Department of Public Health
Environmental Health

Food Handlers Safety Training

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Background

This class meets the general requirement of TB MED 530, Sections 2-501.11 and 2-503.12 for initial or refresher food sanitation and safety training.

This training ONLY covers Soldier and Family Readiness Group (SFRG) and Organizational food event servers for the annual food handler card and counter staff who do not prepare food. Four hours of initial food sanitation and safety training is required within 30 days of beginning work in an establishment that serves food.

A minimum of 5 hours should be planned for executing this training.
Four hours of course content is presented, a 10-minute break at the two-hour mark, and 50 minutes for the exam.

Contents for this course were developed using the March 2019 edition of TB MED 530 Tri-Service Food Code and the 2022 U.S. FDA Food Code.

WHO'S NOT COVERED UNDER THIS TRAINING:

- This training is NOT intended to certify Culinary Specialist (92G), food managers, supervisors, the person in charge (PIC) or food establishment employees.
- This training does NOT cover events held outside of or off JRTC & Fort Polk.
- This training, though not required by regulation at this time, is highly encouraged for Home Based Businesses that produce non-TCS Foods. Review GC Policy Letter #19 for more details.

GC Policy Letter #19, February 2022

Table 8-1. Summary of preoperational coordination and inspection requirements

Food Facility Type, Location, or Event Scenario[1]	Requirements		
	Certified PIC	Plan Review & Approval (Preoperational)	Preoperational & Reoccurring Sanitation Inspections
Fixed, seasonal, mobile, and vending food service business	YES[2]	YES	YES
Temporary food establishment (e.g., commercial food vendors)	YES[2]	YES	YES
Retail food stores and retail food concessions	YES	YES	YES
Child care and youth services facility kitchens	YES	YES	YES
Unit or organizational food events not open to the general public (e.g., unit barbeque, picnic, office pot luck)	NO	NO	NO
Unit or organizational fundraising event that dispenses TCS food to the general public	NO	YES	NO
Unit or organizational fundraising event that only dispenses non-TCS food (e.g., bake sale)	NO	NO	NO
Church supper or similar private group event	NO	NO	NO
Guest lodging facilities (e.g., breakfast area & restaurant)	YES	YES	YES
United Service Organization & Military Entrance Processing Station operated on the installation (e.g., cafeteria, snack bars)	YES	YES	YES
Cottage food operation in government housing	NO	YES	NO
Farmers market on installation	NO	YES	YES[3]

REGULATORY REQUIREMENTS:

SFRGs events serving food-

- Complete FP 96
- Route through required approvers to include Public Health for menu and preparation method approval.
- Have proof of current food handler card for anyone having direct contact with food at the event.
- Keep an accurate and detailed list of all volunteers who working the event.
- Keep an accurate and detailed list of all place's food and food items are purchased or received.

Home Based Business Producing Food-

- Contact the Fort Polk Department of Public Health - ENV Health for food list and method of preparation approval. Provide copies of all items for sale, ingredients and preparation. Also provide copy of label required to be affixed to all sold products.
- A home business may not sell high-risk foods or the following low-risk foods: honey, home-canned vegetables, meats, stews, cream or custard-filled bakery products, and high-acid foods.
- IAW TB MED 530, 8-301.12

TRAINING PURPOSE & OBJECTIVES

Purpose – Ensure food employees and counter staff are trained to perform their duties in a safe manner and with the ability to protect themselves and others from intentional and unintentional food contamination

Objective – Present essential food safety and sanitation practices that must be applied in all food operations. Prevent the occurrence of foodborne illness attributed to unsanitary food operations, poor employee hygienic practices, or poor food handling practices.

Scope of Training –

- Understand and recognize the importance of food safety.
- Understand risk factors that contribute to foodborne illness.
- Understand how food becomes unsafe.

KEY FOOD TERMS: CHAPTER 1

KEY FOOD SAFETY TERMS

Foodborne Illness Outbreak is defined as **2 or more cases** of a similar illness resulting from the ingestion of a common food.

- Ice and beverages are included as a "food".
- The outbreak may be confirmed through laboratory analysis where the causative agent is identified.
- Some outbreaks, such as Norovirus, are not always linked to a specific food, but can be linked to a specific facility where an infected food employee was working.

Contaminated – The presence of harmful substances (physical, chemical, or biological) in or on food.

KEY FOOD SAFETY TERMS *(CONT'D)*

Cross-contamination – The transfer of a harmful substance to food through direct or indirect contact:

- Spilled chemicals or detergents on food packages or surfaces where food comes into direct contact.
- Using un-sanitized equipment or utensils to prepare, store, or serve food.
- Bare-hand contact with foods that are ready-to-eat (RTE).
  - Bacteria from raw protein foods transferred to foods that are RTE.
  - Not changing gloves!
  - Touching your cell phone/skin/clothes etc. then touching food without changing gloves and washing your hands!
  - Not washing hands prior to taking internal temperatures.

KEY FOOD SAFETY TERMS *(CONT'D)*

Time/Temperature Control for Safety (TCS) Food (formerly "potentially hazardous food" (PHF).

- Food that is capable of supporting growth of harmful microorganisms that can cause a foodborne illness.

*Note that foods that are categorized as non-PHFs do not support microbial growth, but they can serve as a vehicle for spreading viruses and toxins if they become contaminated.

KEY FOOD SAFETY TERMS *(CONT'D)*

Ready-to-eat (RTE) Food – means FOOD that:

1. Is in a form that is edible without additional preparation to achieve FOOD safety, as specified under one of the following: 1 3-401.11(A) or (B), $ 3-401.12, or $ 3-402.11, or as specified in 1 3-401.11 (C); or
2. Is a raw or partially cooked animal FOOD, and the CONSUMER is advised as specified in Subparagraphs 3-401.11(D) (1) and (3); or
1. Is prepared IAW a variance that is granted as specified in Subparagraph 3-401.11 (D) (4); and
2. May receive additional preparation for palatability or aesthetic, epicurean, gastronomic, or culinary purposes.

Examples include, but not limited to-

- Food that has already been cooked
- Washed fruits and vegetables (whole or chopped)
- Deli meat & cheese
- Bakery items
- Sugar, spices, and seasonings

**Note: ready-to-eat food also needs careful handling to prevent contamination. For complete list of RTE food refer to TB MED 530 page 422, glossary.*

KEY FOOD SAFETY TERMS *(CONT'D)*

High-risk food. Any RTE FOOD that will easily support the growth of pathogenic bacteria. "High-risk foods" are more likely to be implicated as a method of infectious or toxigenic organisms consumed in foodborne illness incidents.

