



**FOOD SAFETY GROUP**  
FOOD SERVICE SANITATION MANAGER CERTIFICATION

Study Guide

Food Safety Group: Food Safety Training

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# FOOD SAFETY STUDY GUIDE

**FOODBORNE ILLNESS** is a disease carried or transmitted to people by food.

**A FOODBORNE ILLNESS IS CONSIDERED AN OUTBREAK WHEN:**

- **Two or more people have the same symptoms after eating the same food.**
- **An investigation is conducted by state and local regulatory authorities.**
- **The outbreak is confirmed by laboratory analysis.**

**HIGHER RISK POPULATIONS INCLUDE:** Infants, preschool age children, pregnant women, the elderly, people taking medications, and people who are seriously ill.

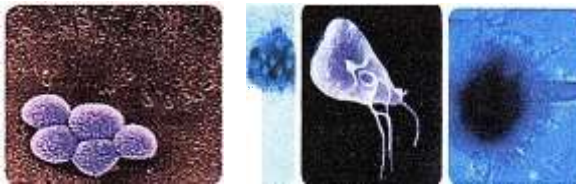
Although any type of food can become contaminated, some are better able to support the rapid growth of microorganisms than others.

These foods require **TEMPERATURE CONTROL FOR SAFETY (TCS).**

**TCS Foods** must be kept out of the **Danger Zone (41° - 135°)** prevent the growth of microorganisms and the production of toxins.



**TCS FOODS** include Milk, Eggs, Shellfish, Fish, Meats, Meat Alternatives, Untreated Garlic & Oil Mixtures, Baked Potatoes, Raw Sprouts, Cooked Rice, Cut Tomatoes, Cut Melons and prepped foods.



### THREE TYPES OF CONTAMINATIONS (Hazards)

1. BIOLOGICAL - Bacteria, Virus, Parasites, Fungi, Natural Toxins
2. CHEMICAL- Cleaners, Sanitizers, Toxic Metal from Non-Food Service Grade Utensils and Cookware, Pesticides
3. PHYSICAL- Foreign Objects - Hair, Glass, Paper, Metal Shavings

### THE CENTER FOR DISEASE CONTROL (CDC) TOP FIVE DOCUMENTED REASONS FOR OUTBREAKS:

1. Purchasing food from unsafe sources
2. Failing to cook food adequately
3. Holding food at incorrect temperatures
4. Contaminated equipment
5. Poor personal hygiene

### FOUR WAYS FOOD BECOMES CONTAMINATED

1. Time-Temperature Control -TCS foods are left in the danger zone for > 4 hours
2. Cross Contamination Contaminants cross to a food that is not going to be cooked any further
3. Poor Personal Hygiene Food handlers cause the foodborne illness
4. Poor Cleaning & Sanitizing

### READY TO EAT FOODS ARE ITEMS THAT CAN BE CONSUMED WITHOUT FURTHER Preparation, Washing & Cooking

Ready-to-eat food includes:

- Cooked food
- Washed fruit and vegetables
- Deli meat
- Bakery items
- Sugar, spices, and seasonings

Focus on these measures

- Controlling time and temperature
- Preventing cross-contamination
- Practicing personal hygiene
- Purchasing from approved, reputable suppliers
- Cleaning and sanitizing

Training and Monitoring

- Train staff to follow food safety procedures
- Provide initial and ongoing training
- Provide all staff with general food safety knowledge
- Provide job specific food safety training
- Retrain staff regularly
- Monitor staff to make sure they are following procedures
- Document training

## GOVERNMENT AGENCIES

- The **Food and Drug Administration (FDA)** inspects all food except meat, poultry, and eggs. The agency also regulates food transported across state lines. In addition, the agency issues the *FDA Food Code*, which provides recommendations for food safety regulations.
- The **U.S. Department of Agriculture (USDA)** regulates and inspects meat, poultry, and eggs. It also regulates food that crosses state boundaries or involves more than one state.
- Agencies such as the **Centers for Disease Control and Prevention (CDC)** and the **U.S. Public Health Service (PHS)** conduct research into the causes of foodborne-illness outbreaks.
- **State and local regulatory authorities** write or adopt code that regulates retail and foodservice operations.

## FORMS OF CONAMINATION

### HOW CONTAMINATION HAPPENS

- Contamination comes from a variety of places.
- Contaminants can cause foodborne illness or result in physical injury.
- Contaminants are found in the animals we use for food, the air, water, dirt, and occur naturally in food, such as bones in fish.
- Food can be contaminated on purpose.
- Most food is contaminated accidentally.
- Examples of accidental contamination include: food handlers who don't wash their hands after using the restroom, and then contaminate food and surfaces with feces from their finger; food handlers who pass contaminants through illness

**FOODBORNE INFECTIONS** can result when a person eats food-containing pathogens, which then grow in the intestines and cause illness.

### Common Symptoms of Foodborne Illness

- Diarrhea: Vomiting: Fever: Nausea: Abdominal cramps
- Jaundice (yellowing of skin and eyes)

### Onset times

- Depend upon the type of foodborne illness
- Can range from 30 minutes to 6 weeks

**FOODBORNE INTOXICATIONS** result when a person eats food-containing toxins (poison) produced by pathogens found on the food or which are results of chemical contamination. Typically, symptoms appear quickly, within a few hours.

**BACTERIA** are of the greatest concern of the biological contaminates. Bacteria are found everywhere and under favorable conditions, they can reproduce very rapidly if FAT TOM conditions are right.

The acronym **FAT TOM** stands for:

Food - Most bacteria need nutrients to survive. TCS food supports the growth of bacteria better than other types of food.

Acidity - Bacteria grow best in food that contains little or no acid on a pH Scale that ranges from 0 to 14.0 acid to alkaline. Bacteria grow right in the middle more rapidly- 4.6pH - 7



EXAMPLES OF acidic foods INCLUDE:	EXAMPLES OF neutral foods INCLUDE:	EXAMPLES OF alkaline foods INCLUDE:
CITRUS JUICES TOMATOES RHUBARB CRANBERRIES	MILK MEATS CHICKEN FISH	EGG WHITES SODA CRACKERS BLACK OLIVES

Temperature - Bacteria grow rapidly between 41°F and 135°F (5°C and 57°C). This range is known as the temperature danger zone. Bacteria growth is limited when food is held above or below the temperature danger zone.

Time - Bacteria need time to grow. The more time bacteria spend in the temperature danger zone, the greater chance they have to grow to unsafe levels. Bacteria doubles every 20 minutes in the TDZ.

Oxygen - Some bacteria need oxygen to grow, while others grow when oxygen isn't there (ROP).

Moisture - The amount of moisture available in food is called water activity (aw). The aw scale ranges from 0.0 to 1.0. The higher the value, the more available moisture in the food.

*Time & Temperature are the easiest thing for us to control.*

## MAJOR BACTERIA THAT CAUSES FOODBORNE ILLNESS

The FDA has identified three types of bacteria that cause severe illness and are highly contagious.

### Salmonella Typhi

- \* Salmonella Typhi lives only in humans.
- \* People with typhoid fever carry the bacteria in their bloodstream and intestinal tract.
- \* Eating only a small amount of these bacteria can make a person sick.
- \* The severity of symptoms depends on the health of the person and the number of bacteria eaten. The bacteria are often in a person's feces for weeks after symptoms have ended.

