



**KNOX COUNTY  
TENNESSEE**

**HEALTH DEPARTMENT**

# **Food Safety Training**

## **Preventing Foodborne Illness**

**Knox County Health Department  
Environmental Health  
140 Dameron Ave.  
Knoxville, TN 37917  
865-215-5200**

# Welcome to the Knox County Health Department Food Safety Training!

Our goal is that by the end of this training, you will:

1. Recognize the importance of preventing foodborne illness, *and*
2. Understand how you can prevent foodborne illness.



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# About This Training

This training will include sections on:

1. Foodborne Illness
2. The 5 Major Foodborne Illness Risk Factors:
  1. Improper Holding & Cooling
  2. Inadequate Cooking
  3. Contaminated Food, Utensils, and Equipment
  4. Poor Employee Health & Hygiene
  5. Food From Unsafe Sources
3. Additional Prevention Measures from the TN Food Service Establishment Rules:
  1. Consumer Advisory
  2. Date Marking
  3. Specialized Processing
  4. Manager Certification



# Foodborne Illness



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# What is foodborne illness?

Foodborne illness has many names, including:

- Food poisoning
- Foodborne disease
- Foodborne infection

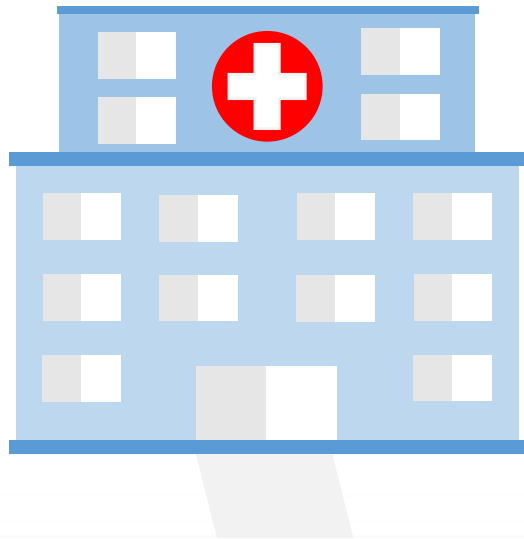




## Test Your Knowledge

# Who can be affected by foodborne illness?

*(click an option below)*



older adults

pregnant women

children

healthy adults

restaurant employees



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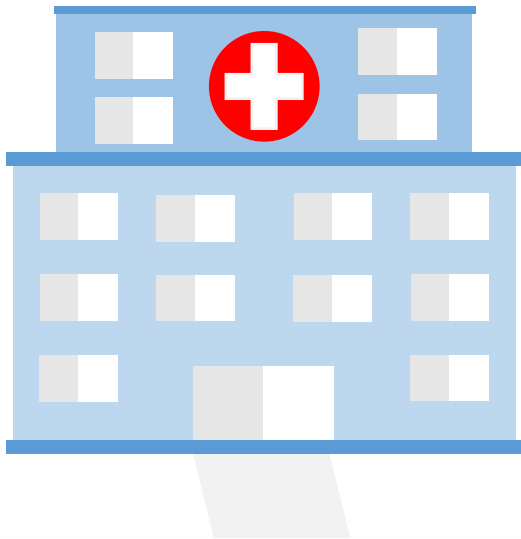
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Test Your Knowledge

# Who can be affected by foodborne illness?

*(click an option below)*



**everyone** is at risk for  
foodborne illness



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## Foodborne Illness

# What are the symptoms of foodborne illness?

There are many symptoms of foodborne illness, including:

- Chills
- Nausea
- Vomiting
- Diarrhea
- Abdominal cramps
- Jaundice
- Fever
- Dizziness







# What causes foodborne illness?

- Bacteria,
- Viruses,
- Parasites,
- Molds,
- Toxins (including chemical toxins, like pesticides), *and*
- Allergens





## Foodborne Illness

# How many people does foodborne illness affect?

- Every year in the U.S., foodborne illness:
  - Sickens 1 in 6 people (a total of 48 million people)
  - Hospitalizes 128,000 people
  - Kills 3,000 people
- Foodborne illness also costs the U.S. an estimated **\$152 billion** every year

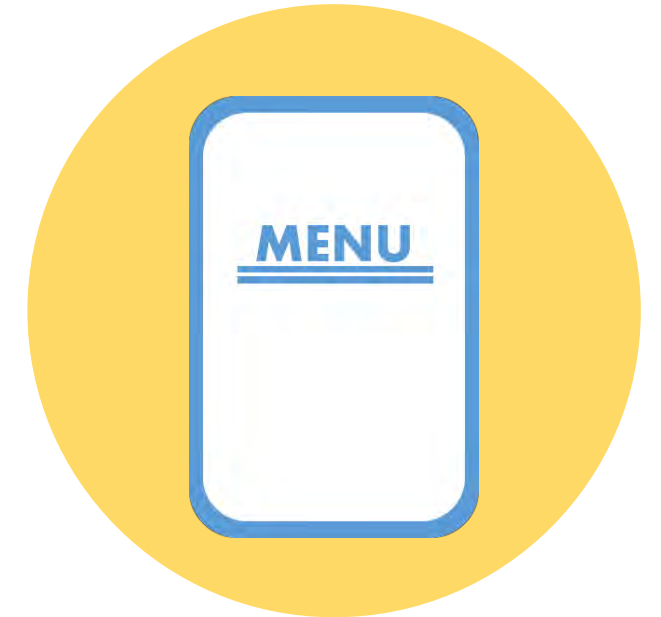




# How are restaurants related to foodborne illness?

In 2013, food prepared in restaurants was related to:

- 60% of foodborne illness outbreaks and
- 51% of outbreak-associated illness





# How are restaurants related to foodborne illness?

**In Tennessee, restaurants were related to:**

- Nearly 56% of foodborne illness outbreaks, and
- 25% of hospitalizations related to foodborne illness





# How can foodborne illness be prevented?

**Safe food handling practices!**  
(Also known as “**food safety**”.)

*Food safety aims to prevent illness, and protect the health and safety of those eating AND working with food.*





# How can foodborne illness be prevented?

Chance of foodborne illness is lowered by:

- Safe food handling practices
- Proper cooking and storage
- Adequate cleaning and sanitation
- All of which you will learn about today!





# What is the Health Department's role in preventing foodborne illness?

Environmental Health Specialists (aka, Health Inspectors) with the Knox County Health Department (KCHD) help establishments prevent foodborne illness by:

- Serving as a resource for questions and food safety education, *and*
- Conducting inspections to ensure establishments understand proper food safety procedures that will help prevent foodborne illness.





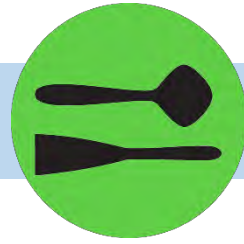
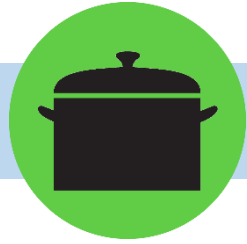
# How do Health Inspectors determine proper food safety procedures?

The current regulations in Tennessee for food safety are the TN Food Service Establishment Rules. This is what:

- KCHD inspections are based on, *and*
- What this training is based on





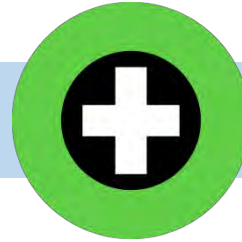
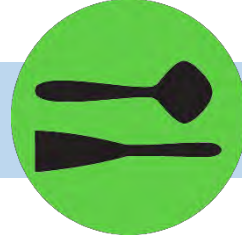
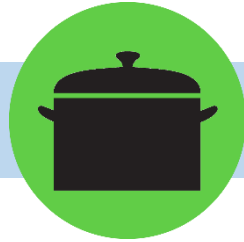


# 5 Major Risk Factors for Foodborne Illness



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## The 5 Major Risk Factors for Foodborne Illness are:

1. Improper Holding & Cooling
2. Inadequate Cooking
3. Contaminated Food, Utensils, and Equipment
4. Poor Employee Health & Hygiene
5. Food From Unsafe Sources



# Risk Factor 1: Improper Holding & Cooling

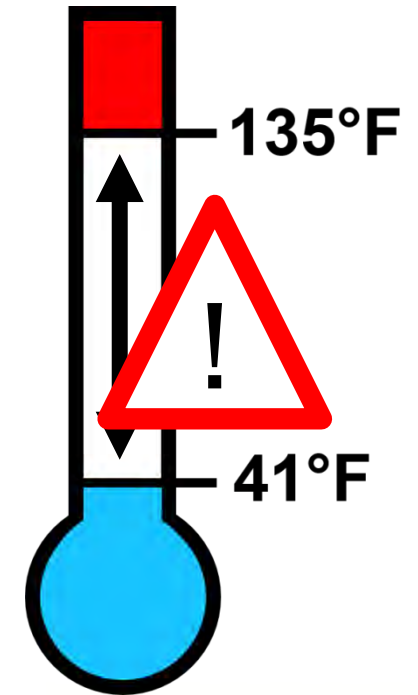




## Risk Factor 1: Improper Holding & Cooling

# Why are holding and cooling procedures important?

- Bacteria that cause foodborne illness grow rapidly in foods when they are **between 41°F and 135°F**.
- This temperature range is called the **temperature danger zone**.

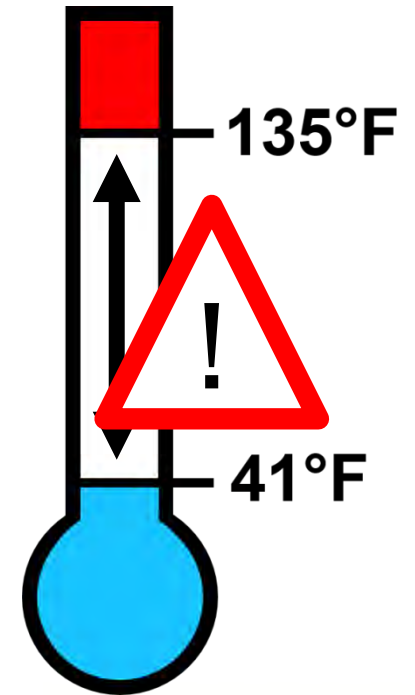




## Risk Factor 1: Improper Holding & Cooling

# Why are holding and cooling procedures important?

- Proper heating and cooling procedures reduce the time a food is in the temperature danger zone (between 41°F and 135°F.)
- This prevents growth of bacteria, preventing foodborne illness.





