

SAFE FOOD

INSTRUCTION

Serving the hospitality industry since 2010

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A Food Borne Illness is a disease that is transmitted to people by food.

An illness is considered an outbreak when two or more people have the same symptoms after eating the same food.

Unsafe food is the result of Biological, Chemical, and Physical contaminants.

TCS food (Time Temperature Control for Safety), are foods that can become contaminated biologically. These foods, when kept in the **Temperature Danger Zone**, (41 to 135 degrees Fahrenheit) four hours or longer, will grow biological pathogens.

Ready-to-eat food is food that can be eaten without further:

Preparation, Washing, or Cooking

Ready-to-eat food includes:

Cooked food, Washed fruit and vegetables, Deli meat, Bakery items,

Sugar, spices, and seasonings

High Risk Populations are people groups that easily become sick, when food has stayed too long in the Temperature Danger. **High**

Risk Populations are people with compromised immune systems, pre-school age children: and senior citizens.

The CDC says there are five risk factors for foodborne illness:

Purchasing food from unsafe sources

Failing to cook food correctly

Holding food at incorrect temperatures

Using contaminated equipment

Practicing poor personal hygiene

Food becomes unsafe when we have:

Time-temperature abuse:

When food has stayed too long at temperatures good for pathogen growth

Food has been time-temperature abused when:

It has not been held or stored at correct temperatures

It is not cooked or reheated enough to kill pathogens

It is not cooled correctly

Cross-contamination:

When pathogens are transferred from one surface or food to another

Cross-contamination can cause a foodborne illness when:

Contaminated ingredients are added to food that receives no further cooking

Ready-to-eat food touches contaminated surfaces

A food handler touches contaminated food and then touches ready-to-eat food

Contaminated cleaning cloths touch

food-contact surfaces

Poor personal hygiene can cause a foodborne illness when food handlers:

Fail to wash their hands correctly after using the restroom

Cough or sneeze on food

Touch or scratch wounds and then touch food

Work while sick

Poor cleaning and sanitizing:

Equipment and utensils are not washed, rinsed, and sanitized between uses

Food contact surfaces are wiped clean instead of being washed rinsed, and sanitized

Wiping cloths are not stored in a sanitizer solution between uses

Sanitizer solution was not prepared correctly

Government agencies:

The Food and Drug Administration (FDA) provides food safety guidelines, inspects imported foods.

U.S. Department of Agriculture (USDA) inspects meat and dairy products

Centers for Disease Control and Prevention (CDC) research causes and cures for illnesses

U.S. Public Health Service (PHS) Conducts research of illnesses

State and local regulatory authorities Responsible for mandating state food safety laws and providing inspection of all food service facilities.

State and local regulatory authority responsibilities include:

Inspecting operations, Enforcing regulations, Investigating complaints and illnesses, Issuing licenses and permits

Approving construction, Reviewing and approving HACCP plans

Chapter Two

FORMS OF CONTAMINATION

Contamination:

Presence of harmful substances in food

Contaminants can:

Be biological, chemical, or physical
Cause foodborne illness
Result in physical injury

Contaminants come from a variety of places:

Animals we use for food
Air, contaminated water, and dirt
Chemicals we use in our operations
Naturally occurring, such as fish bones
People

Deliberately
Accidentally

People can contaminate food when:

They don't wash their hands after using the restroom
They are in contact with a person who is sick
They sneeze or vomit onto food or food contact surfaces
They touch dirty food-contact surfaces and equipment and then touch food

Simple mistakes can cause contamination:

Allowing ready-to-eat food to touch a surface that contacted raw meat, seafood, or poultry
Storing food or cleaning products incorrectly
Failing to spot signs of pests

Microorganism: Small, living organism that can be seen only with a microscope

Pathogen: Harmful microorganism, makes people sick when eaten or produce toxins that cause illness

Toxin: Poison

Four types of pathogens can contaminate food and cause foodborne illness:

Bacteria- Cook food to proper temperature in the proper amount of time

Virus- Practice proper personal hygiene

Parasites- Purchase food from reputable approved suppliers

Fungi- Purchase your food from approved reputable suppliers

Common symptoms of foodborne illness: Diarrhea, Vomiting, Fever, Nausea, Abdominal

cramps, & Jaundice

Onset times: Depends on type of food borne illness, can range from 30 minutes to six weeks

Food handlers diagnosed with illnesses from the "Big Six" pathogens cannot work in a foodservice operation while they are sick. As the manager, you must report this to the regulatory authority. They may return to work when they have a valid doctor's note and you get permission from your regulatory.

The BIG SIX PATHOGENS

H Hepatitis A

E E-Coli

N Norovirus **Cause 90% of all foodborne illnesses**

S Salmonella Nontyphoidal

S Salmonella Typhi

S Shigella

Bacteria: Found almost everywhere, cannot be seen, smelled, or tasted, will grow rapidly if FAT TOM conditions are correct.

To prevent: Control Time and Temperature

There are six conditions needed for the growth of bacteria.

The acronym for these are FAT TOM.

Food- All pathogens need nutrients to survive. TCS foods support the growth of bacteria.

Acidity- Food that is PH neutral is the best at supporting bacterial growth.

Temperature- Food held above or below the temperature danger zone prevents bacterial growth.

Time - The more time food spends in the temperature danger zone, the greater chance of growing bacteria.

Oxygen- Some bacteria need oxygen to grow while others grow when no oxygen is present.

Moisture- The more free moisture in food the better it supports the growth of bacteria.

You can control:

Temperature- keep TCS food out of the temperature danger zone

Time- limit how long TCS food spends in the temperature danger zone

The FDA has identified four types of bacteria that cause severe illness and are highly contagious:

Salmonella Typhi
Nontyphoidal *Salmonella*
Shigella spp.
Shiga toxin-producing *Escherichia coli*

Viruses: Carried by human beings and animals, require a living host to grow, do not grow in food,

Can be transferred through food and remain infectious in food.