- **Shigella spp.**

- \* Shigella spp. is found in the feces of humans with the illness.
- \* Most illnesses occur when people eat or drink contaminated food or water.
- \* Flies can also transfer the bacteria from feces to food.
- \* Eating only a small amount of these bacteria can make a person sick.
- \* High levels of the bacteria are often in a person's feces for weeks after symptoms have ended.

- **Enterohemorrhagic and shiga toxin-producing Escherichia coli**

- \* Enterohemorrhagic and shiga toxin-producing E. coli can be found in the intestines of cattle.
- \* It is also found in infected people.
- \* The bacteria can contaminate meat during slaughtering.
- \* Eating only a small amount of the bacteria can make a person sick.
- \* Once eaten, it produces toxins in the intestines, which cause the illness.
- \* The bacteria are often in a person's feces for weeks after symptoms have ended.

**VIRUSES** are the smallest of the microbial contaminants. While a virus cannot reproduce in the food, once consumed it will cause illness. Viruses are spread from PERSON TO PERSON, PERSON TO FOOD, AND PERSON TO FOOD CONTACT SURFACES. **Practicing good personal hygiene and minimizing bare-hand contact with ready-to-eat food** can help defend against viral foodborne illnesses.

#### **Location**

- 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

#### **Sources**

- \* Food, water, or any contaminated surface.
- \* Typically occur through fecal-oral routes.

#### **Destruction**

- \* 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

The FDA has identified 2 viruses that are highly contagious and can cause severe illness.

- **Hepatitis A**

- Hepatitis A is mainly found in the feces of people infected with it.
- The virus can contaminate water and many types of food.
- It is commonly linked with ready-to-eat food. However, it has also been linked with shellfish from contaminated water.
- The virus is often transferred to food when infected food handlers touch food or equipment with fingers that have feces on them.
- Eating only a small amount of the virus can make a person sick.
- An infected person may not show symptoms for weeks but can be very infectious.
- Cooking does not destroy Hepatitis A.

- **Norovirus**

- Like hepatitis A, Norovirus is commonly linked with ready-to-eat food.
- It has also been linked with contaminated water.
- Norovirus is often transferred to food when infected food handlers touch food or equipment with fingers that have feces on them.
- Eating only a small amount of Norovirus can make a person sick. It is also very contagious.
- People become contagious within a few hours after eating it.
- The virus is often in a person's feces for days after symptoms have ended.

*Food handlers diagnosed with an illness from Hepatitis A or Norovirus must not work in an operation while they are sick.*

**PARASITES** are organisms that need a living host to survive. Proper cooking and freezing kills parasites.

**Location**

- Require a host to live and reproduce

**Source**

- \*Seafood, wild game, and food processed with contaminated water, such as produce

**Prevention**

- \* 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

FUNGI, such as molds and yeast are generally responsible for spoiling food and rarely cause illness. They can grow in almost any condition but grow well in acidic foods. Some molds, however can produce harmful toxins. Yeasts can spoil food rapidly and will produce a smell or taste of alcohol. Foods spoiled by yeast should also be discarded.

**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**

**Origin**

- Naturally occur in certain plants, mushrooms, and seafood

**Seafood Toxins**

- **SCOMBROID** - Histamine Toxin - Tuna, Mackerel, Bonito, Mahi Mahi are time-temperature abused.
- **CIGUATERA** - Ciguatoxin, predatory reef fish (Barracuda, Grouper, Jacks, and Snapper) - marine algae.

*Purchase fish from APPROVED SUPPLIERS since cooking or freezing cannot destroy these toxins.*

**Produce** - All produce should be purchased from an approved supplier. This will prevent illnesses associated with wild mushrooms, and produce that has been contaminated with sewage or chemicals.

**Full lists of Foodborne Illness are listed in the appendix.**

**CHEMICAL CONTAMINANTS** can come from a wide variety of substances including toxic metals, pesticides, cleaning products, sanitizers, lubricants, first aid and personal care products. To prevent contamination, such as lead in a pewter pitcher, use only approved food-grade utensils & equipment to prepare and store food. If carbonated-beverage dispensers are installed improperly, and carbonated water is allowed to flow back into the copper supply lines, it could leach copper from the line and contaminate the beverage. Only allow a licensed professional to apply pesticides.



### **Symptoms**

- \* Vary depending on chemical consumed
- \* Most illnesses occur within minutes
- \* Vomiting and diarrhea are typical

### **Prevention**

- \* 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.
  - o Chemicals must be separated from food and food-contact surfaces by spacing and partitioning.
- \* Chemicals must never be stored above food or food-contact surfaces.
- \* Use chemicals for their intended use and follow manufacturer's directions.
- \* Only handle food with equipment and utensils approved for foodservice use.
- \* Make sure the manufacturer's labels on original chemical containers are readable
- \* Keep MSDS current, and make sure they are accessible to staff at all times.
- \* Follow the manufacturer's directions and local regulatory requirements when throwing out chemicals.

**PHYSICAL CONTAMINATION** can occur when **foreign objects** are accidentally introduced into food. Common physical contaminants include metal shavings from cans, staples, glass from broken light bulbs, fingernails, hair, Band-Aids, dirt, etc.

### **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

**FOOD SECURITY & CRISIS MANAGEMENT** addresses the prevention or elimination of the deliberate contamination of food. The key to protecting food is to make it as difficult as possible for tampering to occur by addressing all potential HUMAN, INTERIOR and EXTERIOR elements in your operation

### **Responding to a Foodborne-illness Outbreak**

- Train staff on food safety policies and procedures
- Create an emergency-contact list
- Gather information
- Notify authorities
- Segregate product
- Document all information with a foodborne-illness incident report form and train staff to use it.
- Identify staff
- Cooperate with authorities
- Review procedures

**FOOD ALLERGIES.** An allergic reaction could include itching, tightening of the throat, wheezing, hives, swelling, diarrhea, vomiting, cramps, and loss of consciousness or even death. Managers and employees should be aware of the most common.

### **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

### **Common Food Allergens**

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

You and your employees should be able to inform customers of these and other potential food allergens that may be included in food served at your establishment.

## **THE SAFE FOODHANDLER**

**FOOD HANDLERS** have the potential to contaminate food when they have been diagnosed with a foodborne illness, show symptoms of a gastrointestinal, have infected lesions, or touch anything that could contaminate their hands.

### **Managers must focus on the following:**

- Creating personal hygiene policies
- Training food handlers on personal hygiene policies and retraining them regularly
- Modeling correct behavior at all times
- Supervising food safety practices
- Revising personal hygiene policies when laws or science change

**PROPER HAND WASHING** must always be practiced, because simple acts like nose picking, or touching one's hair can contaminate food. This is especially important before starting work, after using the restroom, after sneezing, coughing, smoking, eating, drinking, handling raw food, & handling garbage.

