



Professional Food Handler

NEHA, 2011





Chapter 1

FOODBORNE ILLNESS AND CONTAMINATION

- As a food handler, you need to have a good understanding of food safety and how contaminated food causes foodborne illnesses.



The Importance of Food Safety

- Food safety is the responsibility of every employee. If you fail to follow proper food safety principles, you, your coworkers and your customers can get sick. Following safe practices will ensure that the food you prepare and serve to your customers will be safe. **Safe food** is food that is free of contaminants.



What is a Foodborne Illness?

- A **foodborne illness** is a sickness caused by eating contaminated food.
- The foodborne illnesses that most people contract are caused by **microorganisms**, which are living things that are too small to see.



Symptoms of a Foodborne Illness

- Abdominal pain
- Stomach cramps
- Diarrhea
- Vomiting
- Nausea
- Fever



Who is Most at Risk?

- The elderly
- The very young
- Pregnant women
- People who are already ill



TCS Foods

- TCS means time/temperature controlled for safety
- TCS foods are also called potentially hazardous foods (PHFs)
- TCS foods allow microorganisms to grow and multiply easily and need to be under strict time and temperature controls



Examples of TCS Foods

- Meat
- Shellfish and seafood
- Poultry
- Milk and dairy products
- Products made from raw eggs
- Cooked rice, beans, and vegetables



Ready-to-eat food

- **Ready-to-eat food** is food that is meant for consumption without any treatment that is intended to destroy any pathogens that may be present. They include all high-risk foods and such foods as fruit, salad, vegetables and bread.



Low Risk Foods

- Fruit
- Dried pasta
- Breads
- Cereals



Contamination

- **Contamination** is the presence of physical, chemical or biological matter in or on food or the food environment.
- Physical
- Chemical
- Biological

Physical Contamination

Glass	Sharp metal objects
Pieces of paper	Plastic
Stones	Human hair
Scabs	Nails
Rodent and insect droppings	Dead pests, such as flies

- Food items themselves, or parts of food items, may also physically contaminate food ready to be served, such as bones in meat or fish or stalks in vegetables.

Chemical Contamination

Pesticides sprayed on fruit or vegetables

Freezer refrigerants

Drugs

Food additives

Chemicals from cleaning products

Metal or non-food-grade cookware and storage

- Keeping cleaning chemicals in food storage or preparation areas or failing to label containers are common causes of chemical hazards.

Biological Contamination

Bacteria	Viruses
Fungi	Parasites

- Biological contamination is the most common type of contamination and can have very serious consequences. It is usually hard to detect at first, but biological contamination may result in spoiled food, foodborne illnesses or even death.



Causes of Food Contamination

- Cross-Contamination
- Poor personal hygiene
- Improper cleaning and sanitizing



Cross-Contamination

- **Cross-contamination** is the transfer of microorganisms or chemicals from contaminated food, hands or contact surfaces to other foods or surfaces. Proper hand washing, cleaning, sanitizing and storage can prevent cross-contamination.



Poor Personal Hygiene

- Employees who don't wash their hands properly or often enough are one of the biggest risks to proper food safety.
- Other measures, such as wearing proper attire, using hair restraints and covering sores and cuts, also help to prevent contamination of food.



Improper Cleaning and Sanitizing

- Unclean or unsanitized equipment can contaminate food. Even if food is prepared and cooked properly, if equipment, utensils and service items are not clean and sanitized, a foodborne illness can occur.



Temperature Danger Zone

- **The temperature danger zone exists between 41°F (5°C) and 135°F (57°C).** Abuse of the temperature danger zone is not a cause of food contamination, but rather it allows bacteria that are there to multiply rapidly. Food must be stored at the proper temperature to ensure its quality.



Chapter 2

RECEIVING FOOD

- Receiving food safely is the first step towards preventing food contamination.



Receiving Food Safely

- To avoid the introduction of contaminated, out-of-date or unfit food into the food establishment, it is vital that all deliveries are thoroughly checked before being accepted.
- All food must be checked for correct labeling, proper temperature and proper appearance.
- Any food that does not meet specific guidelines should be rejected.



Inspecting Food

Before signing for the delivery, check every aspect of the shipment including:

- The delivery vehicle
- The driver
- The temperature of the food
- The packaging
- The product labels
- The quantity and quality of each item
- Signs of pest infestation



Inspecting Food

Reject shipments that have any of the following:

- A delivery vehicle that has been left open and unattended
- A driver with poor personal hygiene
- Intermingled raw and cooked foods
- Damaged packaging, including broken boxes, swollen or dented cans, leaking packages or mislabeled or unlabeled packaging
- Food that shows signs of pests



Inspecting Food

Reject shipments that have any of the following:

- Food that should be dry that has become wet or damp
- Food that has passed its expiration date
- Food with large ice crystals



Inspecting Food

If you reject food:

- Keep the rejected product away from other food.
- Record the rejection on the delivery note or purchase order.
- Inform the delivery person of the rejected product.
- Get a credit slip from the delivery driver before the rejected product is removed from the establishment.