Found in/on food, water, or any contaminated surface

Typically occur through fecal-oral route

Not destroyed by normal cooking temperatures

Good personal hygiene must be practiced when handling food and food-contact surfaces

Quick removal and cleanup of vomit is important

To prevent, practice good personal hygiene

The FDA has identified two viruses that are highly contagious and can cause severe illness:

Hepatitis A

Norovirus

Parasites:

Require a host to live and reproduce, found in seafood, wild game, and food processed with contaminated water, such as produce

Purchase food from approved, reputable suppliers

Cook food to required minimum internal temperatures

Fish that will be served raw or undercooked, must be frozen correctly by the manufacturer

To prevent, purchase food from approved reputable suppliers.

Fungi- Yeasts, molds, and mushrooms:

Some molds and mushrooms produce toxins

Throw out moldy food, unless mold is a natural part of the food

Purchase mushrooms from approved, reputable suppliers

Biological Toxins

Naturally occur in certain plants, mushrooms, and seafood

Seafood toxins:

Produced by pathogens found on certain fish.

Tuna, bonito, mahimahi

Histamine produced when fish is time-temperature abused

Occur in certain fish that eat smaller fish that have consumed the toxin

Barracuda, snapper, grouper, amberjack

Ciguatera toxin is an example

Illness:

Symptoms and onset times vary with illness People will experience illness within minutes

General symptoms:

Diarrhea or vomiting, Neurological symptoms, Tingling in extremities, Reversal of hot and cold sensations, Flushing of the face and/or hives, Difficulty breathing, and, Heart palpitations

Chemical Contaminants are found in:

Certain types of kitchenware and equipment (items made from pewter, copper, zinc, and some types of painted pottery)

Cleaners, sanitizers, polishes, machine lubricants, and pesticides

Deodorizers, first-aid products, and

health and beauty products (hand lotions, hairsprays, etc.)

Symptoms:

Vary depending on chemical consumed

Most illnesses occur within minutes

Vomiting and diarrhea are typical

To prevent:

- Only use chemicals approved for use in foodservice operations
- Purchase chemicals from approved, reputable suppliers
- Store chemicals away from prep areas, food-storage areas, and service areas.
- Chemicals must NEVER be stored above food or food-contact surfaces
- Use chemicals for their intended use and follow manufacturer's directions

Physical Contaminates

Common objects that get into food.

Metal shavings from cans, Wood, Fingernails, Staples, Bandages, Glass,
Jewelry, Dirt and Naturally occurring objects such as fruit pits and bones

Symptoms:

Mild to fatal injuries are possible

- Cuts, dental damage, and choking
- Bleeding and pain

Prevention:

- Purchase food from approved, reputable suppliers
- Closely inspect food received
- Take steps to prevent physical contamination, including practicing good personal hygiene

There are groups who may attempt to contaminate food:

- Terrorists or activists
- Disgruntled current or former staff
- Vendors
- Competitors

FDA Food Safety Defense tool called A.L.E.R.T.

Designed to prevent the intentional, malicious contamination of your food.

Assure	Make sure products received are from safe sources
Look	Monitor the security of products in the facility
Employees	Know who is in your facility
Reports	Keep information related to food defense accessible
Threat	Develop a plan for responding to suspicious activity or a threat to the operation

Responding to a Foodborne-Illness Outbreak**Gather information**

- Ask the person for general contact information
- Ask the person to identify the food eaten
- Ask for a description of symptoms
- Ask when the person first got sick

Notify authorities

- Contact the local regulatory authority if an outbreak is suspected

Segregate product

- Set the suspected product aside if any remains
- Include a label with "Do Not Use" and "Do Not Discard" on it

Document the information

- Log information about suspected product
- Include a product description, product date, lot number, sell-by date, and pack size

Identify staff

- Keep a list of food handlers scheduled at time of incident
- Interview staff immediately

Cooperate with authorities

- Provide appropriate documentation

Review procedures

- Determine if standards are being met
- Identify if standards are not working

Food allergen:

A protein in a food or ingredient some people are sensitive to
These proteins occur naturally
When an enough of an allergen is eaten, an allergic reaction can occur

Allergy symptoms:

Nausea, Wheezing or shortness of breath, Hives, or itchy rashes
Swelling in various parts of the body, including the face, eyes, hands, or feet, Vomiting and/or diarrhea, Abdominal pain

Allergic reactions:

Symptoms can become serious quickly
A severe reaction, called anaphylaxis, can lead to death.

While more than 160 food items can cause allergic reactions, just eight of these account for 90 percent of all reactions in the United States. These eight food items are known as the Big Eight

The Big Eight food allergens:

Milk, Eggs, Soy, Fish, Tree nuts, such as almonds, walnuts, and pecans, Peanuts
Crustacean shellfish, including lobster, shrimp, and crab, and Wheat

To prevent illness from an allergen:**Service staff:**

Describe menu items to guests,
identify any allergens in the item
Suggest menu items without the allergen
Clearly identify the guest's order for
kitchen and service staff
Deliver food separately to prevent
cross-contact

Kitchen staff:

Avoid cross-contact
Do NOT cook different types of food in the same fryer oil
Do NOT put food on surfaces that have touched allergens
Check recipes and ingredient labels
Wash, rinse, and sanitize cookware, utensils, and equipment before preparing an allergen special order
Make sure the allergen doesn't touch anything for customers with food allergies (food, beverages, utensils, etc.)
Wash your hands and change gloves before prepping food
Label food packaged on-site for retail use

Situations that can lead to contaminating food:

Have a foodborne illness, Have wounds or boils that contain a pathogen, Sneeze or cough, Have contact with a person who is sick, Use the restroom and do not wash their hands, Have symptoms such as diarrhea, vomiting, or jaundice—a yellowing of the eyes or skin

If you touch anything other than food, you can contaminate food. Example are, scratching the scalp, running fingers through hair, wiping or touching the nose, rubbing an ear, touching a pimple or infected wound, wearing a dirty uniform, etc.