1. Turn on hot water - 100°F minimum
2. Apply soap
3. Scrub hands & arms for 10-15 SECONDS.
4. Rinse
5. Dry with a single-use towel or air dry
6. If an establishment uses a hand antiseptic, it must be FDA approved as a food additive

### **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 hand washing
- Must never be used in place of hand washing
- Should be allowed to dry before touching food or equipment

**HANDS:** short & clean nails, cuts & wounds covered with clean bandages and gloves or a finger cot.

GLOVES & FINGER COTS should never be used in place of hand washing. Hands must be washed before putting on gloves and when changing to a new pair. Gloves used to handle food are for single-use and should never be washed or reused. They must be changed at least every FOUR HOURS, when they become soiled or torn, or when beginning a new task.

**PERSONAL HYGIENE** can be a sensitive subject with some people, but it must be addressed with every employee because it is vital to food safety. All employees must bath or shower before work and keep their hair clean. Prior to handling food, employees must put on clean clothing, appropriate shoes and a clean hair restraint or hat.

**JEWELRY & APRONS** - They must also remove jewelry from hands and arms. Only a plain wedding band should be allowed. Aprons should always be removed when the employee leaves food-preparation areas.

**EATING, DRINKING, SMOKING, CHEWING GUM OR TOBACCO** should not be allowed when preparing, serving or working in food-prep areas.

## **EMPLOYEE ILLNESS**

**RESTRICT** employees from working with or around food if they have a sore throat with a fever. • *If serving a high-risk population - exclude with sore throat and fever*

**EXCLUDE** employees with active JAUNDICE, DIARRHEA OR VOMITING • *must be symptom free for 24 hours before returning*

**NOTIFY THE HEALTH DEPARTMENT AND EXCLUDE** if they are diagnosed with • *Salmonella, Shigella, E. Coli, Hepatitis A, or Norovirus.*

## **THE FLOW OF FOOD:**

### **AVOID TIME & TEMPATURE ABUSE**

- Monitor time and temperature - Store 41°F (5°C) and below or 135°F (57°C) and above. 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

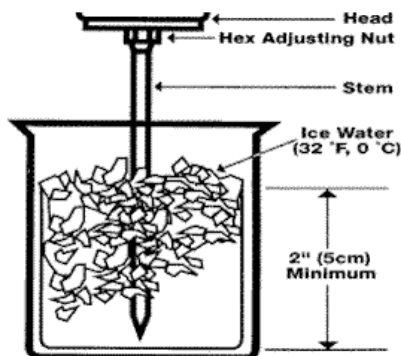
**THERMOMETERS** are the most important tools managers have to prevent time-temperature abuse. Thermometers should be washed, rinsed and sanitized and air-dried before each use to prevent cross contamination. They should also be **calibrated before each shift** to ensure accuracy. When measuring the internal temperatures of food, the thermometer stem or probe should be inserted into the thickest part of the product.



**BIMETAL LIC-STEMMED-** the stem should be immersed in the product from the tip to the end of the sensing area. It should have an adjustable calibration nut, be easy-to-read, and accurate to within 2 degrees.

**INFRARED** - measure surface temperatures and can NOT be used to take the internal temperatures

**THERMOCOUPLES & THERMASTORS** are digital with different types of probes.  
*Penetration Probes - internal temperature of food, Immersion Probes - liquids, Surface Probes - surface.*



**How to calibrate:** Two Methods

*Ice Method*

- Fill a large container with crushed ice and water and stir.
- Put the thermometer stem or probe into the water. Wait till the indicator stops.
- Adjust the thermometer so it reads 32°F (0°C).

### *Boling Point Method*

- Bring tap water to a boil.
- Put the thermometer stem or probe into the water.
- Adjust the thermometer to 212°F (100°C).

When using thermometers:

- Wash, rinse, sanitize, and air-dry thermometers before and after using them
- Make sure thermometers used to measure the temperature of food are accurate to +/- 2°F or +/- 1°C
- Calibrate before each shift for accuracy
- Only use glass thermometers if they are enclosed in a shatterproof casing.

## **PURCHASING & RECEIVING**

**APPROVED SUPPLIER** - Has been inspected and meets all applicable local, state, and federal laws. Food must be purchased from approved, reputable suppliers. These suppliers have been inspected and can show you an inspection report. They also meet all applicable local, state, and federal laws. This applies to all suppliers in the supply chain. Your operation's chain can include growers, shippers, packers, manufacturers, distributors (trucking fleets and warehouses), and local markets.

- Develop a relationship with your suppliers, and get to know their food safety practices. Consider reviewing their most recent inspection reports. These reports can be from the U.S. Department of Agriculture (USDA), the Food and Drug Administration (FDA), or a third-party inspector. They should be based on Good Manufacturing Practices (GMP) or Good Agricultural Practices (GAP).

**KEY DROP OFF DELIVERIES** - Some foodservice operations receive food after-hours when they are closed for business. This is often referred to as a key drop delivery. The supplier is given a key or other access to the operation to make the delivery. Products are then placed in coolers, freezers, and dry storage areas. The delivery must be inspected once you arrive at the operation and meet the criteria identified in the slide.

### **Deliveries must meet the following criteria.**

- Be inspected upon arrival at the operation
- Be from an approved source
- Have been placed in the correct storage location to maintain the required temperature
- Have been protected from contamination in storage
- Is NOT contaminated
- Is honestly presented

**RECEIVING** - Operators must plan their delivery schedules so products can be handled promptly and correctly. Employees assigned to receive deliveries should be trained to inspect food properly as well as to distinguish between products that are acceptable and those that are not. Packaging should be clean and undamaged, use-by dates current, and show no signs of mishandling.

## PRODUCTS MUST BE **DELIVERED AT THE PROPER TEMPERATURES.**

Cold TCS Foods - 41°F or Lower

- Checking the Temperature of Meat, Poultry, and Fish - Insert the thermometer stem or probe into the thickest part of the food (usually the center)
- Checking the Temperature of ROP Food (MAP, vacuum-packed, and sous vide food)- Insert the thermometer stem or probe between 2 packages. As an alternative, fold packaging around the thermometer stem or probe
- Checking the Temperature of Other Packaged Food - Open the package and insert the thermometer stem or probe into the food
- 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.
- Hot TCS Foods 135° F or higher
- Frozen - **Frozen Solid** with no Fluid Stains or Large Ice Crystals

### Harvested Seafood:

- Shellfish must be received with shell stock 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.
- 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:
  - o It is slimy, sticky, or dry
  - o It has soft flesh that leaves an imprint when touched
- Odor: Reject food with an abnormal or unpleasant odor

### 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

- The manufacturer may sometimes recall food items you have received. This may happen when food contamination is confirmed or suspected. It can also occur when items have been mislabeled or misbranded. Often food is recalled when food allergens have not been identified on the label. Most vendors will notify you of the recall. However, you should also monitor recall notifications made by the FDA and the USDA Follow the guidelines in the slide when notified of a recall.
- Identify the recalled food items by matching information from the recall notice to the item. This may include the manufacturer's ID, the time the item was manufactured, and the item's use-by date.
- Remove the item from inventory, and place it in a secure and appropriate location. That may be a cooler or dry-storage area.
- The recalled item must be stored 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. Some operations do this by including a Do Not Use and Do Not Discard label on recalled food items. Inform staff not to use the product.
- Refer to the vendor's notification or recall notice for what to do with the item. For example, you might be instructed to throw it out or return it to the vendor.