Fresh Meat

- Fresh meat, such as beef, lamb and pork, must be received at 41°F (5°C) or colder.
- Beef should be a bright red, although aged beef may be darker. Reject beef that is brown or green.
- Lamb should be light red. Reject lamb that is brown or has a whitish surface.
- Pork should be a light pink color. Reject pork that is a dark color.
- The texture of fresh meat should be firm. Reject meat that is slimy, sticky or dry.
- Fresh meat should not have an odor. Reject meat with a sour odor.



Poultry

- Like fresh meat, poultry must be received at 41°F (5°C) or colder and packaged with crushed ice.
- Fresh poultry has no discoloration. Reject poultry with a purple or green discoloring or with dark wing tips.
- Fresh poultry has a firm texture. Reject poultry with stickiness under the wings or around joints.
- There should not be an odor to fresh poultry. Reject the shipment if it has an abnormal odor.

A vertical collage of three images. The top image shows a close-up of a multi-colored corn cob (yellow, purple, and red kernels) next to a whole orange. The middle image is a clear blue sky with a few wispy white clouds. The bottom image shows a field of golden wheat stalks.

Seafood

- Seafood must be received at 41°F (5°C) or colder and packaged with crushed ice.
- Seafood should not be discolored. Reject fish with dull, gray gills or dull, dry skin.
- Reject seafood that has a strong fishy smell or that smells like ammonia.
- Seafood should have a firm texture. Reject seafood with soft flesh that leaves an imprint when touched.
- The eyes of fresh fish should be bright and clear. Reject fish with cloudy, red-rimmed or sunken eyes.

Eggs

- Eggs must be at an air temperature of 45°F (7°C) or colder.
- Eggs should not give off an odor. Reject eggs that are broken or that give off a sulfur smell or a bad odor.





Dairy Products

- Dairy products—milk, butter and cheese—must be received at 41°F (5°C) or colder.
- Milk should be in date. Reject if it is expired.
- Butter should have a uniform color and a firm texture. Reject butter with uneven color or a soft texture.
- Cheese should have a normal flavor, texture and color. Reject cheese that has an abnormal flavor, texture or color or shows signs of mold.



Reduced Oxygen Packaged, ROP Foods

- ROP foods — produce, bacon and frozen entrées — must be received at 41°F (5°C) or colder. Frozen foods should be frozen.
- The packaging of ROP food should be in good condition. Reject ROP food that has torn or leaking packaging or if the food appears slimy, discolored or has bubbles or excessive liquid.

Fruits and Vegetables

- Inspect fruits and vegetables carefully for signs of pest infestation. Reject if there are any signs of pest infestation.





Frozen Foods

- Frozen foods should be frozen. Reject frozen food that is not frozen solid.
- The packaging of frozen foods should be in good condition. Reject frozen foods that have torn or leaking packaging.



Chapter 3

STORING FOOD

- Proper food labeling and storage helps cut down the risk of contamination and foodborne illness.



Storing Food Properly

- Delivered food must be stored quickly and properly.
- Food that is not stored properly is susceptible to cross-contamination or the risk of bacterial multiplication.
- Spoiled food cannot be used and costs your establishment money.



Storing Order

Following delivery you should store:

- Chilled food in refrigerators first
- Frozen food in freezers next
- Dry or canned good in dry storage last



Storage Concerns

- Minimize the time food spends in the **temperature danger zone between 41°F and 135°F (5°C and 57°C)**.
- If stored in the same unit, raw food such as eggs, meat and poultry must always be placed below TCS and other ready-to-eat food, such as lettuce and tomatoes, to avoid cross-contamination.
- Do not allow raw meat to touch other foods.
- Food cannot be stored in hallways, utility rooms, restrooms or dressing rooms.
- Ideally, keep TCS and raw foods in separate refrigerators.



Proper Temperature

- Minimize the time that food is left at room temperature. Frozen food should never be left out at room temperature.
- **Maintain refrigerators at or below 41°F (5°C).**
- **Maintain freezers at 0°F (-18°C).**
- Do not overload refrigerators and freezers. Congested shelving prevents cold air from circulating and can raise the temperature of the refrigerator and food stored in it.
- Keep refrigerator and freezer doors closed as much as possible to help maintain proper temperatures.



Food Labeling

- Food labels must indicate the food name and the use-by date. For some foods, the label may also list the ingredients.
- If you transfer food to a new container, the container must be clean and sanitized. The container must also be labeled with the food name and the original use-by date.



Use-By/Expiration Dates

- **Food should not be used after these dates.** All best-before date labels should be checked at least weekly and stock rotated as appropriate.
- Out-of-date foods must be removed and destroyed or marked “not for use” and stored separately.
- Notify your manager of any out-of-date food.



First In/First Out (FIFO)

- It is essential that newly delivered food items are stored below or behind older stock.
- **Correct stock rotation** ensures that the food used is safe and of good, consistent quality by avoiding spoilage and reducing the risk of pest infestation and food going out-of-date. Remember the rule 'first in, first out' (FIFO).