Where to wash hands:

Wash hands in a sink designated for handwashing.

NEVER wash hands in sinks designated for food prep or dishwashing or sinks used for discarding waste water.

How to wash hands (should take at least 20 seconds):

Wet hands and arms. Use running water as hot as you can comfortably stand. (100 degrees)

Apply soap. Apply enough to build up a good lather. Scrub hands and arms vigorously. Scrub them for 10 to 15 seconds.

Clean under fingernails and between fingers.

Rinse hands and arms thoroughly. Use running warm water. Dry hands and arms. Use a single-use paper towel or hand dryer. Consider using a paper towel to turn off the faucet and open the restroom door.

If food handlers have touched food or food-contact surfaces with unclean hands:

Dispose of the contaminated food.

Clean potentially contaminated equipment and utensils.

Retrain or coach food handlers who are not following proper handwashing procedures if necessary.

Hand antiseptics:

Liquids or gels used to lower the number of pathogens on skin

Must comply with the CFR and FDA standards

Should be used only *after* handwashing

Must NEVER be used in place of handwashing

Should be allowed to dry before touching food or equipment

Touching anything else that may contaminate hands

Requirements for food handlers:

Long fingernails may be hard to keep clean and can rip gloves. They can also chip and become physical contaminants.

Fingernails should be kept trimmed and filed. This will allow nails to be cleaned easily. Ragged nails can be hard to keep clean. They may also hold pathogens and break off—becoming physical contaminants.

Do not wear false fingernails. They can be hard to keep clean. False fingernails also can break off into food. Some local regulatory authorities allow false nails if single-use gloves are worn.

Do not wear nail polish. It can disguise dirt under nails and may flake off into food. Some regulatory authorities allow polished nails if single-use gloves are worn.

Infected wounds or cuts: Contain pus must be covered to prevent pathogens from contaminating food and food-contact surfaces

Single-use gloves: Should be used when handling ready-to-eat food and must fit correctly

Only Purchase gloves:

Approved for foodservice should be purchased.

Buy only single-use gloves for handling food. **NEVER** wash and reuse gloves.

Make sure you provide different glove sizes.

Some food handlers and customers may be sensitive to latex. Consider providing gloves made from other materials.

Food Handlers Must use hair restraints:

Wear a clean hat or other hair restraint when in a food-prep area.

Do NOT wear hair accessories that could become physical Contaminants. Do not wears false eyelashes. Must wear beard restraints to cover facial hair.

Food handlers must:

Wear clean clothing daily. Change soiled uniforms, including aprons, as needed to prevent contamination. If possible, change into work clothes at work. Store street clothing and personal belongings in designated areas. This includes items such as backpacks, jackets, electronic devices, keys, and personal medications. Make sure these items are stored in a way that does not contaminate food, food-contact surfaces, and linens. Keep dirty clothing that is stored in the operation away from food and prep areas. You can do this by placing dirty clothes in nonabsorbent containers or washable laundry bags. This includes dirty aprons, chef coats, and other uniforms. Remove aprons when leaving prep areas. **NEVER** wipe your hands on your apron.

Food Handlers must not wear jewelry:

Remove jewelry from hands and arms before prepping food or when working around prep areas. Food handlers cannot wear any rings, except for a plain band; bracelets, including medical bracelets; or watches.

Your company may also require you to remove other types of jewelry. This may include earrings, necklaces, and facial jewelry. These items can fall off and become a physical contaminant. Ornate jewelry can be difficult to clean and can hold pathogens. Servers may wear jewelry if allowed by company policy.

Food Handler may not eat drink, smoke, chew tobacco, or gum:

Small droplets of saliva can contain thousands of pathogens. In the process of eating, drinking, smoking, or chewing gum or tobacco, saliva can be transferred to hands or directly to food being handled. That's why food handlers must not eat, drink, smoke, or chew gum or tobacco when performing the tasks indicated in the slide.

Employees can drink from a covered container if they handle the container carefully to prevent contamination of their hands, the container, and exposed food, utensils, and equipment. A correctly covered container will include a lid with a straw or a sip top lid.

Reporting Illnesses:

You must tell your staff to let you know when they are sick. This includes newly hired staff who have not started working yet. Your regulatory authority may ask for proof that you have done this, which can be provided in the ways shown on the slide.

Staff must report illnesses:

Before they come to work.

If they get sick while working

If they—or someone they live with—has been diagnosed with an illness from one of these pathogens:

Norovirus

Hepatitis A

Shigella spp.

Shiga-toxin producing *E. coli* (STEC)

Salmonella Typhi

Nontyphoidal *Salmonella*

You may need to:

Restrict them from working with exposed food, utensils, and equipment.

Exclude them from coming into the operation. This is especially important if they have these symptoms:

Vomiting

Diarrhea

Jaundice (a yellowing of the skin or eyes)

Sore throat with fever

Infected wound or boil that is open or draining (unless properly covered)

The flow of food:

The path that food takes through your operation

Preventing Cross-Contamination

Use separate equipment for each type of food

Clean and sanitize all work surfaces, equipment, and utensils after each task, prepare raw meat, fish, and poultry at different times than ready-to-eat food (when using the same prep table)

Buy food items that don't require much prepping or handling

Time-temperature control:

Food held in the range of 41°F and 135°F has been time-temperature abused

Food has been time-temperature abused whenever it is cooked, held, or reheated to incorrect temperatures.

Avoid time-temperature abuse:

Monitor time and temperature

Make sure the correct kinds of thermometers are available.

Regularly record temperatures and the times they are taken

Minimize the time that food spends in the temperature danger zone

Take corrective actions if time-temperature standards are not met

When using thermometers:

Wash, rinse, sanitize, and air-dry thermometers before and after using them

Calibrate After they have been bumped or dropped, After they have been exposed to extreme temperature changes, Before deliveries arrive, Before each shift.

