



ServSafe® Food Handler Guide

6th EDITION

Updated with the
2013 FDA Food Code



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Food Safety Is Important



After completing this chapter, you will be able to identify:

- What a foodborne illness is
- Biological, chemical, and physical hazards
- The five common behaviors that cause foodborne illness



A Surprising Danger

The guests and staff at a small café got an unwelcome surprise. Dozens of guests who ate the café's famous Baked Potato Salad called to complain of nausea and vomiting. Some guests even developed double vision and had trouble speaking and swallowing.

The local authorities investigated. They found that the baked potatoes in the salad were the source of the outbreak.

After baking, the foil-wrapped potatoes were left on a table to cool overnight. The potatoes were left at room temperature for 18 hours before they were added to the salad. This allowed bacteria on the potatoes to grow to dangerous levels.

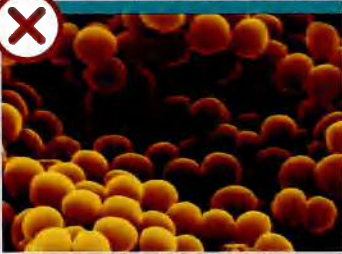
How Food Becomes Unsafe

Food safety matters to everyone. After all, we all need to eat. Every guest at your operation trusts you to help keep him or her safe. One big concern is foodborne illness. A foodborne illness is a disease that is transmitted to people through food.

Many hazards can make food unsafe and cause a foodborne illness. Some come from the air, water, soil, animals, or dirty surfaces. Others happen when people don't handle food correctly. Foodborne illness is almost always preventable. You just need to know how to work safely.

Hazards from the Environment

Three types of hazards make food unsafe: biological, chemical, and physical.



Biological Hazards

These are tiny forms of life that you can't always see, taste, or smell.

- Bacteria
- Viruses
- Parasites
- Fungi

These forms of life are everywhere. Sometimes they are harmless. But some cause illness. They are called pathogens.



Chemical Hazards

Chemicals in your operation can contaminate food.

- Cleaners
- Sanitizers
- Polishes



Physical Hazards

Some physical hazards occur naturally in food.

- Bones in fillets
- Fruit pits



Usually physical hazards occur when objects fall into food.

- Metal shavings
- Staples
- Dirt
- Glass



- Bandages
- Jewelry

Some operations use brightly colored bandages. This makes it easy to spot them if they drop in food.

How People Make Food Unsafe

Sometimes the things people do can make food unsafe. Once you understand what the dangers are, it is easy to avoid them. In addition to purchasing food from unsafe sources, there are four practices that can make food unsafe.



Poor Personal Hygiene

Transferring pathogens from your body to food.

This is the number one cause of foodborne-illness outbreaks at restaurant and foodservice operations.



Cross-Contamination

Transferring pathogens from one surface or food to another.



Time-Temperature Abuse

Letting food stay too long at temperatures that are good for pathogen growth.



Poor Cleaning and Sanitizing

Transferring pathogens from incorrectly cleaned surfaces to food.

Apply Your Knowledge

What Do You Think?

Write an **X** next to the problem for each action listed below.

- ① Leaving raw chicken breasts on a prep table to thaw

_____ A Time-temperature abuse
_____ B Poor personal hygiene
_____ C Cross-contamination
_____ D Poor cleaning and sanitizing

- ② Sneezing on a salad

_____ A Time-temperature abuse
_____ B Poor personal hygiene
_____ C Cross-contamination
_____ D Poor cleaning and sanitizing

- ③ Using the same cutting board to cut up a raw chicken and then using it to slice tomatoes

_____ A Time-temperature abuse
_____ B Poor personal hygiene
_____ C Cross-contamination
_____ D Poor cleaning and sanitizing

- ④ Scraping off baked-on food from an otherwise clean plate

_____ A Time-temperature abuse
_____ B Poor personal hygiene
_____ C Cross-contamination
_____ D Poor cleaning and sanitizing

YOUR ROLE IN KEEPING FOOD SAFE

You have an important role in keeping food safe. Knowing the hazards to food safety is just the start. The next step is to make sure you work safely. Keep your eyes open for possible problems.

It is easy but critical that you follow these practices.



Practice Good Personal Hygiene

- **DON'T** transfer pathogens from your body to food.

You'll learn more about this in the Good Personal Hygiene section.



Control the Time and Temperature of Food

- **DON'T** let food stay too long at temperatures that are good for pathogen growth.

You'll learn more about this in the Controlling Time and Temperature section.



Prevent Cross-Contamination

- **DON'T** transfer pathogens from one surface to another.
- **DON'T** transfer pathogens from one food to another.

You'll learn more about this in the Preventing Cross-Contamination section.



Clean and Sanitize Surfaces Correctly

- Keep everything clean.
- Clean and sanitize anything that touches food.

You'll learn more about this in the Cleaning and Sanitizing section.



Bite Size

DID YOU KNOW THAT FOOD SAFETY LAWS CAN BE DIFFERENT FROM ONE CITY TO THE NEXT? EACH JURISDICTION MAY DECIDE WHAT THE FOOD SAFETY LAWS WILL BE FOR ITS AREA.





Good Personal Hygiene



After completing this chapter, you will be able to identify:

- How, when, and where to wash your hands
- How to use gloves correctly and when to change them
- How to care for your hands and fingernails before handling food
- What should and should not be worn when handling food
- Where you should not eat, drink, smoke, or chew gum or tobacco in the operation
- Illness symptoms that must be reported to your manager



Hepatitis A Scare

Hepatitis A vaccinations were offered to thousands of customers who visited a casual-dining operation on the Gulf Coast. The vaccinations were offered by the local regulatory authority after a food handler at the operation tested positive for hepatitis A, exposing customers to the virus.

The identified food handler was responsible for preparing and setting up items on the salad bar. The food handler was excluded from work until approved to return by a physician and the regulatory authority.

The local regulatory authority also worked with the operation's owners and management team. Together, they made sure they had all of the correct processes in place to protect customers and staff. Ensuring that food handlers reported illness to managers was at the top of the list.

HOW AND WHEN TO WASH YOUR HANDS

It doesn't matter if you are a host, server, cook, buser, or manager. If you work in a restaurant or foodservice operation, you will handle food at some point.

This is important because your hands can transfer pathogens to food. So you must care for them in ways that keep food safe. One critical practice is washing your hands correctly at the correct times.

How to Wash Your Hands

The most important way to keep food from becoming contaminated is also the most simple: washing your hands. It only takes about 20 seconds.

1



Wet hands and arms.

- Use running water as hot as you can comfortably stand.

2



Apply soap.

- Apply enough to build up a good lather.

3



Scrub hands and arms vigorously.

- Scrub them for 10 to 15 seconds. Clean under fingernails and between fingers.

4



Rinse hands and arms thoroughly.

- Use running warm water.

5



Dry hands and arms.

- Do **NOT** use your apron or any part of your uniform.
- Use a single-use paper towel or hand dryer.

After Washing Your Hands

Once your hands are clean, you don't want to contaminate them again. Follow these guidelines.



- Use a paper towel to turn off the faucet.



- Use a paper towel to open the restroom door.

When to Wash Your Hands

It is easy to contaminate your hands while doing everyday activities. And contaminated hands can spread pathogens.

To keep food safe, wash your hands before you start work and after any of these activities.



- Using the restroom. Many foodborne illnesses are caused when food handlers fail to wash their hands after using the restroom.



- Touching your hair, face, or body.



- Handling raw meat, poultry, or seafood (before and after).



- Touching clothing or aprons.



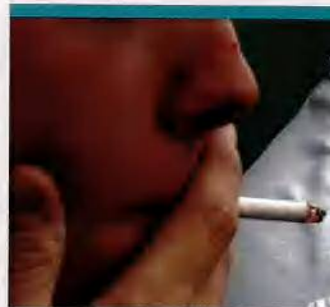
- Taking out garbage.



- Sneezing, coughing, or using a tissue.



- Handling chemicals that can make food unsafe.



- Smoking.



- Clearing tables or busing dirty dishes.



- Eating or drinking.



- Handling money.



- Chewing gum or tobacco.



- Before putting on gloves at the start of a new task.



- Leaving and returning to the kitchen/prep area.



- Handling service animals or aquatic animals.



- Touching anything else that may contaminate your hands. Examples include dirty equipment, work surfaces, and cloths.

Using Hand Antiseptics

Some managers and business owners require food handlers to use hand antiseptics to reduce pathogens on hands. Follow these steps if you are asked to use hand antiseptics.



