Food Safety Made Easy

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Food Safety Made Easy

Instructions

Slides for the Inservice:

- The slides can be shown on computer or projected on a screen using a data projector.
- You can show the slides directly from the Acrobat file by simply clicking on the icon that looks like a computer screen. Or you can go to the tool bar and click on “View” and “Full Screen” to show the slides on your screen.
- Then click the down arrow button or the page down button on your keyboard.

Presenter’s Notes for the Inservice:

- Review the presenter’s notes prior to presenting the slides.
- The presenter’s notes offer additional information not included on the slides, suggestions for how to present some of the information, and activities you may want to incorporate.

Handouts for the Inservice:

- Simply copy the handouts and the pre- post-tests for participants.
- Do not provide the answer key for the pre-post tests.
- You can choose to give the test before and after the training, or just after the training to determine the effectiveness of your inservice and whether or not additional training is needed.


Food Safety
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Slides

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Objectives

1. Outline major causes of foodborne illness (FBI)
2. Understand time and temperature controls that can help prevent foodborne illness
3. Learn how to help prevent foodborne illness in every step of the flow of food in a food service operation

Main Causes of FBI

1. Improper holding temperatures
2. Inadequate cooking temperatures
3. Contaminated equipment
4. Food from unsafe sources
5. Poor personal hygiene

Contamination

Biological hazards

Bacteria/Viruses
Toxins/Spores
Parasites/Fungi

Chemical hazards

Heavy metals, pesticides, cleaning compounds, etc.

Physical hazards

Foreign objects

Contamination Sources for Biological Hazards

Humans	Nose, throat, hands, feces and clothing
Foods of animal origin	Poultry, meat, eggs, fish/shellfish
Foods of Plant origin	Contamination on plants from soils or water

Bacteria Grow Rapidly

- **F**ood
- **A**cid
- **T**ime
- **T**emperature
- **O**xygen
- **M**oisture

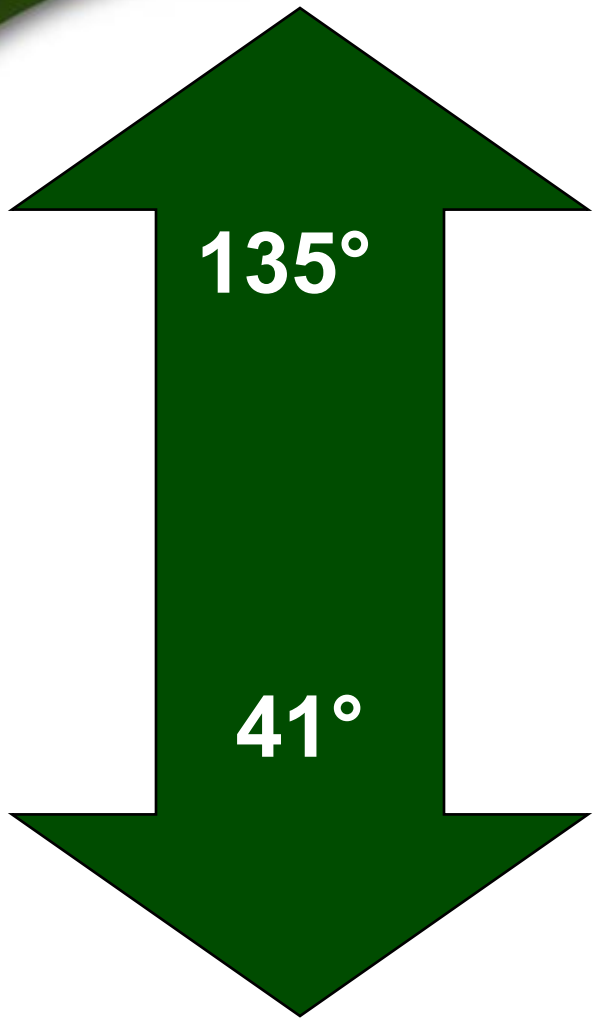
- •High protein; already contaminated
- •pH 4.6-7.0
- •**Avoid TDZ**
- •**Avoid TDZ**
- •Some bacteria need oxygen
- •Free moisture available in food

Time/Temperature Control for Safety Food (TCS food)

A food that requires time/temperature control for safety to limit pathogenic microorganism growth or toxin formation

- Milk and milk products
- Poultry
- Fish
- Crustaceans
- Soy protein foods/tofu
- Shell eggs
- Beef, lamb, pork
- Baked potatoes
- Sliced melons
- Cut tomatoes
- Leafy greens
- Sprouts
- Sprout seeds
- Garlic and oil mixtures

Temperature Danger Zone (TDZ)



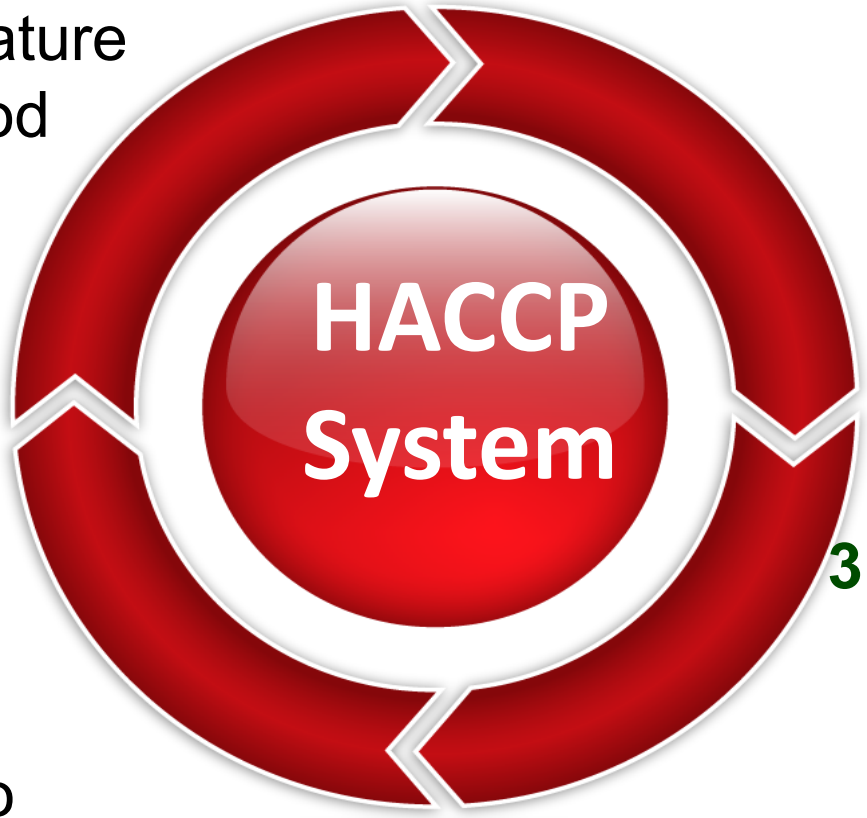
Limit time food is in TDZ:

1. No more than 4 hours total:
   - Thawing, preparation, cooling, reheating
2. All foods must be kept below 41° F or above 135° F
3. This includes holding food prior to food service

Hazardous Analysis Critical Control Points (HACCP)

1. Identify TCS foods (time/temperature control for food safety

2. Identify points at which foods may be contaminated



3. Determine potential for microorganisms to survive and/or multiply

4. Implement procedures to control food safety

7 HACCP Steps

1. Identify hazards
2. Identify CCPs
3. Establish critical limits
4. Monitor CCPs
5. Take corrective action
6. Document findings
7. Verify system working

Critical Control Points

1. **Cooking**
2. **Cooling**
3. **Holding**
4. **Re-heating**

- Can food become contaminated?
- Can hazards be prevented, eliminated or reduced?
- Can CCPs be monitored? Measured? Documented?

Flow of Food

Receiving

Storing

Preparing

Cooking

Holding

Serving

Cooling

Reheating

Receiving

- Take temperatures upon receiving
- Check for damaged goods
  - Dented cans
  - Damaged containers (food exposed)
- Immediately label and date foods as they are put away using FIFO
- Promptly store frozen and refrigerated foods

Cold Storage

Take internal temperatures of each cold storage unit

- Refrigerators: Take internal temperatures of foods in the unit
  - Cold foods should be **≤41°F**
  - Frozen foods should be frozen solid

Remember FIFO (First In, First Out)

Safe Food Thawing

1. In refrigerator at 41° F or lower
2. As part of the cooking process (no interruption)
3. In a microwave, transferred immediately to conventional cooking
4. Under cold running water (At 70° F) completely submerged. Do not allow food temp to rise above 41° F

Taking Food Temps

- Insert the thermometer at a 45 degree angle to the middle of the food item
- Do not touch container or bone
- Wait for thermometer to rise to maximum temp or drop to minimum temp, read and record
- Remove thermometer from the food

The thermometer must be sanitized between uses in different foods

Minimum Cooking Temps

165° F (min.15 seconds)

- Raw eggs prepared for immediate service
- Fish, pork, meat not otherwise specified in these charts
- Commercially raised game animals and exotic species of game animals

155 ° F (min.15 seconds)

- Raw eggs not prepared for immediate service
- Comminuted (ground) fish and meats
- Injected meats
- Mechanically tenderized meats

Final Cooking Temps (cont.)

165° F (min. 15 seconds)

- Poultry
- Stuffed fish, stuffed meat, stuffed pasta, stuffed poultry
- Stuffing containing fish, meat, poultry
- Wild game animals

135° F

- Fruits/vegetables, grains, and legumes that will be hot-held for service

Food Service/Distribution

Hold all hot food at 135°F or higher

- Check temps prior to placing on tray line
- Take out only enough food for 15-20 minutes of service
- Take temperatures every 30 minutes
- Cover all food during transportation to dining rooms/rooms

During Food Service Keep Cold Foods Cold

Hold all cold foods at 41°F or below

- Refrigerate all cold foods before service
- Take out only enough food for 15-20 minutes of service
- Cover all food during transportation to dining rooms/rooms

Essentials of Cooling

135°F to 41°F

Cool within 4 hours

Or

135°F to 70°F within 2 hours and **70°F to 41°F** in 4 hours

Use of Leftovers

- Use recipes to help avoid leftovers
- Cover, label, date, store promptly
- All leftovers should be used within 7 days
- Follow proper cooling procedures
- Reheat to greater than 165° F for 15 seconds
- Do not hold more than 2 hours
- If unused throw it away

Reheating

Rapidly reheat food to greater than 165° F for greater than or equal to15 seconds

If reheating in a microwave:

- Stir and turn food; Let sit for 2 minutes after reheating
- Check temperature in 2 places to assure even reheating

Personal Hygiene

- Wear clean clothes
- Keep body clean
- Restrain hair
- Wash hands at the beginning of your shift, after using the restroom, smoking, and when changing tasks

Report any infections, flu, colds, GI problems, or wounds before working

Always Wash Hands

- Before handling foods
- As often as necessary – especially during food preparation/service
- Any time you change a task in the kitchen
- Before putting on plastic gloves

After touching any soiled item, using restroom, handling TCS/raw foods or chemicals, touching any area of the body, coughing, sneezing, blowing nose; handling trash; smoking, eating or drinking; handling dirty dishes

Proper Handwashing

1. Rinse hands under clean, running warm water
2. Apply an amount of cleaning compound recommended by manufacturer to hands
3. Rub hands together vigorously for 10-15 seconds
   - Remove soil from underneath fingernails
   - Create friction on surfaces of hands and arms, lathered fingers, finger tips and areas between fingers

Proper Handwashing (cont.)

4. Thoroughly rinse hands, finger tips and arms under clean, running warm water;
5. Immediately follow the cleaning procedure with thorough drying of cleaned hands and arms using paper towel
6. Turn tap off with paper towel

Hand sanitizers cannot be used in place of proper hand washing in a food service setting.