Make sure thermometers used to measure the temperature of food are accurate to +/- 2°F or +/- 1°C

Only use glass thermometers if they are enclosed in a shatterproof casing

When using thermometers:

Insert the thermometer stem or probe into thickest part of the product (usually the center)

Take more than one reading in different spots

Wait for the thermometer reading to steady before recording the temperature

To calibrate a thermometer use :

The ice-point method involves adjusting the thermometer to the temperature at which water freezes (32°F [0°C]).

Use crushed ice if you have it. Add tap water until the container is full. Stir the mixture well.

Make sure the sensing area is submerged. Do not let the stem or probe touch the container. Wait 30 seconds or until the indicator stops moving.

To calibrate a bimetallic stemmed thermometer, adjust it by holding the calibration nut with a wrench or other tool. To calibrate a thermocouple or thermistor, follow the manufacturer's directions.

Chapter Five

PURCHASING AND RECEIVING

Purchase food from approved, reputable suppliers: They have been inspected and meet all applicable local, state, and federal laws

Arrange deliveries so they arrive when staff has enough time to do inspections and your food can be correctly received
Receiving principles.

As much as possible have the same people check in all deliveries making sure to train them to follow food safety guidelines.

Key drop deliveries are allowed only when food is stored in the correct storage locations by the delivery people. When you arrive, all food must be inspected to insure it is from an approved source, was placed in the correct storage locations, and is not contaminated.

Rejecting deliveries:

- Separate rejected items from accepted items
- Tell the delivery person what is wrong with the item
- Get a signed adjustment or credit slip before giving the rejected item to the delivery person
- Log the incident on the invoice or receiving document

Recalls:

- Identify the recalled food items
- Remove the item from inventory, and place it in a secure and appropriate location
- Store the item separately from food, utensils, equipment, linens, and single-use items
- Label the item in a way that will prevent it from being placed back in inventory
- Inform staff not to use the product
- Refer to the vendor's notification or recall notice to determine what to do with the item

Cold TCS food: should be received at 41°F (5°C) or lower, unless otherwise specified

The exceptions

Live shellfish: Receive oysters, mussels, clams, and scallops at an air temperature of 45°F (7°C) and an internal temperature no greater than 50°F (10°C)

Once received, the shellfish must be cooled to 41°F (5°C) or lower in four hours

Shucked shellfish: Receive at 45°F (7°C) or lower

Cool the shellfish to 41°F (5°C) or lower in four hours

Shell eggs: Receive at an air temperature of 45°F (7°C) or lower

Milk: Receive at 45°F (7°C) or lower, Cool the milk to 41°F (5°C) or lower in four hours

Hot TCS food: Receive at 135°F (57°C) or higher

Frozen food: Receive frozen solid

Reject frozen food if there is evidence of thawing and refreezing.

Reject packaged items with:

- Tears, holes, or punctures in packaging; reject cans with swollen ends, rust, or dents
- Bloating or leaking (ROP food)
- Broken cartons or seals
- Dirty and discolored packaging
- Leaks, dampness, or water stains
- Signs of pests or pest damage
- Expired use-by/expiration dates
- Evidence of tampering

Required documents for certain fish:

Shellfish must be received with shellstock identification tags

Tags indicate when and where the shellfish were harvested

Must be kept on file for 90 days from the date the last shellfish was used from its delivery container. When the last fish is taken from the container, write this date on tag. Keep your tags 90 days after this date.

Fish that will be eaten raw or partially cooked

Documentation must show the fish was correctly frozen before being received

Keep documents for 90 days from the sale of the fish

Farm raised fish

Must have documentation stating the fish was raised to FDA standards

Keep documents for 90 days from the sale of the fish

Assessing food quality:

Appearance: Reject food that is moldy or has an abnormal color

Texture: Reject meat, fish, or poultry if it is slimy, sticky, or dry. If it has soft flesh that leaves an imprint when touched

Odor: Reject food with an abnormal or unpleasant odor

Labeling food for use on-site:

Labeling food is important for many reasons. Illnesses have occurred when unlabeled chemicals were mistaken for food such as flour, sugar, and baking powder. Customers have also suffered allergic reactions when food was unknowingly prepped with a food allergen that was not labeled.

It is not necessary to label food if clearly it will not be mistaken for another item. The food must be easily identified by sight

Labeling food packaged on-site for retail sale must contain:

Food packaged in the operation that is being sold to customers for use at home must be labeled.

The label must include:

- Common name of the food or a statement clearly identifying it

- Quantity of the food

- If the item contains two or more ingredients, list of the ingredients and sub ingredients in descending order by weight

- List of artificial colors and flavors and chemical preservatives

- Name and place of business of the manufacturer, packer, or distributor

- Source of each major food allergen contained in the food

Naming the source of each major food allergen contained in the food is not necessary if the source is already part of the common name of the ingredient.

These labeling requirements do not apply to customers' leftover food items placed in carry-out containers.

Date marking:

Ready-to-eat TCS food must be marked if held for longer than 24 hours. Date mark must indicate when the food must be sold, eaten, or thrown out. When combining food in a dish with different use-by dates, the discard date of the dish should be based on the earliest prepared food

Temperatures:

- Make sure storage units have at least one air temperature measuring device. It must be accurate to +/- 3°F

- Place the device in the warmest part of refrigerated units, and the coldest part of hot-holding units

- Do NOT overload coolers or freezers, prevents airflow, makes unit work harder

- Frequent opening of the cooler lets warm air inside, which can affect food safety

- Use open shelving lining shelving restricts circulation

- Monitor food temperatures regularly. Randomly sample food temperatures

Rotate food to use the oldest inventory first:

One way to rotate products is to follow FIFO. Identify the food item's use-by or expiration date. Store items with the earliest use-by or expiration dates in front of items with later dates. Once shelved, use those items stored in front first.

