

Food Safety

information manual



Food Safety
It Starts With You



Adapted from the Barren River District Health Department Food Certification Manual and the Oregon Department of Human Services Foodborne Illness Prevention Program



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Acknowledgements

- Barren River District Health Department
- Lexington-Fayette County Health Department
- Oregon Department of Human Services

Quotable Quote:

“Food is our common ground, a universal experience.”
James Beard (1903-1985)

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Foodborne Illness

Foodborne illness is a sickness caused from germs or toxins in food. This is also called food poisoning. Some people are at a higher risk for developing foodborne illness, including pregnant women, young children, older adults and people with a weakened immune system.

Germs grow easily in foods like meat, fish, poultry, milk, cooked rice, baked potatoes, re-fried beans, and cooked vegetables. These are called potentially hazardous foods. These are all foods that are moist and have nutrients that allow the germs to grow. Germs grow well on these foods at temperatures between 41°F and 140°F. This is called the danger zone.

How Does Food Become Unsafe?

- Poor Personal Hygiene of Food Handlers
- Contamination or Cross Contamination of the Food
- Temperature Abuse

Hand washing - The Single Most Affective Way to Prevent the Spread of Disease

To prevent foodborne illness, it is important to wash hands often. Even though hands may look clean, they are not germ-free. Germs, such as bacteria and viruses are extremely small, invisible to the naked eye and picked up easily. The #1 source of food contamination is from bacteria and viruses carried on hands. Think of your hands and fingernails as easily “contaminated”. Just because they look clean does not mean they are clean.

Myth Buster:

MYTH: *Mayonnaise is a common cause of foodborne illness.*

FACT: *Mayonnaise is not a common cause of foodborne illness - bacteria is! Mayonnaise is made with acid (vinegar or lemon juice), so it actually tends to inhibit bacterial growth. However, the combination of hot weather and moist foods that may contain mayonnaise can be a source of foodborne illness. People often think mayonnaise is the source of foodborne illness, but it is usually the meat, poultry, fish or eggs that are mixed with mayonnaise that serve as the culprit. When kept out of refrigeration for more than two hours they provide a medium for bacteria to grow.*

ADVICE: *Bacteria grow rapidly in the “danger zone” between 40° F and 140° F. Toss perishable foods left out at room temperature for more than 2 hours. If left out in a room or outdoors where the temperature is 90° F or hotter, food should be discarded after just one hour.*

How to properly wash your hands:

1. Wet your hands with running water as hot as you can comfortable stand (at least 100°F/85°)
2. Apply soap.
3. Vigorously scrub hands and arms for at least ten to fifteen seconds. Clean under fingernails and between fingers.
4. Rinse thoroughly under running water.
5. Dry hands and arms with a single-use paper towel or warm-air dryer. Use a paper towel to turn off the faucet. When in a restroom, use a paper towel to open the door.

*This whole process should take at least 20 seconds.

When to wash your hands:

1. After using the toilet or urinal
2. After cleaning the bathroom
3. After smoking, eating or drinking
4. After handling garbage
5. After changing linens or diapers
6. After handling dirty dishes
7. Before you eat
8. Before you start work
9. Before handling food
10. Between changing tasks or gloves

Gloves

At this time Kentucky's Food Code does not require you to wear plastic gloves. However, hands must be clean while preparing food by thorough and frequent hand washing. Food must also be prepared with the least bare hand contact possible.

**Tips on using gloves:**

1. Before handling ready-to-eat foods¹, put on gloves to act as a barrier to the bacteria on your hands.
2. Use gloves that fit properly and that are designed for the task.
3. Change gloves often to minimize the build-up of perspiration and bacteria.
4. Change gloves after sneezing, coughing or touching your hair or face.
5. Wash hands thoroughly before and after wearing and changing gloves.
6. Wash, rinse and sanitize reusable gloves after each use.
7. Avoid wearing gloves whenever their use presents a potential safety hazard. Example: Near hot equipment where melting can occur.

¹Ready-to-eat foods are foods that require no additional heating prior to eating.