Approriate Use Gloves

- When touching food directly with hands
  - No bare hand contact with food!!
- Use utensils, clean gloves, deli paper, etc.
- Wash hands before putting gloves on

Change gloves after you:

- Cough or sneeze
- Wipe your mouth or face
- Touch anything that might be contaminated

Prevent Cross Contamination

- Wash and sanitize equipment and surfaces thoroughly
  - After handling uncooked foods
  - After contact with raw meat/juices
- Use clean utensils or gloved hands to handle cooked or ready to serve foods
- Keep raw foods and cooked foods separate during storage and food preparation

Record Keeping: Assure Systems are Working

1. Dishwasher: wash and rinse cycles
2. Refrigerator/freezer temps
3. Food temps
   - Internal cooking temps
   - Tray line
   - Test trays
4. Cooling logs for TCS foods

Storing Cold Foods

Store foods in the following order on refrigerator shelves to prevent cross-contamination:

- Ready-to-eat food
- Whole raw fish
- Whole raw meat
- Raw ground meat
- Raw poultry

General Food Safety Tips

- Always use the FIFO method
- Avoid raw/non-pasteurized foods and beverages
- Thoroughly wash all fruits and vegetables
- Cook ground beef, raw animal foods including hot dogs, to recommended temps
- Keep uncooked meats and their juices away from raw or ready to serve foods
- Thoroughly re-heat lunch meats and cold cuts
- Don’t touch food contact areas of glasses, sliverware, dishware

Egg Safety

- Thoroughly cook all eggs
- Wash hands before handling raw eggs
- Do not pool fresh eggs
- Store shell eggs in the refrigerator until they are needed for cooking
- Discard any cracked or dirty eggs

Pasteurized eggs (shell or liquid) are preferred in skilled nursing facilities or when serving high-risk populations

Meat and Poultry Safety

- Never store raw meat or poultry above/near ready to eat or fresh foods
- Thaw meat and poultry on the bottom shelf of the refrigerator
- Use separate cutting boards and prep sinks for raw meat and poultry
- Clean and sanitize all utensils, dishes and surfaces thoroughly after contact with raw meat and poultry

Allergy Awareness

- Allergy awareness is part of a good food safety program
- Be aware of food allergies in your facility
- Prevent cross-contamination of allergens during food preparation and service

The Keys to Preventing FBI

- Holding food at the correct temperatures (hot and cold)
- Cooking food to the correct temperatures
- Preventing cross-contamination
- Obtaining food from safe sources
- Practicing good personal hygiene
- Careful handling of food allergens

Presenter's Notes

Food Safety Made Easy

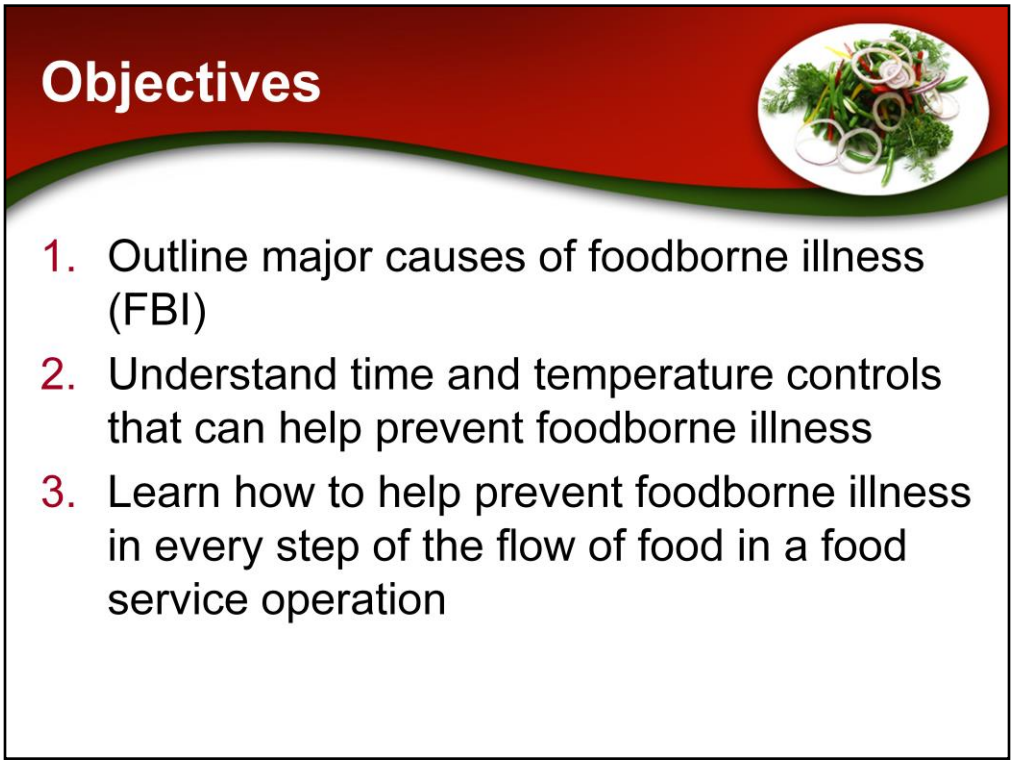
Presenter Note: There is a separate inservice on Sanitation Solutions. Recommended materials to review: Your state food safety regulations, the State Operations Manual for Nursing Homes, and/or the Federal Food Code as appropriate.

Audience: Food service/dining staff

Welcome to our inservice on Food Safety Made Easy.

Presenter Note (Optional): Before we get started, let's test your knowledge with a short pre-test.

- According to the Centers for Disease Control and Prevention (CDC), foodborne disease is caused by consuming contaminated foods or beverages. Foodborne illness (FBI) can cause nausea, vomiting, diarrhea, fever, chills and more serious complications.
- CDC estimates that each year roughly 1 in 6 Americans (or 48 million people) get sick, 128,000 are hospitalized, and 3,000 die of foodborne diseases.
- Federal regulations for long term care facilities state that the facility must--*Store, prepare, distribute, and serve food under sanitary conditions*. The regulations spell out exactly how to make sure conditions are sanitary. Comprehensive sanitation inspections are part of the annual long-term care survey



Today we will learn some basic tips on how to keep food safe. The objectives for our presentation are:

1. Outline major causes of foodborne illness (FBI).
2. Understand time and temperature controls that can help prevent foodborne illness.
3. Learn how to help prevent foodborne illness in every step of the flow of food in a food service operation.

Your main goal in the food service department is to provide wholesome, tasty, and safe food to the people you serve.

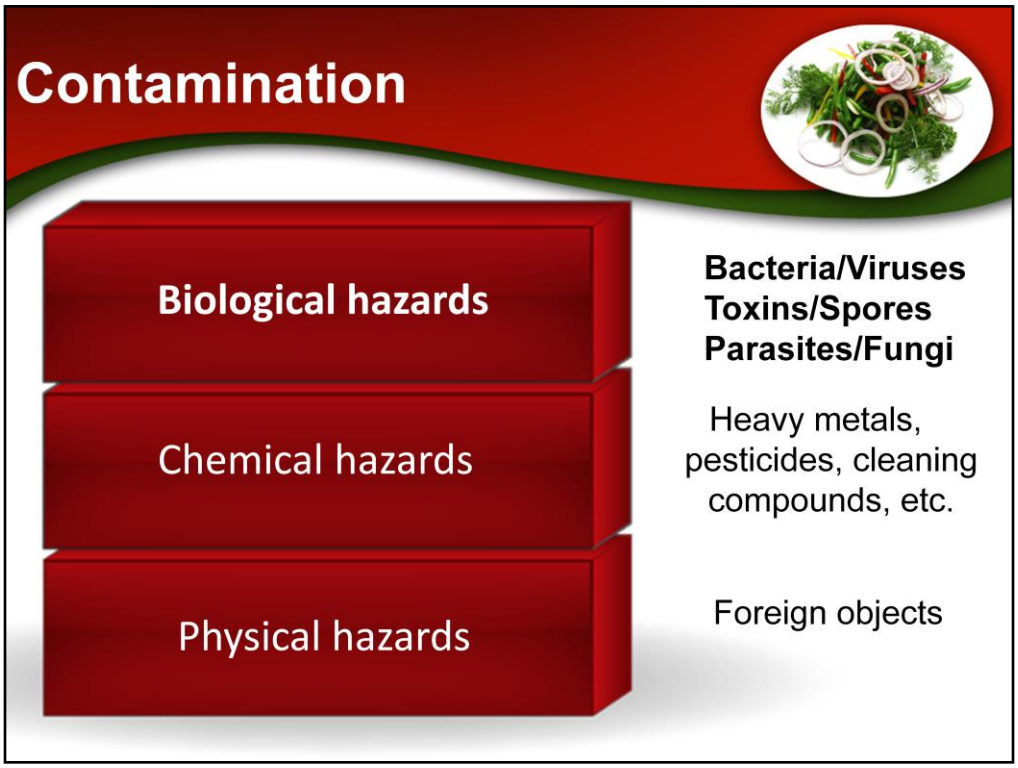
You can prevent FBI outbreaks by improving your food handling practices.

Although anyone can become ill from FBI, certain individuals are at higher risk for FBI: Older adults, people with chronic illness like cancer, COPD, or heart disease; people who have had recent surgery, are immuno-compromised (HIV or cancer, or transplant patients, for example); children/infants, and pregnant women. Because these highly susceptible populations are already compromised, FBI can result in severe illness, additional health complications and even death.

According to the Federal Food Code, there are 5 employee behaviors that create risk for FBI:

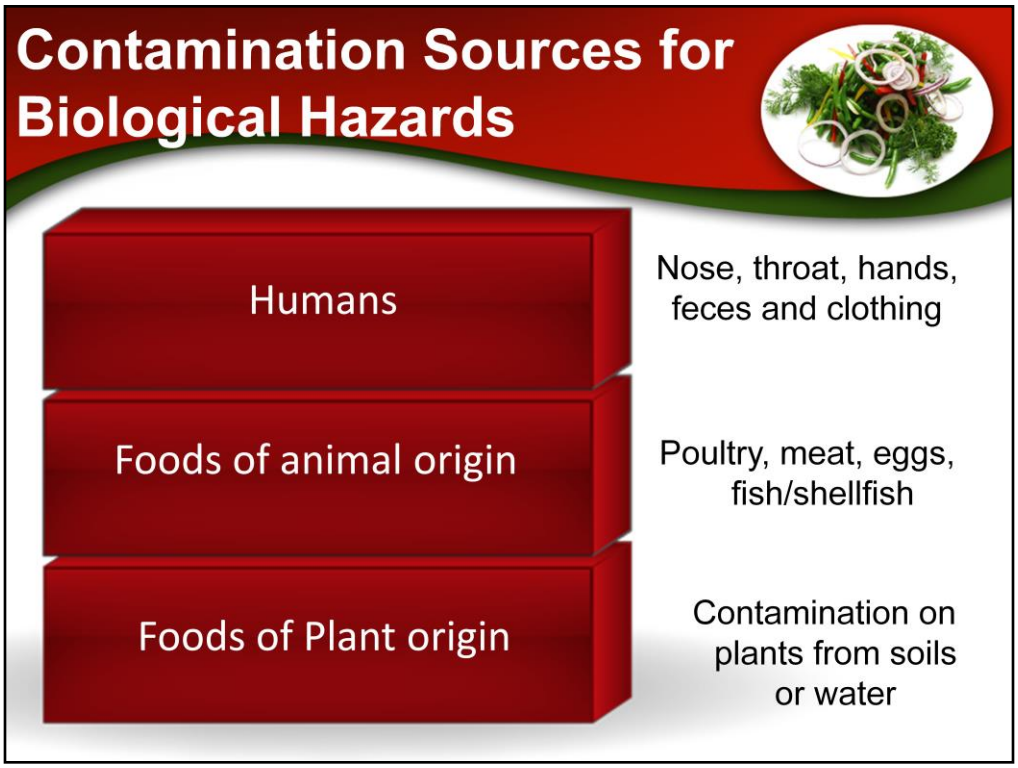
1. Improper holding temperatures
2. Inadequate cooking temperatures
3. Contaminated equipment
4. Food from unsafe sources
5. Poor personal hygiene

These are key points where we can keep food safe.



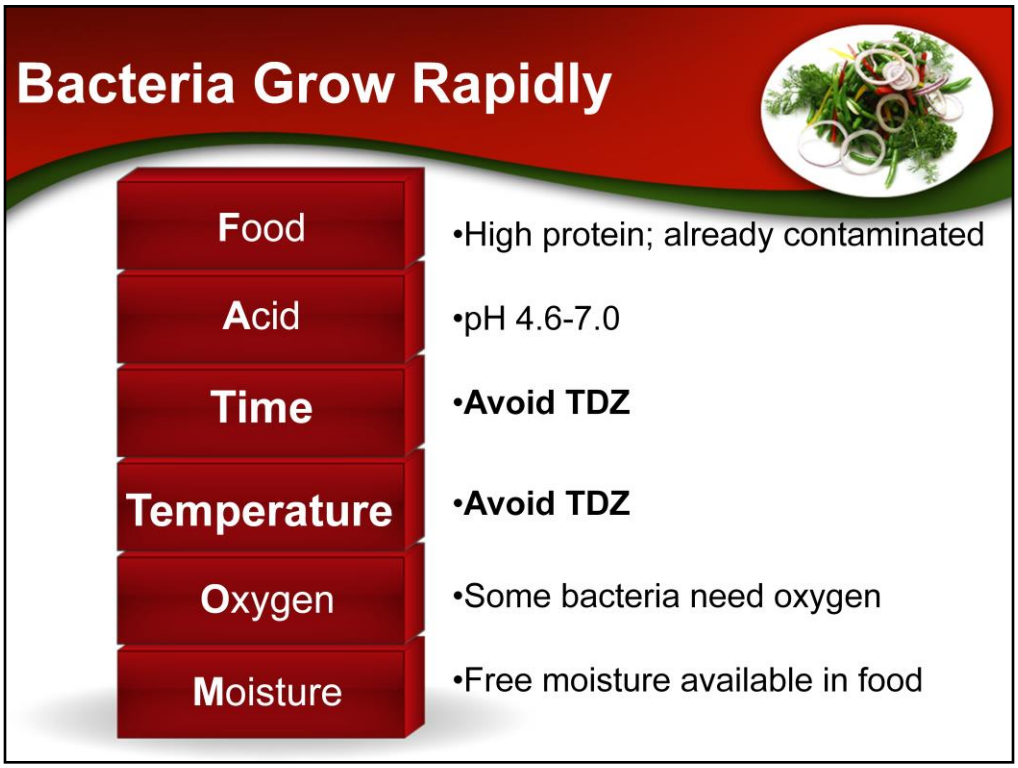
Contamination is defined by CMS as “potentially harmful substances including but not limited to microorganisms, chemicals, or physical objects in food”. These harmful substances can cause FBI.