## STORAGE GUIDE LINES

Do not line refrigerator shelves, overload units, or open doors too often. These practices make units work harder to maintain the temperature inside. If possible, store raw meat, poultry, and fish separately from cooked or ready- to-eat foods to prevent cross contamination.

If not, then store these items below cooked or ready-to-eat food. Product temperatures should be checked regularly. **Internal and external thermometers must be maintained.**

- Storage shelves should be 6" inches off the floor and away from the wall for proper venation and cleaning.
- 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 chemical containers
- Use FIFO (First in First Out) stock rotation should be followed. Store items with earlier use by dates in front, and use them first.
- Dry storage areas should be kept at the appropriate temperature, between 50F and 70F with a relative humidity of 50-60%.

Items should be stored in original packaging. If removed from its original packaging, wrap in clean moisture-proof material, or place it in a clean sanitized container with tight fitting lid. All packaging and containers should be labeled with the

- NAME OF THE FOOD
- THE DATE PREPARED
- EXPIRATION DATE.

To prevent contamination, **NEVER** store food in these areas

- Locker rooms or dressing rooms
- Restrooms or garbage rooms
- Mechanical rooms
- Under unshielded sewer lines or leaking water lines
- Under stairwells

### **LABELING FOOD PACKAGED ON-SITE FOR RETAIL SALE**

- Common name of the food or a statement clearly identifying it.
- Quantity of the food.
- If the item contains two or more ingredients, list the ingredients in descending order by weight.
- List of artificial colors and flavors in the food including chemical preservatives
- Name and place of business of the manufacturer, packer, or distributor.
- Source of each major food allergen contained in the food.

**TCS FOODS PREPARED ON SITE** must be labeled - name **of the food, the date it should be sold, consumed or discarded**. It can be stored a maximum of **SEVEN DAYS** at 41F or lower before it must be discarded.

*THROW OUT ALL FOOD THAT HAS PASSED THE MANUFACTURERS EXP/RATION DATE.*

**REFRIGERATORS** must be set at 39° or lower and thermometer placed in the warmest area. With food stored in the following order from top to bottom to prevent cross contamination:

1. Ready-to-eat food
2. Seafood
3. Whole cuts of beef and pork
4. Ground meat and ground fish
5. Whole and ground poultry

This storage order is based on the minimum internal cooking temperature of each food.

## **THE FLOW OF FOOD: Preparation**

PREPPING FOOD:

- Only remove as much food from the cooler as you can prep in a short period of time.
  - \* These limits time-temperature abuse
- 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) or lower 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
  - 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
- Eggs, Juice and Milk have pasteurization in common.

#### 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.

**SAFE TIME AND INTERNALTEMPATURE REQUIRMENTS**

*If any of these items are cooked below the suggested internal cooking temperature you need to have on the menu a disclaimer noted to Jet the guest know they are consuming under cooked foods.*

PRODUCT	SAFE TIME AND INTERNAL TEMPERATURE REQUIREMENTS
All types of poultry, including ground poultry Stuffed meats, poultry, past a, fish Stuffing that contains PHFs  Microwaved raw animal foods/eggs  Reheated leftovers	165°F for 15 seconds  165°F, allow cooked food to stand for at least 2 minutes.  165°F for 15 seconds within two hours
Ground, minced, and chopped meats and fish Mechanically tenderized meats, flavor injected meats, brined ham Eggs hot-held for service	155°F for 15 seconds
Whole roasts of beef, pork, veal, and lamb  Beef, veal, pork, and lamb chops All types of seafood, including fillets and shellfish Shell eggs made to order	145°F for four minutes  145°F for 15 seconds
Hot held commercially processed, ready-to- eat foods Vegetables, beans, grains, and fruits	135°F
Rare roast beef and corned beef	130°F for 112 minutes

**Partial Cooking During Preparation** - If partially cooking meat, seafood, poultry, or eggs or dishes containing these items:

- A. Never cook the food longer than 60 minutes during initial cooking.
- B. Cool the food immediately after initial cooking.
- C. Freeze or refrigerate the food after cooling it.
- D. Heat the food to at least 165°F (74°C) for 15 seconds before selling or serving it.
- E. Cool the food if it will not be served immediately or held for service.

COOLING TCS FOODS - Never place hot food in refrigerators, which could raise the temperature inside. You have a total of 6 Hours to cool food.

Step 1 - Cool food from 135° F and above to 70° F in the first two hours

Step 2 - Cool food from 70° F to 41° F in 4 hours

*Use the methods:*

- Cut larger items into smaller pieces
- Divide large containers of food into smaller containers or shallow pans
- Place food in an ice-water bath
- Stir it with an icepaddle
- Place it in a blast chiller
- Food can be cooled by adding ice or cold water as an ingredient.

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

## THE FLOW OF FOOD: Service

Guidelines for Holding Food

- Cover food and install sneeze guards to protect food from contaminants. Covers protect food from contamination and help maintain food temperatures.
- Hold TCS food at the right temperature  
Hot food: 135°F (57°C) or higher
  - Cold food: 41°F (5°C) or lower
- Check temperatures at least every 4 hours
  - Throw out food not at 41°F (5°C) or lower
  - Check temperatures every 2 hours to leave time for corrective action
- **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

## Holding Food Without Temperature Control

### **Cold food can be held without temperature control for up to 6 hours**

- If your operation displays or holds TCS food without temperature control, it must do so under certain conditions. The conditions for holding cold food are different from those for holding hot food. 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 4 hours

- Before using time as a method of control, check with your local regulatory authority for specific requirements.
- For hot food, the discard time on the label must be four hours from the time you removed the food from temperature control.

### Kitchen Staff Guidelines for Serving Food

- Store serving utensils correctly between uses
  - On a clean and sanitized food-contact surface
  - In the food with the handle extended above the container rim
- Store serving utensils correctly between uses
  - On a clean and sanitized food-contact surface
  - In the food with the handle extended above the container rim

**GLASSWARE AND DISHES** should be held at the base or from underneath, and not be stacked when serving.

**FLATWARE AND UTENSILS** should be stored handles up and in the same direction in a drawer or storage container.

**RESERVING** - Only un-opened individually packaged condiments are okay to re-serve. Plate garnish, breads or open dishes of condiments can never be served to a new guest.

### **NEVER** re-serve:

- Food returned by one customer to another customer
- Uncovered condiments
- Uneaten bread
- Plate garnishes

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

- Condiment packets
- Wrapped crackers or breadsticks

**SELF SERVICE AREAS** - **Never allow customers to re-use soiled or dirty plates.** Protect food in food bars and buffets with sneeze guards and make sure equipment can hold food at the proper temperature. Keep raw foods away from ready-to-eat or cooked foods and label all food items.