## Risk Factor 1: Improper Holding & Cooling

# Time/Temperature Control for Safety (TCS) Foods

- Certain foods have conditions that are ideal for the growth of bacteria that cause foodborne illness
- These foods are called Time/Temperature Control for Safety Foods, or **TCS Foods**





## Risk Factor 1: Improper Holding & Cooling

# Time/Temperature Control for Safety (TCS) Foods

### TCS foods include:

- Meat, fish, poultry, seafood
- Eggs and dairy products
- Cooked vegetables
- Tofu
- Cooked rice, beans, pasta and potatoes
- Sprouts (alfalfa and bean)
- Cut melons
- Garlic or herbs bottled in oil
- Sliced tomatoes
- Cut leafy greens





## Risk Factor 1: Improper Holding & Cooling

# Proper Holding & Cooling

To keep TCS Foods safe and out of the temperature danger zone, proper procedures should be followed for:

1. Cooling food
2. Holding hot food (soups, cooked rice, etc.)
3. Holding cold food (cut fruit, tuna salad, etc.)



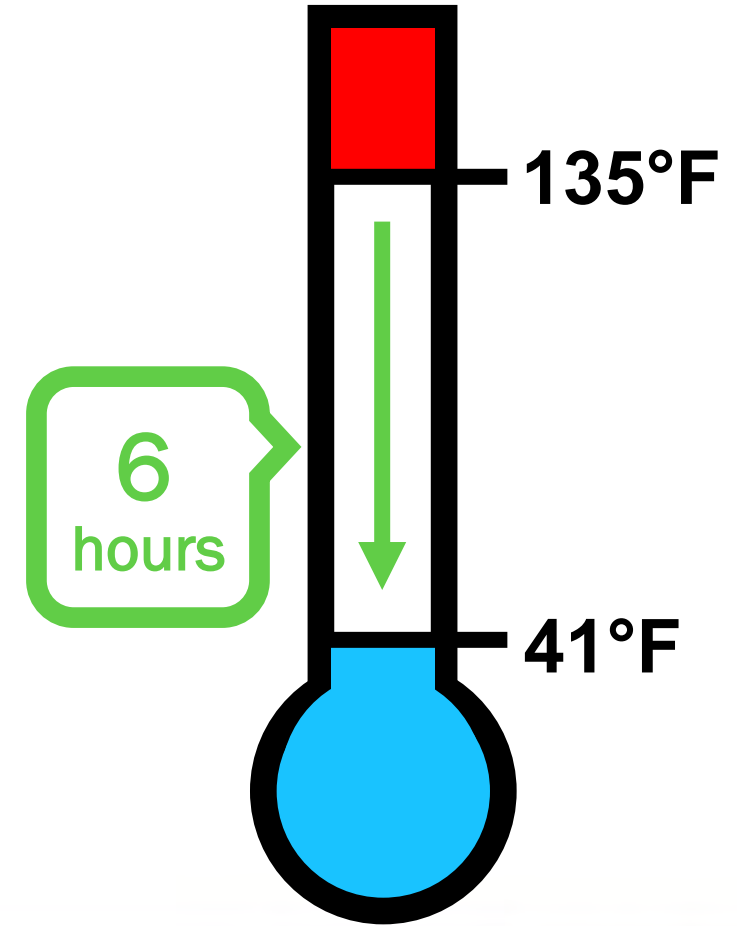




## Risk Factor 1: Improper Holding & Cooling

### Cooling Food

TCS Foods must be cooled from 135°F to 41°F or below within **six hours**

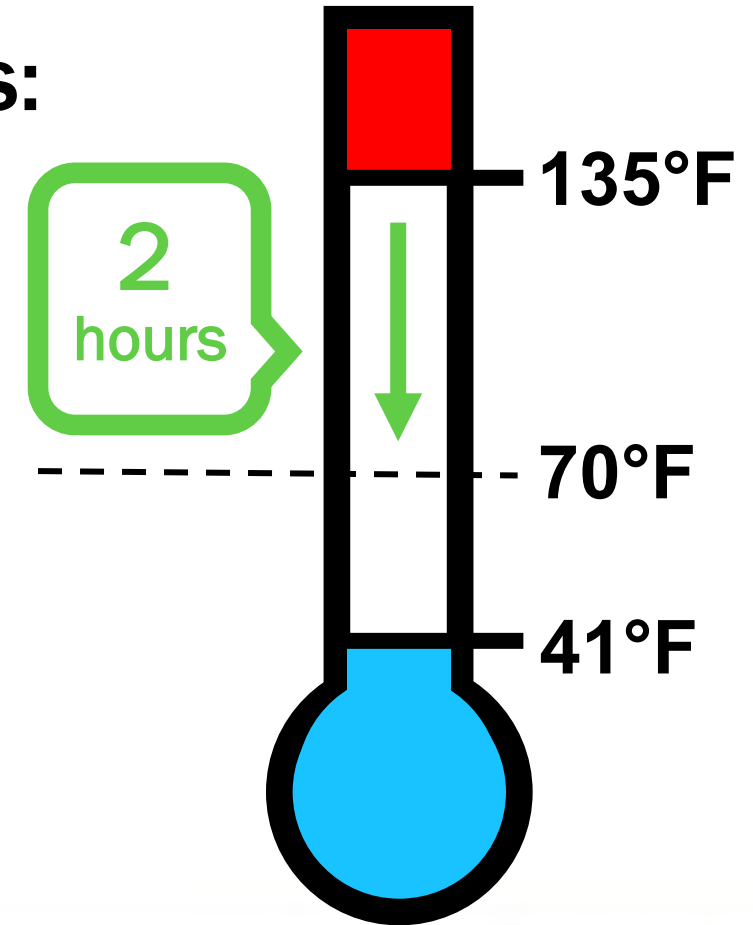




## Risk Factor 1: Improper Holding & Cooling

There are two important cooling stages:

STAGE 1: Reduce the temperature from 135 °F to 70 °F or below within **two hours**



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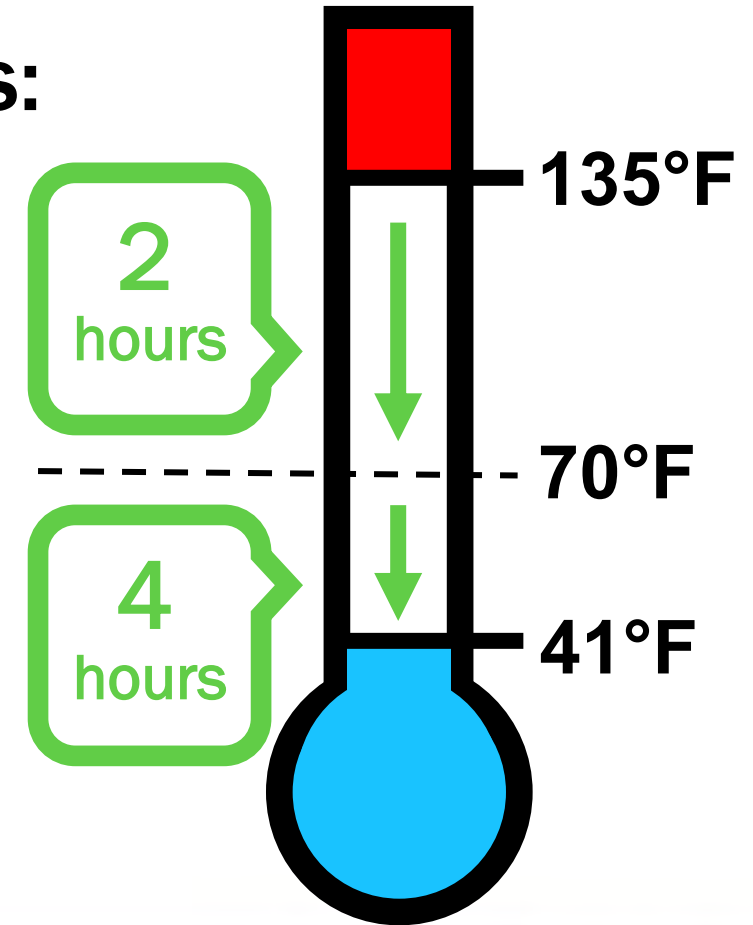
## Risk Factor 1: Improper Holding & Cooling

### There are two important cooling stages:

STAGE 1: Reduce the temperature from 135 °F to 70 °F or below within **two hours**.

STAGE 2: Reduce the temperature from 70 °F to 41 °F or below within the next **four hours**.

Note: Foods prepared from ambient temperatures must be cooled to below 41 °F or below within **four hours** of preparation.