Storage Containers

- When possible, foods should be kept in their original packaging or in airtight containers and labeled and rotated correctly.
- Food should be covered to prevent drying out, cross-contamination and absorption of odor. Unused contents of cans should be emptied into suitable covered storage containers to avoid food, especially acid food, attacking the can surfaces and tainting the food.
- If any open cans are spotted they should be thrown away, as should any food in damaged containers.



Storage Containers

- Food must never be stored in empty chemical containers.
- The base of storage containers should not come into contact with open food.
- Food should be stored away from walls and in mobile, rodent-proof bins.
- Never store any food on the floor.



Fresh Meat

- Meat need to be stored at 41°F (5°C) or below and must be USDA-inspected. If meat is delivered frozen, it should be stored in the freezer quickly so that it does not thaw.
- Meat should either be stored in its original packaging, in clean and sanitized containers or in airtight, moisture-proof wrapping.
- Meats have a short shelf life and support bacterial growth if left in the temperature danger zone.
- Before storing and preparing meat, ensure that it is firm and elastic and has a fresh odor.
Discard any meat that appears to be spoiled.



Poultry

- Poultry should be stored at 41°F (5°C) or below. Poultry must also be USDA-inspected.
- If poultry is delivered frozen, store in the freezer quickly so that it does not thaw.
- Poultry should either be stored in its original packaging, in clean and sanitized containers or in airtight, moisture-proof wrapping.
- Poultry has a short shelf life and supports bacterial growth if left in the temperature danger zone.
- Before storing and preparing poultry, ensure that the flesh is firm and elastic.



Seafood

- Fresh fish should be stored at an internal temperature between 32°F and 41°F (0°C and 5°C). If fish is delivered frozen, it should be stored in the freezer quickly so that it does not thaw.
- Fish fillets and steaks should be stored in their original packaging or securely wrapped in moisture-proof wrapping.
- If fresh, whole fish is delivered on ice, it can be stored in a refrigerator as is, provided that it is stored in self-draining containers that are cleaned and sanitized regularly. Be sure to change the ice often.



Dairy Products

- Milk and dairy products, including bakery fillings containing dairy, must be stored at 41°F (5°C) or lower.
- The use-by or expiration date on milk and dairy products represents the last day you can sell or use the product.
- Dairy containers cannot be reused or refilled.



Eggs

- Eggs should be stored at 45°F (7°C) or lower. Eggs should not be subjected to fluctuating humidity or temperatures, which encourage condensation.
- If egg products are delivered frozen, they should be stored in the freezer quickly so that they do not have an opportunity to thaw. Liquid eggs need to be stored according to the manufacturer's recommendations.
- Dry egg products should be stored under dry storage controls and monitoring. After mixing dry eggs with water, they need to be stored at 41°F (5°C) or lower.



Ready-To-Eat Foods

- Many raw fruits and vegetables, such as carrots and celery, can be refrigerated at 41°F (5°C) and below at a relative humidity of 85 to 95 percent.
- Other fruits and vegetables, such as citrus fruits, root vegetables and hard-rind squash can be stored in dry storage. The ideal temperature for storing fruits and vegetables in dry storage is 60°F to 70°F (16°C to 21°C).
- **The maximum shelf life for any potentially hazardous and ready-to-eat foods prepared in your establishment is seven days** and they must be stored at 41°F (5°C) or below.



Frozen Foods

- Frozen food must be stored properly to keep dormant microorganisms from multiplying if the temperature rises and to prevent contamination of potentially hazardous food from raw food.
- TCS frozen foods should be kept separate from raw frozen foods.
- Frozen foods should be kept in suitable storage containers or packaging to keep food separate and avoid freezer burn.
- Food should not be stored longer than recommended by the manufacturer.



Dry Foods

- Hazards associated with dry foods include contamination from root vegetables, pests, damaged packaging or chemicals.
- Food poisoning bacteria are also a hazard if the food becomes damp.
- Store food on suitable shelves, away from walls and six inches above the floor.
- Keep food covered and protected.
- Ensure effective pest control measures are in place.
- Keep food and cleaning chemicals in separate locations.



ROP Foods

- ROP foods should be stored according to the manufacturer's recommendations or at 41°F (5°C) or below.
- If ROP food is delivered frozen, it should be stored in the freezer in a timely manner so that it does not have an opportunity to thaw.



Chapter 4

PREPARING AND SERVING FOOD

- Properly preparing and serving food is the front line for battling foodborne illness.



Properly Preparing and Serving Food

- Prepare raw foods and ready-to-eat foods in separate areas with clean equipment.
- Minimize handling of food.
- Use disposable cloths.
- Minimize the amount of food prepared and avoid preparing food too far in advance
- Minimize the time food spends in the temperature danger zone, between 41°F and 135°F (5°C and 57°C).
- Follow a 'clean as you go' policy.