Major food allergen. Major food allergens are identified by the FDA and include:

- Milk, EGG, FISH (such as bass, flounder, cod, and including crustacean shellfish such as crab, lobster, or shrimp), tree nuts (such as almonds, pecans, or walnuts), wheat, peanuts, soybeans and sesame; or
- A food ingredient that contains protein derived from a food, as specified above.

KEY FOOD SAFETY TERMS *(CONT'D)*

Clean – Clean to sight and touch means there is no visible debris, encrusted food, or greasy feeling.

Sanitize – Sanitizing is a process of reducing the total number of micro-organisms ("germs") on a surface to safe levels.

*This is **NOT** the same as "sterilization," which is a process used in hospitals to kill (remove) all micro-organisms that are on a surface.*

Person in charge - The individual present at a food establishment who is responsible for the operation at the time of inspection and has the responsibility and authority to supervise and direct the activities of food employees.

FOODBORNE ILLNESS: CHAPTER 2

HOW FOODBORNE ILLNESSES OCCUR

Foodborne illnesses are preventable and most foodborne illnesses occur in persons who are not part of recognized outbreaks. Many cases are often not detected through routine surveillance. Behind every foodborne illness are several factors that contribute to or cause the illness. Unsafe food is the result of contamination.

- Food handlers 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

PATHOGENS

Microorganism:

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

Pathogen:

- Harmful microorganism
- Makes people sick when eaten or produces toxins that cause illness

Toxin:

- Poison

FOOD HAZARDS

Biological. Biological hazards contribute to almost two-thirds of all foodborne illness outbreaks.

- Bacteria
- Viruses
- Parasites
- Fungi

Chemical. Contamination of food or food contact surfaces (equipment/utensils) occurs through direct contact with chemicals or chemical residues following improper use or storage.

- Cleaners
- Sanitizers
- Polishes

Physical. When physical hazards such as insects and hair come into contact with food, biological contaminants contained on their surfaces are transferred to the food.

- Metal shavings
- Staples
- bandages
- Glass
- Dirt
- Natural objects (e.g., fish bones in a fillet)

FOODBORNE ILLNESS *(CONT'D)*

Highly susceptible populations—

- These people have a higher risk of getting a foodborne illness:
  - Aged 65 and Older
  - Younger Than 5 Years
  - Weakened Immune System
  - Expecting mothers
- Personnel operating in a "high stress" environment:
  - Soldiers in Basic Training
  - Soldiers engaged in field training exercises lasting longer than 2 weeks
  - Deployed personnel

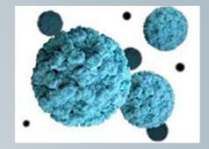
MORE ABOUT…BACTERIA

The Nature of Bacteria

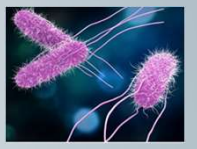
Bacteria are microorganisms in various shapes. They can be spheres, they can be rods, or they can be spirals. Diseases causing bacteria are called pathogenic.

The most common food-borne pathogens are;

Norovirus



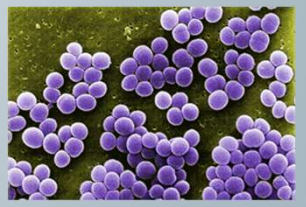
Salmonella



Clostridium perfringens

Campylobacter

Staphylococcus aureus



SYMPTOMS OF A FOODBORNE ILLNESS

The symptoms of a foodborne illness vary depending on which illness a person has. But most victims of foodborne illness share some common symptoms.

Common symptoms of foodborne illness:

- Diarrhea
- Vomiting
- Fever
- Nausea
- Abdominal cramps
- Jaundice—a yellowing of the skin and eyes

Onset times:

- Depend on the type of foodborne illness
- Can range from 30 minutes to six weeks

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 became sick

Notify Authorities

Contact the local regulatory authority if an outbreak is suspect

Segregate product

Set the suspect product aside if any remains
Include a label with “Do not use” and “Do Not Discard” on it.

Document the information

Log information about suspect 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

BIOLOGCIAL CONTAMINANTS

Sources

- Biological hazards can come from a variety of contaminants including bacterial and viral pathogens.
- Disease-causing bacteria, viruses, parasites, molds, yeasts, and naturally occurring toxins.
- Deodorizers, first aid products, and health and beauty products (hand lotions, hairsprays, etc.)

Prevention

- Minimize or eliminate contact with bare hands.
- Wash and clean both hands and surfaces frequently.
- Handle and separate raw meats from other types of food.
- Use sneeze guards or cough shields to prevent employees from sneezing or coughing on food.
- Food employees with cuts or open wounds on their hands should stop working immediately.
- Wash raw fruits and vegetables thoroughly before peeling, cutting, cooking, or eating them.
- Obtain all foods from trusted sources and production facilities.
- Clean and disinfect equipment, utensils, and other types of tools used on food products.

CHEMICAL CONTAMINANTS

Sources

- 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.)

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.
- 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. Must always contain label that identifies the contents of the product.
- Chemicals must have a label that identifies the contents of the product when removed from original container.
- Use chemicals for their intended use and follow manufacturer's directions.

PHYSICAL CONTAMINANTS

Sources

- Common objects that get into food
  - Metal shavings from cans
  - Wood
  - Fingernails
  - Staples
  - Bandages
  - Glass
  - Jewelry
  - Dirt
- Naturally occurring objects such as fruit pits and bones
- Deliberate contamination of food

Prevention

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

FOOD ALLERGENS

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

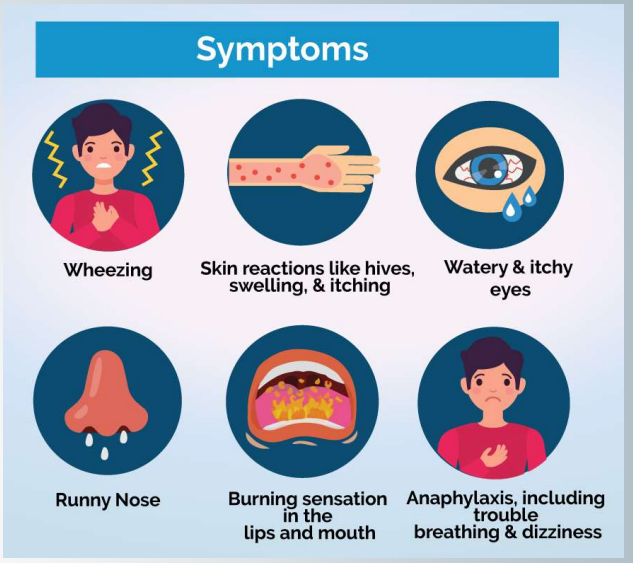
FDA's nine major food allergens

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

FOOD ALLERGENS

Allergy Symptoms

- Nausea
- Wheezing or shortness of breath
- Hives or itchy rashes
- Swelling 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

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.
- Always clean food contact surfaces when contamination may have occurred and between switching tasks-"Clean as you go".
- Always wash, rinse, and sanitize utensils before each use.