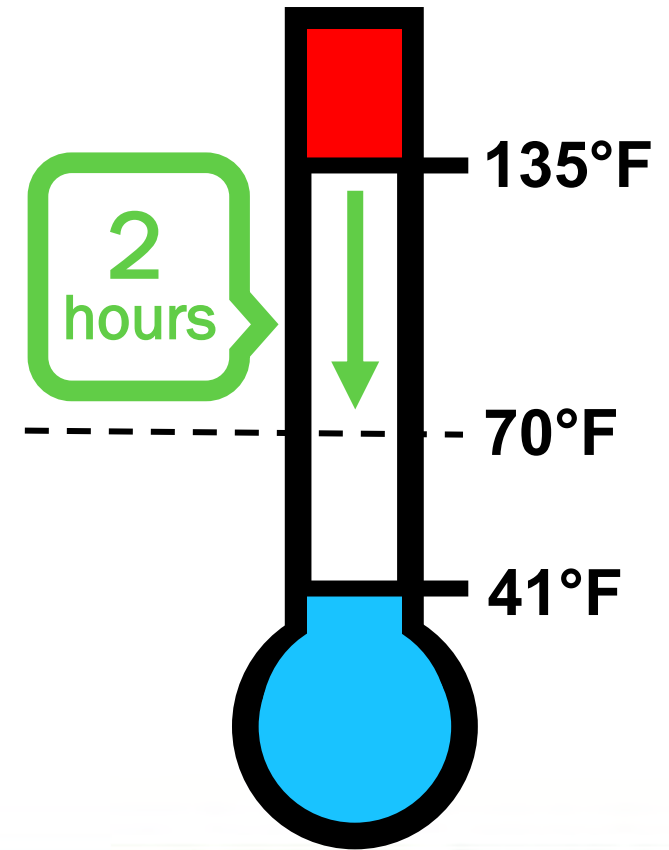


## Risk Factor 1: Improper Holding & Cooling

# How can you be sure foods are cooled properly?

Check the temperature of the food with a **calibrated thermometer** during the two cooling stages to make sure:

1. After **two** hours of cooling from 135° F or above, the food will reach 70° F, *and*



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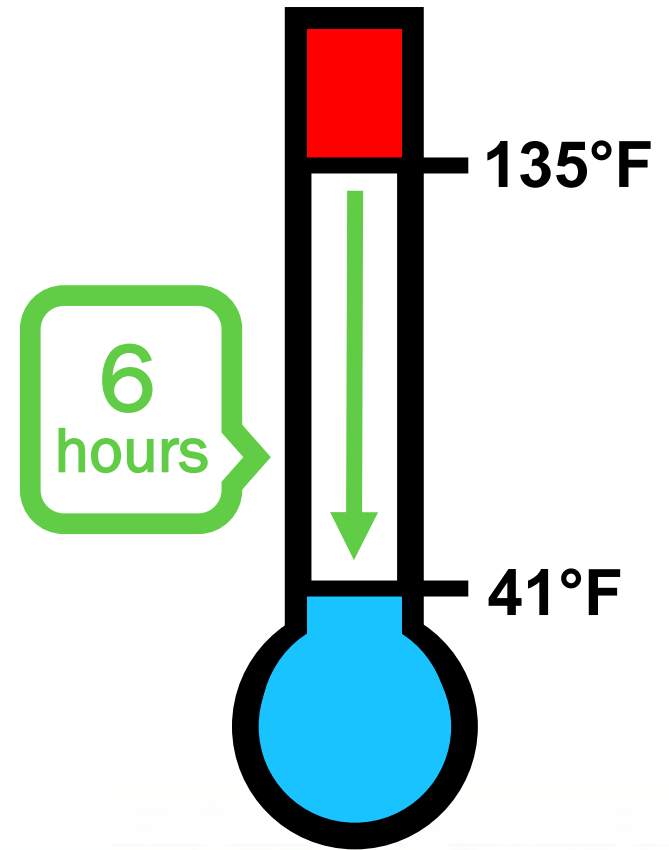
## Risk Factor 1: Improper Holding & Cooling

# How can you be sure foods are cooled properly?

Check the temperature of the food with a **calibrated thermometer** during the two cooling stages to make sure:

1. After **two** hours of cooling from 135° F or above, the food will reach 70° F, *and*
2. After **six** total hours of cooling from 135° F or above, the food will reach 41° F or below.

Note: Temperature logs are recommended



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## Risk Factor 1: Improper Holding & Cooling

# Why use a calibrated thermometer?

- Calibrating a thermometer makes sure it is reading temperatures correctly.
- Correct temperatures are key for making sure food remains safe when:
  - Cooking,
  - Storing,
  - Cooling, *and*
  - Holding





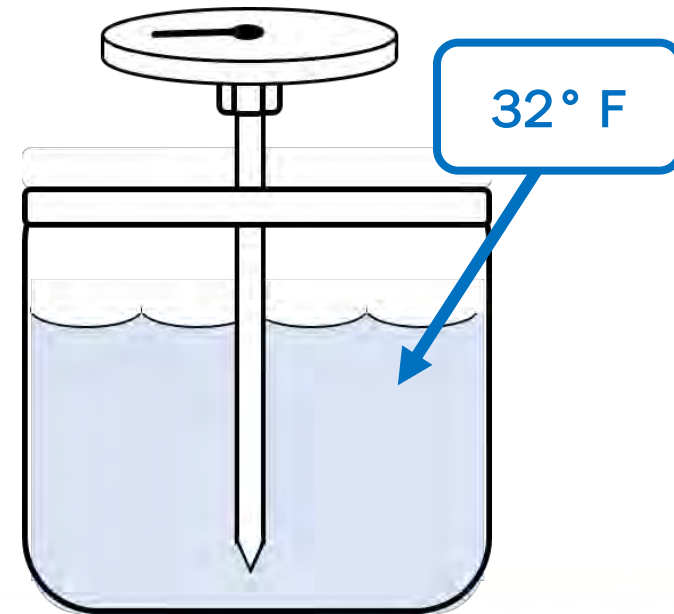
## Risk Factor 1: Improper Holding & Cooling

# How should you calibrate a thermometer?

There are two ways to calibrate a thermometer:

### 1. With Ice water:

- Fill a container with ice, then add water until the container is full.
- Completely submerge the sensing area of the thermometer for 30 seconds.
- The thermometer should read 32° F. If it doesn't, adjust the thermometer until it reads 32° F.



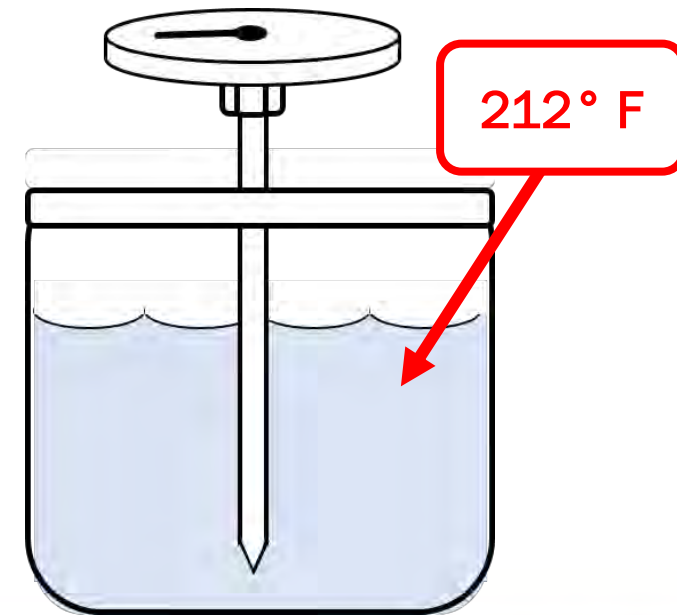


## Risk Factor 1: Improper Holding & Cooling

# How should you calibrate a thermometer?

## 2. With boiling water

- Boil clean tap water in a large pot.
- Completely submerge the sensing area of the thermometer for 30 seconds.
- The thermometer should read 212° F. If it doesn't, adjust the thermometer until it reads 212° F.







## Risk Factor 1: Improper Holding & Cooling

# There are several ways you can help foods cool faster:

- Use shallow containers to reduce the volume
- Change the type of container (metal containers cool faster than plastic)
- Make smaller portions (put into several smaller containers or cut large portions of meat into smaller pieces)
- Put containers in ice baths
- Put ice wands in the container
- Add ice as an ingredient





## Risk Factor 1: Improper Holding & Cooling

# Holding Hot & Cold Food

When holding TCS food, you can keep food safe by either using:

1. Temperature (outside of the temperature danger zone), **or**
2. Time (held no more than four hours, then thrown out)

*This prevents the growth of bacteria that cause foodborne illness.*





## Risk Factor 1: Improper Holding & Cooling

# Using Time Instead of Temperature

*This is called using “time as a public health control”*

To use time to keep food safe:

1. Written procedures stating the foods using time must be prepared in advance
2. Food must be marked to indicate the time that it is taken out of temperature control
3. Food not served within **four hours\*** must be DISCARDED

*\*If initial food temperature is at or below 41° F and does not exceed 70° F during holding, the food may be held for **six hours** before being discarded.*



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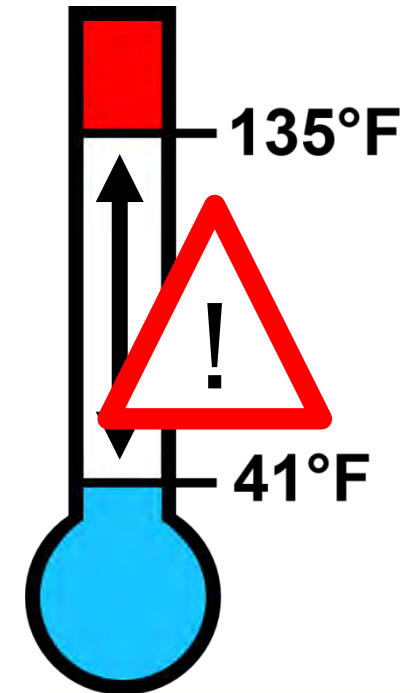


## Risk Factor 1: Improper Holding & Cooling

# Using Proper Temperatures to Keep Food Safe

When using temperature to keep food safe, foods must stay **out** of the:

**Temperature Danger Zone**  
(41 °F to 135 °F)





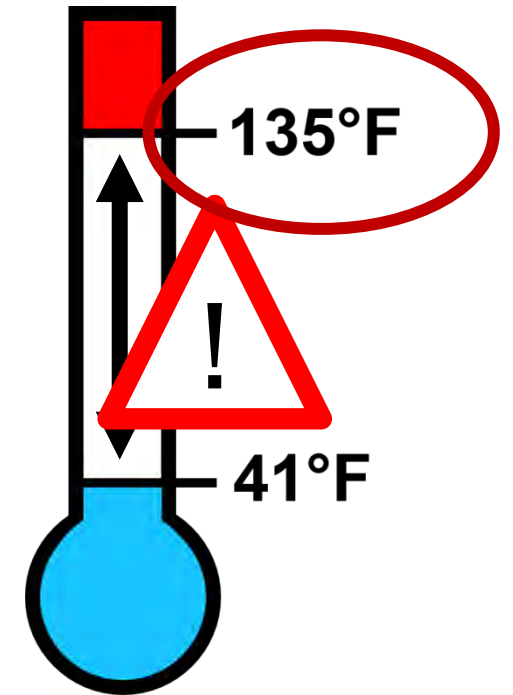
## Risk Factor 1: Improper Holding & Cooling

