



Presented by



DELAWARE HEALTH AND SOCIAL SERVICES

Division of Public Health

Office of Food Protection

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INTRODUCTION

The food service industry in Delaware and throughout the world has changed significantly over the past few years. With that change comes many challenges.

Today's informed consumer spends more dollars dining outside the home than ever before. With this emphasis on dining out, more pressure is placed on the food service industry to cater to the public's demand for greater variety of high quality food that is prepared and cooked safely.

The challenge of preparing quality, safe food begins with well trained and knowledgeable food service workers.

This educational material is designed to help meet that challenge by focusing on items that are critical to the safe obtainment, preparation, cooking, holding, and storage of food.

It clearly and concisely identifies and discusses the basics that will help prevent foodborne illnesses.

Food safety and sanitation is not a part-time job. It is the daily responsibility of those who prepare and serve the food. However, to truly meet this challenge, it is imperative that an effective partnership between the food service industry and health officials be fostered with the common goal of reducing the risk of foodborne illness.

All food establishments in Delaware are required to have a food safety trained Person-In-Charge during all hours of operation. This ensures that the practices presented here are followed.

Together, all of us in the First State must keep the "Focus on Food Safety."

FOOD ALLERGIES – Know the Symptoms

Symptoms of food allergies typically appear from within a few minutes to two hours after a person has eaten the food to which he or she is allergic.

Allergic reactions can include:

- Hives
- Flushed skin or rash
- Tingling/itchy sensation in the mouth
- Face, tongue, or lip swelling
- Vomiting and/or diarrhea
- Abdominal cramps
- Coughing or wheezing
- Dizziness
- Difficulty breathing
- Loss of consciousness
- Swelling of the throat/vocal cords
- Anaphylaxis may occur if symptoms are not treated.
- Death may occur as a result of an allergic reaction to food.

Major Food Allergens

More than 160 foods can cause allergic reactions in people with food allergies. The law identifies the eight most common allergenic foods that account for 90 percent of food allergic reactions, and are the food sources from which many other ingredients are derived.

These eight foods, and any ingredient that contains protein derived from one or more of them, are designated as “major food allergens” by the Food Allergen Labeling and Consumer Protection Act of 2004 (FALCPA):

1. Milk
2. Eggs
3. Fish (e.g., bass, flounder, cod)
4. Crustacean shellfish (e.g. crab, lobster, shrimp)
5. Tree nuts (e.g., almonds, walnuts, pecans)
6. Peanuts
7. Wheat
8. Soybeans

How Major Food Allergens Are Listed

The law requires that food labels identify the food source names of all major food allergens used to make the food. This requirement is met if the common or usual name of an ingredient (e.g., buttermilk) that is a major food allergen already identifies that allergen's food source name (i.e., milk). Otherwise, the allergen's food source name must be declared at least once on the food label in one of two ways:

1. The name of the food source of a major food allergen must appear in parentheses following the name of the ingredient.

Examples: "lecithin (soy)," "flour (wheat)," and "whey (milk)"

– OR –

2. Immediately after or next to the list of ingredients in a "contains" statement.

Example: "Contains Wheat, Milk, and Soy."