- **NEVER** use a hand antiseptic instead of washing your hands.
- Use an antiseptic after you wash your hands.
- Wait for the antiseptic to dry before touching food or equipment and before putting on gloves.
- Follow the manufacturer's directions for using a hand antiseptic.

Stocking the Handwashing Sink



To wash your hands correctly, you need the right tools. A stocked sink should have:

- Hot and cold running water
- Soap
- Single-use paper towels or a hand dryer
- Garbage container

If these items aren't stocked, tell your manager.

Apply Your Knowledge

Check Your Handwashing Savvy

- 1 Write an **X** next to each situation where you must wash your hands.

- _____ A After handling raw chicken
- _____ B Before putting on gloves at the start of a new task
- _____ C Before taking a break
- _____ D After taking out garbage

- 2 Write an **X** next to the things that a stocked handwashing station must have.

- _____ A Hand lotion
- _____ B Soap
- _____ C Garbage container
- _____ D Sponge
- _____ E Single-use paper towels or a hand dryer
- _____ F Hot and cold running water

- 3 Ryan washed his hands before preparing salads. Write an **X** next to each error that Ryan made.

- _____ A He applied hand sanitizer before washing his hands
- _____ B He wet his hands using very hot water
- _____ C He applied enough soap to develop a good lather
- _____ D He scrubbed his hands for five seconds
- _____ E He rinsed his hands under running warm water
- _____ F He dried his hands with his clean apron
- _____ G He turned off the tap with a paper towel
- _____ H He opened the door with his wet hands

WHERE TO WASH YOUR HANDS

Your operation should have specific sinks for handwashing. You must use these sinks correctly to make handwashing effective.

Use a Handwashing Sink



- Wash your hands only in a designated handwashing sink.



- Do **NOT** use handwashing sinks for other things.
- **NEVER** dump dirty water in them.
- **NEVER** prep food in them.
- **NEVER** wash dishes in them.

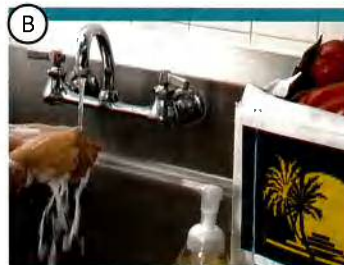


- Make sure handwashing sinks are easy to get to and are not blocked.
- **NEVER** stack food, equipment, or supplies in them or in front of them.

Apply Your Knowledge

Which Sink Is It?

- 1 Draw an X through the place where you cannot wash your hands.



OTHER HAND-CARE GUIDELINES

It takes more than just clean hands to maintain good personal hygiene. You also must use gloves correctly and care for your hands and nails.

Use Gloves Correctly

DO NOT touch ready-to-eat food with your bare hands. Doing so can transfer pathogens from your hands to the food. There are some exceptions to this. Ask your manager.

Ready-to-eat food is exactly what it sounds like. It is food that can be eaten without any further preparation, washing, or cooking. Deli meat, sandwiches, salads, and cooked food are examples.

Wearing gloves when handling ready-to-eat food is one way to prevent contamination. Here is the correct way to use them.



- Only use single-use gloves when handling food.



- Make sure the gloves fit your hands. They should not be too tight or too loose.
- Never blow into a glove, or roll them to make them easier to put on.



- **NEVER** rinse, wash, or reuse gloves.



- Wash your hands before putting on gloves when starting a new task.

Change Gloves When Necessary



- As soon as they become dirty or torn.



- Before beginning a different task.
- Before preparing food for a guest with a known food allergy.



- After handling raw meat, seafood, or poultry and before handling ready-to-eat food.



- After an interruption, such as taking a phone call.

Hands and Nails

Follow these guidelines to maintain your hands and nails.



- Keep fingernails short and clean. Long fingernails can be hard to keep clean.
- Fingernails should also be filed. Ragged nails can be hard to keep clean. They may also hold pathogens and break off into food.



- **DO NOT** wear nail polish. It can hide dirt under nails and flake off into food.
- **DO NOT** wear false fingernails. They can be hard to keep clean.

Some local regulatory authorities allow polished or false nails if single-use gloves are worn.



Infected wounds can contain bacteria. Keep food safe by making sure wounds are covered correctly.

- Cover wounds on the hand or wrist with a bandage or finger cot that will prevent fluid from leaking out. Then place a single-use glove over the cover.
- Cover wounds on the arm with a bandage that will prevent fluid from leaking out. The wound must be completely covered.
- Cover wounds on other parts of the body with a dry, durable, tight-fitting bandage.

Apply Your Knowledge

Keeping It Safe

- 1 Alicia is a prep cook making hamburgers. Write an X next to everything that Alicia has done wrong.

- _____ A Washed her hands before putting on gloves
- _____ B Rinsed her gloves when they became too dirty from working with the hamburger meat
- _____ C Began chopping lettuce after forming hamburgers without washing hands and changing gloves
- _____ D Washed her hands and changed gloves when she noticed a small tear in a glove she was wearing

- 2 Write an X next to each unsafe practice.

- _____ A Washing hands and putting on new gloves after cutting up raw chicken
- _____ B Putting the same gloves back on after finishing one task and starting a new task
- _____ C Prepping food with false nails
- _____ D Working with a tiny, infected cut that is not bandaged

WHAT TO WEAR

If you wear dirty clothes to work, or if you fail to bathe, you'll give customers a bad impression of your operation. But there is more to it than just looking good. Dirty hair, skin, and clothing may carry pathogens that can cause foodborne illnesses. Hygiene matters, so bathe daily. And follow the guidelines below.



Hair Covering

Always wear a clean hat or other hair covering when:

- Prepping food
- Working in prep areas
- Working in areas used to clean utensils and equipment

Food handlers with facial hair should also wear a beard restraint.



Clothing

Wear clean clothes every day. This includes chef coats, aprons, and other uniforms. Dirty clothing that is stored in the operation must be kept away from food and prep areas. This includes dirty aprons, chef coats, and other uniforms. Ask your manager how you should store these items. Street clothes and other personal belongings should also be stored away from food and food-prep areas.



Aprons

Remove aprons and store them correctly when leaving prep areas (for example, before taking out garbage or using the restroom).



Jewelry

Jewelry can contain bacteria and other pathogens. It can also fall off into food. Remove jewelry from hands and arms before prepping food or when working in or around prep areas. Do **NOT** wear:

- Rings, except for a plain band
- Bracelets, including medical bracelets
- Watches

Your manager or business owner may also ask you to remove other jewelry. Servers may wear jewelry if allowed by management or the business owners.

Apply Your Knowledge

It's What You Wear

Write an **X** next to each unsafe practice.

- _____ A Wearing a dirty chef coat
- _____ B Wearing nail polish
- _____ C Wearing a baseball cap while serving food
- _____ D Wearing a watch

- _____ E Taking off your apron in the restroom
- _____ F Wearing a bandage on your finger under your gloves
- _____ G Working in the dishwashing area without a hat or other hair covering
- _____ H Wearing a chef coat for several days until it gets dirty

What to Do if You Are Sick

If you are sick, you could spread pathogens to food and equipment. This could make your guests and your coworkers sick. Don't let this happen.



The symptoms of foodborne illness vary depending on the illness. Tell your manager if you have any of these symptoms:

- Vomiting
- Diarrhea
- Jaundice (yellowing of skin and eyes)
- Sore throat with a fever

Apply Your Knowledge

Watch for Trouble

Draw an **X** through each unsafe practice.



Apply Your Knowledge

Report That Illness

Write an **X** next to the symptoms you must report to your manager.

_____ A Vomiting

_____ B Jaundice

_____ C Sore throat with a fever

_____ D Being very tired

_____ E Diarrhea

_____ F Headache

OTHER IMPORTANT PRACTICES

Using correct hygiene practices helps keep you and everyone else safe. Follow the guidelines below.

Eating, Drinking, Smoking, and Chewing Gum or Tobacco

Saliva contains pathogens that can cause a foodborne illness. Eating, drinking, smoking, and chewing gum or tobacco can contaminate equipment and your hands with saliva. Cigarette butts and other items can also get into food. Only eat, drink, smoke and chew gum or tobacco in designated areas. **NEVER** do these things in the following areas.



- In prep areas.

Some regulatory authorities may allow you to drink from a covered container while in prep and dishwashing areas.



- In areas used to clean utensils and equipment.



- In service areas.