- **Biological hazards (the cause of most FBI) include:** Bacteria/viruses, toxins (found mainly in seafood or mushrooms), and spores which survive and grow in food. Cross contamination of bacteria/viruses from one food to another can occur easily. According to the CDC, the most common causes of bacterial FBI in 2013 were Norovirus, Salmonella. Clostridium perfringens, and Campylobacter.
- **Chemical hazards include:** Toxins/heavy metals/pesticides/cleaning compounds/food additives/preservatives. (This is why it is so important to store chemicals away from foods).
- **Physical hazards include:** Foreign objects such as metal, glass, plastic or wood. (This is why it is important to keep equipment in good shape, keep jewelry to a minimum, keep nails trimmed, etc.).



Sources of biological hazards may include:

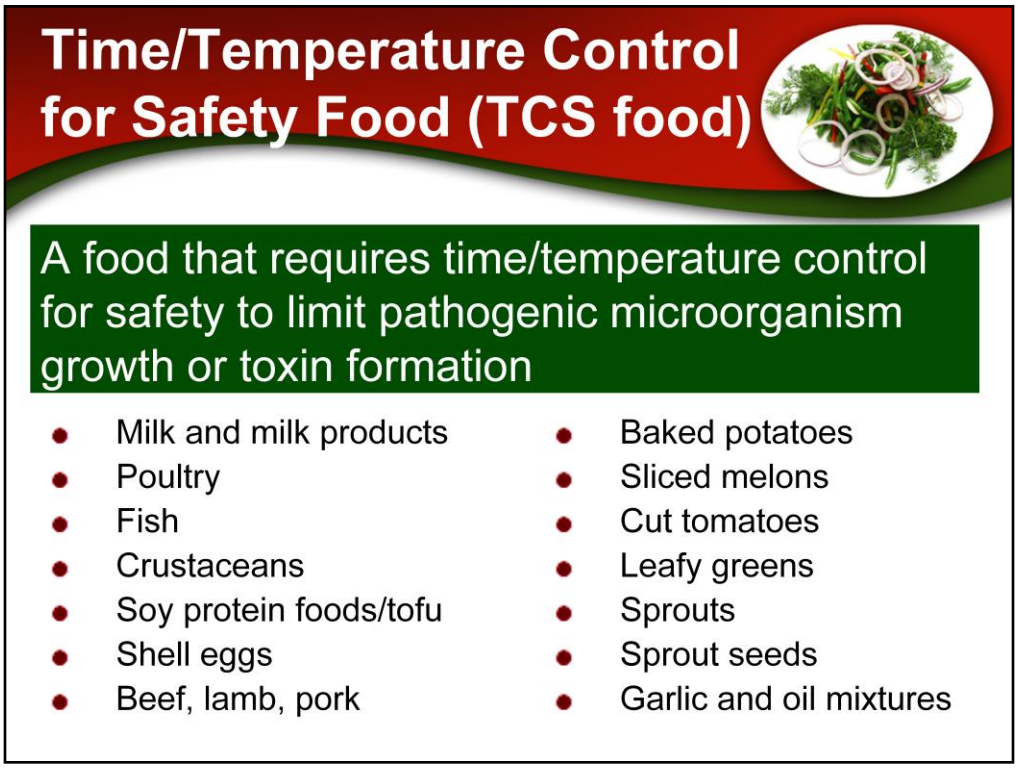
- Humans (nose and throat, hands, feces and clothing), mostly caused by poor personal hygiene and/or poor food handling practices. Humans who are infected with a bacteria or virus (cold, flu, norovirus) can contaminate others through food.
- Foods of animal origin (poultry, meat, eggs, fish/shellfish) that have bacteria in them.
- Foods of plant origin (contamination from soils and water).



Bacteria need certain things to reproduce: Especially warmth, moisture, food and time. We can remember what is needed for bacterial growth by remembering the acronym FATTOM:

- Food—Bacteria need nutrients to survive. High protein foods or those that are already contaminated are a good place for bacteria to grow.
- Acid—pH 4.6-7.0 (Neutral pH, low acid foods are more susceptible to FBI).
- Time—Bacteria need time to grow. Avoid the temperature danger zone (TDZ) for more than 4 hours during entire preparation and service time.
- Temperature—Bacteria grow rapidly between 41° F and 135 ° F. Avoid the TDZ.
- Oxygen—Some bacteria need oxygen and some do not (botulism does not need oxygen).
- Moisture—free moisture available in food is known as water activity. Pathogens need moisture to grow. Foods high in moisture are ideal for bacterial growth.

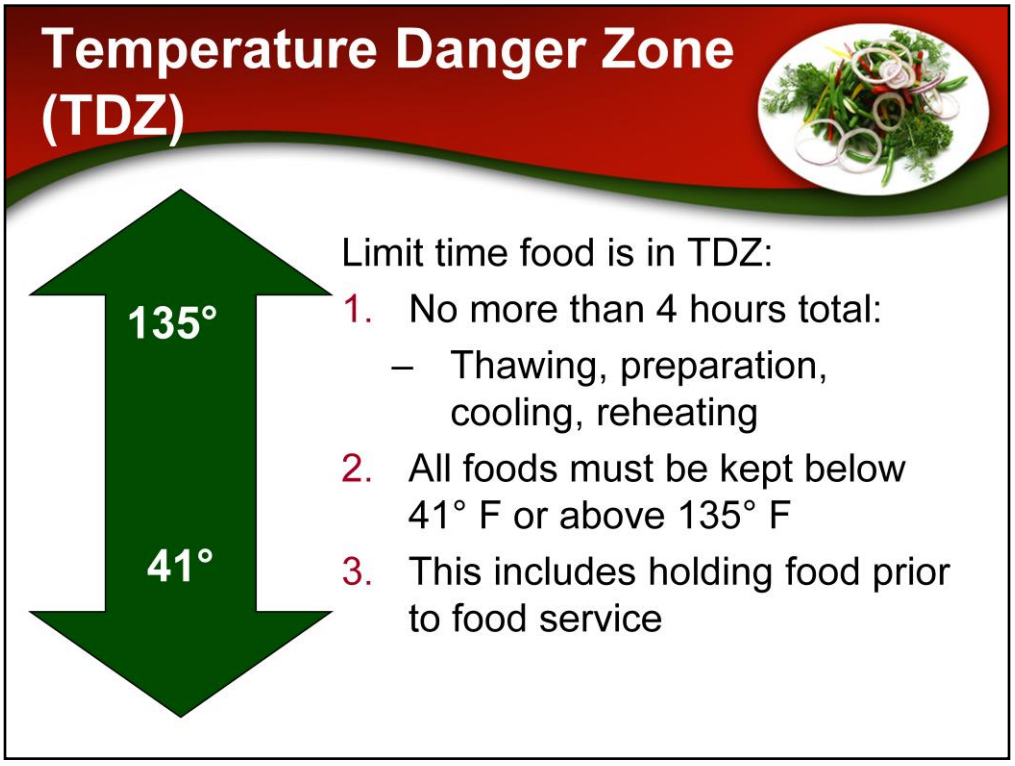
Time and Temperature are the most critical factors, and they are also the factors that can be controlled by food handlers.



A **time/temperature control for food safety food (TCS food)** used to be known as a potentially hazardous food (PHF). Certain foods are considered TCS foods because of their protein content, moisture content and food source. These foods must be handled very carefully, making sure to keep them in the proper temperatures over time to prevent foodborne illness.

The following are Time/Temperature Control for Safety foods:

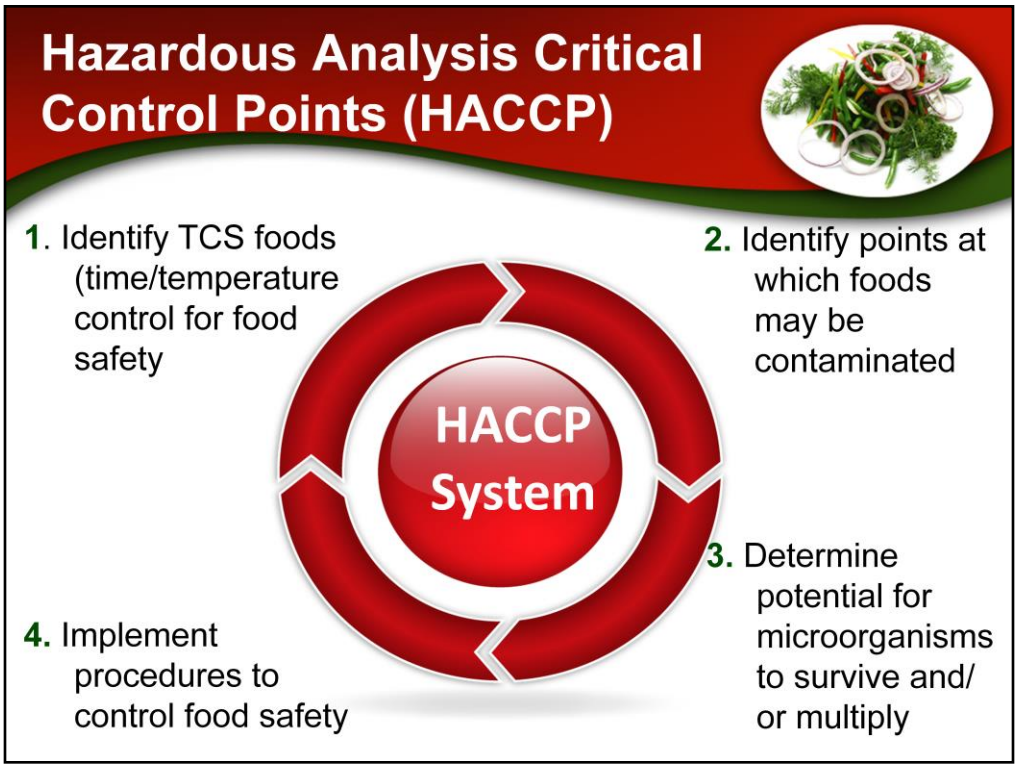
- Milk and milk products
- Poultry, Fish, Crustaceans (lobster, crab, shrimp)
- Soy protein foods such as tofu or meat alternates made of soy
- Shell eggs
- Beef, lamb, and pork
- Baked potatoes
- Sliced melons
- Cut tomatoes
- Leafy greens
- Sprouts
- Sprout seeds
- Garlic and oil mixtures



- Bacteria grow rapidly within the Temperature Danger Zone (TDZ) of 41° F to 135° F, so it is essential to limit the time food is in TDZ to no more than 4 hours total. This includes thawing, preparation, cooling, and reheating.

- Hot foods which are TCS should leave the kitchen or steam table at greater than or equal to 135° F and cold foods should be less than or equal to 41° F.
- Freezer temperatures should keep foods frozen solid.
- Refrigerator temperatures should maintain foods at less than or equal to 41° F.

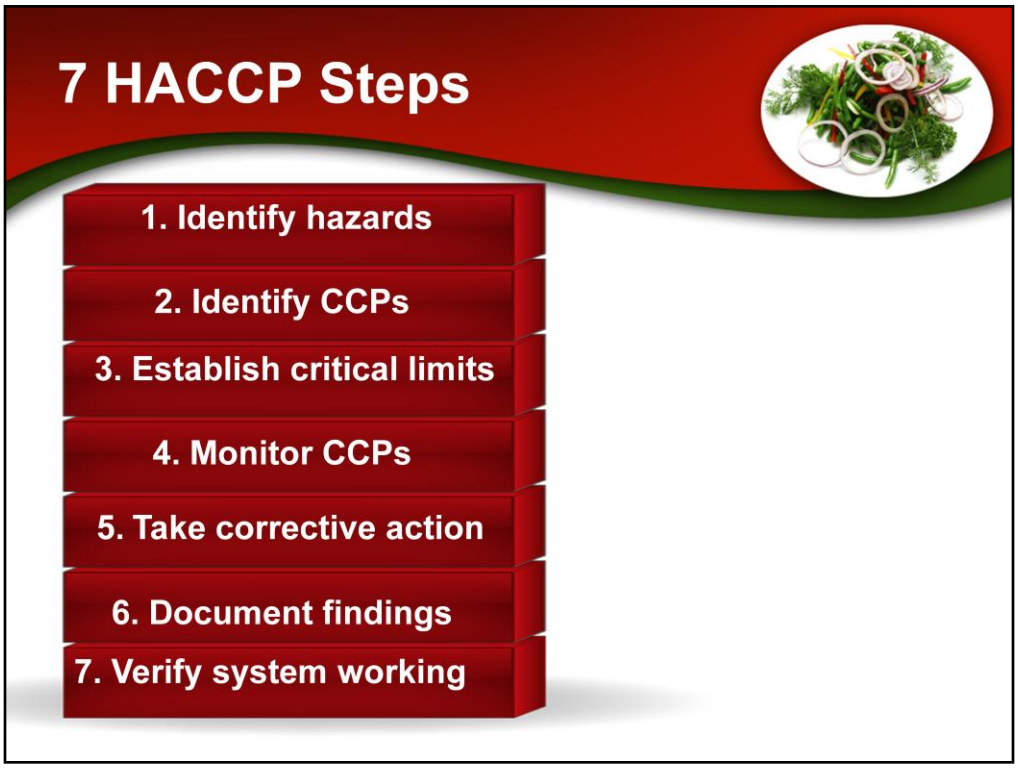
Presenter Note: FDA has made the decision that 41° F and 135° F are the safe cold and hot temperatures, however, your state regulations may be different, so check your state regulations and adjust to the most stringent temperature guidelines.