FIVE MAJOR RISK FACTORS

The are five major risk factors related to employee behaviors and preparation practices in retail and food service establishments as contributing to foodborne illness:

- Improper holding/time temperatures
- Inadequate cooking
- Contaminated equipment/cross contamination protection
- Poor personal hygiene
- Food from unsafe sources

FIVE MAJOR RISK FACTORS (CONT'D)

Improper holding/time temperatures

Time-temperature abuse occurs 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
- Items being re-frozen after being thawed

Inadequate cooking

It is a common misconception that all food bacteria are destroyed simply by adding heat. Internal temperatures and cooking times vary depending on the food.

- Pathogens that live on animal products can only be killed at specific temperatures. If these temperatures are not reached during cooking, the bacteria may not be killed.
- Some pathogens can create heat-stable toxins that cannot be destroyed during cooking, no matter the temperature.

FIVE MAJOR RISK FACTORS (CONT'D)

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 (RTE) food touches contaminated surfaces
- A food handler touches contaminated food and then touches RTE food
- Contaminated cleaning cloths touch food-contact surfaces

FIVE MAJOR RISK FACTORS (CONT'D)

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
- Pass contaminants through illness

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 and/or
- Sanitizer is not exchanged at frequent intervals (not at least 100ppm and/or water is visibly and excessively soiled.)
- No method of accurately testing sanitizer concentrations in ppm or mg/L

Food Contact surfaces and equipment used for TCS foods must be cleaned no less than every 4 hours to prevent growth of microorganisms!

FIVE MAJOR RISK FACTORS (CONT'D)

Food from unsafe sources

The food service manager or the supervisor designated to conduct purchasing and receiving activities is responsible for ensuring foods are obtained from approved sources.

- Compare items delivered against the purchase invoice to ensure product and manufacturer match.
- Questionable items should be rejected or examined against the military Approved Sources Directory.
- Consult with Veterinary Services for assistance.

Food employees tasked to assist with purchasing and receiving must be:

- Trained to identify approved sources and conditions for rejecting deliveries, or
- Directly supervised by the person-in-charge or manager when preparing purchases or conducting receiving activities.

What Bacteria Need to Grow… F-A-T T-O-M

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 (neutral pH, 4.6 – 9.0).

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

Time
The more time bacteria spend in the temperature danger zone, the greater chance they have to grow to unsafe levels.

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

Moisture
Bacteria grow well in food with high levels of moisture.
aw = water activity; the amount of moisture available in food for bacterial growth (aw scale ranges from 0.0 to 1.0).
Water has a water activity of 1.0.

CONTROL F-A-T T-O-M

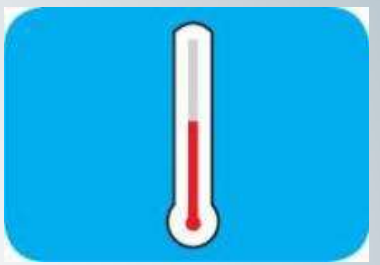
The Conditions You Can Control

Temperature

- Keep TCS food out of the temperature danger zone

Time

- Limit how long TCS food spends in the temperature danger zone



Temperature and time are the two important conditions for growth that can be controlled by the food employee.

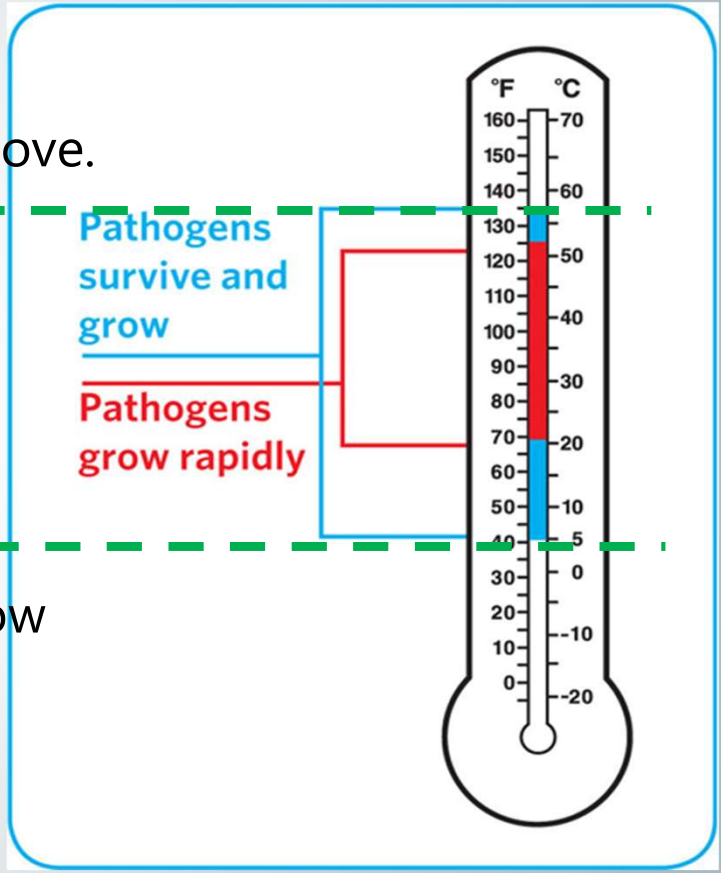
TIME & TEMPERATURE CHAPTER 3

TIME & TEMPERATURE CONTROLS

Safe Temperatures—

Hot: 135°F (57°C) or above.

- ✓ TCS food has been time-temperature abused any time it remains between 41°F and 135°F (5°C and 57°C). This is called the temperature danger zone.