## **Prevent time-temperature abuse and contamination continued**

- Keep hot food at 135°F (57°C) or higher
- Keep cold food at 41°F (5°C) or lower
- Keep raw meat, fish, and poultry separate from ready-to-eat food
- Do **NOT** let customers refill dirty plates or use dirty utensils at self-service areas
- Stock food displays with the correct utensils for dispensing food.
- Do **NOT** use ice as an ingredient if it was used to keep food or beverages cold

## **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

## **OFF SITE SERVICE**

- 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 hand washing
  - Garbage containers stored away from food-prep, storage, and serving areas

## **VENDING MACHINES**

- Handle food prepped and packaged for vending machines with the same care as any other food served to customers. Vending operators should protect food from contamination and time-temperature abuse during transport, delivery, and service.
- Check product shelf life daily. Products often have a code date, such as expiration or a use-by date. If the date has expired, throw out the food immediately. Throw out refrigerated food prepped on-site if not sold within seven days of preparation.
- Keep TCS food at the correct temperature. It should be held at 41°F (5°C) or lower, or at 135°F (57°C) or higher. These machines must have controls that prevent TCS food from being dispensed if the temperature stays in the danger zone for a specified amount of time. This food must be thrown out.

# FOOD SAFETY MANAGEMENT

**PREREQUISITE PROGRAMS** for personal hygiene, facility design, supplier selection, sanitation and pest control, equipment maintenance, and food safety training must be in place before attempting either of the food safety management systems

**ACTIVE MANAGERIAL CONTROL.** This approach focuses on controlling the five most common risk factors responsible for foodborne illness identified by the CDC. These include purchasing from unsafe sources, failing to cook adequately, holding food at improper temperatures, using contaminated equipment, and practicing poor personal hygiene.

1. First you must consider the five risk factors as they apply throughout the flow of food
2. *Identify any issues in your operation that could impact food safety*
3. Develop policies and procedures that address any issues that were identified
4. *Monitoring to determine if your new policies are being followed*
5. Verify that the policies and procedures you have established are actually working

**HAZARD ANALYSIS CRITICAL CONTROL POINT (HACCP)** system focuses on identifying specific points where it is essential to prevent eliminate or reduce biological, chemical, or physical hazards to a safe level.

Hazard analysis and critical control points, or HACCP .is a systematic preventive approach to food safety and pharmaceutical safety that addresses physical, chemical, and biological hazards as a means of prevention rather than finished product inspection. HACCP is used in the food industry to identify potential food safety hazards, so that key actions can be taken to reduce or eliminate the risk of the hazards being realized. The system is used at all stages of food production and preparation processes including packaging, distribution, etc. The Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA) say that their mandatory HACCP programs for juice and meat are an effective approach to food safety and protecting public health. Meat HACCP systems are regulated by the USDA, while seafood and juice are regulated by the FDA. The use of HACCP is currently voluntary in other food industries.

## 7 Steps of HACCP

1. Conduct a Hazard Analysis
2. *Determine the critical control points where the hazards can be prevented, eliminated or reduced to safe levels*
3. Determine and establish maximum and minimum limits that must be met for each Critical Control Point (CCP)
4. *Determine and establish monitoring procedures*
5. Identify what corrective actions will be taken when critical limits have not been met
6. *Verify that your plan is working*
7. Establish procedures for record keeping and documentation

## SANITARY FACILITIES AND EQUIPMENT

**FLOORING** should be strong, durable and easy to clean. It should also be non-absorbent, resist wear and help prevent slips especially in walk-ins, food prep areas, dishwashing areas, restrooms and others areas subject to moisture or spray cleaning. Carpeting is not recommended in high- soil areas but is popular in dining rooms because it absorbs sounds.

- **COVING** is a curved, sealed edge placed between the floor and the wall and is used to eliminate sharp corners or gaps or cracks between the floor and the wall that would make it impossible to clean.

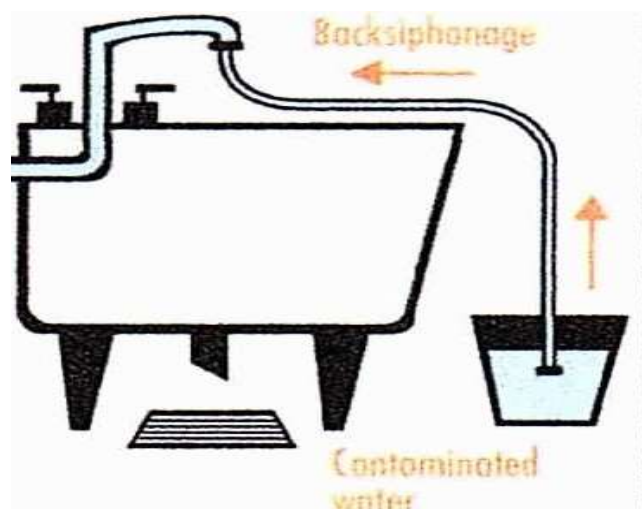
**RESTROOMS/ HANDWASHING STATIONS:** Restrooms should be cleaned regularly and have a fully equipped hand washing station with **hot & cold water**, soap, a means to dry hands, a waste container, signage indicating employees hand washing requirements before returning to work. Hand washing stations should be accessible and convenient to make hand washing easy.

**FOOD SERVICE GRADE EQUIPMENT** is important to purchase equipment that has been designed with sanitation in mind and acceptable for use in a restaurant such as **NSF International and Underwriters Laboratories (UL)**.

**STATIONARY EQUIPMENT** must be mounted on legs at least **six inches off the floor, or it must be sealed to a masonry base**. Stationary tabletop equipment should be mounted on legs with a clearance of four inches between the tabletop and the equipment or it should be sealed to the tabletop.

**POTABLE WATER-water** safe to drink-is vital in an establishment. Sources include public water mains, private water sources that are tested at least once a year, and bottled drinking water. In a water emergency, an establishment might be allowed to remain open if certain precautions are followed. These could include boiling water or purchasing water, boiling water for hand washing and essential tasks.

**PLUMBING** - Only licensed plumbers should install and maintain plumbing systems. The greatest challenge to water safety comes from cross-connections-a physical link through which contaminants from drains, sewers, and other wastewater sources can flow into the potable-water supply. **Vacuum breakers and air gaps can be used to prevent backflow.**



**LIGHTING** intensity is measured in foot-candles

1. At least **108 lux** (10-foot candles): Walk-in refrigerators, Dry food storage areas, Other rooms and areas during cleaning
2. At least **215 lux** (20-foot candles): Self- service displays such as buffets and salad bars, Fresh produce displays, inside equipment such as reach-in and under-counter refrigerators, handwashing, ware washing, and equipment/utensil storing areas, Bathrooms
3. At least **540 lux** (50-foot candles): All food preparation area

**SHATTER-RESISTANT BULBS AND PROTECTIVE COVERS** prevent broken glass from contaminating food.

**ADEQUATE VENTILATION** improves the indoor air quality by removing smoke, grease, steam and heat. **If there is adequate ventilation, there will be no buildup of grease and condensation on walls and ceilings.** Ventilation must be designed so hoods, fans, guards, and ductwork do not drip onto food or equipment. Hood filters and grease extractors must be cleaned regularly by a licensed and bonded professional.

**GARBAGE CONTAINERS** must be leak proof, water proof, pest proof, easy to clean, and durable. They must have tight-fitting lids and must be kept covered when not in use. All garbage containers should be frequently cleaned thoroughly both inside and out. Garbage should be removed from food-preparation areas as soon as possible, and **must not be carried across a food-preparation area.**

**CLEANING AND SANITIZING**

1. **CLEANING** is the process of removing food and other types of soil from a surface. To properly clean you must use a soap and water solution.
2. **SANITIZING** is the process of reducing the number of harmful microorganisms from a clean surface to safe levels. You must clean and rinse a surface before you sanitize. Chemical sanitizers are influenced by contact time, concentration of the sanitizer, and temperature of the solution. Test the solution regularly with a sanitizer test kit.