Thawing Guidelines

The thawing time depends on:

- The weight of the food
- The temperature of the room, refrigerator or water



Thawing Methods

- In a refrigerator that maintains the food temperature at 41°F (5°C) or less
- Using cold, running water, completely submerge at a temperature of 70°F (21°C) or below for a period of time that prevents any thawed portion to rise above 41°F (5°C). The water flow must be strong enough to allow particles to float off into an overflow drain. When thawing with water, you must clean and sanitize the thawing area before and after thawing food.



Thawing Methods

- In a microwave oven, provided the food will immediately be cooked after being thawed in the microwave
- As part of the cooking process as long as the food reaches the minimum internal cooking temperature. **Slacking** may be used to gradually thaw frozen food in preparation for deep-fat frying or to allow for even heating during the cooking process.



Calibrating Thermometers

- In order to measure the internal temperature of any food, you need to make sure that you have a correctly **calibrated thermometer**. If you do not, there's a chance that you will get an improper reading.
- Your manager will tell you when it is time to calibrate the thermometers in your establishment.



How to Check Temperatures

- For meat, poultry and fish, insert the thermometer into the thickest part of the food.
- For food in a bag, insert the thermometer between two packages without puncturing them.
- For liquids, insert the thermometer until the sensing area is completely submerged. Do not touch the bottom or sides of the container.



Proper Cooking Temperatures

- Please refer to the chart on page 22 of the Professional Food Handler textbook.



Roasts

- Roasts, including beef roasts, corned beef, pork roasts and ham must be cooked to the following internal temperatures: 130°F (54°C) for 112 minutes, 132°F (56°C) for 56 minutes, 134°F (57°C) for 36 minutes, 136°F (58°C) for 28 minutes, 138°F (59°C) for 18 minutes, 140°F (60°C) for 12 minutes, 142°F (61°C) for 8 minutes, 144°F (62°C) for 5 minutes, 145°F (63°C) for 4 minutes



Poultry

- Poultry must be cooked to at least 165°F (74°C) for 15 seconds.



Seafood

- Fish must be cooked to at least 145°F (63°C) for 15 seconds.



Eggs

- Raw eggs prepared to order for immediate service must be cooked to at least 145°F (63°C) for 15 seconds.
- Eggs that will be held for service later must be cooked to 155°F (68°C) for 15 seconds.



Beef and Pork

- Beef and pork injected with tenderizers must be cooked at 155°F (68°C) for 15 seconds or to 158°F (70°C).
- Steaks must be cooked to at least 145°F (63°C) for 15 seconds.
- Pork chops and tenderloin medallions must be cooked to at least 145°F (63°C) for 15 seconds.



Ready-To-Eat Food

- Ready-to-eat food must be commercially processed in airtight containers or intact packaging from a government-regulated food processing plant. It must be heated to at least 135°F (57°C) within two hours.
- Stuffing made with potentially hazardous foods, stuffed fish, stuffed meat, stuffed poultry and stuffed pasta must be cooked to at least 165°F (74°C) for 15 seconds.
- Leftovers, or previously cooked TCS foods, must be cooked to 165°F (74°C) for 15 sec.



Ground Meats

- Because **grinding can spread contaminants throughout the meat**, ground meats or fish should be cooked according to the following minimum internal temperatures: 145°F (63°C) for 3 minutes, 150°F (66°C) for 1 minute, 155°F (68°C) for 15 seconds, 158°F (70°C) for more than 1 second.



Microwave Cooking

When cooking in a microwave take the appropriate precautions:

- Rotate or stir during the cooking process to ensure even heat distribution.
- **Ensure all parts of the food reach a temperature of at least 165°F (74°C).**
- Cover the food to help maintain moisture.
- Let food sit for two minutes after cooking to ensure temperature stability.



Holding Food Guidelines

- Once food is prepared, it must be held at the proper temperature until it is served to prevent microorganisms from multiplying and making a customer ill.
- **Hot food must be held at 135°F or higher. Cold food must be held at 41°F or lower.**
- Some foods may need to be held at a specific temperature. Always follow guidelines for these foods.
- Food that is not held properly may need to be prepared again or discarded.



Cooling Guidelines

The hazards associated with cooling include:

- The multiplication of food-poisoning bacteria not destroyed during cooking, either due to inadequate cooking or the activation of spores
- The contamination of food by bacteria, foreign bodies or chemicals while cooling



Cooling Guidelines

Be sure to take the following steps when cooling food:

- Cool food quickly after cooking, and refrigerate or use it as soon as it has cooled to minimize the time the food is in the temperature danger zone. PHFs must be cooled from 135°F to 70°F (57°C to 21°C) within two hours and within a total of six hours from 135°F to 41°F (57°C to 5°C) or less.
- If food does not get cooled to 70°F (21°C) within two hours it must either be reheated to 165°F and cooled again or discarded.



Cooling Guidelines

- Separate cooling food from raw food to avoid cross-contamination.
- If you have large amounts of food to cool, first divide it into smaller amounts. (The food should be stirred and placed in a blast chiller immediately.)
- DO NOT cool hot food in a refrigerator, as this will raise the temperature of the other food items in the refrigerator.
- Once food has been cooled to at least 70°F (21°C) it can be stored in the refrigerator.