# Using Proper Temperatures to Keep Food Safe

To keep hot foods safe, they must stay:

**HOT** at **135°F** or above\*

*\*Unless using time instead of temperature*



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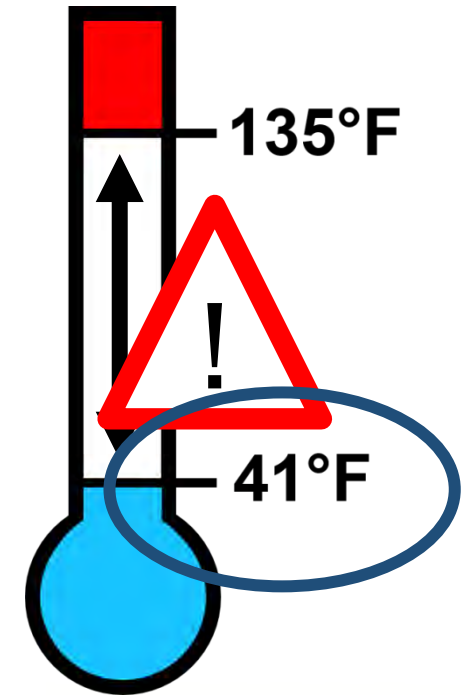
## Risk Factor 1: Improper Holding & Cooling

# Using Proper Temperatures to Keep Food Safe

To keep cold foods safe, they must stay:

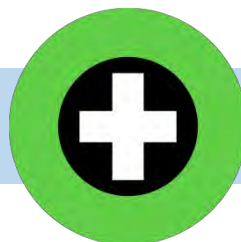
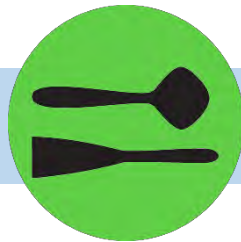
**COLD** at **41°F** or below\*

*\*Unless using time instead of temperature*



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## 5 Major Foodborne Illness Risk Factors:

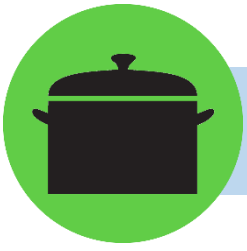
- ✓ 1. Improper Holding & Cooling
2. Inadequate Cooking
3. Contaminated Food, Utensils and Equipment
4. Poor Employee Health and Hygiene
5. Food from Unsafe Sources



# Risk Factor 2: Inadequate Cooking







## Risk Factor 2: Inadequate Cooking

# Why is adequate cooking important?

Cooking is the **only** food preparation step that can actually **kill** bacteria.



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## Risk Factor 2: Inadequate Cooking

# What is “adequate” cooking?

- Adequate cooking means cooking a food to its correct temperature for **at least 15 seconds**.
- This makes sure the foodborne illness-causing bacteria in the food are killed.



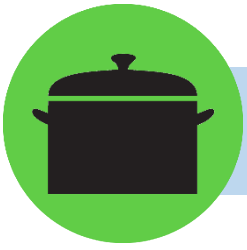


## Risk Factor 2: Inadequate Cooking

# What is “adequate” cooking?

- Different foods contain different types of bacteria, which are killed at different temperatures.
- This means that different foods have **different minimum cooking temperatures** to make sure their bacteria are killed.





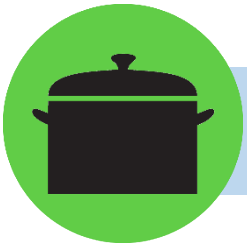
## Risk Factor 2: Inadequate Cooking

# Foods that Must be Cooked to 165° F

The foods that must be cooked to **165° F** for 15 at least seconds are:

- Poultry
- Stuffed foods or stuffing
- Raw animal foods cooked in a microwave
- Reheated Time/Temperature Control for Safety Food (TCS) for hot holding





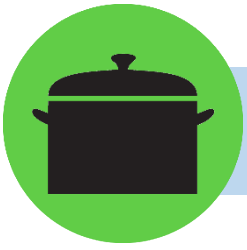
## Risk Factor 2: Inadequate Cooking

# Foods that Must be Cooked to 155° F

The foods that must be cooked to **155° F** for 15 at least seconds are:

- Hamburger
- Sausage
- Injected meats
- Eggs (for hot holding)





## Risk Factor 2: Inadequate Cooking

# Foods that Must be Cooked to 145° F

The foods that must be cooked to **145° F** for 15 at least seconds are:

- Pork
- Eggs (for immediate service)
- Fish
- Shrimp
- Whole intact meats





## Risk Factor 2: Inadequate Cooking

# What is “adequate” cooking?

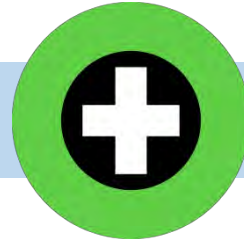
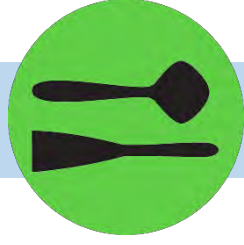
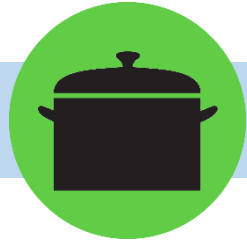
- Remember, the correct cooking temperature depends on the **type** of food.
- For all foods, be sure to always use a **calibrated thermometer** to verify temperatures.

Note: Temperature logs are recommended



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## 5 Major Foodborne Illness Risk Factors:

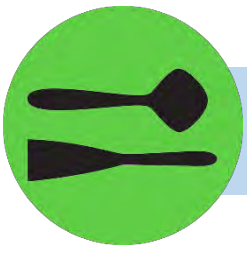
- ✓ 1. Improper Holding & Cooling
- ✓ 2. Inadequate Cooking
3. Contaminated Food, Utensils and Equipment
4. Poor Employee Health and Hygiene
5. Food from Unsafe Sources





# **Risk Factor 3: Contaminated Food, Utensils and Equipment**





## Risk Factor 3: Contaminated Food, Utensils and Equipment

# What is contamination?

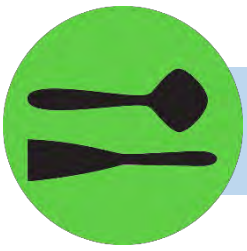
- Food can become contaminated when it comes into contact with dirty or contaminated food contact surfaces, or another contaminated food.
- This is also called **cross-contamination**.

*It is important to prevent contamination because it can lead to foodborne illness.*



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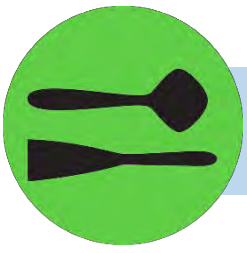
## Risk Factor 3: Contaminated Food, Utensils and Equipment

# What are the food contact surfaces that can transfer contaminants to food?

Anything that is contaminated and may later come into contact with food can be a source of cross-contamination, including:

- Hands and gloves
- Knives and cutting boards
- Storage and serving containers
- Improperly washed/sanitized surfaces, utensils, and equipment





## Risk Factor 3: Contaminated Food, Utensils and Equipment

# How can you prevent cross contamination?

There are several ways you can prevent cross contamination, including:

- Washing hands after handling raw meat, fish, or poultry
- Preparing raw meat and poultry in an area away from other foods
- Using a separate cutting board for raw meat and poultry
- Thoroughly washing, rinsing, and sanitizing ALL food contact surfaces that touch raw meat and poultry





## Test Your Knowledge

# Would this prevent cross contamination?



(Raw meat being thawed in a ware washing sink while dishes are being washed.)

**No.**

- Raw meat can contain bacteria that causes foodborne illness.
- Leaving raw meat in an area where dishes are cleaned could result in bacteria being transferred to clean dishes, and ultimately lead to foodborne illness.



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## Test Your Knowledge

# Would this prevent cross contamination?

**No.**

- Raw chicken can contain bacteria that causes foodborne illness.
- The chicken can transfer this bacteria to the cutting board and knife, which can then transfer it to the vegetables.

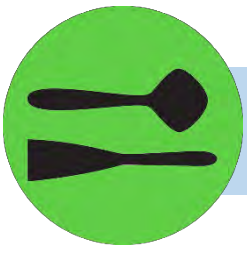


(Cutting board and knife being used at the same time for raw chicken and vegetables to be served raw.)



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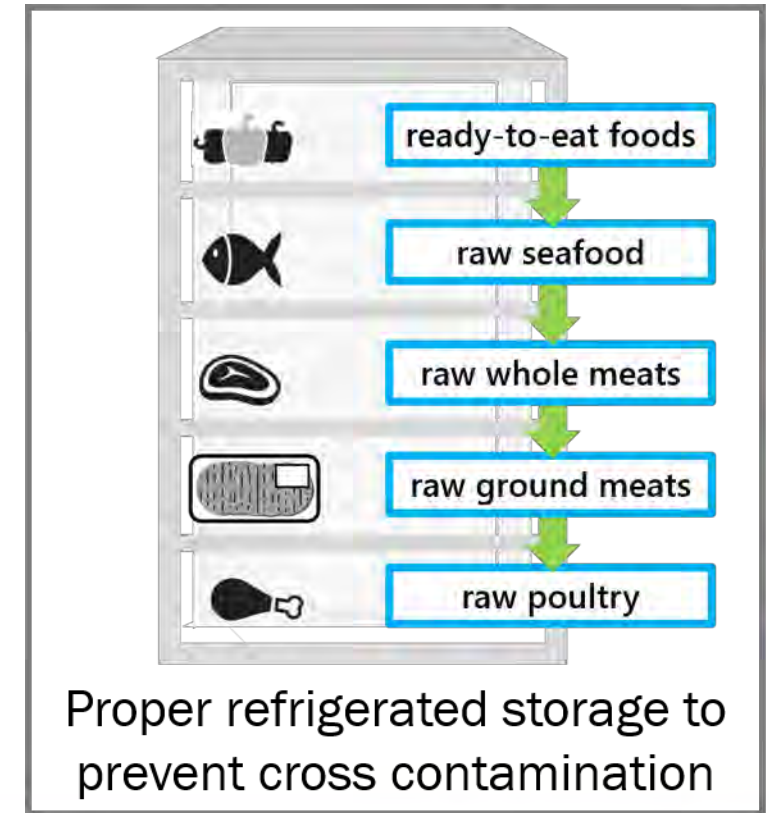
## Risk Factor 3: Contaminated Food, Utensils and Equipment

# Can cross-contamination occur while food is stored?

Contamination can occur if pieces or juices from raw meat or poultry fall into other foods when stored.