Bite Size

THE MOST COMMON FOODBORNE ILLNESS IN THE UNITED STATES IS CALLED NOROVIRUS. SOMETIMES IT'S CAUSED BY SHELLFISH, BUT USUALLY IT COMES FROM PEOPLE. PREVENTING IT COULDN'T BE SIMPLER: *JUST WASH YOUR HANDS.*



Controlling Time and Temperature



After completing this chapter, you will be able to identify:

- Food that needs time and temperature control to keep it safe
- The temperature danger zone
- How to use a thermometer correctly
- Requirements for receiving food and nonfood items
- How to control the time and temperature of food during storage
- How to transport and deliver food off-site correctly
- How to thaw, cook, hold, cool, and reheat food correctly



Undercooked Meatballs Result in Fatal Outbreak

Fifty-one people were sent to the hospital. A 73-year-old woman died. They all had one thing in common. They ate undercooked turkey meatballs at the same buffet.

The victims all got sick with *Salmonella*. An investigation found that the chef had browned the meatballs. But he failed to finish baking them. This left the centers of the meatballs undercooked.

The local health authority said that the problem could have been avoided if the meatballs were fully cooked.

WHY CONTROLLING TIME AND TEMPERATURE IS IMPORTANT

Any type of food can be contaminated. But some types allow more bacterial growth than others. If steps are not taken to prevent it, bacteria can grow to dangerous levels. You can keep your guests safe by limiting how long food spends at incorrect temperatures. This is called time and temperature control.

Food Most Likely to Become Unsafe

Bacteria grow well in some food. If this food is held at unsafe temperatures, bacteria can grow over time. The best way to control this growth is to control time and temperature. Food that needs time and temperature control for safety is called TCS food. Here are the most common types of TCS food.



- Milk and dairy products



- Shell eggs



- Poultry
- Meat: beef, pork, and lamb



- Fish
- Shellfish and crustaceans



- Baked potatoes



- Heat-treated plant food, such as cooked rice, beans, and vegetables



- Tofu or other soy protein
- Synthetic ingredients, such as textured soy protein in meat alternatives



- Sliced melons
- Cut tomatoes
- Cut leafy greens (fresh leafy greens that have been cut, shredded, sliced, or chopped)



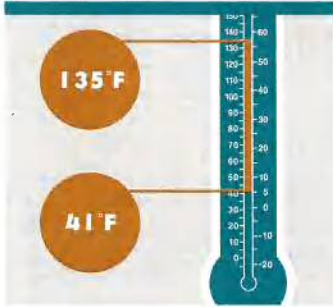
- Sprouts and sprout seeds



- Untreated garlic-and-oil mixtures

Temperature Danger Zone

To keep TCS food safe, you must keep it out of the temperature danger zone.



- Pathogens grow well in the temperature range from 41°F to 135°F (5°C to 57°C). This range is called the temperature danger zone.
- TCS food must be kept out of this range.



- If you find food at incorrect temperatures, tell your manager. You may need to take corrective action. This can include cooking, reheating, or throwing out the food.

How to Measure the Temperature of Food

If you are going to control time and temperature, you will need a thermometer. And you need to know the correct way to use it.

From the moment food arrives in a delivery, right up until the time it is served, thermometers should be used. Many operations keep records of these temperatures. Ask your manager how this is done in your operation. Follow the guidelines below to use thermometers correctly.



Use the correct thermometer for the job you are doing.

- There are different kinds of thermometers for different tasks. Check with your manager about the correct thermometer to use.



Make sure the thermometer is ready to be used.

- It must be washed, rinsed, sanitized, and air-dried. Do this before using it.
- It must be adjusted so it will read temperatures correctly. This is called calibration.



Check temperatures correctly.

- Stick the thermometer into the thickest part of the food. This is usually the center.
- Wait until the thermometer reading stays steady before writing down a temperature.
- Take another reading in a different spot.



Clean and sanitize the thermometer.

- Wash, rinse, sanitize, and air-dry the thermometer after using it.
- Keep its storage case clean.

Apply Your Knowledge

Which Food Needs Control?

Draw an **X** through each food item that needs time and temperature control to keep it safe.



Apply Your Knowledge

Stay In Control (of Time and Temperature)

- 1 Write an **X** next to the lower end of the temperature danger zone.

_____ A 20°F (-7°C)
 _____ B 32°F (0°C)
 _____ C 41°F (5°C)
 _____ D 50°F (10°C)

- 2 Write an **X** next to the upper end of the temperature danger zone.

_____ A 120°F (49°C)
 _____ B 126°F (52°C)
 _____ C 135°F (57°C)
 _____ D 164°F (73°C)

- 3 Write an **X** next to where you should check the temperature of food.

_____ A On the top surface
 _____ B On the bottom surface
 _____ C In the thickest part
 _____ D In the thinnest part

- 4 Write an **X** next to what you should do after using a thermometer.

_____ A Wash it well and then let it dry.
 _____ B Wipe it off and put it back in its case.
 _____ C Let it air-dry.
 _____ D Wash, rinse, sanitize, and air-dry it.

CONTROLLING TIME AND TEMPERATURE FROM RECEIVING THROUGH PREPARATION

Temperature control starts during receiving when food first arrives. It continues through thawing, preparation, and service. Control time and temperature at every step of the way.

How to Be Sure the Food You Receive Is Safe

Checking food when you receive it will help ensure it is safe. Check the temperature, quality, and packaging of the food. Poor food quality is a sign that food has been kept at unsafe temperatures. Your operation may receive food that requires specific checks. Ask your manager about these. Follow these guidelines for receiving most food.



Receive cold TCS food at 41°F (5°C) or lower.
Always follow manufacturers' instructions.



Frozen food should be frozen solid when received.
Reject frozen food if the product or packaging has:

- Fluids
- Water stains
- Ice crystals or frozen liquids

Large ice crystals on food or packaging are signs that the food has thawed and been refrozen.



Receive hot TCS food at 135°F (57°C) or higher.



Reject food if it:

- Has passed the use-by or expiration date
- Has an abnormal color or is moldy
- Smells wrong or unpleasant

Reject meat, fish, or poultry if it:

- Is slimy, sticky, or dry

Storing TCS Food Safely

Time and temperature control is critical when storing food. Carefully monitor storage temperatures and times. You must be able to tell when food was stored and by what date it must be used. This means correctly labeling food as it is stored.

Food delivered for off-site service should be labeled too. Packaged food and self-service areas may have special labeling requirements. Check with your manager. Follow these guidelines to keep food safe when storing and holding it.



- Store cold TCS food at an internal temperature of 41°F (5°C) or lower.
- Keep frozen food frozen.
- Do not overload coolers or freezers.
- Plan ahead so you don't have to open cooler doors more than necessary.



- All food that is not stored in its original container must be labeled. That label must include the common name of the food.
- Ready-to-eat TCS food must be marked if it will be held for longer than 24 hours. The mark must indicate when the food must be sold, eaten, or thrown out.
- Ready-to-eat TCS food prepared on site can be stored for only seven days if held at 41°F (5°C) or lower.



Some operations prepare and deliver food for off-site service. Catering is one example. Keep food out of the temperature danger zone during transportation. Transport food in insulated, food-grade containers. Off-site labels should include this information:

- Name of food
- Use-by date and time
- Reheating and service instructions

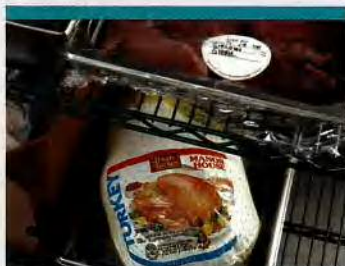


Food must be rotated in storage.

1. Check the use-by or expiration date.
2. Store food in first-in, first-out (FIFO) order. This means storing items with the earliest use-by or expiration dates in front of items with later dates.
3. Use the food stored in front first.

Thawing and Prepping TCS Food

It is important to keep TCS food out of the temperature danger zone when thawing and prepping it. **NEVER** thaw TCS food at room temperature. There are only four acceptable ways to thaw TCS food.



- In a cooler at 41°F (5°C) or lower



- In a microwave oven if the food is cooked immediately



- Submerged under running water at 70°F (21°C) or lower
 - Never let the temperature of the food go above 41°F (5°C) for longer than 4 hours



- As a part of the cooking process

TCS food can become unsafe if it is allowed to sit too long in the temperature danger zone.