	Chlorine		Iodine	Quats
<b>Water temperature</b>	2: 100°F (38°C)	2: 75°F (24°C)	68°F (20°C)	75°F (24°C)
<b>Water pH</b>	s 10	S8	s 5 or as per manufacturer's recommendation	As per manufacturer's recommendation
<b>Water hardness</b>	As per manufacturer's recommendation		As per manufacturer's recommendation	500 ppm or as per manufacturer's recommendation
<b>Sanitizer concentration range</b>	50-99 ppm	50-99 ppm	12.5-25 ppm	As per manufacture r's recommendation
<b>Sanitizer contact time</b>	2: 7 sec	2: 7 sec	2: 30 sec	2: 30 sec

3. All surfaces must be cleaned and rinsed. This includes walls, storage shelves, and garbage containers. However, any surface that touches food, such as knives, stockpots, cutting boards, or prep tables, must be cleaned and sanitized.





### 5 Step Process

1. Scrape or remove food bits from the surface. Use the correct cleaning tool such as a nylon brush or pad, or a cloth towel.
2. Wash the surface. Prepare the cleaning solution with an approved detergent. Wash the surface with the correct cleaning tool such as a cloth towel.
3. Rinse the surface. Use clean water. Rinse the surface with the correct cleaning tool such as a cloth towel.
4. Sanitize the surface. Use the correct sanitizing solution. Prepare the concentration per manufacturer requirements. Use the correct tool, such as a cloth towel, to sanitize the surface. Make sure the entire surface has come in contact with the sanitizing solution.
5. Allow the surface to air-dry.

**DISHWASHING MACHINES** - Follow manufacturer's guidelines and make sure your machine is clean and in good working condition. Check the temperature and pressure of wash and rinse cycles daily. Information should be posted on the machine regarding proper water temperature, conveyor speed, water pressure and chemical concentration.

#### High-Temperature Machines

Final sanitizing rinse must be at least 180°F (82°C) 8.165°F (74°C) for stationary rack, single-temperature machines

#### Chemical-Sanitizing Machines

Clean and sanitize at much lower temperatures

Follow the temperature guidelines provided by the manufacturer

**THREE-COMPARTMENT SINK** - Items cleaned in the three-compartment sink should be pre-soaked or scrapped clean, washed in detergent with 110°F water, rinsed in clean water, and sanitized in either **hot water at least 171°F or a chemical-sanitizing solution**. All items should be **air-dried inverted**.

**CLEANING TOOLS AND CHEMICALS** should be placed in a storage area away from food and food-preparation areas. Make sure chemicals are clearly labeled if removed from the original container.

**Keep Material Safety Data Sheets (MSDS) for each chemical** in a location to all employees on the job. These sheets have important first aid information, and information about safe use. Dispose of chemicals according to the instructions on the label and local regulations. It is the employee's rights to know what they are working with and around.

CLEANING SCHEDULE lists all cleaning tasks, as well as when and how tasks should be completed. Assign responsibility to each task by job title. Create employee support by including their input into the program design and rewarding good performance. Monitor the cleaning program to keep it effective.

## INTEGRATED PEST **MANAGEMENT**

Must address these issues to be an effective

DENY PEST ACCESS

DENY PESTS FOOD

SHELTER AND WATER

WORK WITH A LICENSED PEST CONTROL OPERATOR (PCO) to eliminate any pests that enter.

**ROACHES** like dark, warm moist places. Check for a strong oily smell, **droppings look like grains of black pepper**, and capsule egg cases.

**RODENTS** are also a serious health hazard. A building can be infested with both rats and mice at the same time. Look for droppings, signs of gnawing, tracks, nesting materials and holes.

**FLIES** can carry Shigellosis and typhoid fever.

**PESTICIDES** are hazardous materials. Anytime they are used or stored on your premises, you **must have** a corresponding **MSDS**. To minimize the hazard to people, have your PCO use pesticides when you are closed and your employees are not on site. Be sure to wash rinse and sanitize food contact surfaces after a treatment.

## Practice Test

1. You are cooking ground beef for immediate service. What are the temperature requirements?
  - A. There is no temperature requirement.
  - B. 145F for 15 seconds
  - C. 155F for 15 seconds
  - D. 165F for 15 seconds
  
2. How often should you check the temperature of **PHF** held in a buffet or self-service area?
  - A. every 2 hours
  - B. every 4 hours
  - C. every 6 hours
  - D. every 8 hours
  
3. One of your workers has the flu, should you report this to the authorities?
  - A. yes
  - B. no
  
4. Only food with a temperature below? 75F can be stored in a refrigerator?
  - A. true
  - B. false
  
5. Glasses/cups should be stored upside down and utensils should be stored with handles up.
  - A. true
  - B. false
  
6. You are required to notify authorities if you get more than how many illness foodborne complaints?
  - A. 1
  - B. 2
  - C. 5
  - D. 10
  
7. Unpasteurized juice may be served to high risk populations as long as you provide a consumer advisory.
  - A. True
  - B. False
  
8. Using hair spray away from food and food prep areas is one way of preventing what?

- A. biological contamination
- B. physical contamination
- C. chemical contamination
- D. cross contamination

9. You are frying pork for immediate service. What are the temperature requirements?

- A. There is no temperature requirement.
- B. 145F for 15 seconds
- C. 155F for 15 seconds
- D. 165F for 15 seconds

10. What must the interior temperature of a refrigerator be?

- A. between 36F and 37F in the coolest part of the unit
- B. between 36F and 37F in the warmest part of the unit
- C. between 38F and 39F in the coolest part of the unit
- D. between 38F and 39F in the warmest part of the unit

11. What is the maximum time bread can be kept in the temperature danger zone?

- A. there is no maximum time
- B. 2 hours
- C. 4 hours
- D. 8 hours

12. Which of the following are ways to prevent toxin poisoning? Choose all that apply.

- A. freeze food
- B. cook food thoroughly
- C. buy from reputable vendors
- D. make sure employees practice proper hygiene

13. How hot should water be when washing your hands?

- A. 100F or greater
- B. 130F or greater
- C. 135F or greater
- D. 140F or greater

14. Pasta cooked for hot holding should reach what temperature?

- A. 135F
- B. 145F
- C. 155F
- D. 165F

15. Which of the following is NOT a source of food/water for pests?

- A. cardboard boxes
- B. condensation from air conditioning units

- C. residue on equipment
- D. dirty wet mop

16. What food safety subjects should employees be trained on? Choose all that apply.

- A. Proper hand washing
- B. Proper hygiene
- C. Cleaning and Sanitizing
- D. Food Time/Temperature Control
- E. Cross contamination prevention
- F. Food Handling Practices

17. What is a measure of light intensity?

- A. a watt
- B. a joule
- C. a light candle
- D. a foot candle

18. Meat and poultry must have the USDA inspection stamp.

- A. True
- B. False

19. There is an uncontained sewage backup at your food establishment. What should be done?

- A. notify authorities and wait for them to tell you what actions to take
- B. immediately close and notify authorities
- C. continue operating if sewage backup is not near food or food prep area
- D. clean up sewage and continue operating

20. From top to bottom, how should food be stored in a refrigerator?

- A. whole chicken, ground meat, whole cuts of beef/pork, whole fish, RTE food
- B. RTE food, whole cuts of beef/pork, whole fish, ground meat, whole chicken
- C. RTE food, whole fish, whole cuts of beef/pork, ground meat, whole chicken
- D. RTE food, whole fish, whole cuts of beef/pork, whole chicken, ground meat

21. What is a cross connection?

- A. mixing of raw meat and ready to eat food
- B. where 2 pipes meet
- C. where hot and cold-water pipes converge
- D. mixing of potable and waste water

22. When using the heat method (using plain water) to sanitize items in a ware-washing machine, what temperature should the water be?