Cold: 41°F (5°C) or below

- ✓ The longer food stays in the temperature danger zone, the more time pathogens have to grow. If food is held in this range for more than four hours, you MUST throw it out.

PROPER COOKING, REHEATING, AND HOLDING TEMPERATURES

Table F-1. Summary chart for minimum food cooking temperatures and holding times

Food	Minimum Temperature and Holding Time at the Specified Temperature[1]
• **Cooked fruits and vegetables**	**135°F (57°C); 15 seconds**
• **Raw Eggs** prepared for immediate service • **Commercially Raised Game Animals and Exotic Species of Game Animals** • **Fish, Pork cutlets/chops, and Meat** not otherwise specified in this chart or in ¶ 3-401.11(B)	**145°F (63°C); 15 seconds**
• **Pork Roast**	**145°F (63°C); 4 minutes**
• **Raw Eggs** not prepared for immediate service (e.g., scrambled bulk, quiche, pre-cracked or "pooled") • **Comminuted Commercially Raised Game Animals** and **Exotic Species of Game Animals** • **Comminuted Fish and Meats** • **Injected Meats**	158°F (70°C); < 1 second, or **155°F (68°C); 15 seconds, or** 150°F (66°C); 1 minute, or 145°F (63°C); 3 minutes
• **Poultry** • **Baluts** • **Stuffed Fish; Stuffed Meat;** • **Stuffed Pasta;** • **Stuffed Poultry;** • **Stuffed Ratites** • **Stuffing Containing Fish, Meat, Poultry, or Ratites** • **Wild Game Animals**	**165°F (74°C); 15 seconds**
Food Cooked in a Microwave Oven	**165°F (74°C);** Hold for 2 minutes after removing from microwave oven

[1] Summarized from § 3-401.11

Table F-2. Summary chart for minimum food reheating temperatures and holding times

Food	Minimum Temperature	Minimum Holding Time at the Specified Temperature	Maximum Time to Reach Minimum Temperature
Any TCS food (advanced prepared or leftover) that is cooked, cooled, and reheated: ¶¶ 3-403.11(A) and (D)	165°F (74°C)	15 seconds	2 hours
Any TCS food (advanced prepared or leftover) that is reheated in a microwave oven: ¶¶ 3-403.11(B) and (D)	165°F (74°C)	and hold for 2 minutes after reheating	2 hours
RTE TCS food that is taken from a commercially processed, hermetically sealed container or intact package: ¶¶ 3-403.11(C) and (D)	135°F (57°C)	No time specified	2 hours
Unsliced portions of meat roasts cooked as specified under ¶ 3-401.11(B): ¶ 3-403.11(E)	Same oven parameters and minimum time and temperature conditions as specified under ¶ 3-401.11(B); or		Not applicable
	Minimum and maximum time and temperature conditions listed in this chart for ¶¶ 3-403.11(A) and (D).		

Comminuted

1. "Comminuted" means reduced in size by methods including chopping, flaking, grinding, or mincing.

2. "Comminuted" includes FISH or MEAT products that are reduced in size and restructured or reformulated such as gefilte fish, gyros, ground beef, and sausage; and a mixture of two or more types of meat that have been reduced in size and combined, such as sausages made from two or more meats.

TCS FOODS (CONT'D)

Obvious foods include—

- Raw or heat-treated (cooked) animal food:
  - Meat: *beef, pork, lamb*
  - Poultry
  - Seafood: *fish, shellfish, crustaceans*
  - Dairy products
  - Shell eggs*
    (except pasteurized shell eggs)

TCS FOODS (CONT'D)

Other previously designated foods include—

- Heat-treated plant food -- *rice, pasta, baked potato, fried onions, cooked apples…*
- Sprouts and sprout seeds
- Cream pies
- Gravies
- Sliced melons; cut tomatoes; cut leafy greens
- Untreated garlic-and-oil mixtures

MINIMUM INTERNAL COOKING TEMP 165°F

165°F (74°C) for 15 seconds

- Poultry—whole or ground
  - Chicken, Turkey, Duck
- Stuffing made with fish, meat, or poultry
- Stuffed meat, seafood, poultry
- Stuffed vegetables or pasta containing meat, seafood, poultry
- Dishes that include previously cooked (leftover), TCS ingredients
- Raw animal foods subjected to a non-continuous cooking process *(partially cooked in advance)*
- Leftovers reheated for hot holding
- Microwaved raw animal foods *(poultry, meat, fish)*

MINIMUM INTERNAL COOKING TEMP 155°F

155°F (68°C) for 15 seconds

- Ground meats *(beef, veal, pork, lamb)*
  - Sausage
  - Hamburgers
- Ground, chopped or minced fish; *includes—*
  - Molluscan shellfish *(clams, muscles, oysters)*
  - Crustaceans *(crab, shrimp, lobster)*
- Injected meats; *includes—*
  - Brined ham
  - Flavor-injected roasts
  - Mechanically tenderized meat
- Ratites *(ostrich, emu)*
- Bulk-prepared scrambled eggs
  - Pasteurized & unpasteurized shell or liquid eggs that will be hot-held for service

MINIMUM INTERNAL COOKING TEMP 145°F

145ºF (63ºC) for 15 seconds

- Steaks/chops/strips of pork, beef, veal, & lamb
- Fish *(whole or portioned, not chopped)*
  - Fillets or fish steaks
  - Molluscan shellfish *(clams, muscles, oysters)*
  - Crustaceans *(crab, shrimp, lobster)*
- Commercially raised game animal *(deer, bison, rabbit)*
- Made-to-order eggs

145ºF (63ºC) for 4 minutes – Whole meat roasts *(pork, beef, veal, corned beef, lamb)*

- Must apply prescribed oven temperatures during cooking [Table F-1, Tri-Service Food Code].
- Table 3-3, Tri-Service Food Code identifies alternate minimum cooking temperatures and times for whole meat roast.

MINIMUM INTERNAL COOKING TEMP 135°F

Heat to 135°F (57°C) – Plant foods intended for hot holding during service

- Fruits & vegetables
- Grains *(rice, pasta)*
- Legumes *(beans, refried beans)*

- Must not contain meat, poultry, fish, or eggs

REHEATING FOOD

Foods reheated for immediate service *(individual customer order)*

- Reheat to **any temperature** if it was cooked & cooled correctly.
- Applies to leftovers, pre-prepared foods, & commercially processed & packaged foods that are RTE.