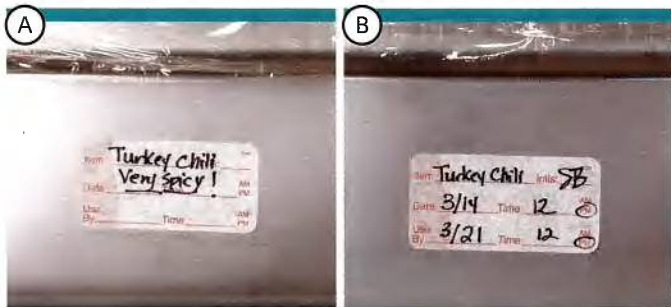


- **NEVER** prep TCS food in large batches.
- Small batches keep ingredients from sitting out for long periods of time.
- Return prepped food to coolers as quickly as possible.

Apply Your Knowledge

Thaw It, Hold It, Prep It

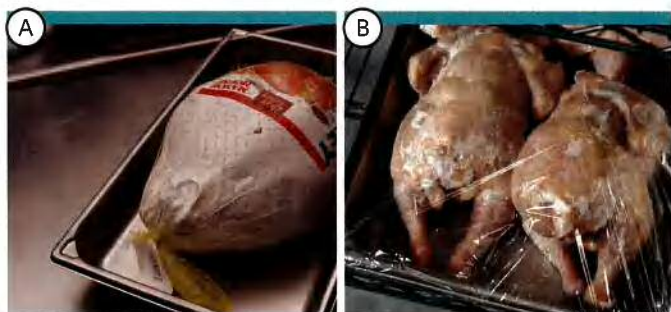
- 1 Draw an **X** through the food storage label that is incomplete.



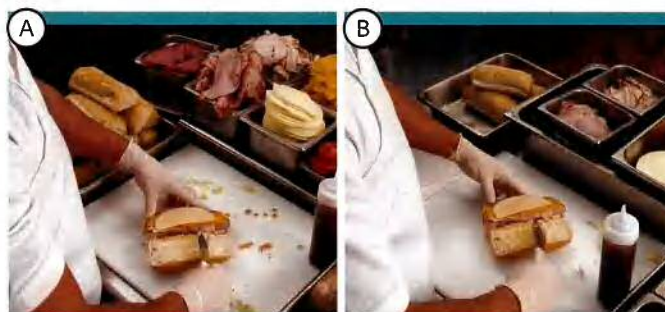
- 2 Draw an **X** through the cold food stored at the wrong temperature.



- 3 Draw an **X** through the frozen poultry being thawed the wrong way.



- 4 Draw an **X** through the food being prepped incorrectly.



Apply Your Knowledge

Does It Stay or Does It Go?

Write an **A** next to the food items you should accept. Write an **R** next to the food items you should reject.

- | | | | |
|---------|--|---------|---|
| _____ A | Chicken received at an internal temperature of 50°F (10°C) | _____ D | Sushi-grade tuna frozen solid |
| _____ B | Fresh salmon with dry flesh | _____ E | Milk received at an internal temperature of 38°F (3°C) |
| _____ C | Frozen meat with large ice crystals on the packaging | _____ F | Hot roast beef received at an internal temperature 125°F (52°C) |

CONTROLLING TIME AND TEMPERATURE WHEN COOKING, HOLDING, COOLING, AND REHEATING

Time-temperature abuse can happen easily during cooking, holding, cooling, and reheating if you are not careful. You can prevent this by making good food-prep choices. Always use the correct thermometer, and minimize the time food spends in the temperature danger zone. Here's how to keep food safe during cooking, holding, cooling, and reheating.

Cooking TCS Food

Cooking food will reduce pathogens in it to safe levels. Always use the correct cooking equipment such as ovens, grills, and fryers. The food must reach the correct internal temperature, and stay there for a specific amount of time.



Poultry (including whole or ground chicken, turkey, or duck)

- 165°F (74°C) for 15 seconds



Ground meat (including beef, pork, and other meat)

- 155°F (68°C) for 15 seconds



Seafood (including fish, shellfish, and crustaceans)

- 145°F (63°C) for 15 seconds



Pork, beef, veal, and lamb

- Steaks or chops 145°F (63°C) for 15 seconds
- Roasts 145°F (63°C) for 4 minutes



Fruit, vegetables, grains (including rice and pasta), and beans that will be hot-held for service

- 135°F (57°C)

Cooking for Populations at Risk for Foodborne Illness

Certain groups of people may have weaker immune systems. They have a higher risk of getting a foodborne illness. Some operations, such as hospitals and day-care centers, have additional rules on cooking for these groups. Check with your manager to learn about your operation's policies.

There are three groups of people that have a higher risk of getting a foodborne illness.



- Elderly people
- Preschool-age children
- People with compromised immune systems, such as chemotherapy patients

Cooking TCS Food in a Microwave Oven

Meat, seafood, poultry, and eggs that you cook in a microwave oven must be cooked to 165°F (74°C). In addition, follow these guidelines.

- Cover the food to prevent its surface from drying out.
- Rotate or stir it halfway through the cooking process so that the heat reaches the food more evenly.
- Let the covered food stand for at least two minutes after cooking to let the food temperature even out.
- Check the temperature in at least two places to make sure that the food is cooked through.

Holding TCS Food Safely

It is important to control time and temperature during hot- and cold-holding. Food should only be held in equipment designed for the job. Steam tables and refrigerated buffet tables are examples. Follow these guidelines to keep TCS food safe during holding.

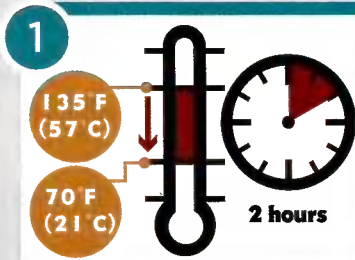


- Keep hot food at 135°F (57°C) or higher.
- Keep cold food at 41°F (5°C) or lower.
- Check the food's temperature at least every four hours.

If food is not being held or stored at the correct temperature, tell your manager.

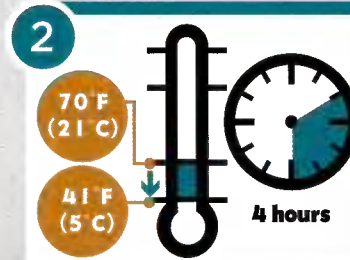
Cooling TCS Food

TCS food must be cooled correctly before storing it. Follow the steps below.



Cooling Process

- First cool food from 135°F to 70°F (57°C to 21°C) within two hours.



- Then cool it to 41°F (5°C) or lower in the next four hours.
- If food has not reached 70°F (21°C) within 2 hours, it must be reheated and then cooled again.



Cooling Methods

- There are many ways to cool food quickly and safely. First reduce the size of the food. Then cool it using one of these methods:
 - Ice water baths
 - Stirring food with ice paddles
 - Adding ice to food
 - Blast chiller
- Ask your manager what method to use.



Cooling Don'ts

- NEVER** cool large amounts of hot food in a cooler.
- NEVER** cool food at room temperature.

Reheating TCS Food

If you are reheating TCS food for hot-holding, you must heat it to the correct temperature. Follow these guidelines to keep food safe.



- Some food is reheated and served immediately, such as roast beef for a hot sandwich. This kind of food can be reheated to any temperature.
- Some food is reheated and then held for later service, such as soup. This kind of food must be heated to an internal temperature of 165°F (74°C) for 15 seconds. The food must reach this temperature within two hours.
- Some commercially processed and packaged ready-to-eat food must be reheated before serving. Deep fried cheese sticks are an example. This kind of food must be heated to an internal temperature of at least 135°F (57°C).

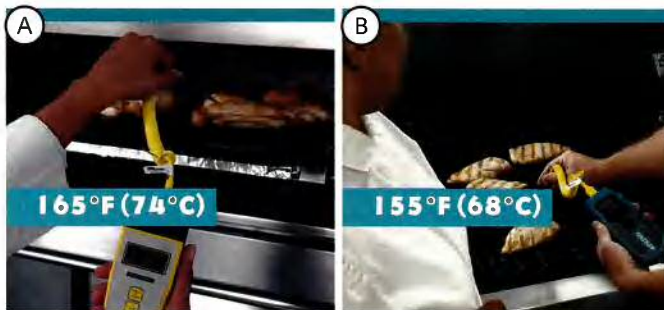


- NEVER** use hot-holding equipment to reheat food unless it has been made for it.
- Ask your manager how food should be reheated in your operation.