To prevent this, always:

- Store raw meat **below** other foods in the refrigerator, *and*
- Store foods with lower cooking temperatures above foods with higher cooking temperatures





## Test Your Knowledge

# Would this prevent cross contamination?

**No.**

- Juices or small parts of the meat could drop onto the vegetables, transferring bacteria that may cause foodborne illness.
- Since the vegetables may not be cooked to a temperature high enough to kill the bacteria in raw meat, or could even be served raw, this could cause foodborne illness.



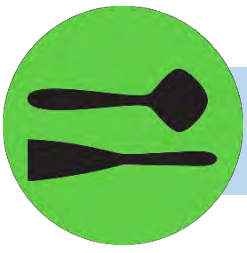
(Raw meat stored over vegetables)



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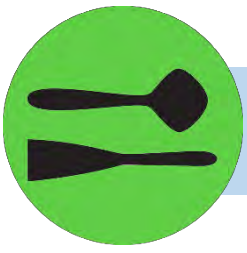


## Risk Factor 3: Contaminated Food, Utensils and Equipment

# How can you prevent contamination?

Washing, rinsing, and sanitizing is key to prevent contamination.





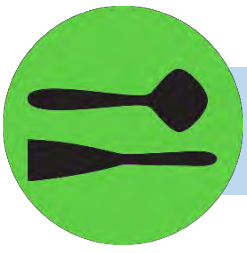
## Risk Factor 3: Contaminated Food, Utensils and Equipment

# How can you prevent contamination?

Always wash, rinse, and sanitize utensils and equipment:

- Between uses for raw and ready-to-eat foods,
- When dirty or contaminated, *and*
- At least every four hours if used continuously at room temperature.



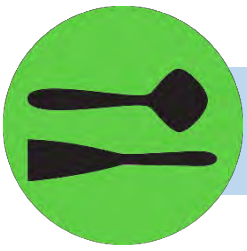


# What is proper sanitizing?

There are two methods of sanitizing that can be used to effectively sanitize utensils and equipment:

1. Hot water
2. Chemical
  - Chlorine *or* quaternary ammonia solution can be used for chemical sanitizing





## How can hot water be used to sanitize?

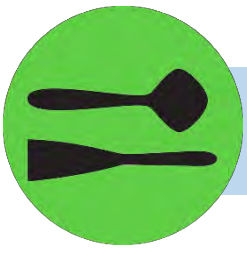
When using hot water sanitizing for manual washing and sanitizing:

1. Water must be at least 171° F for at least 30 seconds, *and*
2. Dishes must reach 160° F by immersion in the 171° F water.

When using a machine for washing and sanitizing, water must reach:

- 165° F for a stationary rack, single temperature machine
- 180° F for all other machines





## Risk Factor 3: Contaminated Food, Utensils and Equipment

# Chemical Sanitizing

For both types of chemical sanitizing, dishes and utensils are immersed in the chemical solution for a specific amount of time.

For chlorine solution:

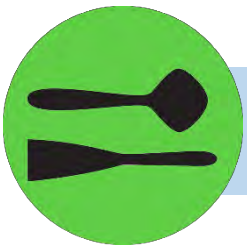
- 25-100 ppm immersion for at least 10 seconds

For quaternary ammonia solution:

- 150-400 ppm immersion for at least 30 seconds

Note: Always follow manufacturer instructions when using sanitizing chemicals.

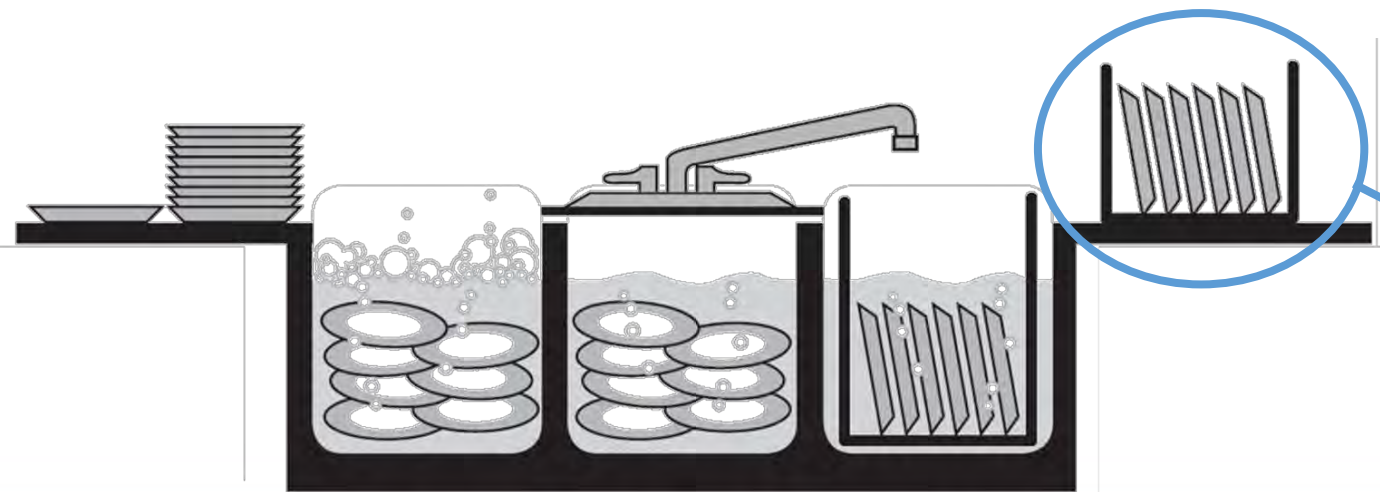




## Risk Factor 3: Contaminated Food, Utensils and Equipment

### After Sanitizing - Drying

Bacteria that cause foodborne illness can grow in water that is trapped between cleaned and sanitized dishes and utensils.

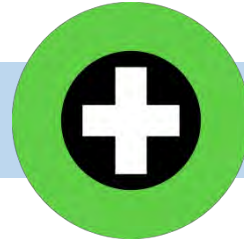
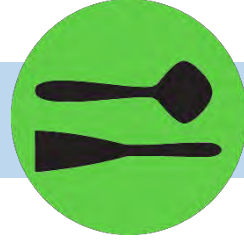
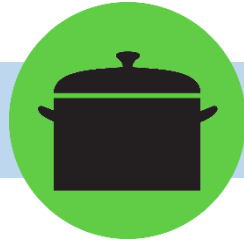


After dishes and utensils are washed, rinsed, and sanitized, make sure they are left to dry in a way that allows air to circulate.



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## 5 Major Foodborne Illness Risk Factors:

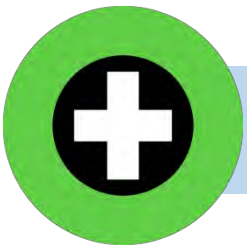
- ✓ 1. Improper Holding & Cooling
- ✓ 2. Inadequate Cooking
- ✓ 3. Contaminated Food, Utensils and Equipment
4. Poor Employee Health and Hygiene
5. Food from Unsafe Sources



# **Risk Factor 4: Poor Employee Health & Hygiene**





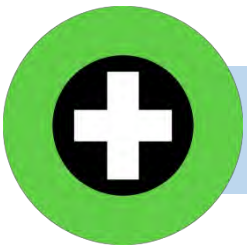


## Risk Factor 4: Poor Employee Health & Hygiene

# Employee Health & Hygiene

- Food workers, even if they look and feel healthy, can spread viruses and bacteria
- Only food workers who are healthy and practice good personal hygiene keep harmful germs from getting on food, which prevents foodborne illness





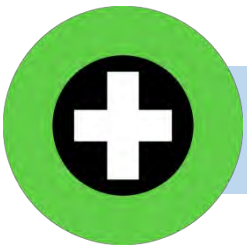
## Risk Factor 4: Poor Employee Health & Hygiene

# Employee Health & Hygiene

**Good** health and hygiene practices include:

1. Proper handwashing practices
2. No bare-hand contact with ready-to-eat foods
3. Proper illness reporting, for both employees and managers
4. Restricting or excluding sick employees



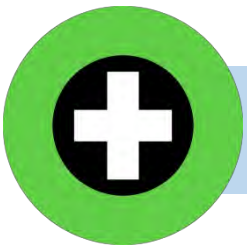


## Risk Factor 4: Poor Employee Health & Hygiene

# Proper Handwashing

- Handwashing is *the most* effective way you can prevent spreading bacteria and viruses that cause foodborne illness.
- When it comes to handwashing, it is important to understand:
  - Who
  - When
  - Where
  - *and* How



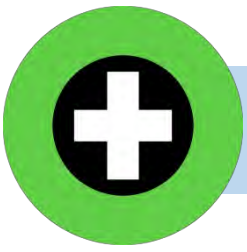


## Risk Factor 4: Poor Employee Health & Hygiene

# Proper Handwashing - Who

- All food workers should practice proper handwashing.
- Even if a person looks and feels healthy, they can cause foodborne illness with the viruses and bacteria on their hands.



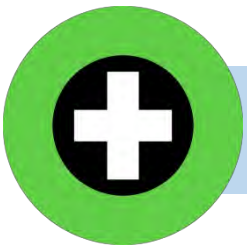


## Risk Factor 4: Poor Employee Health & Hygiene

# Proper Handwashing - When

- Upon entering the kitchen
- Before putting on new gloves
- Anytime you change tasks
- After using the bathroom
- After handling raw meat, fish or poultry
- After handling garbage or dirty dishes
- After taking a break
- After smoking
- After sneezing, coughing or blowing nose
- After handling animals or using chemicals
- After touching your hair, face, or clothing
- After eating



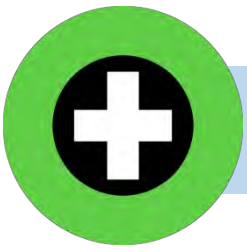


## Risk Factor 4: Poor Employee Health & Hygiene

# Proper Handwashing - Where

- Always wash hands in a sink designated for hand washing.
- Handwashing sinks should always be clean and in working condition.
- Hot water, hand soap, and paper towels should also be available at every hand sink.