IDENTIFYING COMMON FOODBORNE ILLNESSES

Pathogen	Associated Foods	Symptoms and Potential Impact	Prevention
<i>Campylobacter jejuni</i>	Contaminated water, raw or unpasteurized milk, and raw or undercooked meat, poultry, or shellfish.	Diarrhea (sometimes bloody), cramping, abdominal pain, and fever that appear 2 to 5 days after eating; may last 7 days. May spread to bloodstream and cause a life-threatening infection.	Cook meat and poultry to a safe minimum internal temperature. Do not drink or consume unpasteurized milk or milk products. Wash your hands after coming in contact with feces.
<i>Clostridium botulinum</i>	Improperly canned foods, garlic in oil, vacuum-packed, and tightly wrapped food.	Bacteria produce a toxin that affects the nervous system and causes illness. Symptoms usually appear within 18 to 36 hours, but can sometimes appear as few as 6 hours or as many as 10 days after eating. Double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth, and muscle weakness. If untreated, these symptoms may progress, causing muscle paralysis and even death.	Do not use damaged canned foods or canned foods showing signs of swelling, leakage, punctures, holes, fractures, extensive deep rusting, or crushing/denting severe enough to prevent normal stacking. Follow safety guidelines when home canning food. Boil home canned foods for 10 minutes before eating to ensure safety. (Note: Safe home canning guidelines may be obtained from a state University or County Extension Office).
<i>Clostridium perfringens</i>	Meats, meat products, and gravy. Called "the cafeteria germ" because many outbreaks result from food left for long periods in steam tables or at room temperature.	Intense abdominal cramps, nausea, and diarrhea may appear 6 to 24 hours after eating. These usually last about 1 day, but for immune-comprised individuals, symptoms may last 1 to 2 weeks. Complications and/or death can occur only very rarely.	Keep hot foods hot and cold foods cold! Once food is cooked, it should be held hot, at an internal temperature of 140 °F or above. Use a food thermometer to make sure. Discard all perishable foods left at room temperature longer than 2 hours, or left 1 hour in temperatures above 90 °F.
<i>Cryptosporidium</i>	Soil, food, water, contaminated surfaces. Swallowing contaminated water, including that from recreational sources, (e.g., a swimming pool or lake); eating uncooked or contaminated food; placing a contaminated object in the mouth.	Dehydration, weight loss, stomach cramps or pain, fever, nausea, and vomiting; respiratory symptoms may also be present. Symptoms begin 2 to 10 days after becoming infected, and may last 1 to 2 weeks. Immune-comprised individuals may experience a more serious illness.	Wash hands before and after handling raw meat products, and after changing diapers, going to the bathroom, or touching animals. Avoid water that might be contaminated. (Do not drink untreated water from shallow wells, lakes, rivers, springs, ponds, and streams.)

Pathogen	Associated Foods	Symptoms and Potential Impact	Prevention
<i>Escherichia coli</i> O157:H7	Uncooked beef (especially ground beef), unpasteurized milk and juices (e.g., “fresh” apple cider); contaminated raw fruits and vegetables, or water. Person-to-person contamination can also occur.	Severe diarrhea (often bloody diarrhea), abdominal cramps, and vomiting. Usually little or no fever. Can begin within 2 to 8 days, but usually 3-4 days after consuming contaminated food or water; and lasting about 5 to 7 days, depending on severity. Children under 5 are at greater risk of developing hemolytic uremic syndrome (HUS), which causes acute kidney failure.	Cook hamburgers and ground beef to a safe minimum internal temperature of 160°F. Drink only pasteurized milk, juice, or cider. Rinse fruits and vegetables under running tap water, especially those that will not be cooked. Wash your hands with warm water and soap after changing diapers, using the bathroom, handling pets, or having any contact with feces.
<i>Listeria monocytogenes</i>	Ready-to-eat foods such as hot dogs, luncheon meats, cold cuts, fermented or dry sausage, and other deli-style meat and poultry. Also, soft cheeses made with unpasteurized milk. Smoked seafood and salads made in the store such as ham salad, chicken salad, or seafood salad.	Fever, muscle aches, and sometimes gastrointestinal symptoms such as nausea or diarrhea. If infection spreads to the nervous system, symptoms such as headache, stiff neck, confusion, loss of balance, or convulsions can occur. Those at risk (including pregnant women and newborns, older adults, and people with weakened immune systems) may later develop more serious illness; death can result from <i>Listeria</i> . Can cause severe problems with pregnancy, including miscarriage or death in newborns.	Cook raw meat, poultry, and seafood to a safe minimum internal temperature. Prevent cross contamination, separating ready-to-eat foods from raw eggs and raw meat, poultry, seafood, and their juices. Wash hands before and after handling raw meat, poultry, seafood, and egg products. Those with weakened immune systems should avoid eating hot dogs and deli meats, unless they are reheated to 165°F or steaming hot. Do not drink raw (unpasteurized) milk or foods that have unpasteurized milk in them (e.g. soft cheeses). Do not eat deli salads made in store, such as ham, egg, tuna, or seafood salad.
<i>Norovirus</i>	Oysters that are harvested from contaminated water, or fruit and vegetables that are contaminated in the field.	Diarrhea, throwing up, nausea, stomach pain are the main symptoms. Other symptoms include fever, headache and body aches. If you have norovirus illness, you can feel extremely ill and throw up or have diarrhea many times a day. This can lead to dehydration, especially in young children, older adults, and people with other illnesses.	Avoid preparing food for others while you are sick and for at least 48 hours after symptoms stop. Wash your hands carefully and often with soap and water. Rinse fruits and vegetables and cook shellfish thoroughly. Clean and sanitize kitchen utensils, counters, and surfaces routinely. Wash table linens, napkins, and other laundry thoroughly.
<i>Salmonella</i> (over 2300 types)	Raw or undercooked eggs, poultry, and meat; unpasteurized milk and juice; cheese and seafood; and contaminated fresh fruits and vegetables.	Diarrhea, fever, and abdominal cramps usually appear 12 to 72 hours after eating, and may last 4 to 7 days. In people with weakened immune systems, the infection may be more severe and lead to serious complications, including death.	Cook raw meat, poultry, and egg products to a safe temperature. Do not eat raw or undercooked eggs. Avoid consuming raw or unpasteurized milk or other dairy products. Produce should be thoroughly washed before consuming.

