

SANITATION

An old-time doctor who, upon making a house call, inevitably went first to the kitchen to thank the cook for providing him with a new patient. A grain of truth can be gleaned from this story: Anyone who chooses, prepares, and serves food influences the health of those who eat it.

James checked the chicken sizzling on the grill. "It's done!" he called to his aunt. "I'll bring it in." Looking around, he spotted the platter he had used to carry the raw chicken outside. As he started to pick up the platter, his aunt stopped him. "Don't use that!" It hasn't been washed. I'll get you a clean plate."

James almost forgot an important rule of sanitation. **Sanitation means following practices that help prevent disease.**

Estimated 80 million Americans suffer from food-borne illness, also known as food poisoning every year. The illness may be mild - 1 - 2 days or severe to require hospitalization. Can cause death. Children, pregnant women, elderly and people with chronic illness are most at risk.

Most food-borne illness can be traced to harmful **microorganisms –tiny living creatures visible only through a microscope.** Poor food handling practices allow harmful microorganisms to grow and spread.

Bacteria is everywhere – carried by people, animals, insects, and objects.

Sometimes the illness is not caused by the bacteria themselves, but by the **toxins, or poisons, they produce.**

Parasites are organisms that get their nutrients from other living organisms.

Personal hygiene - Keeping yourself clean so you do not introduce harmful microorganisms into food as you handle it.

Sanitary Work Methods

Hand-washing activity

1. Have each student rub Glo-Germ on their hands.
2. Have each student place their hands under the ultraviolet lamp to observe the "germs"
3. Assign each student in the unit a different hand washing method.
 - a. Rinse quickly with cold water.
 - b. Rub hands together under cold water without soap for 10 seconds.

- c. Run hands under hot water, lather with soap, rub hands together for 20 seconds, rinse with hot water.
- d. Run hands under hot water, lather with soap, scrub nails with fingernail brush, rub hands together for 20 seconds, rinse with hot water

Each student should wash their hands using their assigned method above and dry them with clean paper towels.

4. Have the students observe each others hands after washing to observe the remaining germs. Have them compare the amount of remaining germs between each other.
5. Have the students complete their observations on the Glo-Germ Activity Sheet.

Personal cleanliness involves the following:

- Wash hands before food preparation, after sneezing, coughing, using rest room, and touching face or hair.
- Keep hair away from face.
- Wear clean clothes/apron (dirty clothing has bacteria)
- Don't handle food with open cut or sore - STAPH
- Avoid cooking and tasting with same spoon; licking of fingers is prohibited.
- Wash hands after handling raw meat/eggs

Kitchen cleanliness involves the following:

- Wipe spills/remove dirty utensils
- Wash cutting board that has had meat before cutting anything else.
- Don't wipe hands on dish towel - use separate towels so dishes don't get bacteria
- Don't flip each other with dish towels or use a dish towel or dish cloth that has been dropped on the floor. (The floor is an excellent place for staphylococcus to grow.)
- Dust off cans.
- Wash surfaces/cutting boards with bleach periodically. (1 tsp. bleach/pint water)
- NO pets fed or wandering in kitchen and wash their bowl separately.
- Hot soapy water on dishes.
- No food stored under sink - it becomes damp.

Sanitation in food preparation and storage involves:

- Keep food hot (above 140°F) or cold (below 40°F)
- Check temperature in refrigerator and freezer periodically; freezer should be at zero degrees or below.
- Clean refrigerator often.

- Use freezer wrap, wrap meat loosely for refrigerator, leftovers stored with tight cover.
- Thaw frozen foods in the refrigerator not on the counter.
- Put foods away promptly.
- Refrigerate desserts made with dairy products.
- Never taste questionable food.

Avoid **cross-contamination - letting microorganisms from one food get into another.**

Meat juice - vegetables
 Keep work areas clean.
 Use clean spoon for tasting food.
 Pets out of the kitchen.
 Two towels - wiping hands/drying dishes.
 Use clean dishcloth each day.

Washing dishes:

Rinse soiled dishes.
 Wash glasses, flatware, dishes, serving bowls, mixing bowls, pans.
 Wash in hot, soapy water.
 Rinse in hot water.
 Dry.