Hazardous Analysis Critical Control Points (HACCP) is a system that helps us to keep food safe. May food service organizations develop Hazardous Analysis Critical Control Point (HACCP) plans for high-risk foods they produce or prepare.

The four key areas of a HACCP system are to:

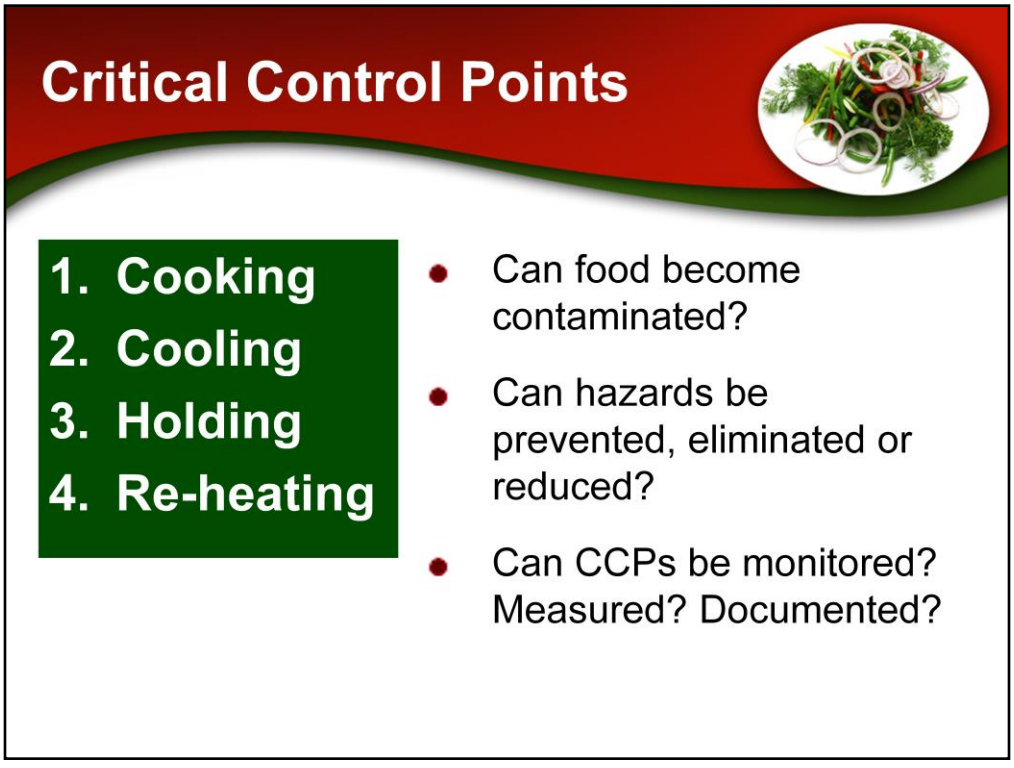
1. Identify any foods that may be TCS.
2. Identify any points at which the foods may become contaminated.
3. Determine the potential for microorganisms to survive and/or multiply.
4. Implement procedures to control safety.



HACCP incorporates 7 steps:

1. Identify hazards and risks, and develop preventive measures to improve food safety: Review menus to identify TCS's, review preparation processes that may pose threats such as cooling, thawing; poor sanitation.
2. Identify Critical Control Points and develop a prevention plan: Identify all steps of food preparation to be monitored.
3. Set up procedures for critical control points: Define measurable standards such as specific cooking times and temperatures, specific holding and cooling instructions; hand washing instructions; standardized recipes.
4. Monitor CCPs: Monitor TCS foods through preparation.
5. Take corrective action: Make corrections immediately; implement corrective procedures.
6. Document findings: Set up a record keeping system such as temperature charts.
7. Verify that the HACCP system is working: Analyze records, take corrective actions, change systems if needed.

We've talked a little bit about identifying hazards (biological, chemical, physical hazards and potentially hazardous foods, etc.). Now let's discuss critical control points or CCPs.



There are certain critical control points (CCPs) at which food is handled when we can prevent contamination or bacteria growth. The goals are to:

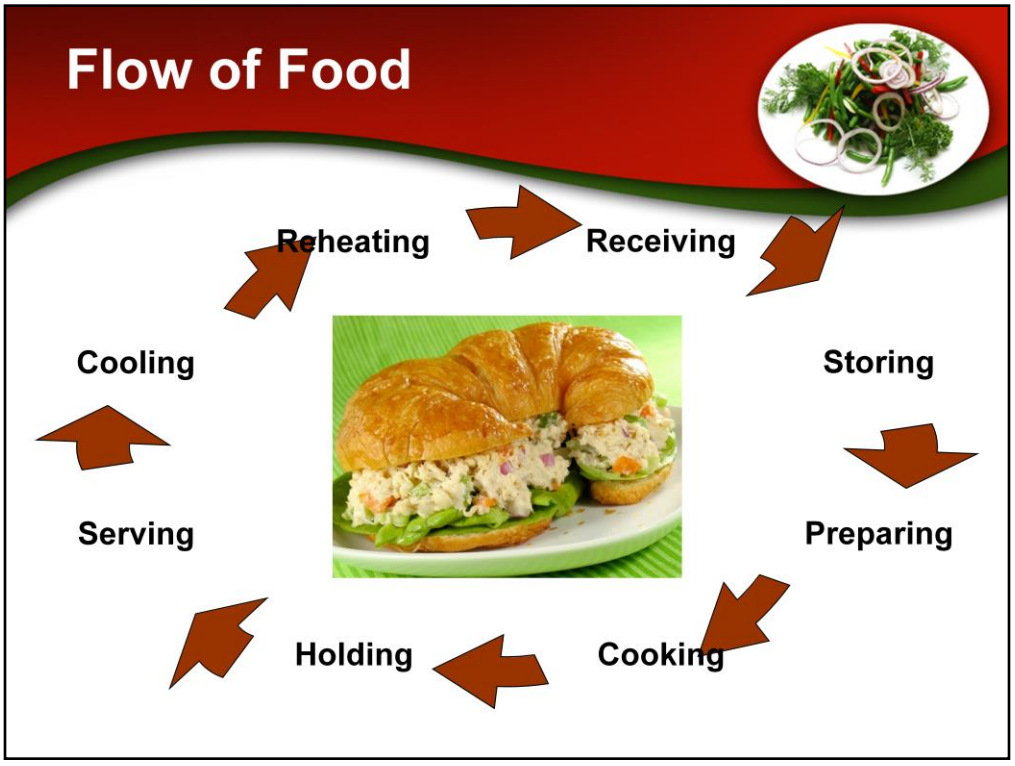
- Eliminate or significantly reduce the possibility of a hazard or FBI.
- Prevent a hazard from happening.

The most critical control points are:

1. Cooking
2. Cooling
3. Holding
4. Re-heating

At each of these critical control points we must ask:

- Can the food become contaminated? Can the contaminants increase? Will the contaminants survive?
- Can hazards be prevented with corrective action? Can hazards be prevented, eliminated or reduced in steps later in the handling process?
- Can CCPs be monitored? How will CCPs be measured? Can CCPs be documented?



There is a flow of food as it goes through your kitchen:

- Receiving ⇒ Storage ⇒ Preparation ⇒ Cooking ⇒ Holding ⇒ Serving ⇒ Cooling ⇒ Re-heating
- Ready-to-eat foods and foods that are served the same day they are cooked will have fewer steps in the flow.
- Food safety must be considered at every step.

This is an example of a complex food that involves multiple steps along the flow of food: Chicken Salad Sandwich.

Frozen chicken is received, stored in the freezer, thawed, then cooked. It is cooled and chicken salad is prepared by adding other ingredients. The finished product is then cooled prior to being served, held cold and then served.

- The steps will be different for each food that you prepare.
- Food safety must be considered at every step.
- Identifying and controlling the hazards in each food preparation process helps control risk factors and keep food safe.

Let's discus how to keep food safe at the different steps in the flow of food.

Food safety must be assured upon receiving of foods.

- Take temperatures upon receiving.
- Check for damaged goods such as dented cans or damaged containers (where food is exposed).
- Immediately label and date foods as they are put away. Use the FIFO (first in, first out) method to put new stock behind older stock so stock that is the oldest will be used first.
- Promptly store frozen and refrigerated foods.

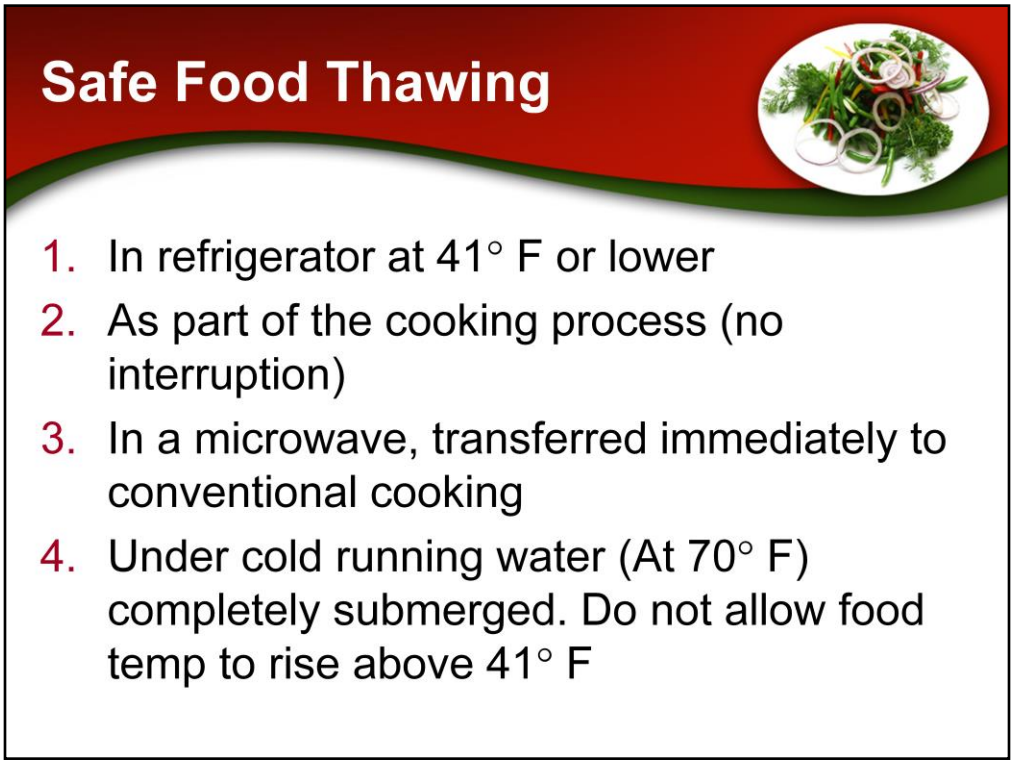
We must protect food from FBI during food storage as well.

It is essential to monitor the internal temperatures of refrigerators and freezers. Keep a temperature log and notify your supervisor if temperatures of cooling units rise.

It is also a good practice to take internal temperatures of foods in the refrigeration units:

- Cold foods should be at or below **41°F**
- Frozen foods should be frozen solid

Remember to follow the FIFO (first in/first out) method. Date all food items to assure fresh food, keep food safe and avoid waste.



Safe Food Thawing

There are 4 ways to safely thaw food:

1. In refrigerator at 41° F or lower.
    - If thawing meats in the refrigerator, they must be placed on the bottom shelf of the refrigerator
2. As part of the cooking process (no interruption).
3. In a microwave, transferred immediately to conventional cooking.
4. Under cold running water (At 70° F) completely submerged. Do not allow food temp to rise above 41° F.
    - When thawing under cold running water, thawing time is included in 4-hour window for time/temperature danger zone.

Other thawing methods, such as leaving food on the counter to thaw, are dangerous and should not be used.