- A. 171F
- B. Between 180F and 194F
- C. Between 75F and 120F

D. Greater than 75F

23. You are cooking whole chicken for immediate service. What are the temperature requirements?

- A. There is no temperature requirement.
- B. 145F for 15 seconds
- C. 155F for 15 seconds
- D. 165F for 15 seconds

24. How many hours do you have to cool cooked PHFs?

- A. 2 hours
- B. 4 hours
- C. 6 hours to cool from above 135F to below 41F
- D. 2 hours to cool from above 135F to 70F, then 4 hours to cool from 70F to below 41F

25. What are the cooking requirements for unpasteurized eggs? Choose all that apply.

- A. unpasteurized eggs prepped for immediate service need to reach a temperature of 145F for 15 seconds
- B. unpasteurized shell eggs that will be placed in hot holding need to reach a temperature of 155F for 15 seconds
- C. unpasteurized eggs prepped for immediate service need to reach a temperature of 135F for 15 seconds
- D. unpasteurized shell eggs that will be placed in hot holding need to reach a temperature of 145F for 15 seconds

26. A tuna salad was prepared on May 2 using tuna that was prepared on May 1, what should the discard date be?

- A. May 7
- B. May 8
- C. May 9
- D. May 10

27. When not in use, food contact surfaces should be?

- A. covered and free of physical contaminants
- B. cleaned every 4 hours
- C. sanitized every 4 hours
- D. cleaned and sanitized every 4 hours

28. One day after eating undercooked chicken, Jason has a fever and diarrhea. What is Jason most likely suffering from?

- A. allergic reaction
- B. foodborne infection
- C. foodborne intoxication
- D. chemical contamination

29. Viruses do not require a host to multiply.

- a. True
- b. False

30. Which of these is more likely to be found in poultry?

- A. e. coli
- B. trichinella
- C. salmonella
- D. ciguatera

31. A customer finds a cockroach in his/her pasta. What is this an example of?

- A. biological contamination
- B. chemical contamination
- C. physical contamination
- D. cross contamination

32. Which of the following are signs of rodents? Choose all that apply.

- A. shredded paper near food packaging
- B. black pellet like droppings
- C. oily odor
- D. oily brush marks on walls and baseboards

33. During transportation, ground beef was held at a temperature of 80F for 2 hours. After receiving the ground beef package, how long do you have to inspect the package and store the ground beef or prepare it for cooking, before the ground beef needs to be discarded?

- A. 2 hours
- B. 4 hours
- C. 6 hours
- D. 8 hours

34. Which of these are examples of PHF?

- A. sliced tomatoes
- B. garlic in oil
- C. steak
- D. baked potatoes

35. Which of the following are proper ways to thaw food? Choose all that apply.

- A. thaw in refrigerator, maintaining a temperature of 41F or lower
- B. submerge food in a bucket of cold water; water must cover at least half of food
- C. thaw food in microwave as long as food will be immediately cooked
- D. thaw food as part of cooking process





# Answers and Explanations

1. You are cooking ground beef for immediate service. What are the temperature requirements?

Answer: C. 155F for 15 seconds

Explanation: There are no temperature requirements when re-heating food for immediate service. However, there are temperature requirements for cooking food, even for immediate service. Whole or ground chicken needs to be cooked to 165F for 15 seconds. Any other ground meat must be cooked to 155F for 15 seconds. Any other meat must be cooked to 145F for 15 seconds.

2. How often should you check the temperature of PHF held in a buffet or self-service area?

Answer: B. every 4 hours

Explanation: You should check the temperature of PHFs in hot or cold holding every 4 hours. Hot food must be held at temperature of 135F or higher. If hot food drops below 135F for more than 4 hours, it must be discarded; if less than 4 hours, it can be re-heated. Cold food must be held at a temperature of 41F or lower. If cold food stays below 41F, it may be held for 7 days.

3. One of your workers has the flu, should you report this to the authorities? Answer: B. No.

Explanation: The flu is not a reportable illness. The reportable illnesses are salmonella, e. Coli, shigella, hepatitis A, norovirus

4. Only food with a temperature below 75F can be stored in a refrigerator?

Answer: B. False

Explanation: Food must have a temperature below 70F before being stored in a refrigerator. Otherwise, you risk raising the temperature of the refrigerator.

5. Glasses/cups should be stored upside down and utensils should be stored with handles up.

Answer: A. True

Explanation: Glasses/cups should be stored upside down and utensils should be stored with handles up. This allows people to grab items without contaminating food contact surfaces.

6. You are required to notify authorities if you get more than how many foodborne illness complaints?

Answer: A. 1

Explanation: You are required to notify authorities if you get more than 1 foodborne illness complaint.

7. Unpasteurized juice may be served to high risk populations as long as you provide a consumer advisory.

Answer: B. False

Explanation: Unpasteurized juice may NOT be served to high risk populations; even if a consumer advisory is provided. Unpasteurized juice may be served to the general population if a consumer advisory is provided.

8. Using hair spray away from food and food prep areas is one way of preventing what?

Answer C. chemical contamination

Explanation: Ways to prevent chemical contamination include using hair spray, lotions, cleaners, etc. away from food or food prep areas; following manufacturer directions/safety precautions for all chemicals; not storing acidic food in metal containers such as copper, brass, tin, galvanized cookware.

9. You are frying pork for immediate service. What are the temperature requirements?

Answer: B. 145F for 15 seconds

Explanation: There are no temperature requirements when re-heating food for immediate service. However, there are temperature requirements for cooking food, even for immediate service. Whole or ground chicken needs to be cooked to 165F for 15 seconds. Any other ground meat must be cooked to 155F for 15 seconds. Any other meat must be cooked to 145F for 15 seconds.

10. What must the interior temperature of a refrigerator be?

Answer: D. between 38F and 39F in the warmest part of the unit

Explanation: The interior of a refrigerator must be between 38F and 39F in the warmest part of the unit.

11. What is the maximum time bread can be kept in the temperature danger zone?

Answer: A. there is no maximum time

Explanation: Bread is not considered a potentially hazardous food and does not have a maximum allowable time it can spend in the temperature danger zone. PHFs can spend a maximum of 4 hours in the temperature danger zone (6 hours if food remains below 41°F). The 4 hours include time it took to receive/inspect food, prepare food, etc. The 4-hour clock starts over once food is brought to temperature outside of danger zone.