Commercially processed & packaged RTE food for hot holding *(serving line)*

- Heat to internal temperature of **135ºF (57ºC)** or above.

Leftovers & pre-prepared RTE foods reheated for hot-holding:

- Must reheat to internal temperature of **165ºF (74ºC)** for 15 seconds **within 2 hours**.
- If microwaved, must let stand covered for 2 minutes after reheating.

TEMPERATURE CONTROLLED PROCESSES

Receiving

- Timely transfer of foods to refrigerator or freezer when receiving deliveries.

Cold holding

- During storage & service
- Check operating temperature of units
- Don't over-pack units

Thawing

- Do **NOT** thaw at room temperature!
- Thaw in a refrigerator that maintains foods cold at 41°F or below
- Thaw as part of cooking process *(frozen hamburgers on a grill).*
- Thawing sealed & impermeable food packages under cold running water (≤70°F) is allowed, but least preferred.
  - ✓ Max time = 4 hours from when the temperature of the thawed portion reaches 41°F and includes time needed to prepare the food after thawing.

TEMPERATURE CONTROLLED PROCESSES *(CONT'D)*

Food Preparation

- Use small batch preparation to minimize the time food is held at unsafe temperatures during preparation.

Cooking

- Check internal product temperature at the terminal stage of cooking.
- Spot check multiple pieces when individual portions are arranged on a baking sheet.
- Check thickest part of product.

Hot holding

- Food must be 135°F or above before being placed in hot holding.

TEMPERATURE CONTROLLED PROCESSES *(CONT'D)*

Cooling:

- Rapid cooling achieved by:
  - Slicing bulk meats
  - Transfer bulk products to multiple shallow pans
  - Immersion in ice-bath and frequent stirring
  - Loosely cover food containers before storing.

Cooling Criteria:

- Hot foods cooled to 70°F or below within 2 hours, and then to 41°F or below within 4 hours *[6 hours for total process]*.
- TCS foods prepared from ambient ingredients—
  - Cooled within 4 hours to 41°F or below.

THERMOMETER REQUIREMENTS

Thermometers must be readily available for spot checking internal food temperatures.

- Verify food in hot & cold holding.
- Verify terminal cooking temperature was achieved.
- Calibrate daily to ensure accuracy.
- Sanitize between foods & prior to each use.

THERMOMETER CALIBRATION

Boiling Point Method

- Thermometers used for hot holding or cooking.

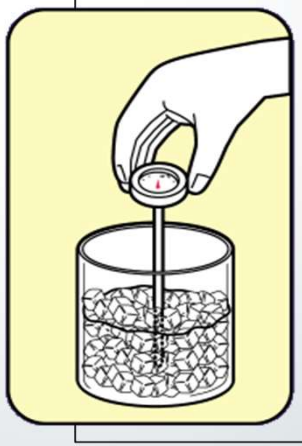
Ice Point Method

- Thermometers used for cold holding.

❖ Calibrating at cold temperature may not result in calibration at the hot end of the thermometer scale.

Ice Point Calibration Method

- ❑ Fill cup with ice;
- ❑ Add cold water to cover ice;
- ❑ Immerse thermometer probe;
- ❑ Wait 5 minutes to allow temperature to stabilize;
- ❑ Thermometer should indicate 32°F—
  - Follow manufacturer's instruction to adjust calibration.
  - For bi-metallic stem-type, adjust by turning the nut located under the dial.
  - Calibration is achieved when scale indicates temperature within ± 2°F (± 1°C) of desired measurement.



FOOD SAFETY: HAND HYGIENE CHAPTER 4

PERSONAL HYGIENE & WORK HABITS

People are natural carriers of bacteria

- Staph bacteria found on skin & hair, regardless of how often you bathe.
- Fecal-oral route of transmission -- *Bacteria found in our intestines transferred to everything you touch.*

People can also carry harmful viruses that are readily transmitted through food or contact with surfaces that are touched by others.

- Norovirus; Hepatitis A
- Infection occurs when contaminated food is ingested or contaminated hands come into contact with mucous membranes (eyes, nose, mouth).

PERSONAL HYGIENE & WORK HABITS *(CONT'D)*

Actions that can lead to contaminated food:

A. Scratching the scalp
B. Running fingers through hair
C. Wiping or touching the nose
D. Rubbing an ear
E. Touching a pimple or infected wound
F. Wearing a dirty uniform
G. Coughing or sneezing into the hand
H. Spitting in the operation
I. Touching a personal item (CELL PHONE)

People can contaminate food when

- They don't wash their hands after using the restroom.
- They come to work when they are sick or have been in contact with a person who is sick.
- They sneeze onto food or food-contact surfaces.
- They touch dirty food-contact surfaces and equipment and then touch food.

❖ Avoid personal behaviors that can contaminate food!

PERSONAL HYGIENE & WORK HABITS *(CONT'D)*

Hand-washing "...the single most important means of preventing the spread of infection." *–Centers for Disease Control and Prevention*

The failure of food-handlers to wash hands in certain situations (such as after using the toilet, handling raw meat, cleaning spills, or carrying garbage), wear clean gloves, or use clean utensils is responsible for various foodborne transmissions. Anyone handling food is responsible for proper food handling.

Hand Washing Standards

Use only designated hand wash sinks.

- 3-compartment sink and custodial sinks are **NOT** authorized for handwashing.

Hand wash sinks must be supplied with the following items at all times

- Soap;
- Hand drying device (paper towels or approved air-knife system);
- Trash receptacle (for paper towels).

❖Do not block access to hand wash sinks!

PROPER HANDWASHING PROCEDURE

Handwashing is a 20-second process

1. Wet hands with warm/cold running water

2. Apply soap

3. Rub hands together for **20 seconds** to form a lather

****Clean under fingernails, between fingers, and the forearms**

4. Rinse thoroughly under running water

5. Dry hands completely with a clean towel

WHEN SHOULD YOU WASH YOUR HANDS?