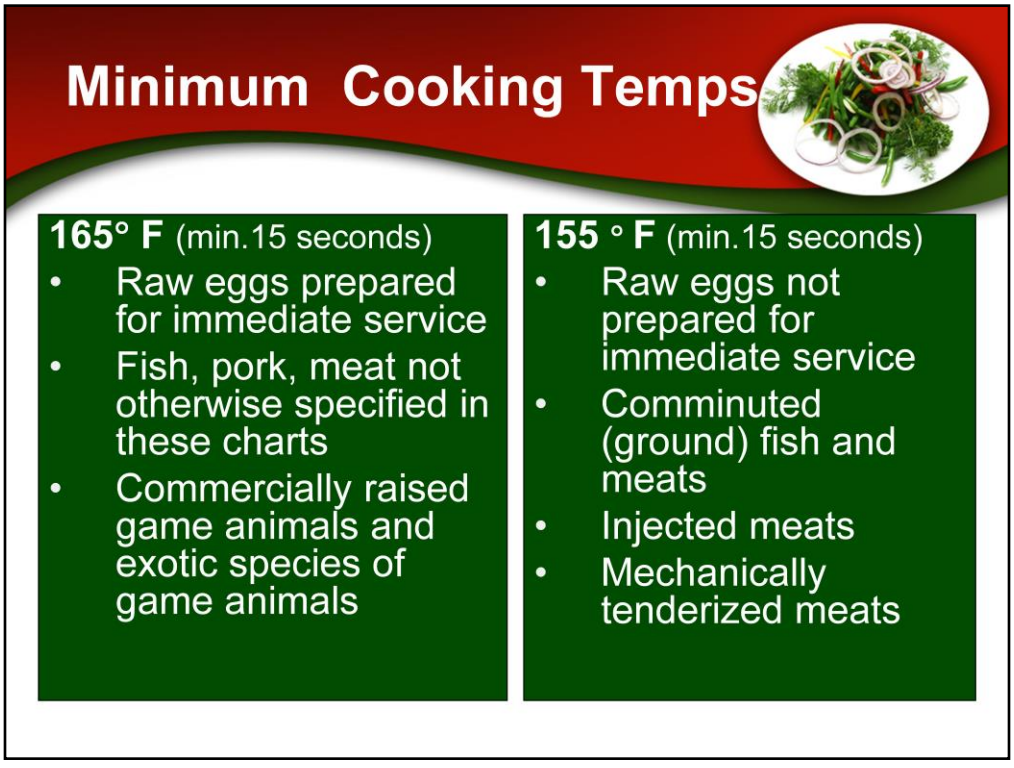
Taking accurate temperatures using metal stem thermometers*

- You will need a clean, rinsed, sanitized and air-dried thermometer that is the metal stem type, numerically scaled and accurate to plus or minus 2° F, and a temperature record for recording the temperatures.
- Choose the proper thermometer for the food to be monitored. (Thin foods will require a different thermometer than thick foods.)
- Insert the thermometer at a 45 degree angle to the middle of the food item, taking care not to touch the container of bone if it has one. Wait for the thermometer to rise to the maximum temperature for hot foods, or drop to the minimum temperature for cold foods, read and record the temperature and then remove the thermometer from the food item.
- Digital thermometers are acceptable as long as they have a probe to measure temperature inside the food

*Thermometers should be sanitized according to manufacturer's instructions. Bimetallic thermometers may be sanitized using a dish machine or three sink method. In between uses at one meal, an alcohol swab may be used to sanitize. (Use a new swab for each sanitizing.)

Calibrate thermometers by putting them in a 50/50 mixture of ice and water. If thermometer does not read 32° F, adjust to read correctly (follow manufacturer's instructions to adjust)

Presenter Note: It is most effective to demonstrate how to take temperatures and have the attendees demonstrate afterwards to show they understand the proper technique.



Monitoring the food's internal temperature for 15 seconds determines when microorganisms can no longer survive and food is safe for consumption. Foods should reach the internal temperatures as outlined on the slide.

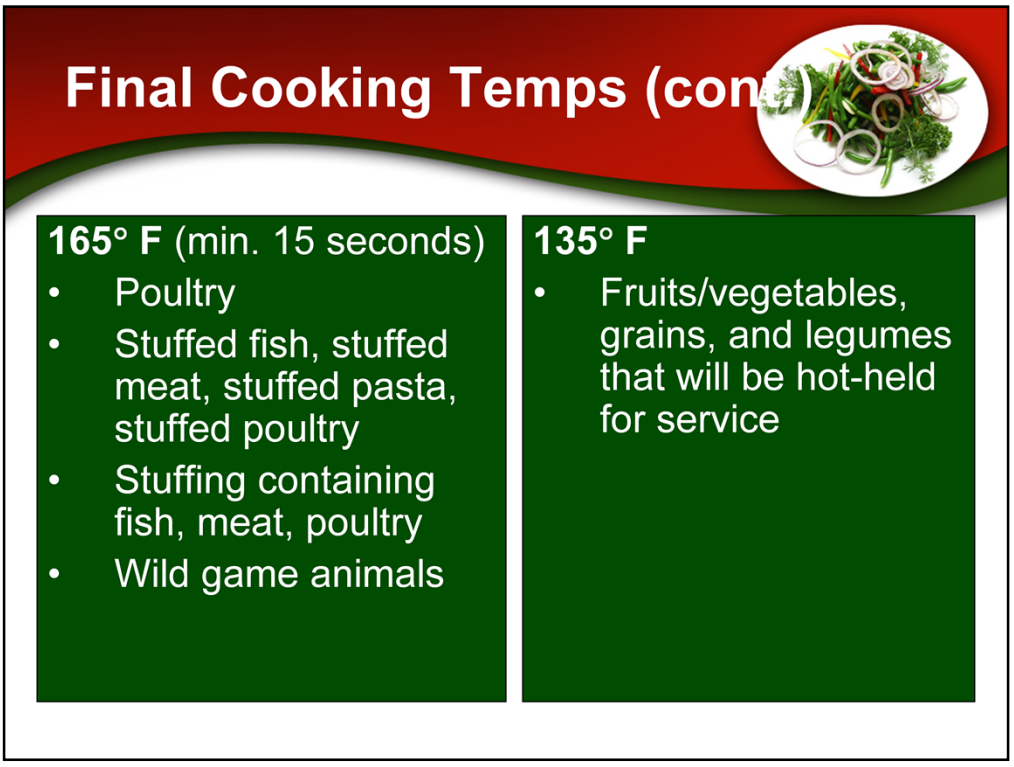
165° F (min. 15 seconds)

Raw eggs prepared for immediate service
Fish, pork, meat not otherwise specified in these charts
Commercially raised game animals and exotic species of game animals

155 ° F (min.15 seconds)

- Raw eggs not prepared for immediate service
- Comminuted (ground) fish and meats
- Injected meats
- Mechanically tenderized meats
- Comminuted commercially raised game animals and exotic species of game animals

Presenter Note: Ratites are birds with a flat breastbone.



Final Cooking Temperatures (continued)

165° F (min. 15 seconds)

Poultry

Stuffed fish, stuffed meat, stuffed pasta, stuffed poultry

Stuffing containing fish, meat, poultry

Wild game animals

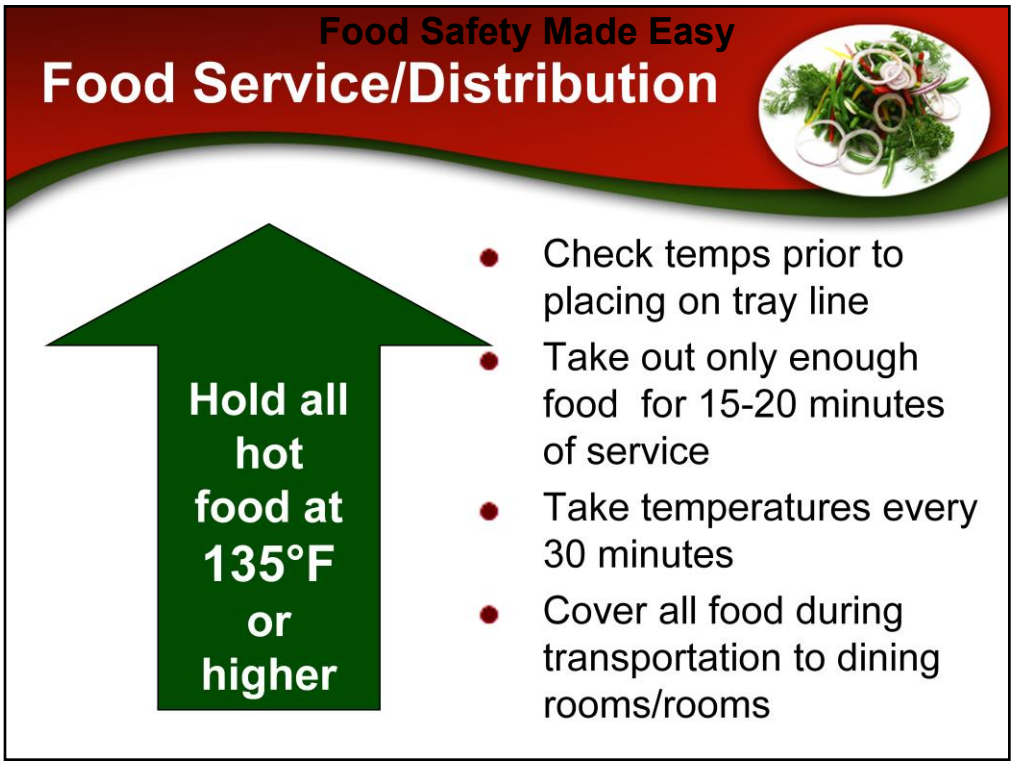
Unpasteurized eggs when cooked to order in response to individual requests and to be eaten promptly after cooking: 145° F for 15 seconds; until the white is completely set and the yolk is congealed.

135° F

Fruits/vegetables, grains, and legumes that will be hot-held for service

Presenter Notes:

1. When cooking raw animal foods in the microwave, foods should be rotated and stirred during the cooking process so that all parts of the food are heated to a temperature of **at least 165° F** for all meat, fish, poultry, and eggs and allowed to stand covered for at least 2 minutes after cooking. Check temp in two places to assure even cooking.
2. **Hold all hot foods at >135° F to prevent growth of bacteria.**



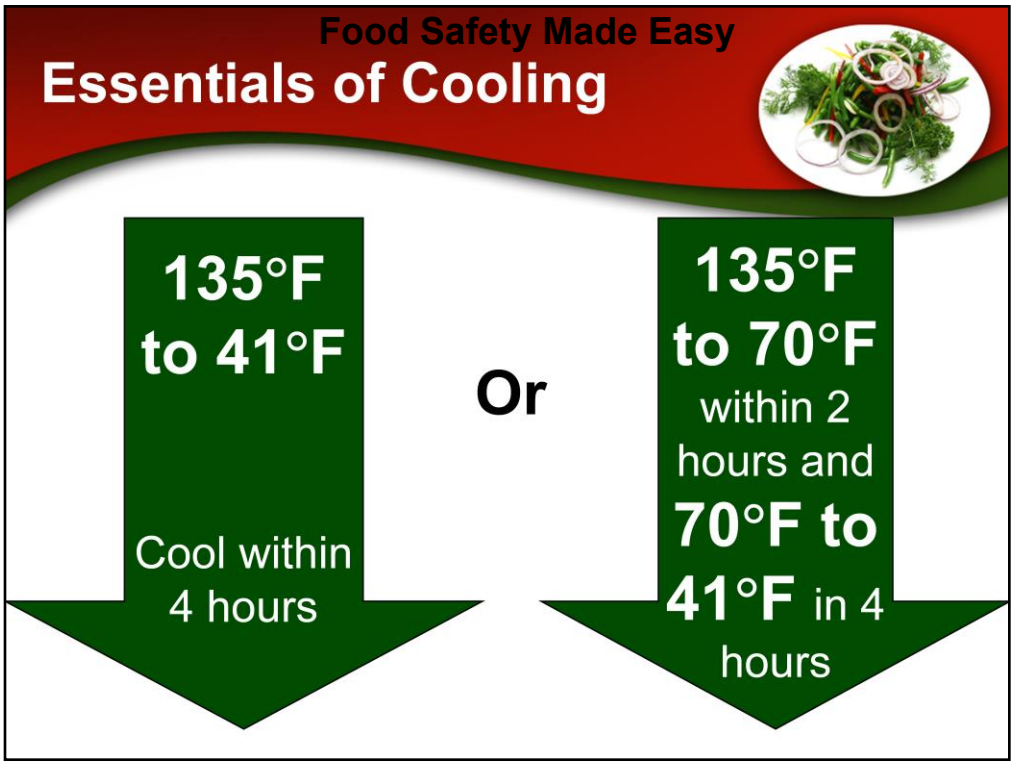
It is important to check the hot and cold food temperatures of all foods prior to serving.

- Hot foods should be placed on the steam table at greater than or equal to **135° F** and maintained at greater than or equal to 135° F during service.
- Take out only enough food for next 15-20 minutes (use batch cooking).
- Take temperatures every 30 minutes to assure food safety.
- Food must be protected from contamination as it is transported to the dining rooms and individuals' rooms. This means that all foods should be covered.

A steam table should not be used to raise temperature of foods or for cooking. It should only be used for hot holding

Again, it is important to check the cold food temperatures of foods prior to serving. The goal is to keep cold foods at less than or equal to **41° F**.

- Refrigerate all cold foods 3 - 4 hours before service (including canned goods) so that they are less than or equal to 41°F prior to service.
- Take out only enough food for the next 15-20 minutes of service.
- Ice or refrigerate all cold foods for service.



Pathogens grow most rapidly between 125° F and 70° F, so reducing temperatures quickly will help decrease pathogen growth. That's why cooked TCS Foods must be cooled from 135° F to 70° F in 2 hours and then from 70° F to 41° F within 4 hours or less (total of 6 hours or less). **Total cooling time cannot exceed 6 hours, from 135° to 41° F.** Check temps during cooling to be sure these goals are being met. If goals are not met, reheat to 165° F for 15 seconds and begin cooling process again.

For TCS Food that is prepared from ingredients at ambient temperatures i.e. reconstituted foods, canned tuna) the **total cooling time cannot exceed 4 hours, from 135° to 41° F.** Check temps during cooling to be sure these goals are being met, and if not, reheat to 165° F for 15 seconds and begin cooling process again.

Use a blast chiller if available. Otherwise, proper cooling can be achieved using the following methods:

- Cut food into smaller pieces. Meats should be no more than 3" thick.
- Divide foods into several smaller batches. Place smaller amounts in pre-chilled stainless steel pans (glass and plastic retain more heat).
- Place pans in ice bath and stir foods as they cool. (Ice bath should contain more ice than water). Then refrigerate.
- Use ice paddles to stir foods as they cool (for soups, stews, etc.).
- Place cooling foods on the top shelf of the refrigerator or freezer—uncovered or loosely covered in 2" shallow pans and stir or turn every 15 to 60 minutes. Avoid cooling foods in storage refrigerators or freezers. Allow air to circulate around food.