Time and Temperature Abuse

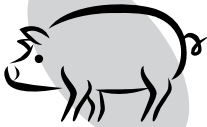
We use high temperatures to kill bacteria, viruses and other microorganisms found on and in raw meat. Heat meats to the following temperatures:



Poultry, stuffed meat and leftovers - 165°



Ground Beef - 155°



Pork - 150°



Fish, beef roast/steaks, other - 140°



Rare beef roast and steak - 130°

Reminder

***Food must be cooled from 140° to 45° within 4 hours.
Bacterial growth is rapid in the DANGER ZONE.***

Cold Storage

Refrigerated foods must be kept at an internal temperature of 45° or less. Many states now require 41°. Cold temperatures are useful in slowing down bacterial growth.

- Do not store packaged food in contact with water or un-drained ice.
- Check refrigerator thermometers regularly.
- Produce must be 45° or below
- Dairy & Meat must be 40° or below
- Seafood must be 30° or below
- Store large pieces of meat and all foods away from the refrigerator fan to permit free circulation of cool air on all surfaces.
- Do not store food directly on floor of walk-in.
- Schedule cleaning of equipment and refrigerated storage rooms at regular intervals.
- Check fruits and vegetables daily for spoilage.
- Establish a preventative maintenance program for equipment.



Quick Chill

Cooked food must be rapidly chilled to prevent bacterial growth. At room temperature bacterial growth is extremely rapid. The Kentucky Food Code requires chilling of potentially hazardous foods to 45° within four hours.



Shallow pans with a maximum food depth of 2-4 inches may be used to cool foods.



Large containers of food may be placed into a 3-compartment sink which has been filled with an ice water slurry. Stir food to maximize cooling.



Ice-Filled Stirring Wands can be placed in foods. Stir until food is chilled to 45°, then cover and place in the refrigerator



Cut larger pieces of meat like roast, turkey and ham so that it will cook quicker. Place on shallow pan and put in the refrigerator.

Reminder:

BAC Down! Give bacteria the cold shoulder. Keep your refrigerator at 40° F or below. Use a thermometer to monitor.

Thawing

Frozen foods must be thawed in one of the following ways:

1. In the refrigerator
2. Under cool running water
3. During the cooking process
4. In a microwave oven (cook immediately)

Storage

Deliveries should be stored immediately after they have been inspected.

Best practices for storing food are:

- Store raw meat, poultry and seafood below cooked or ready-to-eat food
- Practice First In, First Out method of stock rotation. Store food by use-by-dates so that the oldest product gets used first.
- Label and date all stored food.
- Store dry food away from walls and at least six inches off the floor.
- Keep storage areas dry and clean.
- Never store chemicals near food.
- Consult with your manager regarding the proper storage temperature for various foods.
- Regularly check the temperature of foods stored in refrigerators.

Reheating

Quickly reheat leftover food to 165° before placing in a steam table.

Reheating to 165° will kill bacteria which may have multiplied during cooling and refrigeration.

Hot-Holding

Foods which are held hot on a steam table or other unit must be kept at 140° or above. This high temperature prevents bacterial growth.

DANGER ZONE

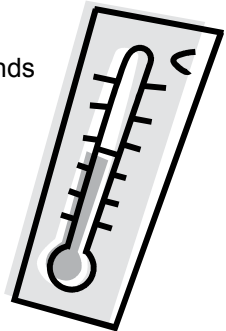
Limit bacterial growth by minimizing the time food spends in the Danger Zone- from 45°-140°.

Thermometers

Controlling food temperatures is one of the best ways of assuring food safety. Thermometers give us a way to measure food temperatures.

Cross-Contamination

Cross contamination is the transfer of harmful microorganisms from one food to another by means of utensils, equipment, or human hands. It can also occur when contaminated or raw food touches or drips its juices onto cooked or ready-to-eat food.



Prevent Cross-Contamination using these methods:

- Wash, rinse and sanitize cutting boards, knives, utensils and counter tops after contact with raw meat.
- Store raw meat below and away from all ready-to-eat food.
- Wash, rinse and sanitize food contact equipment (slicers, knives, cutting boards) at least every four hours.
- Wash hands before handling food and after touching raw meat.

Cleaning and Sanitizing - What's the difference?

Cleaning removes the visible soil and food particles from a surface.

Sanitizing reduces the number of microorganisms. Just because something looks clean does not mean that it is sanitary. Billions of microorganisms may be present and the only way to see them is with a microscope. Both cleaning and sanitizing are essential in preventing foodborne disease.

Personal Hygiene

Your personal hygiene is the first step towards preventing the spread of disease which could cause a foodborne illness.