Pathogen	Associated Foods	Symptoms and Potential Impact	Prevention
<i>Shigella</i> (over 30 types)	Person-to-person by fecal-oral route; fecal contamination of food and water. Most outbreaks result from food, especially salads, prepared and handled by workers using poor personal hygiene.	Disease referred to as "shigellosis" or bacillary dysentery. Symptoms are diarrhea (watery or bloody), fever, and abdominal cramps, occurring 1 to 2 days from ingestion of bacteria. Illness usually resolves in 5 to 7 days.	Hand washing is a very important step to prevent shigellosis. Always wash your hands with warm water and soap before handling food and after using the bathroom, changing diapers, or having contact with an infected person.
<i>Staphylococcus aureus</i>	Commonly found on the skin and in the noses of up to 25% of healthy people and animals. Spreads person-to-person through food from improper food handling. Multiplies rapidly at room temperature to produce a toxin that causes illness. Contaminated milk and cheeses.	Severe nausea, abdominal cramps, vomiting, and diarrhea occur 30 minutes to 6 hours after eating. Recovery is within 1 to 3 days — longer if severe dehydration occurs.	Because the toxins produced by this bacterium are resistant to heat and cannot be destroyed by cooking, it is important to prevent the contamination of food before the toxin can be produced. Keep hot foods hot (over 140°F) and cold foods cold (40°F or under). Wash your hands with warm water and soap. Wash kitchen counters with hot water and soap before and after preparing food.
<i>Vibrio vulnificus</i>	Uncooked or raw seafood (fish or shellfish); oysters	In healthy persons, symptoms include diarrhea, stomach pain, and vomiting. May result in a blood infection and death for those with weakened immune systems, particularly those with underlying liver disease.	Do not eat raw oysters or other raw shellfish. Cook shellfish (oysters, clams, and mussels) thoroughly. Prevent cross-contamination by separating cooked seafood and other foods from raw seafood and its juices. Refrigerate cooked shellfish within two hours after cooking.

BE ON THE LOOKOUT FOR FBI (FOODBORNE ILLNESSES)

Is “Looking Clean” Enough?

FBI Statistics

- 1 in 6 Americans per year; 48 million people get sick
- 128,000 hospitalizations caused by foodborne illness occur each year in the U.S.
- 3,000 deaths caused by foodborne illness occur each year in the U.S.