12. Which of the following are ways to prevent toxin poisoning? Choose all that apply

Answer: C. buy from reputable vendors

Explanation: Toxins cannot be killed by freezing nor heat. Toxins are usually not caused/transferred due to bad hygiene

13. How hot should water be when washing your hands?

Answer: A. 100F or greater

Explanation: You should wash your hands for 20 seconds (10-15 seconds of rubbing) using hot water at a temperature of 100F or greater; 120F or greater in CA

14. Pasta cooked for hot holding should reach what temperature?

Answer: A. 135F

Explanation: Fruits/vegetables/grains/pasta intended for hot holding should be cooked to 135F.

15. Which of the following is NOT a source of food/water for pests?

Answer: A. cardboard boxes

Explanation: Dirty wet mops, residue on equipment's, condensation from air conditioning units are all sources of water and/or food for pests.

16. What food safety subjects should employees be trained on? Choose all that apply.

Answer:

A. Proper hand washing

B. Proper hygiene

C. Cleaning and Sanitizing

D. Food Time/Temperature Control

E. Cross contamination prevention

F. Food Handling Practices

Explanation: Employees should be trained in all of the following subjects: proper hand washing, proper hygiene, cleaning/sanitizing, food time/temperature control, cross contamination prevention, food handling practices.

17. What is a measure of light intensity?

Answer: D. a foot candle

Explanation: A foot candle is a measure of light intensity

18. Meat and poultry must have the USDA inspection stamp.

Answer: A. True

Explanation: True. All meat/poultry must meet USDA inspection requirements.

19. There is an uncontained sewage backup at your food establishment. What should be done?

Answer: B. immediately close and notify authorities

Explanation: A sewage backup is immediate cause for closure and notifying authorities. Any time, you can't maintain minimum food safety, you must close immediately.

20. From top to bottom, how should food be stored in a refrigerator?

Answer: C. RTE food, whole fish, whole cuts of beef/pork, ground meat, whole chicken

Explanation: Store food according to how high cooking temperature needs to be (RTE at top, whole fish, whole cuts of beef/pork, ground meat/fish, whole or ground chicken at bottom).

21. What is a cross connection?

Answer: D. mixing of potable and waste water

Explanation: Cross connection is the mixing of clean and dirty water.

22. When using the heat method (using plain water) to sanitize items in a ware-washing machine, what temperature should the water be?

Answer: B. Between 180F and 194F

Explanation: When using the heat method (using plain water) to sanitize items in a ware-washing machine, the water should be between 180F and 194F. When using the heat method in a 3-compartment sink, items must be submerged in hot water (171F) for at least 30 seconds

23. You are cooking whole chicken for immediate service. What are the temperature requirements?

Answer: D. 165F for 15 seconds

Explanation: There are no temperature requirements when re-heating food for immediate service. However, there are temperature requirements for cooking food, even for immediate service. Whole or ground chicken needs to be cooked to 165F for 15 seconds. Any other ground meat must be cooked to 155F for 15 seconds. Any other meat must be cooked to 145F for 15 seconds.

24. How many hours do you have to cool cooked PHFs?

Answer: D. 2 hours to cool from above 135F to 70F, then 4 hours to cool from 70F to below 41F

Explanation: PHFs must be cooled from above 135F to 70F within 2 hours, and then cooled from 70F to below 41F within 4 hours. If you don't cool food within the time limit, the food must be discarded or re-heated (following correct re-heating procedures).

25. What are the cooking requirements for unpasteurized eggs? Choose all that apply.

Answer:

A. unpasteurized eggs prepared for immediate service need to reach a temperature of 145F for 15 seconds

B. unpasteurized shell eggs that will be placed in hot holding need to reach a temperature of 155F for 15 seconds

Explanation: Unpasteurized eggs prepared for immediate service need to reach a temperature of 145F for 15 seconds. Unpasteurized shell eggs that will be placed in hot holding need to reach a temperature of 155F for 15 seconds

26. A tuna salad was prepared on May 2 using tuna that was prepared on May 1, what should the discard date be?

Answer: A. May 7

Explanation: The discard date should be May 7. Salads and ready to eat food that contain PHF should be discarded 7 days(inclusive) from when original PHF (i.e. Chicken/tuna) was cooked/cooled, not date salad was assembled.

27. When not in use, food contact surfaces should be?

Answer: A. Covered and free of physical contaminants

Explanation: When not in use, food contact surfaces should be covered. When food contact surfaces are in continual use, they should be cleaned and sanitized every 4 hours.

28. One day after eating undercooked chicken, Jason has a fever and diarrhea. What is Jason most likely suffering from?

Answer: B. Foodborne Infection

Explanation: Foodborne infections are caused by eating food that contains living pathogens and symptoms have a delayed onset (they do not occur right away). Foodborne intoxication is caused by eating food that contain toxins; symptoms usually occur rapidly. Allergic reactions usually occur within minutes to hours after eating food a person is allergic to.

29. Viruses do not require a host to multiply.

Answer: B. False

Explanation: Viruses do NOT require a host to live, but DO require a host to multiply.

30. Which of these is more likely to be found in poultry?

Answer: C. Salmonella

Explanation: Salmonella is likely to be found in poultry/eggs. E. coli is more likely found in beef and produce. Trichinella is more likely found in pork and wild game. Ciguatera poisoning is more likely to occur when eating fish.

31. A customer finds a cockroach in his/her pasta. What is this an example of?

Answer: C. Physical contamination

Explanation: Any contaminant that can be seen is considered a physical contamination.

32. Which of the following are signs of rodents? Choose all that apply.

Answer:

A. shredded paper near food packaging

B. black pellet like droppings

D. oily brush marks on walls and baseboards

Explanation: Oily odor is not a sign of rodents; it is a sign of cockroaches

33. During transportation, ground beef was held at a temperature of 80F for 2 hours. After receiving the ground beef package, how long do you have to inspect the package and store the ground beef or prepare it for cooking, before the ground beef needs to be discarded?

Answer: A. 2 hours

Explanation: Ground beef is a potentially hazardous food. Since the ground beef spent 2 hours in the temperature danger zone during delivery, you have 2 hours to bring the ground beef outside the temperature danger zone before it must be discarded. PHFs can spend a maximum of 4 hours in the temperature danger zone (6 hours if food remains below 70F). The 4 hours include time it took to receive/inspect food, prepare food, etc. The 4-hour clock starts over once food is brought to a temperature outside of danger zone.

34. Which of these are examples of PHF?

Answer:

A. sliced tomatoes

B. garlic in oil

C. steak

D. baked potatoes

Explanation: **PHF** tend to be high in protein, includes heat treated plant foods (cooked vegetables/fruits such as baked potatoes, baked beans), include cut melons/fruit, raw sprouts (alfalfa, bean, radish), tofu, soy burgers, cut leafy greens, garlic in oil (potential for botulism)

35. Which of the following are proper ways to thaw food? Choose all that apply.

Answer:

A. thaw in refrigerator, maintaining a temperature of 41F or lower

C. thaw food in microwave as long as food will be immediately cooked

D. thaw food as part of cooking process

Explanation: The 4 ways to thaw food are:

1. in refrigerator (maintaining temp of 41F or lower)

2. completely submerged under cold **RUNNING** water (water must be below 70F)

3. in microwave as long as food goes immediately into cooking process

4. as part of cooking process