Bacteria and dirt can be carried on clothing as well as hands and hair. To minimize bacterial contamination, we should wear lab coats or aprons whenever we work with food or food products. Our clothing carries bacteria and can pass onto food. The protective apron or lab coat helps to protect your clothing from spills and damage too.

The causes of Food-borne illness will help you to be more alert to the proper care of food. The **“Four f’s”** can spread disease:

Food Fungus Flies Flees

Symptoms of food poisoning: **“NDV’s”**

Nausea Diarrhea Vomiting

Temperature affects Microorganisms:

Bacteria produce **spores, cells that will develop into bacteria if conditions are right. Spores can survive cooking heat. Bacteria needs time, temperature, moisture, and food (low acids) to survive.**

Cold refrigerator temperatures slow down the growth of some bacteria but do not kill them.

Frozen foods, the bacteria stops growing. Bacteria or spores already present in food, however, will not be killed. When the food is thawed, bacteria will start to grow again. (Show Chart)

Sanitation:

- wash hands with soap and water - minimum of 20 seconds
- wash hands - after using restroom, sneezing, coughing, or touching face or hair
- wear gloves when cut on hand or any open sores
- keep all work surfaces clean
- change dirty apron - bacteria could be on it that can contaminate food
- before preparing food - wash hands, check for necessary food and equipment
- tasting food - use clean spoon and use only once
- reduce pests/insects - avoid crumbs or spills, dispose of garbage properly, keep staples in airtight containers
- dish washing order - rinse and scrape first, glassware before silverware, wash pots and pans last
- disinfect work surfaces - use dilute solution of chlorine bleach and water in labeled container (1/2 t. - 1 t. per pint of water) or commercial sanitizer or disinfectant.

Food-Borne Illness:

- food-borne illness - result from eating contaminated foods containing poisonous toxins
- conditions for bacteria growth - warmth, moisture, and food
- food with food-borne illness - not always off-odor or off-flavor
- foods will often look and smell normal

Types:

- Botulism - associated with improperly canned foods, specifically low-acid foods
- e. coli - bacteria spread by air from soil, ground, fecal matter to food sources; usually found in undercooked ground beef, unpasteurized milk, fruit juices, fresh fruits and vegetables, etc.; e. coli will be killed by cooking or heating to a high enough temperature
- hepatitis - toxin from fecal bacteria transferred by human contact usually through improper hand washing
- salmonella - often found in fresh poultry and raw eggs
- staphylococci - spread through human mucous contact to food sources

Prevention:

- prevented by practicing proper hand washing
- 20 seconds
- food with off-odor - throw out, do not taste or use; don't use bulging cans
- frequently clean and sanitize work surfaces, i.e. cutting boards, counters
- avoid cross-contamination of cutting boards, hands, etc.
- store raw meat, poultry, etc. - covered in refrigerator so they will not touch/contaminate or drip on other foods
- never place cooked food on a plate which has previously held raw meat, poultry, or seafood w/o first washing the plate with hot soapy water

Temperature Zones - cooking to proper temperatures:

- use a clean thermometer to measure internal temperature of foods to ensure safety
- keep freezer temperatures set at 0° F or below to keep foods frozen solid.
- danger zone for food-borne bacteria: 40 and 140° F
- ground meat must be cooked to at least 160° F., don't eat if the ground beef is pink inside
- cook eggs until the yolks and white are firm
- don't use recipes where eggs remain raw or only partially cooked

Temperature Zones - cooling and reheating foods:

- keep hot foods hot and cold foods cold
- thoroughly cool hot foods and reheat leftovers thoroughly
- bring sauces, soups, etc. to a boil when reheating; heat other leftovers to 165° F.
- number one cause of food illnesses is related to improper cooling of foods
- place foods in shallow dishes and put immediately in the refrigerator to cool, don't leave foods on the counter to cool
- foods should not be in the danger temperature zone for more than two hours
- refrigerate or freeze foods immediately or at least within two hours
- divide large amounts of leftovers in small, shallow containers for quick cooking
- store foods in the freezer and refrigerator so that the cool air can circulate to keep food safe

Thawing foods:

- refrigerator - safest way to thaw; never defrost food at room temperature on counter
- thaw in refrigerator, under cold running water or in the microwave
- if thawing food under cold water or in the microwave, cook food immediately