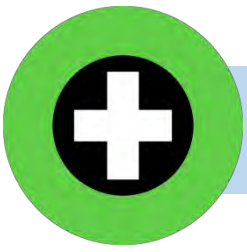
## Risk Factor 4: Poor Employee Health & Hygiene

# Proper Handwashing - How

Proper handwashing should last for a total of at least **20 seconds** *and* follow these steps:

1. Wet hands and exposed parts of arms under warm running water
2. Lather soap for at least 10 to 15 seconds on hands (front and back), exposed parts of arms, finger tips, and between fingers
3. Rinse thoroughly under warm running water
4. Dry hands with single-use paper towels or an electric hand dryer
5. Using a paper towel to turn off tap is a good practice  
*(This is recommended to keep bacteria from the tap off of your clean hands)*





## Risk Factor 4: Poor Employee Health & Hygiene

# Personal Hygiene

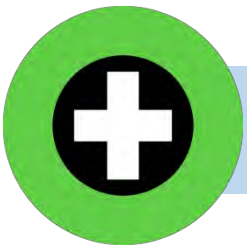
There's more to good personal hygiene than just handwashing.

To help prevent foodborne illness, food workers must also:

- Keep hair restrained using a hat, hairnet, beard restraint, etc.
- Wear clean outer clothing
- Keep fingernails trimmed
- Only drink from an approved closed container, with proper handling to prevent cross-contamination in the food prep area







## Risk Factor 4: Poor Employee Health & Hygiene

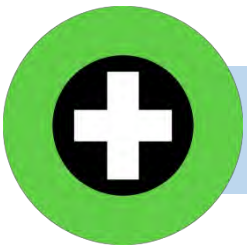
# Personal Hygiene

To prevent food contamination, it is important that food workers do **not**:

- Wear fingernail polish or artificial fingernails when working with exposed food (unless wearing intact gloves in good repair)
- Eat or use tobacco in food prep areas
- Wear jewelry (only a plain wedding band is permitted)

*Artificial fingernails, fingernail polish, tobacco products, and jewelry can fall into food and harm the person who eats it.*



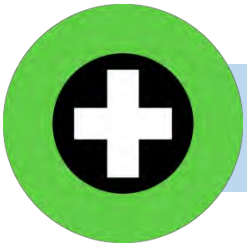


## Risk Factor 4: Poor Employee Health & Hygiene

# Bare Hand Contact & Ready-to-Eat Foods

- Bare hand contact with ready-to-eat foods can cause cross contamination, and can spread Hepatitis A and Norovirus.
- It is important to never touch ready-to-eat foods with bare hands to prevent the spread of illness.



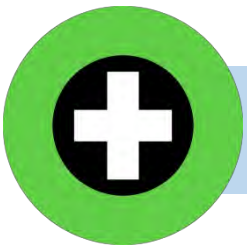


## Risk Factor 4: Poor Employee Health & Hygiene

# What are Ready-to-Eat Foods?

- Washed fruits and vegetables served raw
- Sandwich meats and cheese
- Bread, toast, rolls and baked goods
- Garnishes such as lettuce, parsley, lemon wedges and pickles
- Ice for consumption
- Any food that has been thoroughly cooked and is ready to eat





## Risk Factor 4: Poor Employee Health & Hygiene

# What should be used to handle ready-to-eat foods?

To prevent contamination, always use a barrier *instead* of bare hands when handling ready-to-eat foods

- Barriers include:
  - Tongs
  - Deli paper
  - Single-use gloves





## Risk Factor 4: Poor Employee Health & Hygiene

# If you choose gloves, always follow these steps:

- 1** Wash your hands **before** putting on gloves.
- 2** Choose only single-use food service gloves.
- 3** Change gloves:
  - When they become damaged, dirty, or contaminated
  - When changing tasks
  - After handling dirty utensils or equipment
  - Between working with raw meat and ready to eat foods
- 4** After you have finished using a pair of gloves:
  - dispose of the gloves
  - *and* wash your hands



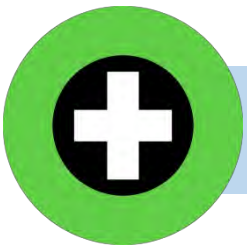
**REMINDER:**

*To prevent cross-contamination, never wash or reuse single-use food service gloves.*



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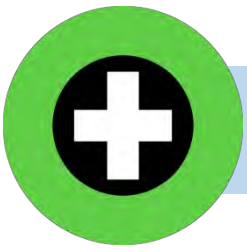


## Risk Factor 4: Poor Employee Health & Hygiene

# Employee Illness

- Sick food workers are a leading cause of foodborne illness outbreaks.
- It is up to employees and managers to make sure that sick employees do not spread illnesses.



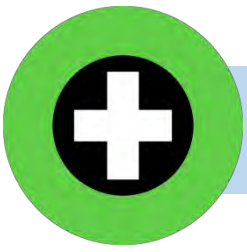


## Risk Factor 4: Poor Employee Health & Hygiene

# Employee Responsibilities

- Employees are responsible for reporting certain symptoms and illnesses to the person in charge of the establishment
- Symptoms employees must report to the person in charge are:
  - Diarrhea
  - Vomiting
  - Jaundice (yellowing of the eyes or skin)
  - Sore throat with fever
  - Infected lesion on hands or arms





## Risk Factor 4: Poor Employee Health & Hygiene

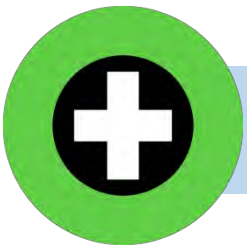
# Employee Responsibilities

Diagnosed illnesses employees must report to the person in charge are:

- Salmonella
- Shigella
- E-coli
- Hepatitis A
- Norovirus







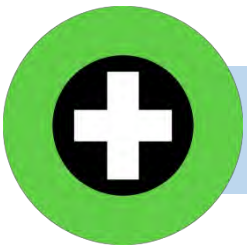
## Risk Factor 4: Poor Employee Health & Hygiene

# Manager Responsibilities

The person in charge at the establishment has a responsibility to **restrict or exclude** employees with certain symptoms and diagnosed illnesses.

- “Restricting” means to limit the activities of a food employee.
- “Excluding” means to prevent a person from working as an employee in a food establishment or entering a food establishment as an employee.

*This prevents a spread of disease that is transmissible through food.*

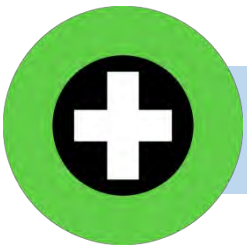


## Risk Factor 4: Poor Employee Health & Hygiene

# Restricting/Excluding Sick Employees

- The person in charge of the establishment must exclude employees while they have:
  - Diarrhea, or
  - Vomiting
- Employees can return to work after they have been without symptoms for at least 24 hours, or provides written medical documentation from a medical provider stating the symptom(s) is from a non-infectious condition.





## Risk Factor 4: Poor Employee Health & Hygiene

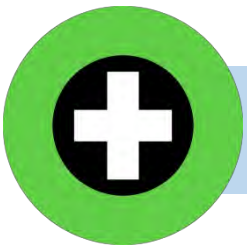
# Restricting/Excluding Sick Employees

The person in charge of the establishment must restrict or exclude\* employees while they have:

- E. coli
- Salmonella
- Shigella
- Hepatitis A

*\*Always refer to the Employee Health section of the Tennessee Food Service Establishment Rules when determining if restriction or exclusion is required.*





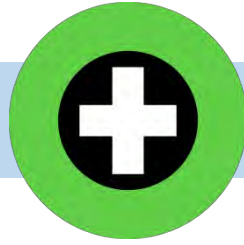
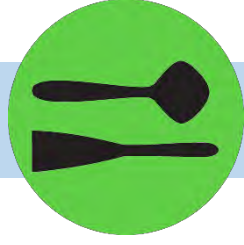
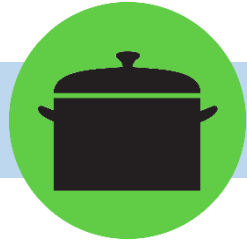
## Risk Factor 4: Poor Employee Health & Hygiene

# Restricting/Excluding Sick Employees

The person in charge of the establishment must also notify the health department when an employee has been diagnosed with:

- E. Coli
- Salmonella
- Shigella
- Hepatitis A
- Norovirus
- Or when an employee is jaundiced





## 5 Major Foodborne Illness Risk Factors:

- ✓ 1. Improper Holding & Cooling
- ✓ 2. Inadequate Cooking
- ✓ 3. Contaminated Food, Utensils and Equipment
- ✓ 4. Poor Employee Health and Hygiene
5. Food from Unsafe Sources



# Risk Factor 5: Food from Unsafe Sources





## Risk Factor 5: Food from Unsafe Sources

# What is a safe source?

A food source is considered safe if:

- A regulatory agency has approved it
- The source delivers food to your establishment under proper conditions
- Proper procedures are followed for shellfish they sell to you





## Risk Factor 5: Food from Unsafe Sources

# Approved Sources

- An approved source means that a regulatory agency has determined that where the food is produced, prepared, or processed meets the standards required by law.
- Any food that will be sold or served to customers must come from an approved source.
- *Local produce vendors (farmer's markets, etc.) **are** allowed.*







## Risk Factor 5: Food from Unsafe Sources

# Identifying unsafe food when it is delivered

Inspecting food when it is delivered is another way to ensure the food you serve in your establishment is safe. Be sure to check for:

- Spoilage
- Opened, rusty or severely damaged packaged or canned foods
- Dented cans
- Proper temperatures — received frozen must be frozen, cold foods must be 41 °F or below.

*These are all signs of unsafe food and should **not** be accepted by your establishment*



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## Risk Factor 5: Food from Unsafe Sources

# Special Procedures for Shellfish

- To be sure the shellfish (oysters, clams, mussels) your establishment serves is safe, verify the source is listed in the **Interstate Certified Shellfish Shippers (ICSS)** list, which can be located at [www.fda.gov](http://www.fda.gov)
- Identification tags should be attached to the shellfish container
- Your establishment must keep shellfish tags for **90 days**.