- Before beginning work.
- After using toilet facilities.
- After sneezing, coughing, or using a tissue.
- Before putting on **and** when changing disposable glove.
- Leaving and returning to the kitchen or food preparation area.
- After handling money then returning to a food handling task.
- After taking a break, to include—
  - Smoking or using tobacco;
  - Eating (and chewing gum);
  - Applying lip balm or makeup.
- After touching—
  - Hair, face, or body;
  - Clothing or apron.
- Before handling cleaned and sanitized equipment and utensils.
- Before and after handling uncooked eggs, raw meat, poultry, and fish/seafood.
- After handling chemicals that might affect food safety.
- Handling service animals or aquatic animals.
- After every chance of contamination, such as custodial tasks—
  - Clearing tables or busing dirty dishes;
  - Handling trash;
  - Cleaning floors & restrooms

HAND ANTISEPTICS (HAND SANITIZER)

Use of sanitizing hand gels is **NOT** authorized as a substitute for proper handwashing!

- Used only after properly washing hands.
- Dry hands before applying.
- Must be allowed to air dry before touching food or equipment.

HYGIENE STANDARDS

- **Fingernails**
  - Short *(max ¼ inch above the fingertip)*
  - Neatly trimmed & smooth
  - No false nails, polish, or nail jewelry/ornaments
    - ❖ Wearing disposable gloves does **NOT** dismiss this requirement.

- **No** eating, chewing gum, drinking, or tobacco use in kitchen (food prep) areas or serving lines.
  - Use only designated break areas.
  - Exception: Water in a closed container with straw.

If you see something….say something!

SINGLE-USE GLOVES

Disposable Glove Use Policy

- Optional for use when preparing foods that require further cooking before being served to customers.
- NEVER used in place of hand washing.
- NEVER wash and reuse

Ready-to-Eat Foods

- Bare-hand contact with RTE foods is prohibited.
- Options include using—
  - Disposable gloves;
  - Utensil;
  - Food-grade tissue paper.

Wash your hands before putting on gloves and every time you change gloves!

SINGLE-USE GLOVES *(CONT'D)*

Wearing the gloves

- Wash and dry hands before putting on gloves.
- Select the correct glove size to ensure proper fit.
- Hold gloves by the edge when putting them on.
  - NEVER blow into gloves
  - NEVER roll gloves to make them easier to put on
- Check for rips or tears.

When to change gloves

- When soiled or torn.
- Before beginning a different task.
- After interruptions of the immediate task.
- After handling raw meat, seafood, or poultry and before handling ready-to-eat food.

FOOD SAFETY: CLEANING & SANITIZING AND FACILITY SANITATION CHAPTER 5

PREVENTING CONTAMINATION

Protect cleaned & sanitized items from contamination between uses—

- Store away from chemicals, soiled linens, & soiled dinnerware or equipment.
- Keep storage & drying racks/shelves clean.
- Store plates, cups, & bowls inverted or covered.
- Store silverware with handles facing up.

Hygienic Practices:

✓ Wash hands before handling clean/sanitized items.

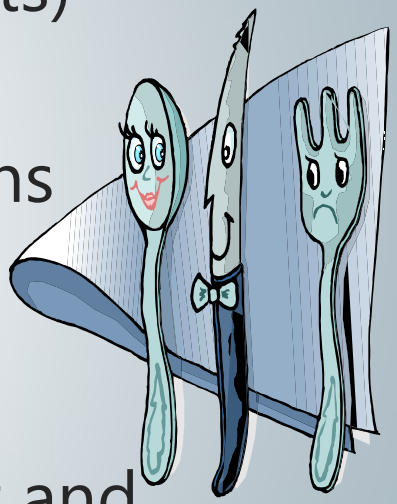
✓ Handle cups, glasses, bowls, plates, silverware, & utensils **without touching inside surfaces or surfaces that contact food or the user's mouth**.

PROPER CLEANING AND SANITIZING

Controls

Food employees (and dining facility attendants) must adhere to proper procedures for—

- Preparing and managing sanitizing solutions
- Using a 3-compartment sink
- Managing dishware using a dishwasher
- Handling cleaned and sanitized equipment and utensils
- Managing wiping cloths



METHODS FOR SANITIZING

Hot water is preferred method

- Manual & mechanical ware washing.
- Heat from sanitizing rinse will speed the air-drying process, allowing rapid return of equipment & utensils for use or placement in storage.

Hot Water Sanitizing		
Sanitizing Rinse Temperature	**Dish machine**	**Manual**
	160°F (71°C) at utensil surface*	171°F (77°C)
Contact Time	n/a – equipment operated IAW manufacturer specifications	30 seconds
** Minimum temp of hot water supplying Stationary rack, single temp machine = 165°F (74°C); minimum temp of hot water supplying all other machines = 180°F (82°C)*		

METHODS FOR SANITIZING *(CONT'D)*

Chemical Sanitizers: *chlorine (bleach), quaternary ammonia, iodine:*

- Food prep tables, dining room tables, food/beverage dispensers, & condiment containers
- Used when hot water sanitizing cannot be achieved during mechanical or manual ware washing.
- Requires longer time for treated surfaces to air dry.

Chemical Sanitizing				
Sanitizer Concentration	**Chlorine**		**Quats**	**Iodine**
	100 mg/L	50 mg/L	*varies**	12.5 – 25* mg/L
Contact Time	15 sec	7 sec	30 sec	30 sec
Water Temp	55°F (13°C)	pH ≤10, 100°F (38°C), **or** pH ≤8, 75°F (24°C)	75°F (24°C)	68°F (20°C)
Water pH	8 or 10		n/a	≤ 5.0*
* *Solution concentration prepared per manufacturers' instruction; pH for iodine must not exceed manufacturer's specification.*				

CHEMICAL SANITIZERS

Reminders:

- Prepare fresh solution daily and as often as necessary to maintain proper concentration.
- Concentration will dissipate over time, by heat *(hot water)*, contamination *(food debris),* & soapy water.
- Prepare according to manufacturer's instruction.
- Do **NOT** mix different chemical agents in the same solution.

Ensuring Effectiveness:

- Use chemical test kit or test paper to verify concentration of the prepared solution—
  - Conducted each time a solution is prepared!
  - Minimum required concentration achieved.
  - Maximum concentration **NOT** exceeded.
  - Spot check throughout the day or period of use.
- Second clear water rinse required when sanitizer concentrations are exceeded—
  - Chlorine $\geq$ 200 mg/L
  - Quats $\geq$ 200 mg/L
  - Iodine $\geq$ 25 mg/L

MECHANICAL WAREWASHING

Recommend segregating worker duties for loading & unloading to prevent cross contamination.

Machine is cleaned, operated and serviced IAW manufacturer specification.