Throw out food that has passed its manufacturer's use-by or expiration date

Preventing cross-contamination:

- Store all items in designated storage areas. Store items away from walls and at least six inches (15 centimeters) off the floor. Store single-use items (e.g., sleeve of single-use cups, single-use gloves) in original packaging. Store food in containers intended for food. Use containers that are durable, leak proof, and able to be sealed or covered. NEVER use empty food containers to store chemicals; NEVER put food in empty. Keep all storage areas clean and dry. Clean up spills and leaks immediately

- Clean dollies, carts, transporters, and trays often. Store food in containers that have been cleaned and sanitized. Store dirty linens in clean, nonabsorbent containers or washable laundry bags. Wrap or cover food. Store raw meat, poultry, and seafood separately from ready-to-eat food. If this is not possible, store ready-to-eat food above raw meat, poultry, and seafood. This will prevent juices from raw food from dripping onto ready-to-eat food

If you have only one cooler, Store food items 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 storage order is based on the minimum internal cooking temperature of each food

Discard food that has become unsafe:

Expired, damaged, spoiled, or incorrectly stored food.

Food missing a date mark.

Ready-to-eat TCS food that has exceeded its date mark.

Food that has exceeded time/temperature requirements.

If food will be returned to the vendor:

Store the food away from other food and equipment.

Label the food so it will not be used.

When prepping food:

Only remove as much food from the cooler as you can prep in a short period of time
Return prepped food to the cooler or cook it as quickly as possible
Make sure workstations, cutting boards, and utensils are clean and sanitized

Food and color additives- Only use additives approved by your local regulatory authority

NEVER use more additives than are allowed by law
NEVER use additives to alter the appearance of food
Do NOT sell produce treated with sulfites before it was received in the operation
NEVER add sulfites to produce that will be eaten raw
Food not presented honestly must be thrown out

Four methods for thawing food:

Thaw food in a cooler, keeping its temperature at 41°F (5°C) or lower
Submerge food 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 four hours
Thaw food in a microwave, only if cooked immediately after thawing
Thaw as part of the cooking process

Produce:

Make sure produce does not touch surfaces exposed to raw meat, seafood, or poultry. Wash it thoroughly under running water before cutting, cooking, combining with other ingredients
Produce can be washed in water containing ozone to sanitize it, but check with your local regulatory authority
When soaking, or storing produce in standing water or an ice-water slurry, do NOT mix different items, multiple batches of the same item
Refrigerate and hold sliced melons, cut tomatoes, and cut leafy greens at 41°F (5°C) or lower
Do NOT serve raw seed sprouts if primarily serving a high-risk population

Eggs and egg mixtures:

Handle pooled eggs (if allowed) with care, cook promptly after mixing or store at 41°F (5°C) or lower clean and sanitize containers between batches
Consider using pasteurized shell eggs or egg products when prepping dishes that need little or no cooking

Ice:

NEVER use ice as an ingredient if it was used to keep food cold
Transfer ice using clean and sanitized containers and scoops
NEVER hold ice in containers that held chemicals or raw meat, seafood, or poultry
Store ice scoops outside ice machines in a clean, protected location
NEVER use a glass to scoop ice or touch ice with hands

You will need a variance when prepping food in certain ways.

A variance is a document issued by your regulatory authority that allows a regulatory requirement to be waived or changed.

When applying for a variance, your regulatory authority may require you to submit a HACCP plan. The plan must account for any food safety risks related to the way you plan to prep the food item.

When cooking TCS food, the internal portion must:

Reach the required minimum internal temperature
Hold that temperature for a specific amount of time

When checking temperatures:

Pick a thermometer with a probe that is the correct size for the food
Check the temperature in the thickest part of the food
Take at least two readings in different locations

Minimum internal cooking temperature:**165°F (74°C) for 15 seconds**

Poultry—whole or ground chicken, turkey or duck
Stuffing made with fish, meat, or poultry
Stuffed meat, seafood, poultry, or pasta
Dishes that include previously cooked, TCS ingredients
Microwave cooking of meat, fish, poultry, and eggs.

155°F (68°C) for 15 seconds

Ground meat—beef, pork, and other meat
Injected meat—including brined ham and flavor-injected roasts
Mechanically tenderized meat
Ratites including ostrich and emu
Ground seafood—including chopped or minced seafood
Shell eggs that will be hot-held for service

145°F (63°C) for 15 seconds

Seafood—including fish, shellfish, and crustaceans
Steaks/chops of pork, beef, veal, and lamb
Commercially raised game
Shell eggs that will be served immediately

145°F (63°C) for four minutes

Roasts of pork, beef, veal, and lamb

135°F (57°C)

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

If partially cooking (Non-continuous cooking) meat, seafood, poultry, or eggs or dishes containing these items:

NEVER cook the food longer than 60 minutes during initial cooking
Cool the food immediately after initial cooking
Freeze or refrigerate the food after cooling it
Heat the food to its required minimum internal temperature before selling or serving it
Cool the food if it will not be served immediately or held for service
Your local regulatory authority will require you to have written procedures that explain how the food cooked by this process will be prepped and stored.

These procedures must be approved by the regulatory authority and describe:

How to monitor and document requirements
Which corrective actions will be taken if requirements are not met
How parcooked items will be marked after initial cooking
How parcooked food will be stored separately from ready-to-eat food

Consumer Advisories: If your menu includes raw or undercooked TCS items, you must:

Note it on the menu next to the items place a footnote at the menu bottom indicating the item is raw, undercooked, or contains raw or undercooked ingredients
Advise customers who order this food of the increased risk of foodborne illness. Post a notice in the menu. Provide this information using brochures, table tents, or signs

To properly cool your food:

As you know, pathogens grow well in the temperature danger zone. However, they grow much faster at temperatures between 125°F and 70°F (52°C and 21°C). Food must pass through this temperature range quickly to reduce this growth.