## Risk Factor 5: Food from Unsafe Sources

# Important Components of Shellfish Identification Tags

Dealer name and address

PERISHABLE  
KEEP REFRIGERATED

US OYSTER SHIPPERS, LLC.  
90 SHORE LANE  
SEA CITY, ME 01239  
(231) 555-0199 FAX: (231) 555-0198

R3456.SS

Dealer certification number

Harvest date

ORIGINAL SHIPPER'S CERT. NO. IF OTHER THAN ABOVE:

HARVEST DATE:

WET STORAGE HARVEST DATE:

Harvester certification number

Harvest location

HARVEST LOCATION:

TYPE OF SHELLFISH:

Type and quantity of shellfish

QUANTITY OF SHELLFISH:

**THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY AND  
THEREAFTER KEPT ON FILE FOR 90 DAYS.**

Bold and capitalized statement that  
"This tag is required to be attached  
until container is empty and  
thereafter kept on file for 90 days."

LOT #:

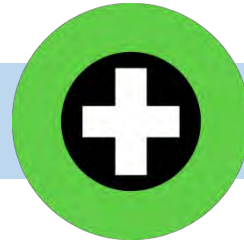
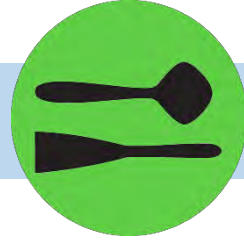
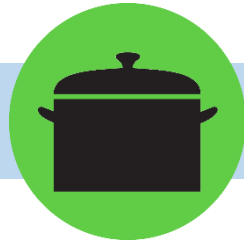
RESHIPPER'S CERT. NO.

DATE RESHIPPED



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## 5 Major Foodborne Illness Risk Factors:

- ✓ 1. Improper Holding & Cooling
- ✓ 2. Inadequate Cooking
- ✓ 3. Contaminated Food, Utensils and Equipment
- ✓ 4. Poor Employee Health and Hygiene
- ✓ 5. Food from Unsafe Sources



# Additional Prevention Measures in the 2009 Food Code





# Adoption of the 2009 FDA Food Code

- Effective July 1, 2015 the state of Tennessee implemented new rules governing food service establishments. These rules are based in part on the 2009 FDA Food Code.
- Health inspections in Tennessee, as well as this training, are based on the rules of TN Food Service Establishment Rules.





# What's in the new code?

The changes under the new TN Food Service Establishment Rules include requirements for:

- Consumer advisory
- Date marking
- Specialized processing
- Parasite destruction
- Manager certification/demonstration of knowledge



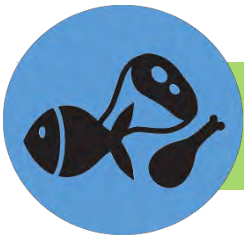
# TN Food Service Establishment Rules: Consumer Advisory



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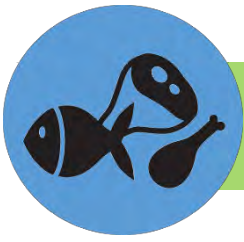


## Have you seen notes like these before?



They're an example of a **consumer advisory**.





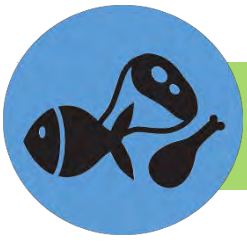
# What is a consumer advisory?

A consumer advisory is a way to let customers know:

1. Which menu items that contain animal foods that are:
  - Raw,\*
  - Undercooked\*, or
  - Without otherwise being processed to eliminate pathogens\*
2. The increased risk of foodborne illness associated with consuming those items

*\*Consumer advisories are **required** for these kinds of foods.*





## What does a consumer advisory look like?

There are two sections that must be included in a consumer advisory.

1. Disclosure

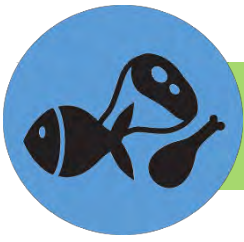
2. Reminder

\*Bourbon Street Steak  
A juicy, tender 10 oz. steak jazzed up with Cajun spices and served with sautéed onions & mushrooms. \$12.49

\*NOTICE: Items marked with an \* may be cooked to order. Consuming raw or undercooked meat may increase your risk of foodborne illness.

oin & shrimp



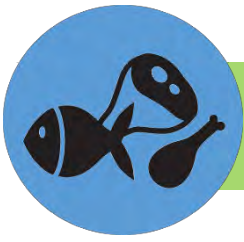


# What is the disclosure in a consumer advisory?

The disclosure in a consumer advisory:

- Is a written statement, *and*
- Clearly identifies items with animal foods that are, or can be ordered, raw or undercooked





# What is the disclosure in a consumer advisory?

Disclosures must include two parts:

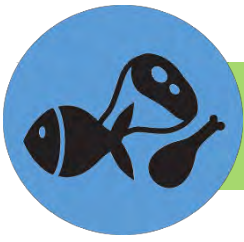
1

Identification of the foods by asterisking (\*) to a footnote stating the items are served raw or undercooked

2

A description of the food



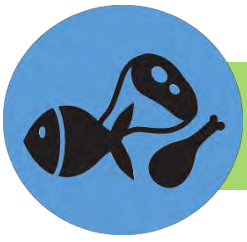


# What is the reminder in a consumer advisory?

The reminder in a consumer advisory:

- Is a written statement, *and*
- Is asterisked to make it clear to the customer which foods the reminder applies to, *and*
- Includes **specific wording** about the health risk of consuming raw or undercooked animal foods



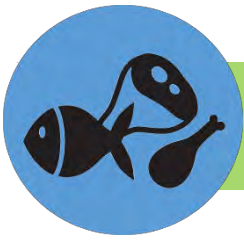


# What is the reminder in a consumer advisory?

The wording in the reminder must be:

- “Consuming raw or undercooked meats, poultry, seafood, shellfish or eggs may increase your risk of foodborne illness.” *or*
- “Consuming raw or undercooked meats, poultry, seafood, shellfish or eggs may increase your risk of foodborne illness, especially if you have certain medical conditions.” *or*
- “Regarding the safety of these items, written information is available upon request.”





## Where should a consumer advisory be?

A consumer advisory can be included on:

- Reminder statements on the menu or deli case
- Placards
- Table tents
- Brochures or pamphlets
- Other areas where it can be written and clearly seen by customers







## Test Your Knowledge

**\*Which of these foods require a consumer advisory?**  
*(click an option below)*

Milk

Poultry

Lamb

Fish

Eggs

Pork

Beef

Shellfish

Any animal food that will be served or sold raw, undercooked, or without otherwise being processed to eliminate pathogens **must** have a consumer advisory.



KNOX COUNTY  
TENNESSEE

HEALTH DEPARTMENT

# TN Food Service Establishment Rules: Date Marking





# What is date marking?

- Even foods that are refrigerated can grow bacteria that can cause foodborne illness.
- Date marking is a way to identify how old foods are, and when those foods should be discarded to prevent bacteria from causing foodborne illness.





# What foods need to be date marked?

Foods require date marking when they are:

- Prepared in house OR commercially,
- Refrigerated,
- Ready-to-eat,
- Held for longer than 24 hours, *and*
- A TCS food.





# What foods need to be date marked?

Foods require date marking when they are:

- Prepared in house OR commercially,
- Refrigerated,
- Ready-to-eat,
- Held for longer than 24 hours
- A TCS food.

### REMEMBER! TCS foods include:

- Meat, fish, poultry, seafood
- Eggs & dairy products
- Cooked vegetables
- Tofu
- Cooked rice, beans, pasta and potatoes
- Sprouts (alfalfa and bean)
- Cut melons
- Garlic or herbs bottled in oil
- Sliced tomatoes & cut leafy greens





# Are there exceptions to date marking?

Date marking is not required for the following items:

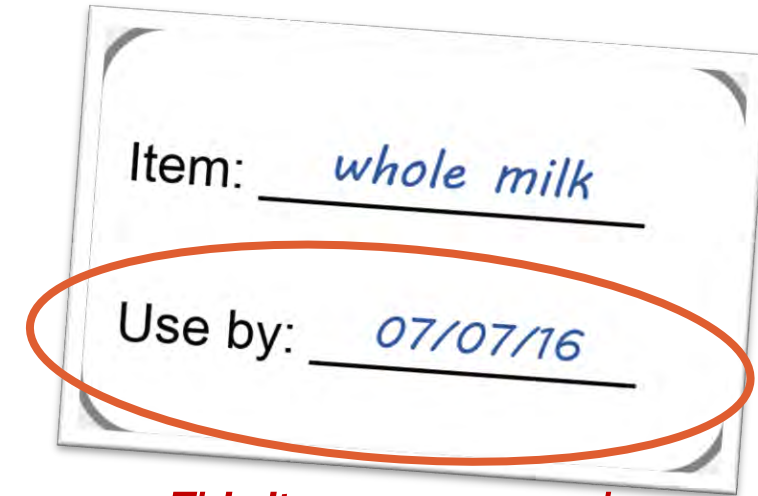
- Deli salads
- Aged hard cheese
- Semi-soft cheeses
- Cultured dairy products
- Preserved Fish products
- Shelf stable dry fermented sausages
- Shelf stable salt-cured products





# What should a date mark include?

- A day or date should be clearly written on the food package to indicate **when the food should be consumed, sold, or discarded**
  - Other dates may also be listed, but they are not required
- The day/date written can be no more than seven (7) days from when the food was prepared (if prepared in house) or opened (if it was commercially prepared)



*This item was opened  
on 7/01/16*

**Note: If food is not properly dated, it must be used or discarded within 24 hours.**





# Does freezing a food change its date mark?

- Freezing a food stops the date marking clock, but **does not reset it**
- When a food requiring date marking is frozen, the marking must include:
  - Use by date,
  - Freezing date,
  - Thawing date, *and*
  - Preparation date

*This makes it clear how many of the original seven days have been used.*

Item: baked chicken  
Date prepared: 07/02/16  
Date frozen: 07/03/16  
Date thawed: 07/10/16  
Use by: 07/14/16







# TN Food Service Establishment Rules: Date Marking

## Example: Freezing & Date Marking

1

The food is prepared and date marked, and is counted as the first of 7 days it is safe to use.