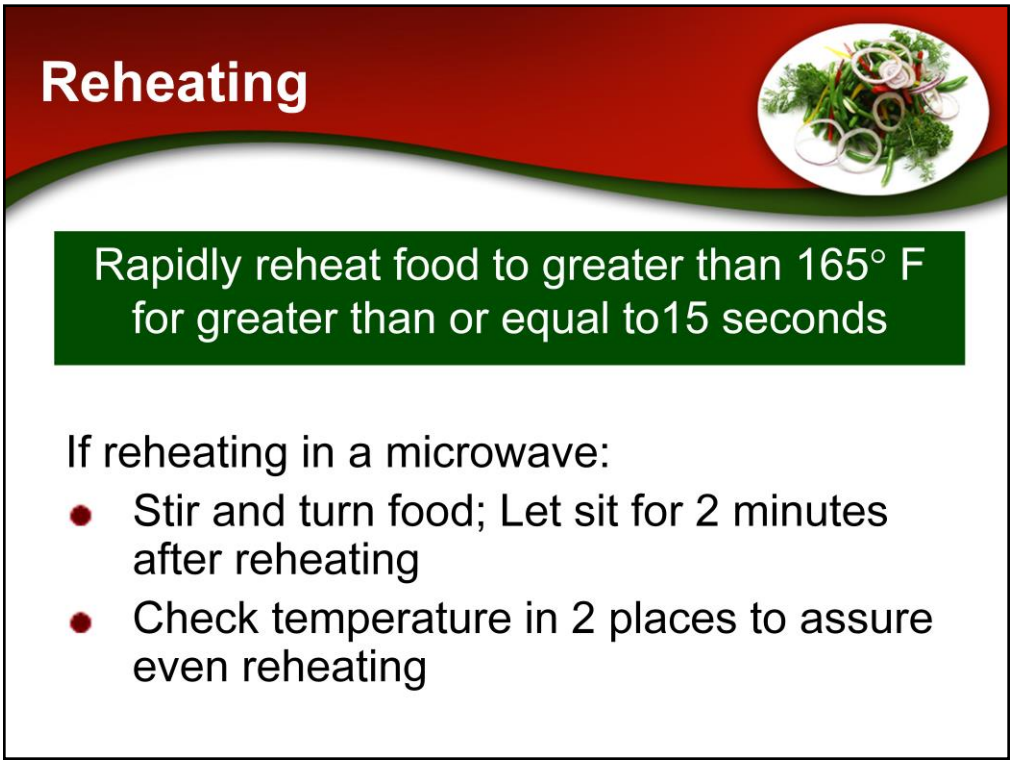
If food is not cooled to above specifications, rapidly reheat to 165° F or greater for at least 15 seconds (within 2 hours) - and throw it away if not served immediately.

Use of Leftovers

- Use standardized, portion controlled recipes to help avoid leftovers.
- Cover, label, date and store promptly.
- All leftovers should be used within 7 days. Throw out if not used within 7 days. (When in doubt, throw it out.)

Follow proper cooling procedures:

- Leftovers should be cooled promptly to less than or equal to 41° F within 4 hours (or from 135F to 70 within 2 hours or less and then from 70 to 41 F or less within 4 hours or less – for a total of 6 hours or less).
- Leftovers should be **reheated to a temperature of 165° F for a minimum of 15 seconds** (do not reheat more than once).

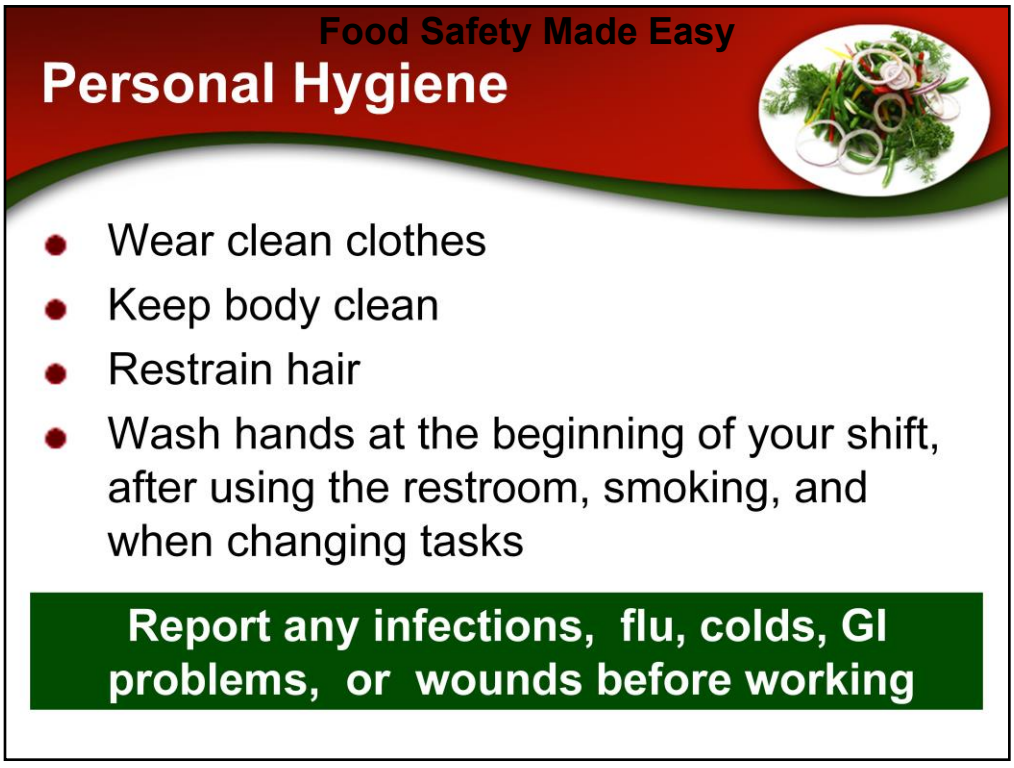


When reheating foods, temperature is critical. The food must be rapidly heated to at least 165° F for a minimum of 15 seconds and be held above 135° F.

The following tips will help:

- Stir the food to circulate.
- Use a thermometer to assure that the proper temperature has been reached.
- Hold at greater than or equal to 135° F.
- If reheating in a microwave, stir and turn food to insure uniform heating, let sit for 2 minutes after reheating so all food will heat up to the correct temperature. Check the temperature in two places to assure even reheating.

Do not use the steam table to reheat food. It does not bring the food to the proper temperature within acceptable timeframes.

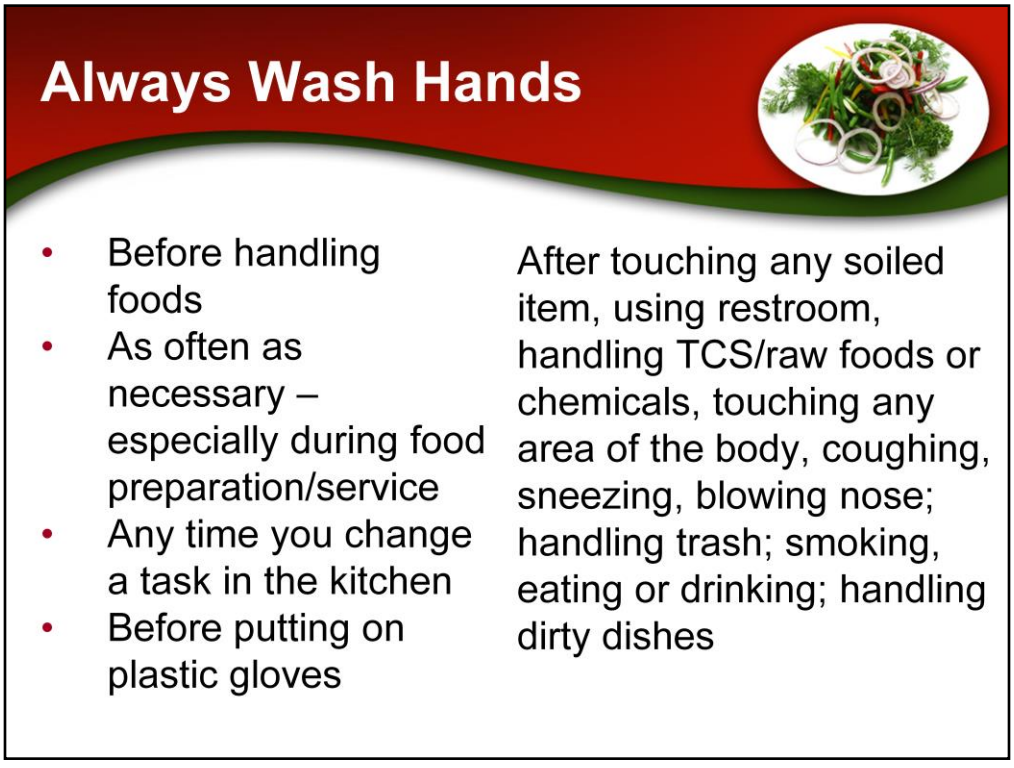


Poor personal hygiene is an important cause of foodborne illness. You should come to work every day with clean clothes, body, and hair. Hair should be restrained at all times.

Always wash your hands before handling food, after using the restroom, smoking, taking a break, and when changing tasks (collecting money, talking on the phone, etc.). If in doubt, wash your hands.

Come to work in good health. **Follow your facility policies for working when ill.**

- Report any infections (URI, flu), colds, wounds, diarrhea, nausea, or vomiting to your supervisor before working with food.
- Employees who are symptomatic (vomiting, diarrhea) and have an increased chance of transmitting bacteria to food products should not be allowed to handle food, equipment or utensils.
- Employees who have been out ill can go back to work when symptoms cease; or laboratory tests show they are healthy; or they have written clearance by a medical practitioner.
- Wounds: If they can be easily covered with a bandage and gloves, the person can work. If seeping or not easily covered to protect food, the person cannot not work with food or utensils.



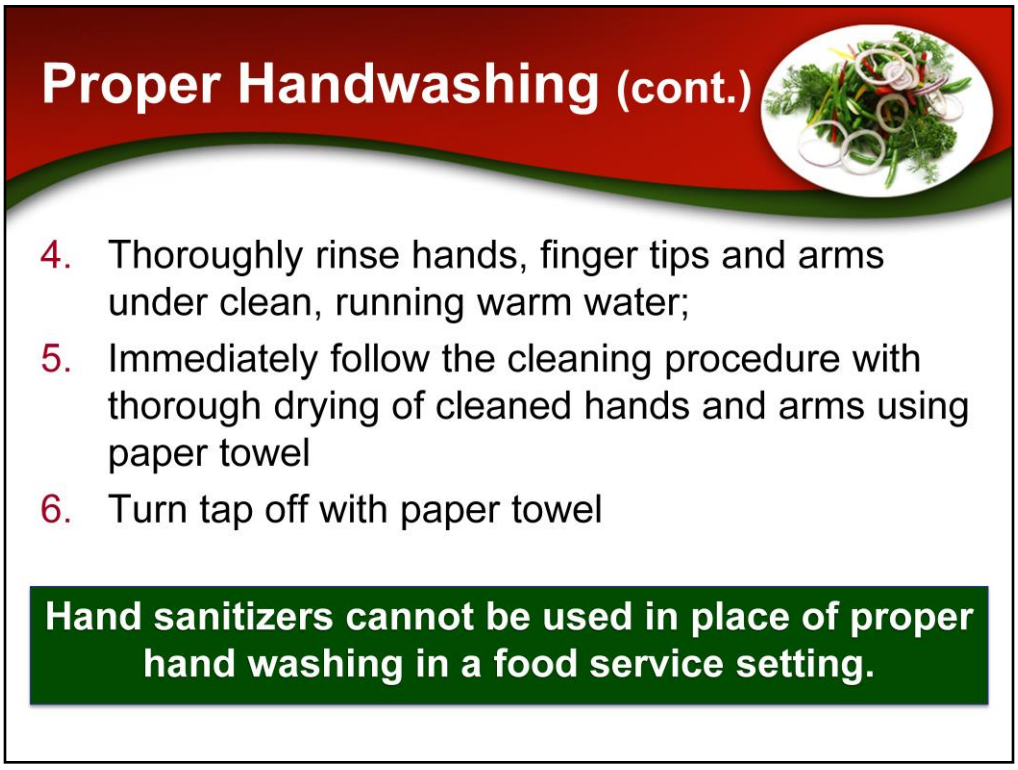
One of the most common causes of food borne illness (FBI) is worker contamination. One of the easiest ways to prevent the spread of food borne illness, but one that is sadly neglected, is hand washing.

Always wash hands:

- Before handling foods.
- As often as necessary, especially during food preparation/service.
- Any time you change a task in the kitchen.
- Before putting on plastic gloves.
- After touching any soiled item, using the restroom, handling TCS/raw foods, handling chemicals, touching any area of the body, coughing, sneezing, blowing nose; cleaning or taking trash out; smoking, eating or drinking; handling dirty dishes.