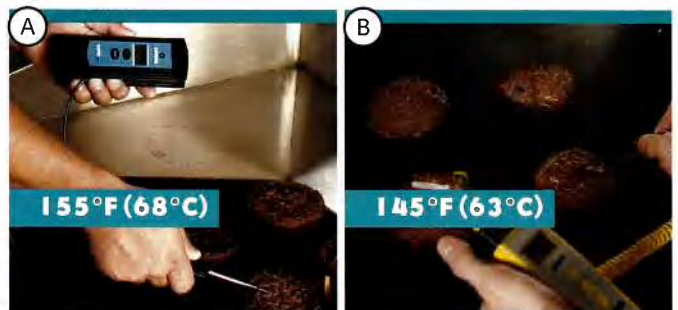
Apply Your Knowledge

What's the Right Temperature?

- 1 Draw an **X** through the chicken that has been cooked to the wrong temperature.



- 2 Draw an **X** through the hamburger that has been cooked to the wrong temperature.



- 3 Write an **X** next to the person at higher risk for foodborne illness.

- _____ A A 36-year-old man.
_____ B A 74-year-old man.

- 4 Write an **X** next to the stew that was cooled correctly.

- _____ A Pot of stew that was cooled from 135°F to 70°F (57°C to 21°C) in two hours and to 41°F (5°C) in the next four hours
_____ B Pot of stew that was cooled from 135°F to 70°F (57°C to 21°C) in four hours and to 41°F (5°C) in the next two hours

- 5 Write an **X** next to the refried beans that were hot-held correctly.

- _____ A The refried beans were held on a steam table at 135°F (57°C).
_____ B The refried beans were held on a prep table at 115°F (46°C).

- 6 Write an **X** next to the soup that was correctly reheated for hot-holding.

- _____ A Soup reheated to 145°F (63°C) for 15 seconds within two hours
_____ B Soup reheated to 165°F (74°C) for 15 seconds within two hours



Bite Size

COOLERS ARE GOOD AT KEEPING FOOD COLD BUT AREN'T SO GREAT AT COOLING DOWN LARGE AMOUNTS OF HOT FOOD. IN FACT, A FEW YEARS AGO A HEALTH INSPECTOR FOUND LARGE QUANTITIES OF MEAT SAUCE THAT WAS STILL AT 70°F (21°C) FIVE DAYS AFTER BEING PLACED IN A COOLER. THE OPERATION STARTED COOLING THE SAUCE WITH ICE BEFORE PLACING IT IN THE COOLER.



Preventing Cross-Contamination



After completing this chapter, you will be able to identify:

- Food that may have been contaminated during receiving
- How to prevent cross-contamination when storing, prepping, and serving food
- How to handle and store chemicals to prevent cross-contamination
- The Big Eight food allergens and how to prevent them from causing an allergic reaction



Outbreak!

An outbreak of foodborne illness sickened 32 visitors to a university located in the northeastern United States. The guests had attended a luncheon during graduation weekend. Reports of illness flooded the local media, the campus clinic, and the local regulatory authority.

Symptoms included stomach pain, nausea, diarrhea, chills, and vomiting. It turned out a new food handler at the dining facility had cross-contaminated romaine lettuce. The lettuce was used for a chicken Caesar salad served at the luncheon.

In her haste to catch up during a busy shift, the food handler chopped the lettuce on a cutting board that had been used to prep raw chicken for the salad. The board had not been cleaned and sanitized between uses.

The university's foodservice contractor announced that they would work closely with the local inspector to correct the problem.

PREVENTING CROSS-CONTAMINATION OF FOOD

Pathogens can be transferred from one surface or food to another. This is called cross-contamination. Fortunately there are steps you can take to prevent it.

The first step is to keep contaminated food out of the operation. The same goes for nonfood items such as single-use cups, utensils, and napkins. Packaging must be intact and clean. Reject items if the packaging is dirty, water stained, leaking, or discolored. Packaging should not have holes, tears, punctures, or other types of damage. Make sure the cans you receive are not dented, rusty, or have swollen ends. Always reject items if you see signs of pests. Your manager may have other guidelines to follow when receiving food.

Preventing Cross-Contamination When Storing Food

Storage is one place where cross-contamination can happen. It's not hard to keep food safe in storage if you know what to do. Follow these guidelines.



- Store food only in designated food-storage areas.
- Store food and nonfood items away from walls and at least six inches (15 centimeters) off the floor.



- Wrap or cover food before storing it.
- This can stop contaminants from falling into food.



- **NEVER** use old chemical containers to store food. This could cause chemical contamination.
- Only store food in containers intended for food.



- Store raw and ready-to-eat food separately if possible. This should also be done when transporting food for off-site service.
- If separate storage is not possible, store food in the following top to bottom order: ready-to-eat food; seafood; whole cuts of beef and pork; ground meat and ground fish; whole and ground poultry.
- This order is based on the minimum internal cooking temperature of each food.

Preventing Cross-Contamination When Prepping Food

When you prep food, you may handle both raw and ready-to-eat food items. Pathogens can be transferred from one food to another if you are not careful. That could make you or your guests sick. To stay safe, follow these guidelines.



- Make sure workstations, cutting boards, equipment, and utensils are cleaned and sanitized.



- Do **NOT** allow ready-to-eat food to touch surfaces that have come in contact with raw meat, seafood, or poultry.



- Prep raw meat, seafood, and poultry at a different time than ready-to-eat food when using the same table.
- Clean and sanitize work surfaces, utensils, and equipment between each product.

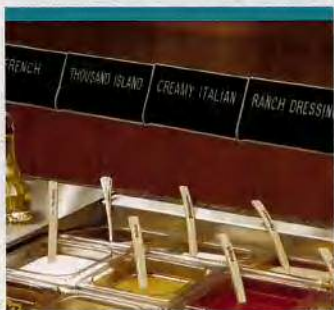


Some foodborne illnesses are caused by contaminated produce. To keep guests safe, produce should be washed.

- Clean and sanitize the prep sink and work area before starting.
- Wash produce in running water slightly warmer than the food. Be sure to pull apart leafy greens such as lettuce or spinach.
- When soaking or storing produce in standing water or ice water, do not mix different items or multiple batches of the same item.
- Refrigerate and hold sliced melons, cut tomatoes, and cut leafy greens at 41°F (5°C) or lower.

Preventing Cross-Contamination in Self-Service Areas

Customers can cross-contaminate food when they serve themselves. It can happen when they refill dirty plates or reuse dirty utensils. It can also happen when they pick up food with bare hands, or place their heads underneath the sneeze guard while reaching food. Self-service areas must be protected from contamination. That includes biological, chemical, and physical contaminants. Here's how to keep them safe.



- Make sure food is labeled.
- Provide separate utensils for each item.
- Keep food under the sneeze guard. This helps protect it from contaminants.



- Do **NOT** let customers refill their dirty plates.
- Do **NOT** let customers use dirty utensils.
- If you see customers doing these things, ask them to use clean plates and utensils.



- **NEVER** serve ice that was used to keep food or beverages cold.



Bite Size

KEEPING FOOD SEPARATE WHEN PREPARING IS ONE WAY TO PREVENT CROSS-CONTAMINATION. SOME KITCHENS USE RED CUTTING BOARDS FOR MEAT AND GREEN CUTTING BOARDS FOR VEGETABLES. BY USING SEPARATE EQUIPMENT, THEY REDUCE THE CHANCE THAT RAW MEAT WILL TOUCH READY-TO-EAT VEGETABLES.



Preventing Cross-Contamination When Serving Food

Surfaces that touch food are called food-contact surfaces. Many of the utensils and equipment you use have food-contact surfaces. Plates, glasses, forks, and tongs are examples. You can contaminate these surfaces if you are not careful when handling them. Follow these practices to prevent this.



- Do **NOT** touch the parts of dishes or glassware that come in contact with food.
- Hold dishes by the bottom or edge.
- Hold glasses by the middle, bottom, or stem.



- Do **NOT** stack glasses when carrying them.
- Carry glasses in a rack or tray.



- Do **NOT** hold utensils by the parts that come in contact with food.
- Hold utensils by the handle.



- Do **NOT** use bare hands to handle ready-to-eat food.
- Use tongs, deli sheets, or gloves.



- **NEVER** scoop ice with your bare hands or a glass.
- Use ice scoops or tongs to get ice.



- **NEVER** store towels in your apron or uniform pocket.
- Store towels for cleaning food spills in a sanitizer solution when you are not using them.
- **NEVER** use towels for cleaning food spills for any other purpose.



- **NEVER** use the same utensils when handling:
 - Ready-to-eat food and raw meat, poultry, or seafood
 - Different food items
- Use separate utensils when serving different food items.
- Store serving utensils in food with the handles extended above the rims of the containers.
- Cover food to protect it from contaminants.