To keep food safe:

- Shower or bathe daily
- Wear a clean change of clothes
- Jewelry, nail polish, and false fingernails are not allowed
- Keep fingernails clean and trim
- Facial hair should be trimmed, neat and clean. Beard nets should be worn in food prep and service areas. For all personal hygiene matters refer to your employee handbook.

Work Only When You Are Well

Are you ill? Infected food workers can spread a wide range of illnesses to consumers and co-workers through food preparation and service. If you are feeling sick you should not go to work. The germs you bring to work can spread when you touch food, dishes, counters, utensils and other people.

- Do not come to work if you have a fever or sore throat
- Do not come to work if you have loose bowels (diarrhea)
- Do not come to work if you have vomiting
- Do not come to work if you have yellowing of the skin or dark, tea colored urine (jaundice).

****Tell your manager if you are having these symptoms***

Fast Fact:

Several billion bacteria can easily fit on the head of a pencil lead.

Hazards to Safe Food

There are biological, physical and chemical hazards to our food supply.

Biological

Bacteria
Viruses
Parasites
Molds

Physical

Metal
Glass
Rocks
Toothpicks

Chemical

Pesticides
Sanitizers
Degreasers
Food Additives

Biological hazards to safe food are our major concern. Viruses and bacteria account for 97% of foodborne diseases.

Bacteria

Different kinds of germs can make people sick. Bacteria is one type of germ. Bacteria grow fast and may cause foodborne illness. Some bacteria make toxins that act like a poison. Cooking does not destroy most toxins. Toxins can occur in many foods that have not been kept hot or cold enough. Unlike animals and plants that are composed of many cells, bacteria are single celled organisms.

There are some bacteria that are beneficial to our bodies. Humans have billions of bacterial cells in their intestines. They live there peacefully with their human hosts helping with digestion, producing vitamins and helping to limit growth of harmful bacteria (pathogens).

Bacteria grow rapidly on foods that are moist and low acid such as meat, dairy, eggs, cooked vegetables, rice and pasta.

Other Germs

Viruses

A virus is another kind of germ that causes illness when it gets into the food. You can have a virus and not know it. Norovirus and Hepatitis A are the two most common viruses that can cause foodborne illness, and they are highly contagious. A virus can be spread by foodborne, airborne, person-to-person and environment-to-person transmission. Hand washing is the first step in preventing the spread of a virus, especially after use of the toilet.

Fast Fact:

Many of our favorite foods are produced with the aid of bacteria - yogurt, cheese, buttermilk, sauerkraut and summer sausage.

Parasites

Tiny worms that live in fish and meat are called parasites. Cooking the fish and meat to the right internal temperature will kill the parasites.

Chemicals

People can also get sick when chemicals come in contact with the food so keep those away from preparation and cooking areas and stored in the appropriate place.

Physical Contamination

Physical contamination is when foreign objects are accidentally introduced into food.

HACCP - What? Hazard Analysis Critical Control Point

HACCP is a system of assuring safe food and began in 1959 with the space program. The astronauts had to be protected from foodborne illness in the space environment.

HACCP is pro-active, meaning they prevent problems before they happen.

A very basic way to look at HACCP is to consider it as a risk evaluation of food served. Take each food item and consider what risk it could be. For example, if you serve hamburgers made from raw meat, a risk would be E. coli O157:H7 bacteria in the raw meat. Once you decided what the risks are you decide how to control the risk. Cooking the raw meat to 155° will assure a safe product.

Water Supply Emergency

During a water supply emergency, which includes a Boil Water Advisory, Chemical Contamination and Pressure Reduction, water may serve as a source of contamination for food, equipment, utensils and hands. Unsafe water is also a vector in the transmission of disease. Therefore, water must be obtained from sources regulated by law and must be handled, transported and dispensed in a sanitary manner. When a Water Supply Emergency occurs you should close immediately and not reopen until the Health Department assures you that safe procedures are in place.

Quotable Quote:

“Food is the most primitive form of comfort.”
Sheilah Graham (1904-1988)

Self test

Choose the best answer for each question.