Use the proper sequence for handwashing:

1. Rinse hands under clean, running warm water.
2. Apply an amount of cleaning compound recommended by manufacturer to hands.
3. Rub hands together vigorously for 10-15 seconds.
    - Remove soil from underneath fingernails.
    - Create friction on surfaces of hands and arms, lathered fingers, finger tips and areas between fingers. (Continued next slide)



Proper Handwashing (continued)

4. Thoroughly rinse hands, finger tips and arms under clean, running warm water.
5. Immediately follow the cleaning procedure with thorough drying of cleaned hands and arms using paper towel.
6. Turn the tap off with paper towel.

Presenter Note: No artificial fingernails or nail polish are allowed unless gloves are used at all times when working with exposed foods.

- Remember, any time you change a task in the kitchen, wash your hands! This helps prevent cross contamination, especially when switching between raw and ready to eat foods.
- Avoid recontamination of the hands after washing. Be careful what you touch. Do not apply lotion after handwashing.

Hand Sanitizers: According to CMS guidelines for long-term care settings, antimicrobial gel (hand hygiene agent that does not require water) cannot be used in place of proper hand washing techniques in a food service setting.

Presenter Note: It is best to demonstrate handwashing and allow workers to demonstrate back the proper method.

The Federal Food Code discourages the use of bare hand contact of ready-to-eat foods for any highly susceptible population (elderly, pregnant women, infants, young children, anyone who is immuno-suppressed, chronically or critically ill). CMS regulations prohibit bare hand contact with food.

No bare hand contact with ready to eat food!! If you need to touch food directly with hands:

- Use utensils such as tongs or spatulas, deli paper, and/or clean gloves.
- Wash hands before putting gloves on. Use single-use gloves.

Change gloves after you:

- Cough or sneeze
- Wipe your mouth or face
- Touch anything that might be contaminated

Prevent cross contamination. Use common sense when keeping equipment sanitized.

Wash and sanitize equipment and surfaces thoroughly:

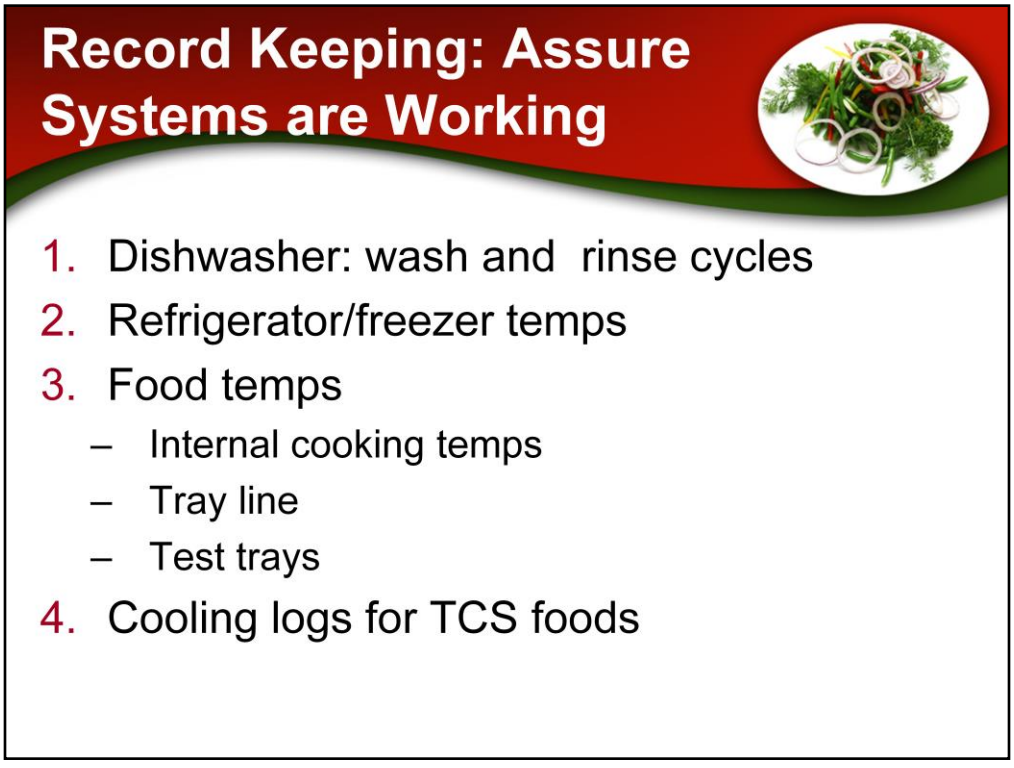
- After handling uncooked foods
- After contact with raw meat/juices

Keep raw foods and cooked foods separate. Never place cooked meat back on a plate or dish containing raw meat juices.

Carefully handle cooked foods or ready to serve foods (using clean, gloved hands, utensils or baking paper). **No bare hand contact with food is allowed.**

To avoid cross contamination with cutting boards, if available, use different colors of cutting boards for each type of food (yellow for poultry, red for raw meats, green for vegetables). Send them to dish room after *every* use.

Presenter Note: There is more information on sanitizing, three sink method and dishwashing in the “Sanitation Solutions” inservice.



Remember to keep good records to monitor critical temperatures regularly for:

1. Dishwasher: wash and rinse cycles
2. Refrigerators/freezers
3. Food temperatures
    - Internal cooking temperatures
    - Tray line
    - Test trays
4. Cooling logs for TCS foods: Check and record temperature every 30-60 minutes during cooling to assure proper temperatures are achieved within acceptable time limits.

Records should be kept on file and staff should all know how to use them.

Presenter Note: Show forms used in the facility and remind them how to fill them in.

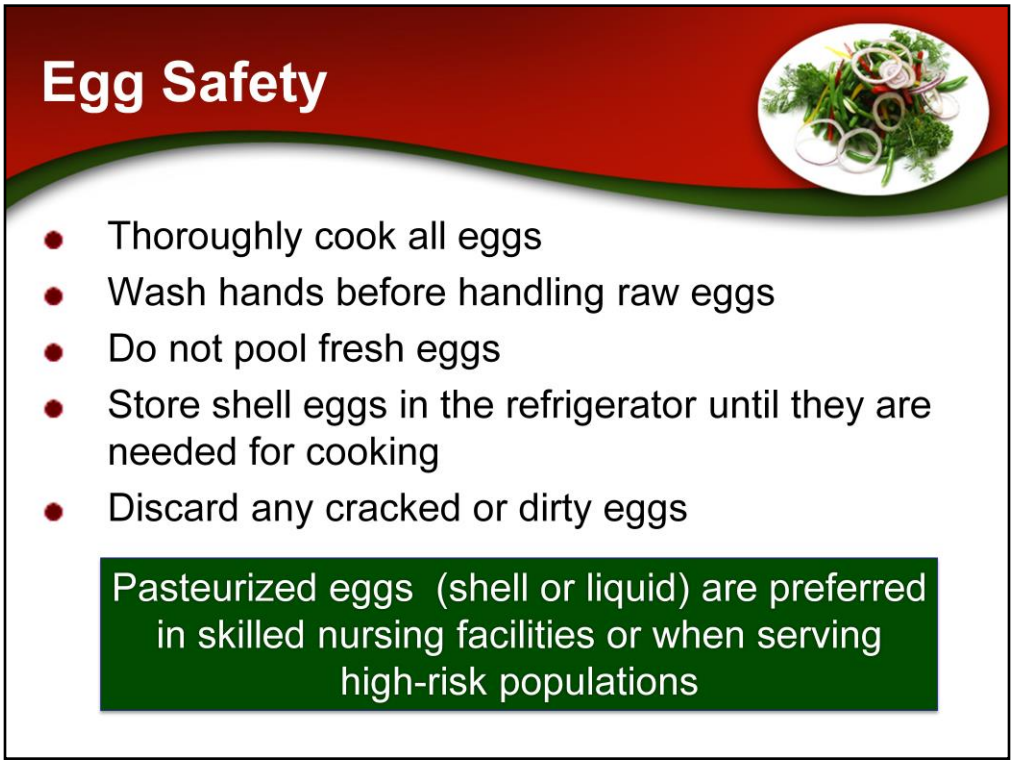
Store foods in the following order on refrigerator shelves to prevent cross-contamination:

- Ready-to-eat food
- Whole raw fish
- Whole raw meat
- Raw ground meat
- Raw poultry

When thawing meats in the refrigerator, they should always be placed in a pan or on a sheet pan on the bottom shelf.

Here are some additional food safety tips that are critical to controlling FBI.

- Always use the first in first out (FIFO) method of food rotation.
- Avoid raw or non-pasteurized foods/beverages, such as unpasteurized apple or orange juice.
- Thoroughly wash all fruits and vegetables.
- Thoroughly cook ground beef and raw animal foods including hot dogs to recommended temperatures.
- Keep uncooked meats and their juices away from raw or ready to serve foods.
- Thoroughly reheat lunch meats and cold cuts until steaming hot or 165° F (for min. 15 seconds) for pregnant women or people who are immunosuppressed. (**Presenter Note:** This is not required by CMS but is recommended as a good practice by the FDA.)
- Don't touch food-contact areas of glasses, dishware, or utensils.
- Use separate serving utensils for each food.

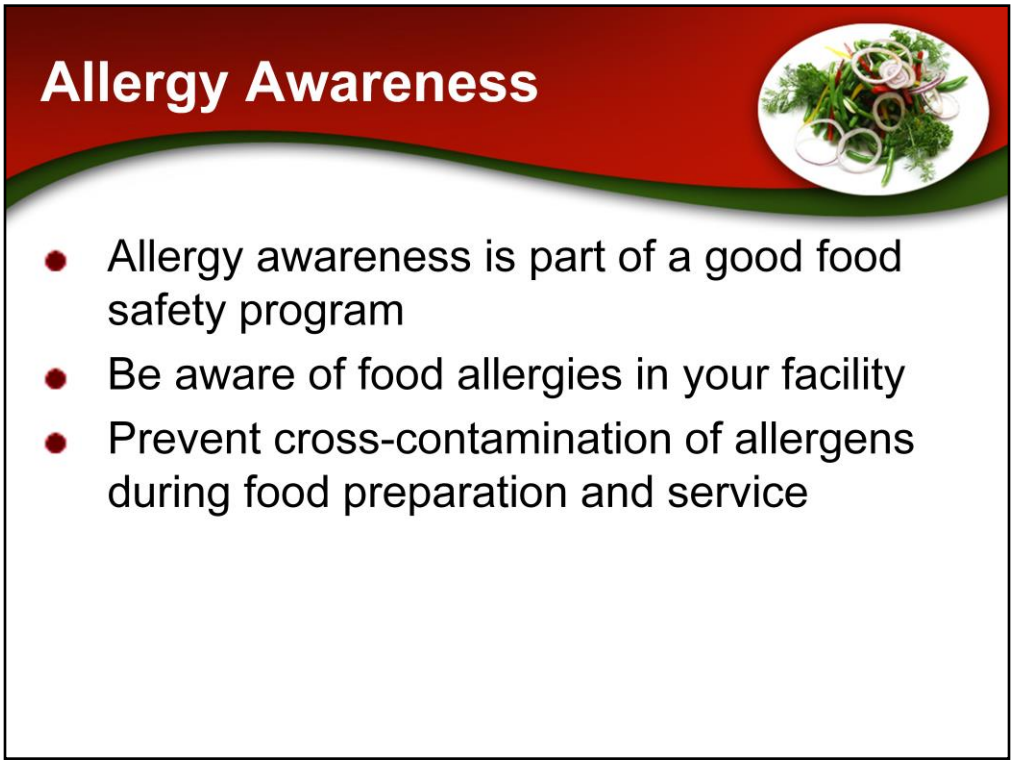


Remember that eggs are a TCS food. They may be contaminated with salmonella (which is one of the major causes of FBI).

- Thoroughly cook all eggs.
- Wash hands before handling raw eggs.
- Do not pool fresh eggs (placing 2 or more eggs cracked into the same bowl or container).
- Store shell eggs in the refrigerator until they are needed for cooking.
- Discard any cracked or dirty eggs.

Meat and poultry are TCS foods due to potential for bacterial growth.

- Never store raw meat or poultry above/near ready to eat or fresh foods.
- Thaw meat and poultry on the bottom shelf of the refrigerator.
- Use separate cutting boards for raw meats and poultry.
- Clean and sanitize all utensils, dishes and surfaces thoroughly after contact with raw meat and poultry.

