consumed in the same form as purchased at the store. They can become perishable foods (support pathogenic bacterial growth) through cross contamination. An outbreak of food borne illness occurred when a knife used for cutting raw beef was used to slice watermelon without first washing the knife.
- Use separate counters, cutting boards and utensils for preparing raw and cooked food.
- Clean and sanitize cutting boards and work surfaces after handling raw meat, poultry or fish and before using them for other food.
- Wash equipment in hot, soapy water and then rinse thoroughly with clean, hot water. Let cutting boards and utensils (after cleaning) soak for one minute in a bleach and hot water solution (2 teaspoons of bleach per gallon of water) and then air dry.
- If gloves are worn while handling food, replace gloves and wash hands as needed to prevent contamination of other foods. For example, if handling raw meat and then vegetables, remove the gloves, wash your hands and use a clean pair of gloves before handling the vegetables.
- Use disposable towels to clean spills. Studies have shown that the dish towel or sponge is frequently the most bacteria laden object in the kitchen.
- When barbecuing or cooking raw meat, fish or poultry, use a different plate for cooked food than the one that held raw food. Use different utensils also.

3) Cook Foods Thoroughly

- To be free of most bacterial contamination, all perishable foods (see table #2), especially meats must be cooked to at least the following internal temperatures outlined in Table #1.

Table A- Minimum Internal Cooking Temperatures Chart

145°F for 15 seconds	Fish, seafood, veal, lamb, mutton, pork products (roasts, cured pork-hams), raw shell eggs, any fish or meat not specifically mentioned below.
155°F for 15 seconds	Ground meats (beef, pork, ostrich, emu etc.), ground fish and inspected game animals.
165°F for 15 seconds	Poultry, wild game (not inspected), stuffed fish, meat, pasta, poultry or stuffing containing fish, meat or poultry.
165°F for 15 seconds	Any dish containing previously cooked food (i.e. leftovers).
165°F at the center of the food product	All raw animal foods cooked in a MICROWAVE. The food should be rotated and stirred at least midway through the cooking process, covered to retain moisture and allowed to stand covered for two minutes following cooking to allow for post-cooking heat rise.

- Use the "small batch cookery" approach when preparing any perishable foods (see Table 2). Bring out only as much food as you need to complete one particular step in the recipe. For example, do not have all the ingredients for chicken salad on the counter at the same time. The produce can be contaminated with the raw chicken juice and then recontaminate the cooked chicken when all the ingredients are combined.

Table 1-Classification of Non-Perishable Foods

Bakery Products	Cakes, pies and cookies.
Dehydrated Food Products	Jerky, dried fruits, jams/jellies, trail mixes etc.
Raw Fruit and Vegetables	Most raw fruits and vegetables see exceptions in Table 2.
Non-Dairy Products	Non-dairy creamers.
Snack Foods	Chips, raw or dehydrated fruits/vegetables and candies, pizza being served at a meeting.

Table 2-Classification of Perishable Foods

Meat and Poultry Products	Beef, pork, lamb, mutton, veal, venison, chicken, turkey, goose, duck, pigeon etc. Pizza being served at a fundraising event.
Animal Based Byproducts	Gravies/ soups/ broth made from ANIMAL stock or containing ANIMAL products.
Fish/Seafood Products	All types of fresh or salt water finfish, mollusks (squid, octopus etc.), crustaceans (crab etc) and shellfish (mussels, clams, oysters etc.)
Egg Products	From any animal that produces eggs for human consumption: e.g. chicken, duck or goose.
Milk and Egg Based Byproducts	Foods that contain milk products or egg products. Includes dry (powdered) egg concentrates (e.g. eggbeaters) AFTER water is added to product and such items as custards, cheesecake etc.

Soy Products	Tofu and other soy products (soy milk etc.).
Raw Fruits and Vegetables	Raw seed sprouts (bean sprouts, alfalfa sprouts etc.), cut melons.
COOKED Legumes, Grains and Vegetables	Beans, rice, pastas and other cereal grains; most vegetables, especially BAKED POTATOES, since they become perishable AFTER they are cooked.

4) Store Food Properly- Keep Hot Food Hot and Cold Food Cold

- Refrigerate or freeze perishable foods right away after coming home from the store.
- Thaw frozen food in the refrigerator or microwave oven, not on the counter or in the sink.
- After cooking, do not let cooked food stand out at room temperature.
- Keep hot food above 135° F or cool in the refrigerator. Hot food can be placed in shallow containers in the refrigerator to help cool it quickly. If food is left out to cool, heat resistant pathogens can multiply and produce toxins. Refrigeration or heat prevents the growth of microorganisms.
- Cold foods must be kept below 41° F.
- Refrigerate or freeze leftovers promptly in shallow covered containers or tightly wrapped bags.

5) Finally- Remember the 4-Hour Rule

It takes only a couple of hours for a few bacteria to multiply and cause a food borne outbreak when the food is not refrigerated or kept hot. Follow these procedures:

- Chill down all perishable foods still requiring further preparation AFTER 90 MINUTES outside of the fridge.
- Ensure all perishable foods are kept hot (135°F or above) or cold (41°F or less) while you are serving OR
 - Cold perishable foods must be tossed out 3 hours after leaving the refrigerator. Remember to include prep time at home/restaurant, travel time to campus and serving time.
 - Hot perishable foods must be served as soon as possible. Hot perishable foods that have been on the service line for over 1.5 hrs should not be served.
 - Exception: When cooking equipment is available and you can reheat the menu items, reheat the food to 165°F. After the reheat, throw out the food within 1 hour.
 - In either case, after 3 hours, all leftovers should be tossed out. You should not save leftovers for later consumption for your own health and safety.

6) At Your Event

- All raw meats and dishes containing meat, rice or beans are to be kept hot and served immediately after cooking or refrigerated immediately.
- All perishable foods must be reheated to 165°F before serving unless they will be served cold.
- Transport all perishable foods prepared at home/restaurant on ice (use an ice cooler with ice).
- Use chafing dishes or a warming device to keep food hot (above 135°F) until served, Equipment is available at most party rental or department stores.
- You can place all cold foods on ice.
- Perishable bakery products (custards, meringues etc.) are not allowed to be prepared at home and therefore cannot be sold at a food booth.

If you have questions or comments, please contact EH&S at (209) 228-2255.