**From CDC 2011 estimates.*

FBI Agents

- Biological Hazards: Bacteria, Viruses, Parasites, Yeast, Molds
- Physical Hazards: Glass, Toothpicks, Fingernails, Jewelry
- Chemical Hazards: Cleaners and Sanitizers, Pesticides, Medications
- Naturally Occurring Chemical Hazards: Fish Toxins, Plant Toxins

FBI Sources

- Humans/Food Workers: Contaminated Hands, Illness
- Foods: Source, Contaminated Food, Time and Temperature Abuse

FBI Symptoms

- Common Symptoms (onset 12-36 hours): Diarrhea, Cramping, Nausea, Vomiting, Low-Grade Fever, Body Aches
- Rare Symptoms: System Shutdown, Coma, Death



FOOD SAFETY RISK FACTORS

Risk factors are those practices or procedures that pose the greatest potential for foodborne illness. The risk factors are determined by the Centers for Disease Control and Prevention (CDC) and the U.S. Food and Drug Administration (FDA).

UNAPPROVED SOURCE:

- Food from unapproved or uninspected source
- Unsound condition of food, adulterated food
- Shellfish records not maintained properly

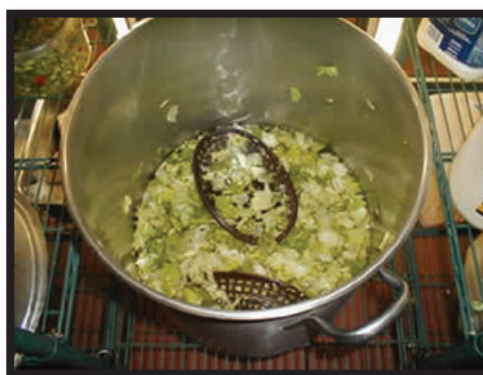


IMPROPER HOLDING:

- Unsafe cooling
- Lack of date marking
- Improper cold/hot holding temperatures

CONTAMINATED EQUIPMENT (1):

- Raw meats not separated from ready-to-eat foods
- Species not separated
- Equipment not properly cleaned and sanitized



INADEQUATE COOKING:

- Improper cooking temperatures
- Improper reheating temperatures

POOR PERSONAL HYGIENE:

- Lack of appropriate hand washing
 - Inadequate hand sinks
 - Lack of soap and paper towels
- Bare hand contact with ready-to-eat food
- Ill food workers
- Employees eating, drinking or using tobacco outside of designated areas

CONTAMINATED EQUIPMENT (2):

- Improper storage, labeling, or usage of chemicals
- Presence of insects or rodents
- Lack of potable water
- Presence of insects or rodents
- Lack of potable water
- Improper sewage disposal

APPROVED FOOD AND WATER SOURCES

SOURCES

- Food needs to come from sources that are in compliance with all local, state and federal statutes, regulations and ordinances.
- Drinking water needs to be obtained from an approved source that is a:
 - A Public Water System; or
 - A Private Water System that is constructed, maintained, and operated according to all local, state and federal statutes, regulations and ordinances.



TCS: Time/Temperature Control for Safety Food

TCS (formerly “potentially hazardous food (PHF)”) means a food that requires time/temperature control for safety (TCS) to limit pathogenic microorganism growth or toxin formation.



MEAT • DAIRY
Cooked or raw animal (protein) products, such as meats, poultry, dairy, milk, cheese, fish, and seafood.

STARCH
Heat-treated vegetables and starches such as cooked rice, beans, potatoes, and pasta.