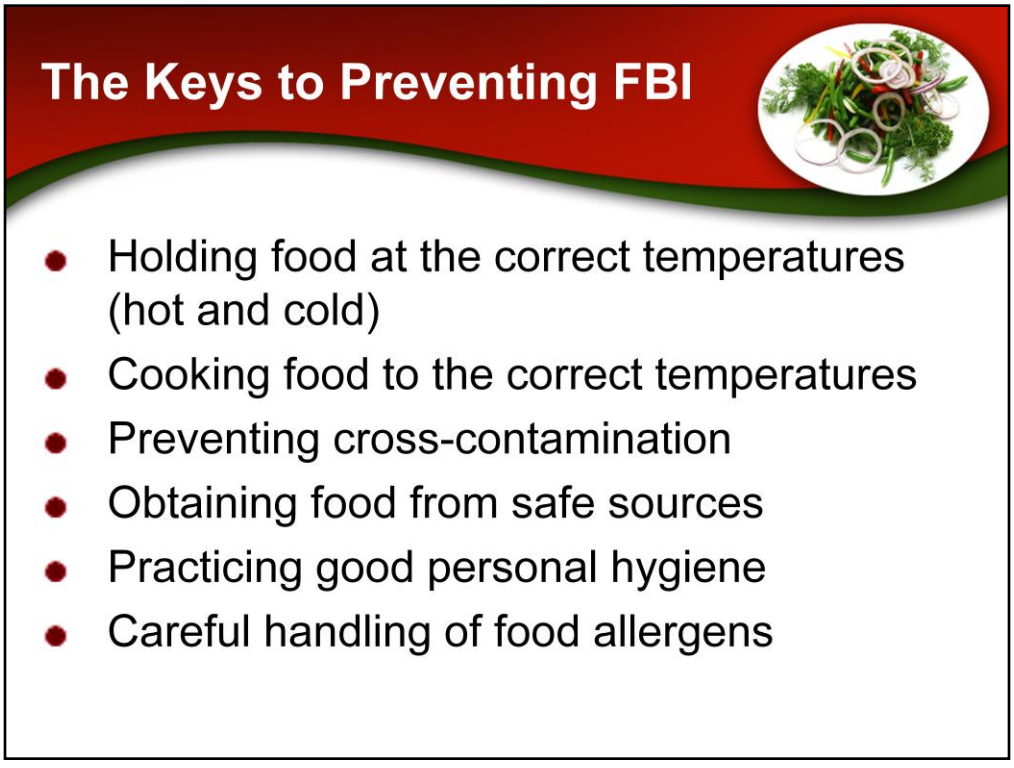


We also must be aware of allergies that our customers have. The most common food allergies are eggs, fish or shellfish, milk, soy, peanuts, tree nuts (almonds, pecans, walnuts, etc.) and wheat.

When a true allergy is present, a person must avoid all foods containing ingredients that they are allergic to.

Cross contamination could be caused by cooking different foods (for example, fish and chicken) in the same fryer without changing the oil, or by not sanitizing utensils or equipment when working with allergens.

Presenter Note: Also see separate inservice on Food Allergies and Intolerances.



In summary, food handlers can have an effect on preventing the spread of FBI by following proper procedures for food storage and preparation, kitchen sanitation, and personal hygiene.

The keys to preventing FBI are:

- Holding food at the correct temperatures (hot and cold)
- Cooking food to the correct temperatures
- Prevent cross-contamination
- Obtain food from safe sources
- Practice good personal hygiene
- Handle food allergens carefully

Thank you for helping prevent foodborne illness every day.

Presenter Notes:

Questions and Answers.

Optional: Post-test.


Food Safety
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Handouts

Objectives

1. Outline major causes of foodborne illness (FBI)
2. Understand time and temperature controls that can help prevent foodborne illness
3. Learn how to help prevent foodborne illness in every step of the flow of food in a food service operation

Main Causes of FBI

1. Improper holding temperatures
2. Inadequate cooking temperatures
3. Contaminated equipment
4. Food from unsafe sources
5. Poor personal hygiene

Contamination

Biological hazards	**Bacteria/Viruses Toxins/Spores Parasites/Fungi**
Chemical hazards	Heavy metals, pesticides, cleaning compounds, etc.
Physical hazards	Foreign objects

Contamination Sources for Biological Hazards

Humans	Nose, throat, hands, feces and clothing
Foods of animal origin	Poultry, meat, eggs, fish/shellfish
Foods of Plant origin	Contamination on plants from soils or water

Bacteria Grow Rapidly

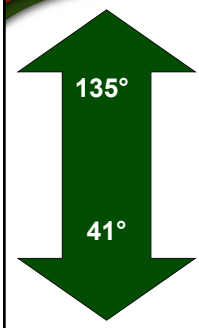
Food	•High protein; already contaminated
Acid	•pH 4.6-7.0
Time	•**Avoid TDZ**
Temperature	•**Avoid TDZ**
Oxygen	•Some bacteria need oxygen
Moisture	•Free moisture available in food

Time/Temperature Control for Safety Food (TCS food)

A food that requires time/temperature control for safety to limit pathogenic microorganism growth or toxin formation

- Milk and milk products
- Poultry
- Fish
- Crustaceans
- Soy protein foods/tofu
- Shell eggs
- Beef, lamb, pork
- Baked potatoes
- Sliced melons
- Cut tomatoes
- Leafy greens
- Sprouts
- Sprout seeds
- Garlic and oil mixtures

Temperature Danger Zone (TDZ)



Limit time food is in TDZ:

1. No more than 4 hours total:
   - Thawing, preparation, cooling, reheating
2. All foods must be kept below 41° F or above 135° F
3. This includes holding food prior to food service

Hazardous Analysis Critical Control Points (HACCP)

1. Identify TCS foods (time/temperature control for food safety
2. Identify points at which foods may be contaminated
3. Determine potential for microorganisms to survive and/or multiply
4. Implement procedures to control food safety

7 HACCP Steps

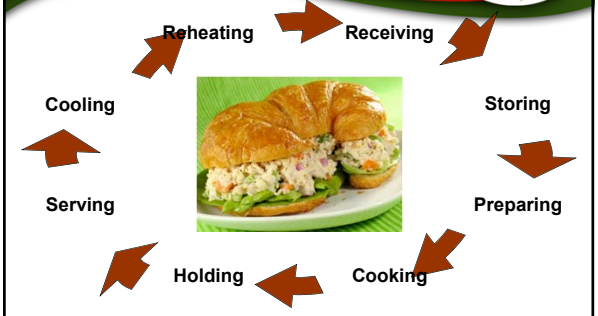
1. Identify hazards
2. Identify CCPs
3. Establish critical limits
4. Monitor CCPs
5. Take corrective action
6. Document findings
7. Verify system working

Critical Control Points

1. Cooking
2. Cooling
3. Holding
4. Re-heating

- Can food become contaminated?
- Can hazards be prevented, eliminated or reduced?
- Can CCPs be monitored? Measured? Documented?

Flow of Food



Receiving

- Take temperatures upon receiving
- Check for damaged goods
  - Dented cans
  - Damaged containers (food exposed)
- Immediately label and date foods as they are put away using FIFO
- Promptly store frozen and refrigerated foods

Cold Storage

Take internal temperatures of each cold storage unit

- Refrigerators: Take internal temperatures of foods in the unit
  - Cold foods should be **≤41°F**
  - Frozen foods should be frozen solid

Remember FIFO (First In, First Out)

Safe Food Thawing

1. In refrigerator at 41° F or lower
2. As part of the cooking process (no interruption)
3. In a microwave, transferred immediately to conventional cooking
4. Under cold running water (At 70° F) completely submerged. Do not allow food temp to rise above 41° F

Taking Food Temps

- Insert the thermometer at a 45 degree angle to the middle of the food item
- Do not touch container or bone
- Wait for thermometer to rise to maximum temp or drop to minimum temp, read and record
- Remove thermometer from the food

The thermometer must be sanitized between uses in different foods

Minimum Cooking Temps

165° F (min.15 seconds)

- Raw eggs prepared for immediate service
- Fish, pork, meat not otherwise specified in these charts
- Commercially raised game animals and exotic species of game animals

155 ° F (min.15 seconds)

- Raw eggs not prepared for immediate service
- Comminuted (ground) fish and meats
- Injected meats
- Mechanically tenderized meats

Final Cooking Temps (cont.)

165° F (min. 15 seconds)

- Poultry
- Stuffed fish, stuffed meat, stuffed pasta, stuffed poultry
- Stuffing containing fish, meat, poultry
- Wild game animals

135° F

- Fruits/vegetables, grains, and legumes that will be hot-held for service

Food Safety Made Easy

Food Service/Distribution

Hold all hot food at 135°F or higher

- Check temps prior to placing on tray line
- Take out only enough food for 15-20 minutes of service
- Take temperatures every 30 minutes
- Cover all food during transportation to dining rooms/rooms

During Food Service Keep Cold Foods Cold

Hold all cold foods at 41°F or below

- Refrigerate all cold foods before service
- Take out only enough food for 15-20 minutes of service
- Cover all food during transportation to dining rooms/rooms

Essentials of Cooling

135°F to 41°F

Cool within 4 hours

Or

135°F to 70°F within 2 hours and **70°F to 41°F** in 4 hours

Use of Leftovers

- Use recipes to help avoid leftovers
- Cover, label, date, store promptly
- All leftovers should be used within 7 days
- Follow proper cooling procedures
- Reheat to greater than 165° F for 15 seconds
- Do not hold more than 2 hours
- If unused throw it away

Reheating

Rapidly reheat food to greater than 165° F for greater than or equal to15 seconds

If reheating in a microwave:

- Stir and turn food; Let sit for 2 minutes after reheating
- Check temperature in 2 places to assure even reheating

Personal Hygiene

- Wear clean clothes
- Keep body clean
- Restrain hair
- Wash hands at the beginning of your shift, after using the restroom, smoking, and when changing tasks

Report any infections, flu, colds, GI problems, or wounds before working

Always Wash Hands

- Before handling foods
- As often as necessary – especially during food preparation/service
- Any time you change a task in the kitchen
- Before putting on plastic gloves

After touching any soiled item, using restroom, handling TCS/raw foods or chemicals, touching any area of the body, coughing, sneezing, blowing nose; handling trash; smoking, eating or drinking; handling dirty dishes

Proper Handwashing

1. Rinse hands under clean, running warm water
2. Apply an amount of cleaning compound recommended by manufacturer to hands
3. Rub hands together vigorously for 10-15 seconds
   - Remove soil from underneath fingernails
   - Create friction on surfaces of hands and arms, lathered fingers, finger tips and areas between fingers

Proper Handwashing (cont.)

4. Thoroughly rinse hands, finger tips and arms under clean, running warm water;
5. Immediately follow the cleaning procedure with thorough drying of cleaned hands and arms using paper towel
6. Turn tap off with paper towel

Hand sanitizers cannot be used in place of proper hand washing in a food service setting.

Approriate Use Gloves

- When touching food directly with hands
  - No bare hand contact with food!!
- Use utensils, clean gloves, deli paper, etc.
- Wash hands before putting gloves on

Change gloves after you:
- Cough or sneeze
- Wipe your mouth or face
- Touch anything that might be contaminated

Prevent Cross Contamination

- Wash and sanitize equipment and surfaces thoroughly
  - After handling uncooked foods
  - After contact with raw meat/juices
- Use clean utensils or gloved hands to handle cooked or ready to serve foods
- Keep raw foods and cooked foods separate during storage and food preparation

Record Keeping: Assure Systems are Working

1. Dishwasher: wash and rinse cycles
2. Refrigerator/freezer temps
3. Food temps
   - Internal cooking temps
   - Tray line
   - Test trays
4. Cooling logs for TCS foods

Storing Cold Foods

Store foods in the following order on refrigerator shelves to prevent cross-contamination:

- Ready-to-eat food
- Whole raw fish
- Whole raw meat
- Raw ground meat
- Raw poultry

General Food Safety Tips

- Always use the FIFO method
- Avoid raw/non-pasteurized foods and beverages
- Thoroughly wash all fruits and vegetables
- Cook ground beef, raw animal foods including hot dogs, to recommended temps
- Keep uncooked meats and their juices away from raw or ready to serve foods
- Thoroughly re-heat lunch meats and cold cuts
- Don't touch food contact areas of glasses, sliverware, dishware

Egg Safety

- Thoroughly cook all eggs
- Wash hands before handling raw eggs
- Do not pool fresh eggs
- Store shell eggs in the refrigerator until they are needed for cooking
- Discard any cracked or dirty eggs

Pasteurized eggs (shell or liquid) are preferred in skilled nursing facilities or when serving high-risk populations

Meat and Poultry Safety

- Never store raw meat or poultry above/near ready to eat or fresh foods
- Thaw meat and poultry on the bottom shelf of the refrigerator
- Use separate cutting boards and prep sinks for raw meat and poultry
- Clean and sanitize all utensils, dishes and surfaces thoroughly after contact with raw meat and poultry

Allergy Awareness

- Allergy awareness is part of a good food safety program
- Be aware of food allergies in your facility
- Prevent cross-contamination of allergens during food preparation and service

The Keys to Preventing FBI

- Holding food at the correct temperatures (hot and cold)
- Cooking food to the correct temperatures
- Preventing cross-contamination
- Obtaining food from safe sources
- Practicing good personal hygiene
- Careful handling of food allergens

Pre/Post Test

True/False *(Circle your choice)*

1. Food can become contaminated during preparation, cooking, serving and storage.
   True **False**

2. Most foods become contaminated due to biological contaminants such as bacteria and viruses.
   True **False**

3. People at high risk for FBI include infants, the elderly and pregnant women.
   True **False**

4. All hot and cold foods should be checked for proper temperature before serving.
   True **False**

5. Food can become contaminated from unsafe cooking or cooling.
   True **False**

6. Time/temperature control for safety (TCS) foods include meat, eggs and milk.
   True **False**

7. The temperature danger zone is 35 to 120 degrees Celsius.
   True **False**

8. The most critical control points are cooking, cooling, holding and re-heating.
   True **False**

9. Poultry should be cooked to a minimal internal temperature of 155 degrees F.
   True **False**

10. Foods should be cooled from 140 degrees F to 40 degrees F within 2 hours.
    True **False**

Answer Key

1. **True**
2. **True**
3. **True**
4. **True**
5. **True**
6. **True**
7. **False**
8. **True**
9. **False**
10. **False**

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