	4	5	6	7	8	9	10
		<i>prepared &amp; date marked (day 1)</i>	<i>stored at 41° F (day 2)</i>	<i>stored at 41° F (day 3)</i>	<i>frozen at 0° F (day 4)</i>	<i>stored frozen at 0° F (count stopped)</i>	<i>stored frozen at 0° F (count stopped)</i>
	11	12	13	14	15	16	17
	<i>stored frozen at 0° F (count stopped)</i>	<i>thawed &amp; stored at 41° F (day 5)</i>	<i>stored at 41° F (day 6)</i>	<i>stored at 41° F &amp; discarded at end of day (day 7)</i>			





# TN Food Service Establishment Rules: Date Marking

## Example: Freezing & Date Marking

**1** The food is prepared and date marked, and is counted as the first of 7 days it is safe to use.

**2** The food is stored at 41° F for two days.

	4	5	6	7	8	9	10
		<i>prepared &amp; date marked (day 1)</i>	<i>stored at 41° F (day 2)</i>	<i>stored at 41° F (day 3)</i>	<i>frozen at 0° F (day 4)</i>	<i>stored frozen at 0° F (count stopped)</i>	<i>stored frozen at 0° F (count stopped)</i>
	11	12	13	14	15	16	17
	<i>stored frozen at 0° F (count stopped)</i>	<i>thawed &amp; stored at 41° F (day 5)</i>	<i>stored at 41° F (day 6)</i>	<i>stored at 41° F &amp; discarded at end of day (day 7)</i>			



## TN Food Service Establishment Rules: Date Marking

# Example: Freezing & Date Marking

**1** The food is prepared and date marked, and is counted as the first of 7 days it is safe to use.

**2** The food is stored at 41° F for two days.

**3** The food is frozen at 0° F the next day, and since it was not frozen *all* day, it counts as one of the 7 days.

4	5	6	7	8	9	10
	<i>prepared &amp; date marked (day 1)</i>	<i>stored at 41° F (day 2)</i>	<i>stored at 41° F (day 3)</i>	<i>frozen at 0° F (day 4)</i>	<i>stored frozen at 0° F (count stopped)</i>	<i>stored frozen at 0° F (count stopped)</i>
11	12	13	14	15	16	17
<i>stored frozen at 0° F (count stopped)</i>	<i>thawed &amp; stored at 41° F (day 5)</i>	<i>stored at 41° F (day 6)</i>	<i>stored at 41° F &amp; discarded at end of day (day 7)</i>			





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11	12	13	14	15	16	17
stored frozen at 0° F (count stopped)	thawed & stored at 41° F (day 5)	stored at 41° F (day 6)	stored at 41° F & discarded at end of day (day 7)			

**4** The food remains frozen for 3 days.



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**5** The food is thawed and stored at 41° F. This counts as one of the 7 days because it is above 0° F for part of the day.



## Example: Freezing & Date Marking

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**4** The food remains frozen for 3 days.

**5** The food is thawed and stored at 41° F. This counts as one of the 7 days because it is above 0° F for part of the day.

**6** The food is stored at 41° F and discarded at the end of the day.



# How does combining foods affect date marking?

- If different containers of foods are combined, the date of the **oldest** ingredient becomes the date marked on the package
- For example: If today is Wednesday, and you are mixing salad prepared on Monday with salad prepared on Tuesday, the salad would be labeled as prepared on Monday.



# TN Food Service Establishment Rules: Specialized Processing







# What is specialized processing?

- Some establishments use food additives for preservation or prepare foods in ways that alter the atmosphere in a food package
- To ensure these foods remain safe, a Food Safety Plan (or variance) is required if these types of practices will be used in your establishment





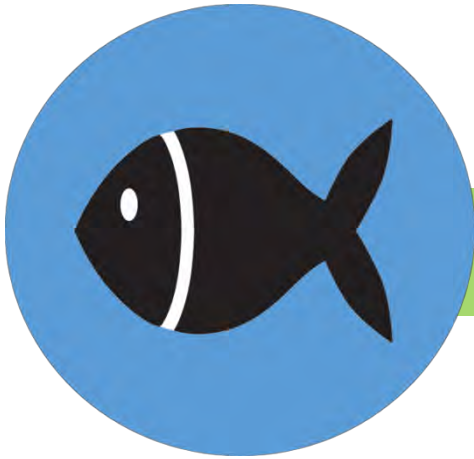
# What is specialized processing?

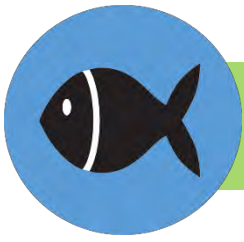
Some specialized processing methods that require a Food Safety Plan (or variance) are:

- Smoking for preservation
- Curing food
- Using food additives, such as vinegar for preservation
- Reduced oxygen packaging
- Operating a molluscan shellfish life-support system display tank
- Sprouting seeds or beans



# TN Food Service Establishment Rules: Parasite Destruction

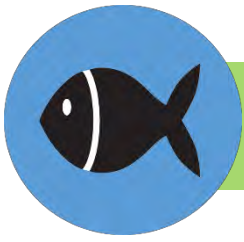




# When is parasite destruction needed?

- Some species of fish contain parasites that can be harmful when eaten.
- Parasites are killed during normal cooking, but become a concern when fish are eaten in dishes such as sushi, sashimi, and ceviche, when the fish is :
  - Raw,
  - Undercooked, or
  - Lightly preserved.
- Freezing to specified temperatures can kill parasites, allowing these foods to be safe to eat.

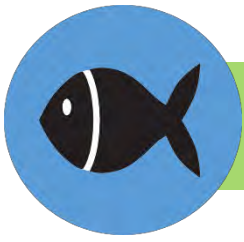




## How can parasites be destroyed by freezing?

- To ensure raw or partially cooked fish is safe to eat, it must be:
  - Frozen at  $-4^{\circ}\text{F}$  or below for at least seven days, *or*
  - Frozen at  $-31^{\circ}\text{F}$  or below until solid and stored at  $-31^{\circ}$  or below for a minimum of 15 hours, *or*
  - Frozen at  $-31^{\circ}\text{F}$  or below until solid and stored at  $-4^{\circ}\text{F}$  or below for a minimum of 24 hours





# Are there exemptions for parasite destruction?

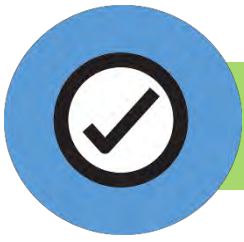
Some species are exempt from this requirement, including:

- Molluscan shellfish
- Tuna of the species *allalunga*, *albacares* (Yellowfin), *atlanticus*, *maccoyii* (Bluefin, southern), *obesus* (Bigeye), or *thynnus* (Bluefin, northern)
- Aquacultured fish, such as salmon if:
  - Raised in net-pens in open water, or
  - Raised in land-based ponds or tanks, *and*
  - Are fed formula feed that contains no live parasites infective to the aquacultured fish
- Fish eggs that have been removed from the skein and rinsed



# TN Food Service Establishment Rules: Manager Certification



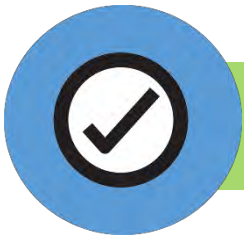


## What is required of a manager?

- An establishment should always have a designated “person in charge” (PIC) at the establishment.
- The PIC is required to have demonstrate appropriate food safety knowledge.
- This knowledge can be demonstrated by:
  - ANSI-approved food safety certification of one employee,
  - Having an inspection with no priority item violations, or
  - Correctly answering food safety questions at the time of inspection.



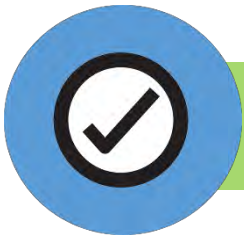




## What if a manager chooses certification?

- If a manager choose to obtain a certification, it must be from a program using the Conference for Food Protection Standards
- You can find a qualified program at the American National Standards Institute's website, which has a listing of accredited personnel certification programs utilizing the Conference for Food Protection Standards:
  - <https://www.ansica.org/wwwversion2/outside/ALLdirectoryListing.asp?menuID=8&prgID=8&status=>





## What if a manager chooses demonstration of knowledge?

If a manager chooses demonstration of knowledge, they must be prepared to\*:

- Describe the relationship between personal hygiene of a food employee and the prevention of foodborne illness.
- Explain the responsibilities, rights, and authorities assigned to the food employees and person in charge.
- Explain proper procedures for sanitizing utensils and food contact surfaces of equipment.
- Correctly answer additional questions about food safety procedures.

*\*Manager can be aided by utilizing TN Department of Health Demonstration of Knowledge Fact Sheet or other food safety materials.*

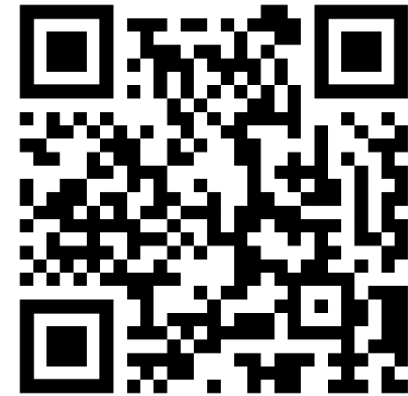


# Congratulations!

## You have completed this training!

### Next, take the Knox County HD Food Safety Awareness Test

- This test asks about food safety practices that you learned in the KCHD Food Safety Training. You will earn a certificate of completion for the training if you receive a score of 70% or higher. Results can take up to 2 weeks to process.
- [Click here to take the test.](https://www.surveymonkey.com/r/FG6B8QB) (<https://www.surveymonkey.com/r/FG6B8QB>)



**For additional food safety information and handouts visit our website:**

[http://www.knoxcounty.org/health/food\\_protection.php](http://www.knoxcounty.org/health/food_protection.php)

**If you have any issues or questions, please call 865-215-5200**



**KNOX COUNTY  
TENNESSEE**  
HEALTH DEPARTMENT