Cooling Methods

- **Ice paddles** filled with ice or water can be used to stir food and chill it quickly.
- Filling a large pot or clean sink with **ice water** and then placing a pot or pan of hot food into it will cool the food.
- **Blast chillers** may be available to place food in and cool it quickly.
- Placing food in **shallow, stainless steel pans** when cooling food will help transfer heat quicker.



Reheating Guidelines

- Food that has been cooled after cooking will eventually be served to customers, either hot or cold. If food is to be served hot, then it will require reheating.
- The reheating of food has the same potential hazards as cooking. To avoid contamination, reheat food only once, and only for immediate consumption or hot holding. If the food doesn't reach 165°F (74°C) within 2 hours, discard.



Reheating Methods

- Food must be reheated using the proper food preparation equipment; hot-holding equipment must not be used to reheat food.
- When using a microwave to reheat potentially hazardous foods for hot holding, all parts of the food need to reach an internal temperature of 165°F (74°C).



Serving Food Guidelines

The hazards associated with serving food include:

- The **buildup of food-poisoning bacteria** due to prolonged periods at room temperature
- **Contamination** from food handlers, equipment, utensils or even price tags, in the case of retail premises



Serving Food Guidelines

- Food should be served quickly after cooking, cooling or reheating, in order to avoid the multiplication of bacteria in food.
- Raw food should be served using separate equipment and utensils from ready-to-eat food to avoid cross-contamination. Ideally, it should be served by different food handlers, using separate serving counters.
- Food that has been previously served to a customer must not be re-served to another customer.



Serving Food Guidelines

- Appropriate, clean protective clothing should be worn to avoid contaminating the food. Hands should be washed properly and regularly, and they should handle food as little as possible.
- Hand contact with food during service can be minimized by using long-handled, clean and sanitized serving utensils or equipment, carrying products on trays or using disposable gloves.



Serving Food Guidelines

- Plates and other serving dishes should be held and carried from the bottom to avoid touching the surface where food or utensils will touch.
- Utensils should be held by the handle and never by the eating surface.



Serving Food Guidelines

- Glasses and cups should be held by the side or by the handle. Do not touch the rim of glasses or cups and do not allow your hand to be above the drinking surface.
- When serving ice, always use tongs, never your hands.
- Tongs should also be used with individual food items, such as bagels, muffins, donuts, baked potatoes and similar items.



Food Bars

- If food is to be displayed for self-service, then cold food must be kept below 41°F (5°C). Ensure that the cold-holding equipment keeps food at this temperature. With the exception of whole fruits and vegetables and cut, raw vegetables, food cannot be stored directly on ice.
- Hot food must be kept above 135°F (57°C). Roast beef and pork are an exception. If they have been cooked to 130°F (54°C), they can be held at 130°F (54°C).



Food Bars

- Food should be pre-wrapped, where feasible.
- Customers should not be able to handle open food.
- Use sneeze guards and plenty of serving utensils to reduce the risk of contamination from customers.
- The handles of serving utensils should be longer than the display dishes, to prevent them dropping into food.



Ice

- Ice is a food and should be handled carefully, especially when preparing and serving beverages. Because freezing water does not destroy bacteria or toxins, ice can contain those dangerous bacteria or toxins.
- **Toxins** are poisonous substances created by living things. Therefore, only potable water should be used to make ice.
- **Potable** means that it is suitable for drinking. Ice should always be stored in clean and sanitized containers.



Chapter 5

PERSONAL HYGIENE

- Good personal hygiene reduces the potential for contamination or foodborne illness.



Proper Personal Hygiene

- Maintain a high level of personal cleanliness
- Wear proper work attire
- Practice proper hand washing techniques
- Exercise proper glove use



Food Contamination

- Food handlers are potential sources of physical, chemical and biological hazards and can cause cross-contamination as a result of poor hygiene practices.
- Because hands come into direct contact with food during preparation, they often act as a vehicle, transferring bacteria from other items directly onto the food itself.



Food Contamination

Bacteria is often present:

- In boils, skin infections and cuts
- On hands
- In the nose, mouth and ears
- On the hair
- In bodily waste



Nose, Mouth, Ears

- Do not cough or sneeze over food or equipment.
- Do not bite nails, blow your nose or scratch ears or skin.
- Do not lick fingers, blow onto food or equipment or spit.
- Do not snack or chew gum.



Hair and Bathing

- Do not touch or comb hair while at work.
- Do not scratch your head.
- Keep your hair clean and short, or keep longer hair tied back.
- Wear a hairnet or protective hat, or even a hairnet under a protective hat when possible. This includes wearing beard restraints for workers with facial hair.
- Shower or bathe on a daily basis.
- Make a habit of frequent, proper hand washing.



Boils, Skin Infections and Cuts

- To prevent contamination from boils, skin infections and cuts, make sure to cover all wounds with a waterproof dressing or bandage, preferably blue. The blue dressings will be easily seen if they fall into food.
- Cover the bandage with a glove or finger cot to keep it from falling off.
- Do not handle potentially hazardous food if you have boils, skin lesions or infections.