1. *Which of the following statements is true? After touching raw ground beef, it is important to:*

- A. Wipe your hands on a sanitizer wipe cloth
- B. Use a hand sanitizer before touching anything else
- C. Wash your hands with soap and water
- D. Dip your hands in a bucket of sanitizer

2. *What is proper hand washing?*

- A. Using soap, running water and scrubbing 20 seconds
- B. Using sanitizer, running water and scrubbing for 20 second
- C. Using soap, running water and scrubbing for 10 seconds
- D. Using sanitizer, running water and scrubbing for 10 seconds

3. *It is okay to wear disposable gloves if:*

- A. You wear a pair of gloves to handle money and food
- B. You wash your hands first and discard gloves between activities
- C. You discard the gloves every few hours or at least once a day
- D. You blow into the gloves first to make them easier to put on

4. *When you have a sore throat or diarrhea, you should:*

- A. Go to work and tell your coworkers to be careful around you
- B. Call your manager and report that you are sick
- C. Take medicine to stop the symptoms and go to work
- D. Not tell anyone and continue working

5. *Preparing food several hours in advance can make food unsafe because:*

- A. Bacteria can grow if the food temperatures fall into the danger zone
- B. Foods can lose their flavor, color and general quality
- C. Foods can lose their nutritional value
- D. Refrigerators can only hold so much food

6. *The most important reason to wash, rinse and sanitize cutting boards is to:*
- A. Eliminate odors and tastes from getting into other foods
 - B. Make the cutting boards look better and last longer
 - C. Prevent contamination from one food to another
 - D. Prevent flavors and garlic or onion juices from getting onto other foods
7. *What is the minimum temperature that hot food must be kept at on the steam table to keep food safe?*
- A. Hot – 140° F
 - B. Hot – 130° F
 - C. Hot – 120° F
 - D. Hot – 165° F
8. *What is the maximum temperature that cold food must be kept at on the salad bar to keep food safe?*
- A. Cold - 51° F
 - B. Cold – 65° F
 - C. Cold - 41° F
 - D. Cold - 55° F

Answers:
1-C: 2-A: 3-B: 4-B: 5-A: 6-C: 7-A: 8-C

Quotable Quote:

“If we could give every individual the right amount of nourishment and exercise, not too little and not too much, we would have found the safest way to health.”

Hippocrates

glossary of terms

Bacteria – Bacteria are germs with only one cell that can multiply into large numbers when food is in the danger zone for more than four hours.

Chemicals – In this book, chemicals are referred to as ingredients in cleaning, sanitizing or pesticide products that make people sick if eaten.

Cold Holding – Cold holding is when you keep food cold by using refrigeration or ice.

Cross Contamination – When germs from one food item are passed to another food item, usually raw food to ready-to-eat food.

Danger Zone – The Danger Zone is when the temperature of food is between 41°F and 140°F. This is called the danger zone because bacteria will grow quickly between these temperatures.

Foodborne Illness - Sickness caused from germs or toxins in food. This is also called food poisoning.

Food Thermometer - A metal-stem probe thermometer used to take temperatures of food.

Hot holding – Holding food hot after it has been properly cooked or reheated. Food must maintain a temperature of 140°F or hotter.

Infected – A cut or burn that is swollen, red, or has pus.

Reheating – The process of making a cold food hot. Food must be heated between 41°F to 165°F within two hours.

Parasites – These are tiny worms that live in fish, meat and humans.

Potentially Hazardous Foods – Moist, nutrient-rich foods that supports the growth of bacteria when the temperature is between 41°F and 140°F.

Sanitize – The final step to removing bacteria from food contact surfaces that have just been cleaned. Many places use a solution made up of one teaspoon of bleach to one gallon of water to sanitize equipment and utensils.

Virus – Viruses are germs that can only reproduce inside of a living cell. It takes a small number of viruses to make someone sick. Many viruses get into the food from the lack of hand washing especially after using the toilet and then touching food.

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resources

Websites:

National Food Safety Database - www.foodsafety.gov

USDA - www.fsis.usda.gov

Fight BAC! Fight Foodborne Bacteria - www.fightbac.org

National Restaurant Association Educational Foundation - www.nraef.org

FDA Center for Food Safety & Applied Nutrition - www.cfsan.fda.gov

ServSafe - www.servsafe.com

Learn 2 Serve - www.learn2serve.com

Barren River District Health Department - www.barrenriverhealth.org

Quotable Quote:

“The history of government regulation of food safety is one of government watchdogs chasing the horse after it’s out of the barn.”

David A. Kessler, M.D. (FDA Commissioner)

For more information, please contact

*WKU Restaurant & Catering Group
1906 College Heights Blvd.
DUC Room 124
Bowling Green, KY 42101
Bonnie Holt, RD, LD
Registered Dietitian
270-745-3122 or www.wkudining.com*



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