Apply Your Knowledge

Spot the Cross-Contamination

Write an **X** next to the actions that could cause cross-contamination.

- | | |
|---|--|
| _____ A Storing ready-to-eat food in a separate cooler from raw food | _____ E Wrapping a hamburger while wearing single-use gloves |
| _____ B Storing cleaning chemicals and dry pasta in the same area | _____ F Serving a drink by holding it from the top of the glass |
| _____ C Placing potato salad underneath raw chicken in a cooler | _____ G Scooping ice from the ice bin with bare hands |
| _____ D Using the same spatula for raw hamburgers and cooked hamburgers | _____ H Providing a single set of tongs for all items in the self-service area |

Apply Your Knowledge

Prep That Food Safely

Write an **X** next to each situation that is unsafe.

- _____ A Bob debones raw chicken on a white cutting board. He immediately uses the same knife and cutting board to dice onions.
- _____ B Mary trims a raw roast on a red cutting board. She washes her hands and puts on new gloves. Then she uses a new knife to slice tomatoes on a green cutting board.
- _____ C Ted preps salads from 8:00 a.m. to 9:00 a.m. He cleans and sanitizes the prep table and the knife and cutting board. Mary filets raw fish on the same prep table at 9:30 a.m.

PREVENTING CROSS-CONTAMINATION IN STORAGE AREAS

It is important to keep food from direct contamination. It is just as important to protect nonfood items from contamination. A contaminated bowl can cause an illness just as easily as a contaminated salad. That's why it is so important to store utensils and equipment safely.

Cleaning supplies and chemicals must also be handled safely. When stored incorrectly, a bottle of sanitizer might contaminate food or equipment.

Storing Utensils and Equipment

Utensils and equipment with food-contact surfaces, such as cutting boards, must be stored in ways that prevent contamination. The same is true for nonfood items such as napkins and plastic forks and knives. Follow these guidelines.



- Store utensils and equipment that touches food at least six inches (15 centimeters) off the floor.



- Store glasses and cups upside down on a clean and sanitized surface.

This keeps things from falling in them.



- Store utensils with handles up.

This keeps people from touching the food-contact surface.



Bite Size

SOME PEOPLE WONDER WHY FOOD AND SUPPLIES MUST BE STORED SIX INCHES (15 CM) OFF THE GROUND. IT'S SIMPLE: THIS KEEPS THESE THINGS AWAY FROM SPLASHES AND SPILLS. AND IT MAKES IT EASY TO CLEAN UNDER AND BEHIND THE SHELVES.



Storing Chemicals and Cleaning Supplies

Chemicals and cleaning supplies must be stored in the correct place to prevent food contamination. If not, chemicals could contaminate food. Dirty cleaning tools, such as a mop, can also be a hazard to food.



- Always store chemicals and cleaning supplies in the designated storage area.
- Ask your manager where these items should be stored.
- Store chemicals in their original containers. If chemicals are transferred to a new container, the label on the container must list the common name of the chemical.



- **NEVER** store chemicals and cleaning supplies near food. The chemicals might get on the food.
- **NEVER** store cleaning equipment near food. Dirty equipment might contaminate the food.

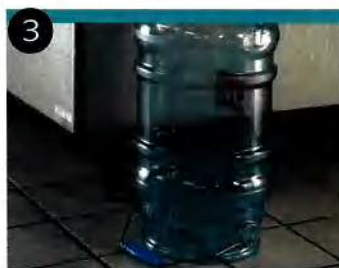
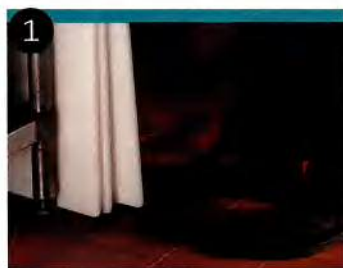


- Dispose of chemicals according to their labels.
- Always dump mop water and other dirty liquids into a designated service sink with a floor drain.
- **NEVER** dump mop water or dirty liquids into a toilet or urinal. It might contaminate the cleaning equipment and spread pathogens.

Apply Your Knowledge

What's The Problem?

Draw an **X** through the situations that can cause cross-contamination.



WHAT TO DO IF CROSS-CONTAMINATION HAPPENS

There are several things you should do if you notice that cross-contamination has happened. If you see a problem, act right away.



- Do your best to fix the problem.



- Set aside the contaminated item so no one can use it.



- Ask your manager what to do.

Apply Your Knowledge

Now What?

- 1 Frank got some desserts from the cooler and found raw meat juice on them. Write an **X** next to what he should do.

- _____ A Wipe off the meat juice and then serve them.
- _____ B Set the desserts aside and then tell his manager.

- _____ C Throw out the desserts with juice on them and then serve the remaining ones.
- _____ D Throw them all out and then tell his manager.
-

WHAT TO DO FOR PEOPLE WHO HAVE FOOD ALLERGIES

Some people are allergic to certain types of food. The tiniest speck of a food they are allergic to can make them sick or even cause death. You must keep this food away from these customers.

When a food item containing an allergen comes in contact with another food item and their proteins mix, it is called cross-contact. This can be dangerous for guests with food allergies. Food should be stored and handled in a way that prevents cross-contact. Many of the things you do already, including handwashing and practicing good personal hygiene, will also help prevent cross-contact.

The Most Common Food Allergens

The proteins that cause allergic reactions are called allergens. Many different food items can cause allergic reactions. But just eight food items cause most reactions. These are called the Big Eight.

You need to be aware of the Big Eight and the dishes on your menu that contain them. Here are the Big Eight allergens.



- Milk



- Eggs



- Soy



- Fish, such as bass, flounder, and cod



- Tree nuts, such as almonds, walnuts, and pecans



- Peanuts



- Crustacean shellfish, such as crab, lobster, and shrimp



- Wheat

Serving Customers with Food Allergies

Both servers and kitchen staff must do their parts to keep customers with food allergies safe. When a customer says that he or she has a food allergy, you need to pay attention. There are special steps to take for an allergen special order. That includes reading food labels and checking for allergens.

Servers need to be able to answer questions about food allergies. They should also know how to prevent cross-contact. Here's how to keep guests safe.



- Tell the customer how each dish is made. It is important for you to know which dishes contain Big Eight allergens. If you are not sure, ask your manager.



- Tell the customer if any “secret” ingredients contain allergens. Food should always be honestly presented.



- Suggest menu items that do not have the food allergen.



- Identify the allergen special order. Clearly indicate the order for the guest with a food allergy. Kitchen staff need this information.



- Hand deliver the allergen special order to the guest. Do this separately from other food to prevent cross-contact.

These practices also apply to other food sensitivities a customer may have, such as a gluten intolerance.

Prepping Food for Customers with Food Allergies

Make sure the allergen is not transferred from food containing the allergen to a customer's food. Even a small amount of contact can be bad.

For example, think about a guest with a shellfish allergy who orders chicken nuggets. If the chicken nuggets are cooked in a fryer that was used for shrimp, that could cause an allergic reaction. Here's how to prepare an allergen special order.



- Check recipes and ingredient labels. Make sure the allergen is not present.



- Wash, rinse, and sanitize cookware, utensils, and equipment before prepping the food. This includes food-prep surfaces.

Some operations use a separate set of utensils just for allergen special orders.



- Make sure the allergen does not touch anything for these customers, including food, beverages, utensils, equipment, and gloves.



- Wash your hands and change gloves before prepping their food.



- Use equipment assigned for prepping the allergen special order. Use separate fryers and cooking oils when frying food for customers with food allergies.

What to Do if Cross-Contact Happens

Keeping the guests safe is an important job, so keep your eyes open for cross-contact. There are certain steps you should take if food comes in contact with a food allergen.



- Do **NOT** serve the food to the customer.
- Set it aside so it cannot be used.



- Tell your manager, who will tell you what to do.

What to Do if a Customer Has a Severe Allergic Reaction

You might see a customer having a severe allergic reaction to food. If you do, there are several actions to take.



- Call the emergency number in your area.
- Tell your manager.