You may cool TCS food from 135°F (57°C) to 41°F (5°C) or lower within six hours.

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 two hours, it must be reheated and then cooled again.

Before cooling food, start by reducing its size:

Cut larger items into smaller pieces
Divide large containers of food into smaller containers or shallow pans

When storing food for further cooling:

Loosely cover food containers before storing them
Food can be left uncovered if protected from contamination
Storing uncovered containers above other food, especially raw seafood, meat, and poultry, will help prevent cross-contamination

Food reheated for immediate service: Can be reheated to any temperature if it was cooked and cooled correctly

Food reheated for hot-holding:

Must be reheated to an internal temperature of 165°F (74°C) for 15 seconds within two hours

Reheat commercially processed and packaged ready-to-eat food to an internal temperature of at least 135°F (57°C)

Food covers and sneeze guards:

Cover food and install sneeze guards to protect food from contaminants
Covers protect food from contamination and help maintain food temperatures

Hold TCS foods at the correct temperature:

Cold food at 41°F or colder.
Hot Food at 135°F or hotter.

Check temperatures every four hours

Food not at correct temperature must be thrown away. Check temperatures every two to leave time for corrective actions,

NEVER use hot-holding equipment to reheat food unless it's designed for it

Reheat food correctly, and then move it into a holding unit

Cold food can be held without temperature control for up to six hours if:

Your operation may want to display or hold TCS food without temperature control.
If you primarily serve a high-risk population, you cannot hold TCS food without temperature control.
If your operation displays or holds TCS food without temperature control, it must do so under certain conditions. Before using time as a method of control, check with your local regulatory authority for specific requirements.
For cold food, label the food with the time you removed it from refrigeration and the time you must throw it out. The discard time on the label must be six hours from the time you removed the food from refrigeration.
For example, if you remove potato salad from refrigeration at 3:00 p.m. to serve at a picnic, the discard time on the label should be 9:00 p.m. This equals six hours from the time you removed it from refrigeration.

Hot food can be held without temperature control for up to four hours if:

It was held at 135°F (57°C) or higher before removing it from temperature control
It has a label specifying when the item must be thrown out
It is sold, served, or thrown out within four hours

Never re-serve food returned by one customer to another.

Such as uncovered condiments, uneaten bread, or plate garnishes.

Generally, only unopened, prepackaged food in good condition can be re-served:

Condiment packets
Wrapped crackers or breadsticks

In self-service areas never allow customers to re-use dirty plates. Protect your food use sneeze guards and proper equipment to maintain temperature. Label food items and salad dressings with the name on the ladle handle. Keep raw foods separate from ready to eat foods.

When labeling bulk food in self-service areas:

Make sure the label is in plain view of the customer
Include the manufacturer or processor label provided with the food
As an alternative, provide the information using a card, sign, or other labeling method

A label is not needed for bulk unpackaged food, such as bakery products, if:

The product makes no claim regarding health or nutrient content
No laws requiring labeling exist
The food is manufactured or prepared on the premises
The food is manufactured or prepared at another regulated food operation or processing plant owned by the same person

When delivering food off-site:

Use insulated, food-grade containers designed to stop food from mixing, leaking, or spilling
Clean the inside of delivery vehicles regularly
Check internal food temperatures
Label food with a use-by date and time, and reheating and service instructions

Make sure the service site has the correct utilities

Safe water for cooking, dishwashing, and handwashing, Garbage containers stored away from food-prep, storage, and serving areas, Store raw meat, poultry, seafood, and ready-to-eat items separately

To keep vended food safe:

Check product shelf life daily, refrigerated food prepped on-site and not sold in seven days must be thrown out.
Keep TCS food at the correct temperature. Dispense TCS food in its original container. Wash and wrap fresh fruit with edible peels before putting it in the machine

Chapter Eight FOOD SAFETY MANAGEMENT SYSTEMS

Active Managerial Control is a:

Group of practices and procedures intended to prevent foodborne illness

Actively controls risks and hazards throughout the flow of food.

Having food safety programs already in place gives you the foundation for your system. The principles presented in the ServSafe program are the basis of these programs.

There are many ways to achieve Active Managerial Control:

Training programs, Manager supervision, Standard operating procedures (SOPs), and HACCP.

Steps for implementing active managerial control:

Identify and document potential risks and ways to control or eliminate them.

Monitor critical activities.

Correct improper procedures or behaviors.

Verify that policies, procedures, and corrective actions are followed.

Ensure employees are trained and retrained as needed.

Periodically assess the system to make sure it is working.

The FDA provides specific recommendations for controlling the common risk factors for foodborne illness. These are known as public health interventions. They are designed to protect public health.

Demonstration of knowledge: As a manager, you must be able to show that you know what to do to keep food safe. Becoming certified in food safety is one way to show this.

Staff health controls: Procedures must be put in place to make sure staff are practicing personal hygiene. For example, staff must know that they are required to report illnesses and illness symptoms to management.

Controlling hands as a vehicle of contamination: Controls must be put in place to prevent bare-hand contact with ready-to-eat food. This might include requiring the use of tongs to handle ready-to-eat food.

Time and temperature parameters for controlling pathogens: Procedures must be put in place to limit the time food spends in the temperature danger zone. Requiring food handlers to check the temperature of food being hot-held every two hours is an example.

Consumer advisories: Notices must be provided to customers if you serve raw or undercooked menu items. These notices must include a statement about the risks of eating these foods.

HACCP program:

Identifies significant hazards at points within a product's flow through an operation

Biological, chemical, and physical hazards

Identifies how to prevent, eliminate, or reduce hazards to safe levels

Is documented in a written plan.

The plan is specific to the facility's menu, customers, equipment, processes, and operations.