Smoking

- Smokers touch their lips and can transfer bacteria to food from their mouth.
- Cigarettes contaminated with saliva may be placed on work surfaces.
- Smoking encourages coughing.
- Cigarette butts and ash may land on and contaminate food.



Eating and Drinking

- Do not eat or drink while preparing or serving food or in areas where food is prepared.
- Do not eat or drink in areas where equipment or utensils are stored or cleaned. Check with your manager for designated areas where you can eat or drink.



Illnesses

You should inform your manager whenever:

- You or any member of your household has symptoms such as diarrhea, vomiting, nausea or abdominal pain.
- You have a boil or skin lesion.
- You have conditions, such as colds, which result in excessive sneezing or coughing.
- You have a sore throat with fever.
- You have jaundice.



Illnesses

You should inform your manager whenever:

- You have eaten a meal known to have caused a foodborne illness.
- You have a foodborne illness, caused by one of these pathogens: norovirus, hepatitis A, *Shigella*, Shiga toxin-producing *E. coli*, and *Salmonella*.
- You have recently visited a country where questionable hygiene practices have been known to occur, especially if you have been ill.



Restrictions and Exclusions

You will be **excluded** from working in the facility if you have vomiting, diarrhea, jaundice, or any one of the following illnesses:

- Norovirus
- Hepatitis A virus
- *Shigella* spp.
- Shiga toxin-producing *E. coli*
- *Salmonella typhi*



Hand Washing

- Hand washing is one of the most important actions that can be taken to prevent the spread of foodborne illnesses. It is important that you wash your hands often using proper techniques.

When to Wash Hands

Hands must be washed:

- Before starting work and regularly throughout the work day, especially following certain activities
- Always after using the toilet, without exception
- Upon entering a food preparation, serving or dishwashing area
- Before handling potentially hazardous food or raw food
- After clearing tables or bussing dirty dishes
- After touching or taking out the trash





When to Wash Hands

Hands must be washed:

- After dealing with an ill customer or coworker
- After putting on or changing a dressing covering a boil, skin infection or cut
- After cleaning animal feces, handling boxes contaminated with bird droppings or handling a baby's diaper
- After handling hazardous chemicals
- After touching your hair or face
- After eating or smoking
- After coughing, sneezing or blowing your nose
- After handling money



Where to Wash Hands

- In order to avoid contamination, hand washing must take place in a hand-washing specific basin, such as a dedicated hand-washing sink or an approved automated hand-washing facility.
- Hand washing should not occur in sinks used for preparing food or in a service sink.



How to Wash Hands

Please refer to the images on page 34 of the Professional Food Handler textbook.

- Wet hands and exposed portions of the arms with clean, running water that is as hot as you can comfortably stand. The temperature should be around 100°F (38°C).
- Apply a liquid soap.



How to Wash Hands

- Rub the hands together vigorously, cleaning all parts of the hands and arms, especially the fingertips and around the nails. Do this for 10 to 15 seconds.
- Rinse hands and arms.
- Completely dry hands and arms using a single-use paper towel or an air dryer.



Gloves

- When used properly, gloves can aid in the service of safe food by acting as an added layer of protection between the hands and food.
- The first step to wearing gloves is to wash and dry your hands using the proper hand-washing technique.
- Gloves should be changed after touching anything that may be a source of contamination.



Gloves

Always change gloves:

- When changing tasks
- After touching raw meat and before handling cooked or ready-to-eat food
- After covering your mouth when sneezing or coughing
- After touching your face or hair
- When they become soiled or torn



Gloves

- Gloves should never be worn for more than four hours, as perspiration and bacteria can build up under the gloves.
- Even if you have no other reason to, dispose of your gloves, properly wash and dry your hands, and put on a fresh pair after four hours have passed.
- Do not re-use gloves.



Bare Hand Contact

- There are times when avoiding bare hand contact with food items is not only impractical, it is almost impossible.
- Some jurisdictions allow bare hand contact with ready-to-eat foods in food service establishments that *do not* serve highly susceptible populations.



Special Training

Prior to allowing employees bare hand contact, the employees must sign that they have received training in the following areas:

- The risks associated with contacting the specific ready-to-eat food items with their bare hands
- Proper hand washing methods, including when to wash hands and where to wash hands
- Proper fingernail maintenance, including the proper use of a finger-nail brush



Special Training

Cont.:

- Prohibitions against jewelry, such as rings, where bacteria and germs can evade the effects of hand washing
- General good hygiene practices
- Employee health policies, such as what to do in cases of illness, when illness will exclude employees from bare hand contact or the workplace altogether, and when illness might result in restrictions to bare hand contact or food contact in general



Special Requirements

Additionally, if bare hand contact is to be allowed, the food service establishment must utilize two or more of the following additional safeguards:

- Double hand washing before contact
- The use of nail brushes during hand washing
- The use of hand sanitizer following proper hand washing



Special Requirements

Cont.:

- An incentive program that encourages and/or assists food employees to refrain from working when ill or otherwise contagious. This could include paid time off for documented illness, or reassignment in duties without impacting pay, among others.
- The use of another control measure that has been approved by the regulatory agency with jurisdiction over the food service establishment.