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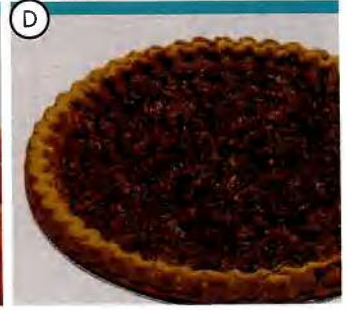
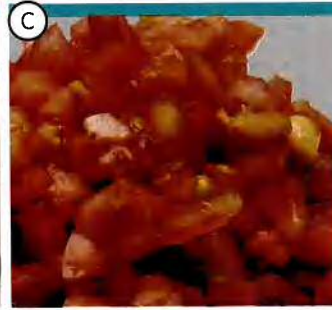
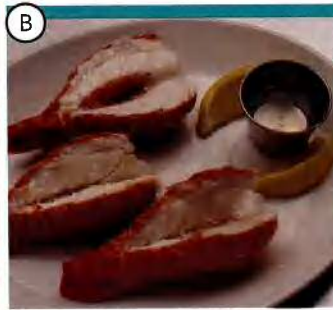
FIFTEEN MILLION AMERICANS HAVE FOOD ALLERGIES, AND THE NUMBER IS GOING UP. IN FACT, NEARLY ONE IN THIRTEEN KIDS HAVE A FOOD ALLERGY. THAT'S A LOT OF POTENTIAL CUSTOMERS.



Apply Your Knowledge

Watching for Food Allergens in the Operation

- 1 Circle the food items that contain a Big Eight allergen.



- 2 José is prepping roast beef and gravy for a customer who is allergic to milk. He doesn't know whether the gravy in the pot is made with milk or water. Write an X next to what he should do.

- _____ A Reheat the gravy to 212°F (100°C). _____ C Stop and ask his manager.
_____ B Serve the beef with less gravy. _____ D Use the gravy.

- 3 Melissa is a server. Her customer is allergic to tree nuts. In the kitchen, she notices pecans sprinkled on the salad her customer ordered. Write an X next to what she should do.

- _____ A Pick the pecans off the salad and serve it with the nuts on the side. _____ C Pick the pecans off the salad and serve it.
_____ B Serve the salad, and explain that there are nuts on it. _____ D Set the salad aside and tell her manager.

- 4 Louis is getting ready to cook an order for a guest with a soy allergy. Write an X next to what he should do.

- _____ A Cook the food to a higher temperature than normal. _____ C Apply hand sanitizer to his hands.
_____ B Get freshly cleaned and sanitized equipment. _____ D Prepare the meal normally.

Cleaning and Sanitizing



After completing this chapter, you will be able to identify:

- The difference between cleaning and sanitizing
- How and when to clean and sanitize surfaces
- How to set up and use a three-compartment sink correctly
- How to use and maintain dishwashers correctly
- How to handle garbage correctly
- Signs of pests in the operation



Incorrectly Cleaned Yogurt Machine Makes Soldiers Sick

Several soldiers and their family members got sick at a military base. The victims had eaten frozen yogurt at a popular snack bar on the base. They suffered from vomiting, diarrhea, and chills. A child was admitted to the base hospital for severe dehydration.

An investigation showed that the yogurt machine was the culprit. Food handlers at the snack bar did not break down the machine before cleaning it. This led to the outbreak. The local regulatory authority worked with the snack bar manager. Together they put procedures in place to prevent future incidents.

HOW AND WHEN TO CLEAN AND SANITIZE

Cleaning and sanitizing are two different things. Cleaning removes food and other dirt from a surface. Sanitizing reduces pathogens on a surface to safe levels.

The most important reason to clean and sanitize is to prevent the spread of pathogens to food. It also helps control pests such as insects and rodents.

Surfaces to Clean and Sanitize

Not all surfaces are handled the same way. Some only need to be cleaned. Others must be cleaned and then sanitized.



All surfaces must be cleaned and rinsed. Examples include:

- Walls
- Floors
- Storage shelves
- Garbage containers

This prevents dust, dirt, and food residue from building up.



Any surface that touches food must be cleaned and sanitized. Examples include:

- Pans
- Knives
- Cutting boards



If you notice worn or cracked equipment, set it aside and report it to your manager. This equipment is not easy to clean or sanitize. It also may hold pathogens.



Bite Size

SANITIZING IS DONE TO REDUCE THE NUMBER OF PATHOGENS ON SURFACES. THIS IS IMPORTANT BECAUSE SOME PATHOGENS CAN REPRODUCE VERY QUICKLY. IN FACT, SOME BACTERIA CAN DOUBLE THEIR NUMBERS EVERY 20 MINUTES. A SINGLE CELL CAN BECOME MORE THAN ONE BILLION IN JUST TEN HOURS.



How to Clean and Sanitize Surfaces

The procedure below shows you how to clean and sanitize. Be sure to avoid contamination when cleaning. For example, do not allow spray cleaner to contaminate food. Always use cleaners and sanitizers according to manufacturers' directions and your company policy.



Scrape or remove food from the surface.



Wash the surface.



Rinse the surface.



Sanitize the surface.



Allow the surface to air-dry.

Cleaning and Sanitizing Stationary Equipment

Cleaning stationary equipment, such as a slicer, is similar to cleaning other surfaces. Talk to your manager about how to clean specific equipment you might use. Follow these steps when cleaning and sanitizing stationary equipment.



- Unplug the equipment.
- Take off the parts that can be removed. Wash, rinse, and sanitize them by hand. You can also run them through the dishwasher.



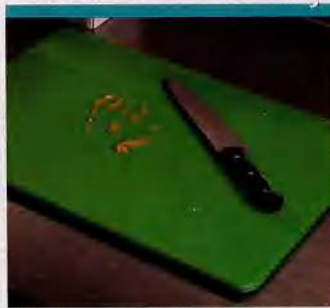
- Scrape or remove food from the equipment surfaces.
- Wash, rinse, and sanitize the equipment surfaces.
- Let the surfaces air-dry. Then put the equipment back together.

When To Clean and Sanitize

All food-contact surfaces need to be cleaned and sanitized at these times.



- After you're done using them



- Any time you're interrupted during a task and the surfaces could have been contaminated



- Before you start working with a different type of food



- After four hours if the items have been in constant use

How to Make Sure Sanitizers Are Effective

You must make sure the sanitizer you use is effective. Whether you are using sanitizer on surfaces or during dishwashing, the steps are the same. Ask your manager how to complete these steps.



- Make sure the water is the correct temperature.



- Make sure you have used the correct amount of sanitizer.
- Use a test kit to check the sanitizer's strength.



- Make sure you leave the items being sanitized in contact with the sanitizer for the correct amount of time. This will reduce pathogens to safe levels.



- When wiping or spraying sanitizer on surfaces such as prep tables, allow the sanitizer to air-dry on the surface.

- 1 Circle the item that needs to be both cleaned and sanitized.



- 2 Put the steps for cleaning and sanitizing in the correct order by placing the number of each step in the space provided.
- _____ A Sanitize the surface.
 _____ B Wash the surface.
 _____ C Allow the surface to air-dry.
 _____ D Rinse the surface.
 _____ E Scrape or remove food from the surface.
- 3 Write an X next to each situation that requires the food handler to clean and sanitize the item being used.
- _____ A Jorge has used the same knife to dice onions for an hour.
 _____ B Bob finishes trimming a roast and wants to use the same cutting board to fillet fish.
 _____ C Shelly walks away to talk to her manager and then returns to chopping lettuce.
 _____ D Maria has been slicing cheese on the same slicer from 8:00 a.m. to 12:00 p.m.

- 4 Write an X next to the first step when cleaning stationary equipment.
- _____ A Remove the detachable parts.
 _____ B Sanitize the equipment.
 _____ C Unplug the equipment.
 _____ D Remove food from the surfaces.
- 5 Write an X next to the actions that prevent a sanitizer from working well.
- _____ A Making the sanitizer temperature too high
 _____ B Putting extra sanitizer in the solution
 _____ C Letting items make contact with the sanitizer solution
 _____ D Testing the sanitizer strength with a test kit

HOW TO KEEP FOOD SAFE THROUGH DISHWASHING

There are different ways to clean and sanitize things. A dishwashing machine is used for small items. Tableware and utensils are examples. Big items usually go in a three-compartment sink. This includes items such as pots and pans.

Whichever method you use, you must follow specific practices so items are cleaned and sanitized correctly.

Setting Up a Three-Compartment Sink

Start by cleaning and sanitizing each sink and all work surfaces. Next set up each sink following these steps.



Sink 1

- Fill with water at least 110°F (43°C).
- Add detergent. Ask your manager how to do this.



Sink 2

- Fill with water. Leave the sink empty if you spray-rinse items.



Sink 3

- Fill with water.
- Add the correct amount of sanitizer. Ask your manager how to do this.
- Check the strength of the sanitizer with a test kit.

Using a Three-Compartment Sink

Follow these steps to clean and sanitize items in a three-compartment sink.

1



Rinse, scrape, or soak the items before washing them.