Floors, walls, and ceilings:

- Made from smooth and durable materials for easier cleaning
- Maintained regularly
- Have coving where the floors and walls meet
- Promptly cleared of any standing water

Equipment that contacts food must be:

- Nonabsorbent, smooth, and corrosion resistant
- Easy to clean
- Durable
- Resistant to damage

All floor mounted stationary equipment must be either, mounted on legs at least six inches or sealed to a masonry base. Tabletop equipment must be mounted four inches off the counter or sealed to the counter top.

Once equipment has been installed:

- It must be maintained regularly
- Only qualified people should maintain it
- Set up a maintenance schedule with your supplier or manufacturer
- Check equipment regularly to make sure it is working correctly

Three-Compartment Sinks must be large enough to accommodate large equipment and utensils.

Handwashing stations must be conveniently located and are required in,

- Restrooms or directly next to them, food-prep areas, service areas, and dishwashing areas. Used only for handwashing
- Installed with adequate barriers or distance from food and food-contact surfaces
- Available at all times.
- Do not block them.

Acceptable sources of drinkable, potable water are:

- approved public water mains, regularly tested, and maintained private sources, closed, portable water containers, water transport vehicle

Installation and maintenance:

- If using an on-site septic system, make sure it is properly tested and maintained
- Only licensed plumbers should work on the plumbing

Cross-connection:

The greatest challenge to water safety comes from cross-connections. A cross-connection is a physical link between safe water and dirty water, which can come from drains, sewers, or other wastewater sources. A cross-connection is dangerous because it can let backflow occur.

Backflow:

Backflow can be the result of pressure pushing contaminants back into the water supply. It can also happen when high water use in one area of an operation creates a vacuum in the plumbing system that sucks contaminants back into the water supply. This is called **backsiphonage**.

A running faucet below the flood rim of a sink is an example of a cross-connection that can lead to backsiphonage. A running hose in a mop bucket is another example.

To prevent backflow

The best way to prevent backflow is to avoid creating a cross-connection.

Do **NOT** attach a hose to a faucet unless a backflow prevention device, such as a **vacuum breaker**, is attached. A vacuum breaker is a mechanical device that prevents backsiphonage. It does this by closing a check valve and sealing the water supply line shut when water flow is stopped.

Other mechanical devices are used to prevent backflow. These include **double check valves** and reduced pressure zone backflow preventers. These devices include more than one check valve for sealing off the water supply. They also provide a way to determine if the check valves are operational.

Backflow prevention devices must be checked periodically to make sure they are working correctly. This work must be done and documented by a trained and certified technician. Always follow local requirements and manufacturers' recommendations.

The only sure way to prevent backflow is to create an air gap.

An air gap is an air space that separates a water supply outlet from a potentially contaminated source. A sink that is correctly designed and installed usually has two air gaps, as shown in the graphic on the slide. One is between the faucet and the flood rim of the sink. The other is between the drainpipe of the sink and the floor drain of the operation.

Grease buildup in pipes:

Grease traps can be installed to prevent grease from blocking drains.

Grease traps must be:

Installed by a licensed plumber

Easy to access

Cleaned regularly

Consider the following when installing and maintaining lighting.

Different areas of the facility have different lighting intensity requirements, local jurisdictions usually require prep areas to be brighter than other areas, all lights should have shatter-resistant lightbulbs or protective covers, replace burned out bulbs with correct size bulbs

Ventilation systems.

Must be cleaned and maintained to prevent grease and condensation from building up on walls and ceilings, follow manufacturer's recommendations, meet local regulatory requirements

Garbage

must be removed from prep areas as quickly as possible. Be careful not to contaminate food and food-contact surfaces.

Clean the inside and outside of containers frequently. Clean them away from food-prep and storage areas

Indoor containers must be Leak proof, waterproof, and pest proof, easy to clean and covered when not in use

Designated storage areas: Store waste and recyclables separately from food and food-contact surfaces. Storage must not create a nuisance or a public health hazard

Outdoor containers must:

Be placed on a smooth, durable nonabsorbent surface such as asphalt or concrete.

Have tight-fitting lids, be covered at all times and have their drain plugs in place

To prevent food safety problems due to the facility:

Clean the operation regularly.

Check building systems regularly.

Maintain the building:

Repair leaks, holes, or cracks in the floors, foundation, ceilings, or windows.

Maintain the outside, including patios and parking lots.

Control pests.

Imminent health hazard:

A significant threat or danger to health

Requires immediate correction or closure to prevent injury

Possible imminent health hazards:

Electrical power outages, fire, flood, or, sewage backups

How to respond to a crisis affecting the facility:

Determine if there is a significant risk to the safety or security of your food

If the risk is significant

Stop service

Notify the local regulatory authority

Decide how to correct the problem

Establish time-temperature control

Clean and sanitize surfaces

Verify water is drinkable

Reestablish physical security of the facility

Three rules of pest prevention:

Deny pests access to the operation,

deny pests food, water, and shelter, and,

Work with a licensed Pest Control Operator (PCO)

Cleaning:

Removes food and other dirt from a surface

Sanitizing:

Reduces pathogens on a surface to safe levels

Cleaning and Sanitizing cleaners must be:

Stable and noncorrosive

Safe to use

Types of cleaners include:

Detergents

Degreasers

Delimers

Abrasive cleaners

When using them:

Follow manufacturers' instructions

Do NOT use one type of detergent in place of another unless the intended use is the same

For heat (hot water) sanitizing

The water must be at least 171°F (77°C) and the item immersed the item for 30 seconds

For Chemical sanitizing:

Food-contact surfaces can be sanitized by either soaking them in a sanitizing solution, Rinsing, swabbing, or spraying them with a sanitizing solution

In some cases, a detergent-sanitizer blend can be used:

Use it once to clean, use it a second time to sanitize

Sanitizers should be mixed with water to the correct concentration

Not enough sanitizer may make the solution weak and useless

Too much sanitizer may make the solution too strong, unsafe, and corrode metal.