- Machine is cleaned after each meal period;
- Various parts allowed to air dry.

Procedures during use

- Scrape or pre-rinse;
- Do not overload dish racks;
- All surfaces exposed to wash & rinse water;
- Monitor gages *(temp, pressure, sanitizer);*
- Spot check surface temperature on utensils following sanitizing rinse;
- Air dry before storing or returning to service.

IN-PLACE EQUIPMENT CLEANING

Applies to:

- Fixed and large equipment that cannot be disassembled.
- Equipment designated by the manufacturer as clean-in-place (CIP).

Procedures: *Follow manufacturer's instruction—*

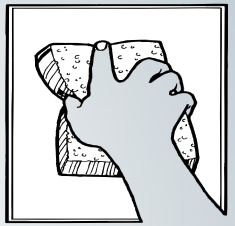
- Unplug the equipment.
- Remove parts *(as applicable)*
  - Wash, rinse, & sanitize using dishwasher or 3-compartment sink.
- Scrape/remove food debris from equipment surfaces.
- Wash equipment surfaces with soap solution.
- Rinse with clear, potable water.
- Spray chemical sanitizer onto surfaces in sufficient quantity to allow minimum prescribed sanitizing contact time. – Air dry.

❖ **NOTE:** Using pressure spray (power washing) to clean the equipment must be approved by the equipment manufacturer.

WIPING CLOTHS

Sponges may **NOT** be used for cleaning tables, chairs, or equipment food contact surfaces

- Used on walls & floors only



Wiping cloths

- Segregate cloths that are used for food contact surfaces *(serving lines, beverage bars, condiment dispensers)* from those used on non-food contact surfaces *(tables, chairs).*
  - Laundered daily; do **NOT** use soiled cloths from previous day.
    - Rinse frequently; store in a sanitizer solution comprised of soapy or clear water.
      - Food prep sinks, pot/pan wash sinks, & hand wash sinks may **NOT** be used to rinse wiping cloths.

TB MED 530 IAW 3-304.14

FACILITY SANITATION

Cleaning activities & supplies

- Sweep and mop floors—
  - When the least amount of food is exposed.
  - Using a dustless method in dining room, kitchen, serving areas, & food storage areas.

- Store cleaning supplies and equipment in designated areas away from food, equipment, utensils, linens, and single-use/service items.
  - Clean/rinse all supplies before storing.
  - Store mops head down.
  - Use only designated custodial sinks.

Waste Management

- Cover garbage and refuse containers when not in use.
- Garbage containers—
  - Use plastic liners; do **NOT** reuse liners.
  - Empty when 2/3 full; bags must be tightly sealed (tied) before placement in dumpster.
  - Do **NOT** store/hold tied bags or filled trash cans in unapproved areas; take immediately to the dumpster.
  - Close dumpster doors after each use.
    - *Clean-up spilled food debris around the dumpster when it occurs*

FACILITY SANITATION *(CONT'D)*

Pest control

Pests are readily controlled by maintaining facilities in a sanitary status by;

- Keep windows closed if screens are torn or missing.
- Keep exterior doors closed when not in use.
- During hours of operation, turn on mechanical air curtains above doors (when equipped).
- Eliminate harborage conditions by removing cardboard boxes & wooden pallets.
- Routinely inspecting incoming shipments of FOOD and supplies.
- Routinely inspecting the PREMISES for evidence of pests.
- Using proper stock rotation, "First In First Out" or the manufacturer's "use by" date.

- Application of pesticides is **NOT** authorized by food employees.

CLEANING & SANITIZING WORK SURFACES

Equipment food-contact surfaces and utensils shall be cleaned throughout the day at least every 4 hours

1. Scrape or remove food debris from the surface

2. Wash with a soap solution

3. Rinse with clear water

4. Sanitize the entire surface (Contains 100 ppm chlorine solution)

5. Allow the surface to air-dry

USING A THREE-COMPARTMENT SINK

There are six steps to using a three-compartment sink:

1. Scrape
2. Pre-rinse or pre-soak
3. Wash *(clean soapy water; 110-120°F)*
4. Rinse *(clear water; 120-140°F)*
5. Sanitize *(clear water)*
   - Hot water *(171°F (77°C) or above)* or chemical
6. Air dry
   - Use clean drainboards or racks.
   - Invert items; do not stack.

CAUTION

Use PPE *(dishwashing gloves & apron)* **to protect from scalding.**

Ideally, one employee handles soiled items and conducts wash activities while another employee conducts rinse and sanitizing activities. Failure to supply hot water to a dishwashing machine or 3-compartment sink affects proper cleaning and sanitizing.

FOOD SAFETY: HEALTH & FOOD STORAGE CHAPTER 6

HEALTH REQUIREMENTS

Disclosure by Workers

- **Reportable diagnosis or history of exposure**
  - Initially disclosed to employer when hired.
  - Reported during occurrences while employed.

Individual Diagnosis …or	…Reportable Exposure
Norovirus	Within past 48 hours
Enterohemorrhagic (EHEC) or Shiga Toxin-Producing E. coli (STEC)	Within past 3 days
Shigella spp.	Within past 3 days
Salmonella Typhi	Within past 14 days
Hepatitis A virus	Within past 30 days

- **Reportable symptoms:**
  - Vomiting, diarrhea, jaundice, sore throat with fever, infected wound or lesion with pus *(oozing boils, pimples, and sores)*

HEALTH REQUIREMENTS *(CONT'D)*

Infected wounds / unhealed cuts / blistered burns

- Must be covered to prevent pathogens from contaminating food and food-contact surfaces.

How a wound is covered depends on where it is located:

- **Hand or wrist –** use impermeable cover (bandage or gauze covered by a finger cot) **and** then cover with a single-use glove.
- **Arm –** use impermeable bandage.
  - If work smock has full or three-quarter sleeves, always wear the sleeves down.
- **Body –** cover with dry, tight-fitting bandage.

HEALTH REQUIREMENTS *(CONT'D)*

Exclusion from work

- Individuals must be cleared by medical practitioner before returning to work if—
  - ✓ Experiencing symptoms of vomiting or diarrhea;
  - ✓ Diagnosed with a reportable disease **and** the food establishment serves a highly susceptible population (HSP).

Restrictions from working with food

- Employee duties limited to performing administrative or custodial tasks if—
  - ✓ Diagnosed with a reportable disease *(but does not serve a HSP)*
  - ✓ Frequent coughing or sneezing
  - ✓ Sore throat with fever
  - ✓ **Infected** wound *(regardless where located on the body)*

Communicate with your Supervisor!