Special Requirements

- The final step required for bare hand contact of ready-to-eat foods is documentation of corrective actions taken when steps one and/or two are not adhered to. This documentation must include a plan for implementing these corrective actions. It may be included as a part of the food service establishment's records, or as a stand-alone document, but it must be in written format.



Clothing

- Food handlers must always wear clean and washable protective clothing. Protective garments should completely cover ordinary clothing and be appropriate for the work being carried out.
- When dressing, it is important to dress from the top down. First, put on a hairnet or a hat. Then, put on the other pieces of clothing. And finally, put on the shoes. This way, you will avoid contaminating the protective clothing with bacteria from your hair and work shoes.



Shoes

- Suitable footwear should be worn to prevent slipping and to protect the feet.
- Appropriate footwear includes clean, close-toed shoes with a low heel and non-skid soles.



Aprons

- Always begin the work day with a fresh, clean apron.
- Remove your apron when leaving the food preparation areas. There should be a designated area for aprons to be hung or stored when taking out trash or visiting the toilet.
- If an apron becomes soiled, it should be changed immediately.



Hands and Nails

- Hands should be kept clean at all times. If there is any doubt if your hands are clean, wash them.
- Long nails are almost impossible to keep clean. You should trim your nails at least once a week.
- Do not wear false nails or nail polish, as they can contaminate food.



Jewelry

- Jewelry is another potential source of contamination. Do not wear earrings, watches or jeweled rings as they may hide dirt and bacteria.
- Stones and small pieces of metal present in jewelry may physically contaminate food.



Tasting Food

- Employees should only taste food by using a clean spoon every time.
- Food should never be tasted using a finger.



Chapter 6

CLEANING AND SANITIZING

- Cleaning and sanitizing food surfaces and equipment is essential to eliminating the risk of contamination and foodborne illness.



Proper Cleaning and Sanitizing

- Customers expect a food establishment to be clean. If it isn't clean, they'll choose to eat somewhere else.
- **Food-contact surfaces** must also be sanitized to prevent the spread of foodborne diseases.
- Consistently and thoroughly cleaning and sanitizing is an important part of your job to ensure that your food establishment is up to standards.



Cleaning vs. Sanitizing

- There is a significant difference between cleaning and sanitizing.



Cleaning

The purpose of cleaning is to remove food residues, dirt, grease and other types of soil from surfaces by:

- Physical cleaning, like scrubbing
- Thermal cleaning, for example, the use of hot water
- Chemical cleaning, for example, the use of a detergent
- A combination of all of these



Sanitizing

The purpose of sanitizing is to reduce microorganisms to a safe level.

- Microorganisms are destroyed by the use of very hot water, steam or a chemical sanitizer. Test strips should be used to determine if the correct amount of sanitizer is present in the solution.
- Sanitizer needs to be in contact with that equipment or surface for sufficient time, called the **contact time**.



When to Clean and Sanitize

- Sanitizing is normally restricted to food-contact surfaces, such as cutting boards, slicers and knives and hand-contact surfaces, such as taps or refrigerator door handles. If food contact equipment and surfaces are not sanitized, then you may be introducing food safety hazards to the operation unnecessarily.
- Cleaning materials such as mops and buckets do not need to be sanitized, since they do not come into contact with food or food contact surfaces.



When to Clean and Sanitize

Equipment, food-contact surfaces and utensils should be sanitized:

- When changing to a different type of raw animal food
- When changing from working with raw foods to working with ready-to-eat foods
- When changing from raw fruits and vegetables to potentially hazardous food
- Before using or storing a food temperature measuring device
- When contamination may have occurred



Steps to Clean and Sanitize

The cleaning and sanitizing process is based on five steps:

- **Pre-cleaning:** the removal of loose dirt and debris
- **Main cleaning:** the removal of dirt and grease
- **Rinsing:** the removal of loosened dirt and detergent
- **Sanitizing:** reducing bacteria to a safe level
- **Drying:** ideally air drying, as cloths may just reintroduce bacteria



3-Compartment Sink

There are five steps used when washing manually:

- Remove as much of the visible food soil as possible.
- Use the first compartment of the sink to wash the items. Use a detergent and make sure that the water temperature used is at least 110°F (43°C). Replace the detergent and the water in this compartment as needed.



3-Compartment Sink

- Use the second compartment of the sink to rinse the detergent off of the item and prepare for sanitizing. You can spray clean the objects or immerse them in water to remove the detergent. The water used in this compartment should be kept clean and replaced when needed.



3-Compartment Sink

- Use the third compartment to sanitize the items. It may need a device to keep the temperature of the sanitizing solution at a specific temperature. The temperature of the solution and the contact time for the solution will be determined by the type and concentration of chemical sanitizer you use. For hot water sanitizing, you must immerse the object for at least 30 seconds in water that is at least 171°F (77°C).
- Finally, allow the items to air dry.