Check concentration with a test kit. Make sure it is designed for the sanitizer used, check the concentration often and

Change the solution when It's dirty or the concentration is too low

Temperature:

Follow manufacturer's recommendations for the correct temperature

Contact time:

The sanitizer must make contact with the object for a specific amount of time

Minimum times differ for each sanitizer

Water hardness and pH:

Find out what your water hardness and pH is from your municipality

Work with your supplier to identify the correct amount of sanitizer to use

Guidelines for the Effective Use of Sanitizers**Chlorine**

75 to 100 degrees

50 to 99 ppm

Make contact for 7 secs.

Iodine

68 degrees

12.5 to 50 ppm

Make contact for 30 secs.

Quat

75 degrees

PPM is set up by your supplier

Make contact for 30 secs.

How to clean and sanitize is completed in a 5-step process

1-Scrape, soak, to remove food particles

2-Wash the item

3-Rinse the item

4-Sanitize the item

5-Air dry. Never hand dry

Food-contact surfaces must be cleaned and sanitized:

After they are used, before working with a different type of food, any time a task was interrupted and the items may have been contaminated, after four hours if the items are in constant use

Cleaning and sanitizing stationary equipment:

Unplug the equipment, take the removable parts off the equipment, wash, rinse, and sanitize them by hand or run the parts through a dishwasher if allowed, scrape or remove food from the equipment surfaces, wash the equipment surfaces, rinse the equipment surfaces with clean water, sanitize the equipment surface, allow all surfaces to air-dry, put the unit back together

High-temperature dish machines:

Final sanitizing rinse must be at least 180°F (82°C) for the free-flowing machine and 165°F for stationary rack, single-temperature machines

Chemical-sanitizing machines: Clean and sanitize at much lower temperatures, follow the temperature guidelines provided by the manufacturer

Setting up a three-compartment sink:

Clean and sanitize each sink and drain board

Fill the first sink with detergent and water at least 110°F (43°C)

Fill the second sink with clean water

Fill the third sink with water and sanitizer to the correct concentration

Provide a clock with a second hand to let food handlers know how long items have been in the sanitizer

When storing clean and sanitized tableware and equipment:

Store them at least six inches (15 cm) off the floor

Store glasses and cups upside down on a clean and sanitized shelf or rack

Store flatware and utensils with handles up

Cover the food-contact surfaces of stationary equipment until ready for use

Clean and sanitize trays and carts used to carry clean tableware and utensils

Cleaning up after people who get sick:

Diarrhea and vomit in the operation must be cleaned up correctly. It can carry Norovirus, which is highly contagious. Correct cleanup can prevent food from becoming contaminated and keep others from getting sick. Check with your local regulatory authority regarding requirements for cleaning up vomit and diarrhea. A written cleanup plan may be required.

Wiping cloths:

Used to wipe up food spills and wipe down equipment.

Two types:

Wet wiping cloths:

For wiping counters and other surfaces.

Store in sanitizer solution between uses.

Change the solution when necessary.

Keep cloths that contact raw meat, fish, and poultry separate from other cleaning cloths.

Dry wiping cloths:

Used to wipe food spills from tableware

Must be kept dry while in use

Must NOT

Contain food debris

Be visibly dirty

NEVER use cloths that are meant for wiping food spills for any other purpose.

Consider the following when developing a plan for cleaning up vomit and diarrhea:

- How you will contain liquid and airborne substances, and remove them from the operation
- How you will clean, sanitize, and disinfect surfaces
- When to throw away food that may have been contaminated
- What equipment is needed to clean up these substances, and how it will be cleaned and disinfected after use
- When a food handler must wear personal protective equipment
- How staff will be notified of the correct procedures for containing, cleaning, and disinfecting these substances
- How to segregate contaminated areas from other areas
- When staff must be restricted from working with or around food or excluded from working in the operation
- How sick customers will be quickly removed from the operation
- How the cleaning plan will be implemented

Storing cleaning tools and chemicals:

- Place in a separate area away from food and prep areas

The storage area should have:

- Good lighting so chemicals can be easily seen
- Utility sink for filling buckets and washing cleaning tools
- Floor drain for dumping dirty water
- Hooks for hanging cleaning tools

NEVER:

- Dump mop water or other liquid waste into toilets or urinals
- Clean tools in sinks used for
 - Handwashing
 - Food prep
 - Dishwashing

Chemicals:

- Many of the chemicals used in an operation can be hazardous, especially if they are used or stored the wrong way. One of the biggest dangers is cross-contamination. To reduce your risk, follow these guidelines on the slide.
- Only chemicals approved for use in a foodservice operation should be used. **NEVER** keep chemicals that are not required to operate or maintain the establishment.
- To prevent contamination, always cover or remove items that could become contaminated before using chemicals. After using chemicals, make sure to clean and sanitize equipment and utensils.
- Chemicals must be stored in their original containers. Some operations also designate specific areas for storing chemicals. Whether or not this is done, chemicals must be kept separate from food, equipment, utensils, and linens. This separation can be done either of these ways: by spacing chemicals apart from other items, or by partitioning off chemicals from other items stored in the same area.
- Regardless of the method used, chemicals must always be stored below food, equipment, utensils, and linens.

Labeling foodservice chemicals:

- Manufacturer's label must:
 - Include directions for use.
 - Be clear enough to read.
- If chemicals are transferred to a new working container:
 - The working container must be labeled with the common name.

To develop an effective cleaning program:

- Create a master cleaning schedule
- Train your staff to follow it
- Monitor the program to make sure it works

To create a master cleaning schedule, identify:

- What should be cleaned
- Who should clean it
- When it should be cleaned
- How it should be cleaned

Monitoring the cleaning program:

- Supervise daily cleaning routines
- Check cleaning tasks against the master schedule every day
- Change the master schedule as needed
- Ask staff for input on the program