UNIFORM STANDARDS

Clean Uniforms

- Wear clean uniform or clothing daily;
- Change outer clothing when it becomes heavily soiled with food debris during the course of the day.
- Remove aprons when leaving food-preparation areas.

Remove jewelry from hands and arms when preparing, cooking, or serving food.

- *Exceptions allow wearing:*
  - Single, plain/smooth ring/wedding band;
  - Medical alert bracelet or necklace.

UNIFORM STANDARDS *(CONT'D)*

Adequate Hair Restraints

- Clean hat or other hair restraint. *Exception allowed for—*
  - ✓ Counter staff who only serve beverages & wrapped foods.
  - ✓ Hostesses & wait staff if they present a minimal risk of contaminating exposed food and clean equipment/utensils.

Hairnets

- Beard-net (snood) and arm-net/sleeve must be worn.

Hats

- Paper/disposable hat disposed at end of shift/day.
- Long hair must remain pinned/tied and tucked under hat or contained by hairnet.
- All males must wear a hat even if head is clean shaven – *hats prevent perspiration from dripping onto surfaces.*

Hair restraints and clothing that covers body hair, that are designed and worn to effectively keep their hair and sweat from contacting exposed FOOD; EQUIPMENT, UTENSILS, and LINENS.

FOOD STORAGE

Storage location:

- Store food in a clean, dry location away from dust and other contaminants.
- 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

FOOD STORAGE (cont'd)

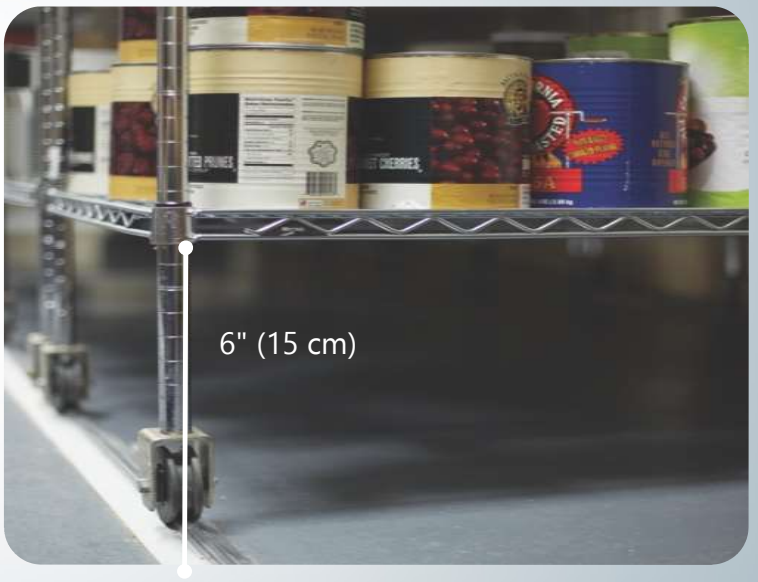
Damaged, spoiled, or incorrectly stored food:

- Discard unsafe food:
  - Damaged
  - Spoiled
  - Incorrectly stored
  - Missing its date mark
  - Past its date mark
  - Exceeded time/temperature requirements
- If returning unsafe food:
  - Store it away from other food and equipment.
  - Label it so it is not used.

FOOD STORAGE (cont'd)

Equipment, utensils, linens, and single-service and single-use articles:

- 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 protective packaging;
  - In a clean, dry location;
  - Where they are not exposed to splash, dust, or other contamination.



FOOD STORAGE (cont'd)

Containers:

- Store food in containers intended for food.
- Use containers that are durable, leakproof, and able to be sealed or covered.
- NEVER use empty food containers to store chemicals.
- NEVER put food in empty chemical containers.
- Wrap or cover all food correctly.
- Have common name of food if removed from original package.

FOOD STORAGE (cont'd)

Storage order:

- 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.

- Store food items in the following top-to-bottom order:
  A. Ready-to-eat food
  B. Seafood
  C. Whole cuts of beef and pork
  D. Ground meat and ground fish
  E. Whole and ground poultry

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

FOOD LABELS

Advanced Prepared TCS Food

- The maximum refrigerated holding period for may not exceed 7 days to include the day prepared.
- Must have date and time item was advanced prepared and the discard date.
- Labeled to indicate whether the product is "raw," "partially cooked," or "RTE;"
- The name of the food.
- Leftovers shall have a label indicating, "Leftover," the food name, the date prepared, and the use-by date.

Foods **cannot** be retained as leftovers if:

- ✓ Serving a highly susceptible population.
- ✓ Contaminated self service items that are TCS foods.
- ✓ Food exceeds Time/temp control of foods.
- ✓ Food are visibly contaminated with debris or other foreign contaminant.

Foods **can** be retained as leftover if:

✓Items that were protected in display via sneeze guards.
✓Uncontaminated bulk products from a serving line.
✓No outside ingredients from other items mixed in.
✓Items were appropriately labeled.
✓Hot FOODS held at 135°F (57°C) or above, and cold FOODS at 41°F (5°C) or below throughout the meal period.

FOOD LABELS (CONT'D)

- Frozen foods pulled from freezer:
  - Must have expiration date prior to placing in freezer.
  - The item must have the date it was placed in the freezer, not to exceed 30 days. Once pulled from freezer, must be used within 7 days, that day counting as day 1.
    - Example: Buns pulled from freezer 9/22. Use by 9/28. Expires 11/30 IAW 3-502.13

ALL LABELS ON TCS FOODS MUST HAVE DATE AND TIME OF ORIGINAL PREPARATION AND DATE AND TIME OF DISCARD.

- No items can be retained past manufacturers shelf life; best use by, best by, sell by dates.
  - Must contact VETCOM for a shelf extension well in advance.

NOW THE QUIZ…

- 50 Question Exam.
- This is an individual exam (you can NOT assist your co-workers).
- You must score a minimum of 70% to pass.
- Once you've completed the exam, hit submit. Your completed exam will go the DPH ENV Health team email box.
- DPH ENV Health team will grade your exam and contact you with your results.

Questions regarding this training package should be directed to the Department of Public Health, Environmental Health Team:
usarmy.johnson.medcom-bjach.mbx.environmental-health@health.mil

EH Chief (337) 531-2272
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