Safety

- Always wear protective clothing, such as gloves and goggles, when cleaning.
- Follow chemical manufacturers' instructions correctly.
- Never mix chemicals as this may result in an explosion or the production of poisonous gases.

A vertical collage of food-related images. The top section shows a close-up of a multi-colored corn cob (yellow, red, purple) next to a whole orange tomato. The middle section shows a clear blue sky with light, wispy white clouds. The bottom section shows a field of golden wheat stalks in focus.

Storing Cleaners and Equipment

- Chemicals and cleaning equipment must always be stored separately from food and utensils.
- Chemicals should never be emptied into unmarked or food containers.
- Cleaning equipment must be kept clean. After use, the cleaning equipment should be thoroughly cleaned and sanitized.
- Mops and cloths should be replaced frequently and never left to stand overnight in buckets of dirty water or cleaning solutions.



Chapter 7

PEST PREVENTION

- Identifying the kinds of pests you are likely to encounter in the food service industry is an important aspect of keeping food safe and disease-free.



Importance of Pest Prevention

- Contamination and food waste
- Foodborne illnesses and foodborne disease outbreaks
- Damage to equipment and the premises — for example, fires caused by gnawed wires
- Loss of customers and profits caused by selling contaminated food
- Loss of employees who don't want to work in infested premises
- Fines and closure of the establishment



What Attracts Pests?

- Pests are attracted to places where food and water are readily available. They find dimly-lit, moist, warm locations good places to live and breed.
- Removing these conditions minimizes the risk of pest infestation.



Preventing Pest Entrance

Pests enter buildings in two ways.

- First, pests can be brought in by people, supplies or even equipment entering or leaving a building. Food delivery is of the greatest concern in this regard.
- Second, pests can come in through gaps, holes or openings in the building. They can enter via a crack in the wall, a gap between walls and window frames and through a door that has been left open.



Preventing Pest Entrance

Prevent access by:

- Reporting defects in the building to management
- Sealing access points and other openings
- Protecting the bottom of wooden doors with metal kick plates
- Keeping doors and windows closed or fitting them with screens
- Keeping up with facility repairs
- Inspecting all deliveries closely



Preventing Pest Infestation

- Establishing and maintaining high standards of cleanliness is all important in eliminating the conditions that attract pests.
- A **cleaning schedule** is a plan for completing routine cleaning tasks that works hand-in-hand with on-going clean up during food preparation.
- A cleaning schedule also contains provisions for refuse and waste disposal, as well as other priority practices specific to a facility.



Preventing Pest Infestation

A good cleaning schedule ensures that you:

- Keep premises and waste areas clean and tidy. Make sure that external waste containers always have tight-fitting lids.
- Protect food where appropriate, for example, exposed food that is cooling or thawing.
- Follow a 'clean as you go' policy, and clear spillages promptly.
- Never leave food outside.



Preventing Pest Infestation

- Store food in pest-proof containers, off the floor and clear of walls.
- Practice stock rotation.
- Check all deliveries, including raw materials, packaging and laundry.
- Maintain all drains and water taps.
- Remove vegetation from around the premises as it can provide a safe haven and/or breeding sites for pests.
- Make regular inspections, and report any signs of pests to management.



Identifying Pests

- Ants, flies, other insects and small mammals are an important part of our environment. A problem occurs when they enter our dwellings, especially living, food preparation and eating areas.
- Pests that carry and spread disease are of the highest concern for pest control.
- Rodents, cockroaches and flies are of special concern because of their ability to cause illness.



Rodents

Signs of rodent infestation include:

- Sightings of live or dead bodies
- Droppings and smear marks against walls
- Damaged packaging
- Gnawed plugs, electrical wires and wood
- Scratching, gnawing noises and unusual smells



Insects

Signs of insect infestation include:

- Sightings of adults, eggs, maggots or pupae
- Droppings from cockroaches or flies
- Unusual smells, especially from cockroaches



Birds

Signs of bird infestation include:

- Feathers and nesting material
- Damaged packaging
- Droppings



Pets and Stray Animals

Signs of pet and stray animal infestation include:

- Fur
- Damaged packaging
- Droppings
- Spillages near food or waste



Pest Control Operators

- **Pest control operators (PCOs)** are persons licensed by the state to control pests.
- They are trained and experienced professionals.
- The PCOs' combination of education and practice allows them to make informed decisions about effective pest prevention and control methods, especially in areas with food.



Pest Control Operators

PCOs:

- Quickly identify issues
- Efficiently select treatments
- Safely apply the treatments
- Save the establishment money
- Respond quickly
- Provide advice and recordkeeping



Pesticides

- **Pesticides** are chemicals used to kill pests.
- Misused, pesticides can cause illness and physical conditions in humans far greater than the damage the pests themselves could have inflicted.



Pesticides

Improper use of pesticides can result in the following:

- Unnecessary exposure to the chemicals
- Failure to remedy the infestation
- Introduction of a greater hazard
- Contamination of food
- Health hazards to you, your co-workers and your customers



Professional Food Handler

NEHA, 2011