2



Wash the items in the first sink.

- Use a brush, cloth, or nylon scrub pad to loosen dirt.
- Change the water and detergent when the suds are gone or the water is dirty.

3



Rinse the items in the second sink.

- Dip them in the water or spray-rinse them.
- Remove any food or detergent.
- Change the water when it becomes dirty or full of suds.

4



Sanitize the items in the third sink.

- Soak them in the sanitizer solution for the correct length of time.
- **NEVER** rinse items after sanitizing them. This could contaminate the surfaces.

5



Air-dry the items.

- Place them upside down so they will drain.
- Do **NOT** wipe them dry.

Washing Items in a Dishwasher

Use dishwashers according to manufacturers' and company directions. You should also follow the guidelines below.



- Scrape, rinse, or soak items before washing.
- Presoak items with dried-on food.



- **NEVER** overload the dish racks.
- Use the correct rack for the items you are washing.
- Load racks so the water spray will reach all surfaces.



- As each rack comes out of the machine, check for dirty items.
- Rewash dirty items.



- **NEVER** use a towel to dry items.
- Air-dry all items.



- Frequently check water temperature, pressure, and sanitizer levels. Ask your manager how to do this for the type of machine you are using.
- Tell your manager if either one is not correct.
- Change the water when necessary.

SPOTTING PESTS

Pests carry pathogens that can make people sick. Insect parts can even be a source of physical contamination. That's why it is important to look for signs that pests are in the operation. Tell your manager if you spot these signs.



• Droppings



• Nests



• Damage to products, packaging, and the facility

Apply Your Knowledge

Pest Danger

1 Write an **X** next to the main risk pests pose in the operation.

- _____ A Cross-contact
 - _____ B Chemical contamination
 - _____ C Temperature abuse
 - _____ D Biological contamination
-

HANDLING GARBAGE

Garbage can contaminate food and equipment if it's not handled safely. It can also create odors and attract pests. Here's how you should handle it.



- Remove garbage from prep areas as quickly as possible.
- Be careful not to contaminate food or surfaces when removing garbage.



- Do **NOT** clean garbage containers near prep or food-storage areas.
- Clean the inside and outside of garbage containers often.



- Close the lids on outdoor containers.
- Keep indoor containers covered when they are not in use.

Apply Your Knowledge

That's Just Garbage

- 1 Draw an X through each situation that is unsafe.

A



B



SPOTTING PESTS

Pests carry pathogens that can make people sick. Insect parts can even be a source of physical contamination. That's why it is important to look for signs that pests are in the operation. Tell your manager if you spot these signs.



• Droppings



• Nests



• Damage to products, packaging, and the facility

Apply Your Knowledge

Pest Danger

1 Write an **X** next to the main risk pests pose in the operation.

- _____ A Cross-contact
 - _____ B Chemical contamination
 - _____ C Temperature abuse
 - _____ D Biological contamination
-

1-2 What Do You Think?

- ① A. Leaving the chicken breasts on a table to thaw will let the food stay too long at temperatures good for pathogen growth.
- ② B. Sneezing on a salad could transfer pathogens from your mouth to the food.
- ③ C. Pathogens from the chicken could be transferred to the tomatoes.
- ④ D. Pathogens could be transferred to food because the plate was not cleaned and sanitized correctly.

2-4 Check Your Handwashing Savvy

- ① A, B, D
- ② B, C, E, F
- ③ A, D, F, H

2-5 Which Sink Is It?

- ① A This is a safe practice.
B **X**. Never use a prep sink to wash your hands. Use only a designated handwashing sink.

2-7 Keeping It Safe

- ① B, C. Alicia should have changed gloves when they got dirty. She also should have changed them after handling the raw hamburger and before handling the lettuce. In both cases, she would need to wash her hands before putting on the new gloves.
- ② B, C, D. You should never put the same gloves back on. Also do not wear false nails, and keep all infected cuts—no matter how small—bandaged and covered with a glove or a finger cot that will prevent fluid from leaking out.

2-8 It's What You Wear

- Ⓐ **X**. Never wear dirty chef coats or uniforms.
- Ⓑ **X**. Never wear nail polish.
- Ⓒ This is a safe practice.
- Ⓓ **X**. Remove jewelry from hands and arms before prepping food or when working in or around prep areas. Servers may be able to wear jewelry if allowed by management or business owners.
- Ⓔ **X**. Remove and store aprons when you leave prep areas.
- Ⓕ This is a safe practice.

- Ⓖ **X**. Always wear a clean hat or other hair covering when working in areas for cleaning utensils and equipment.
- Ⓗ **X**. Never wear dirty chef coats or uniforms.

2-10 Watch for Trouble

- Ⓐ **X**. Never chew gum in service areas.
- Ⓑ **X**. Touching your hair, face, or body while prepping food could cause contamination.
- Ⓒ This is a safe practice. The employee is in a designated area.
- Ⓓ This is a safe practice because the employees are smoking outside the operation. However they must wash their hands before returning to work.

2-10 Report That Illness

A, B, C, E

3-3 Which Food Needs Control?

2, 4, 5, 6, 7

3-3 Stay in Control (of Time and Temperature)

- ① C
- ② C
- ③ C
- ④ D

3-7 Thaw It, Hold It, Prep It

- ① A. This label does not include the date by which the food must be sold, eaten, or thrown out.
- ② A. The cottage cheese should be stored at 41°F (5°C) or lower
- ③ A. Never thaw food by leaving it on a counter.
- ④ A. Prep TCS food, such as these sandwiches, in small batches.

3-7 Does It Stay or Does It Go?

- Ⓐ R. The chicken's temperature must be 41°F (5°C) or lower.
- Ⓑ R. Fish that is slimy, sticky, or dry must be rejected.
- Ⓒ R. Frozen food with large ice crystals on the product or packaging must be rejected.

- D A. This item is acceptable.
- E A. This item is acceptable.
- F R. The beef's temperature must be 135°F (57°C) or higher.

3-11 What's the Right Temperature?

- 1 B
- 2 B
- 3 B
- 4 A
- 5 A
- 6 B

4-5 Spot the Cross-Contamination

- A This is a safe practice.
- B **X**. Store food only in designated food-storage areas.
- C **X**. Raw and ready-to-eat food should be stored separately. If they must be stored together, place ready-to-eat food above raw food. Otherwise the raw food might drip or spill on the ready-to-eat food.
- D **X**. Never use the same utensils when handling ready-to-eat food and raw meat, poultry, or seafood.
- E This is a safe practice.
- F **X**. Don't touch the food-contact surface of a glass. Hold it by the middle, bottom, or stem.
- G **X**. Scoop ice only with an ice scoop or tongs.
- H **X**. Provide separate utensils for each item.

4-5 Prep That Food Safely

- A **X**. This is unsafe. Bob should have cleaned and sanitized the knife and cutting board between uses.
- B This is a safe practice.
- C This is a safe practice.

4-7 What's The Problem?

- 1 **X**. Store equipment that touches food, such as cutting boards, at least six inches (15 centimeters) off the floor.
- 2 **X**. Store cups upside down on a clean and sanitized surface.
- 3 **X**. Store equipment that touches food, such as ice buckets, at least six inches (15 centimeters) off the floor.

- 4 **X**. Store utensils with handles up.
- 5 **X**. Chemicals and cleaning supplies should not be stored near food.
- 6 **X**. Never store cleaning equipment near food.

4-8 Now What?

- 1 B

4-13 Watching for Food Allergens in the Operation

- 1 A. Cottage cheese contains milk, which is a Big Eight allergen. B. Lobster is a crustacean shellfish, which is a Big Eight allergen. D. Pecan pie contains pecans, which are tree nuts. They are Big Eight allergens.
- 2 C
- 3 D
- 4 B

5-5 Keeping It Clean

- 1 B
- 2 4, 2, 5, 3, 1
- 3 B, C, D
- 4 C
- 5 A, B. Sanitizers need the correct water temperature and the correct amount of sanitizer to work well. You also must leave the items being sanitized in the sanitizer for the correct amount of time.

5-9 Wash Those Dishes

- 1 D
- 2 5, 3, 4, 1, 2
- 3 A **X**. Never overload dish racks.
B **X**. Never use a towel to dry items.
C This is a safe practice.
D **X**. Scrape, rinse, or soak items before washing.

5-10 That's Just Garbage

- 1 A This is a safe practice.
B **X**. Remove garbage from prep areas as quickly as possible. Don't let it stack up.

5-11 Pest Danger

- 1 D. Pests carry pathogens that can make people sick.