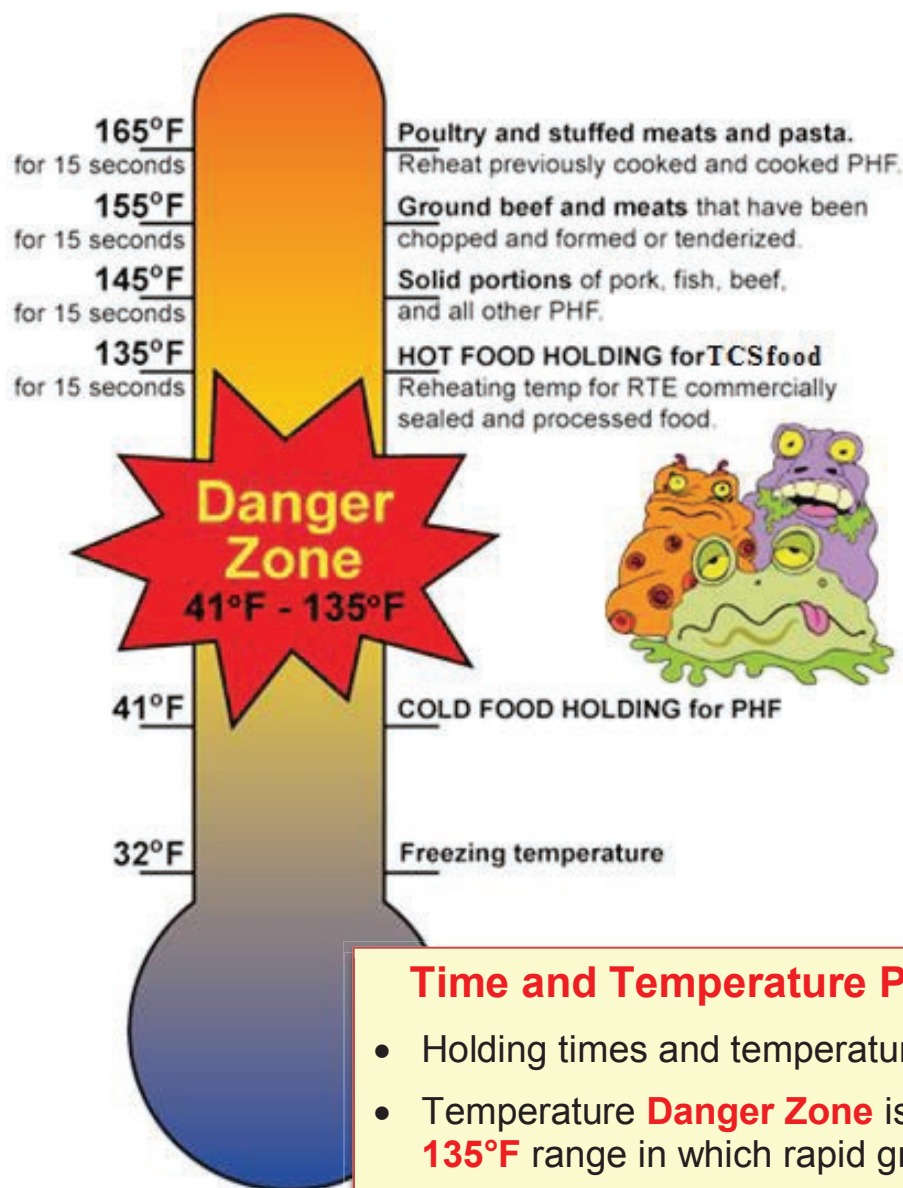


SPROUTS • MELONS
Tofu • Raw Seed Sprouts
Cut Melons • Garlic in Oil • Etc.



Is There a Microbe in Your Soup?

Conditions Necessary for Growth of Microbes



Time and Temperature Parameters

- Holding times and temperatures are critical.
- Temperature **Danger Zone** is from **41°F to 135°F** range in which rapid growth occurs.
- TCS food should not be exposed to **Danger Zone** for more than 4 hours total, including time spent in preparation, cooling, and reheating.

MONITORING TEMPERATURES OF TCS FOOD

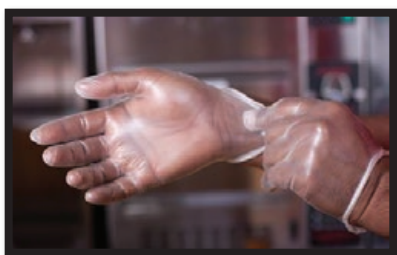
Use and Care of Temperature Measuring Devices (TMDs)



Thermocouple, Infrared and Digital Thermometer

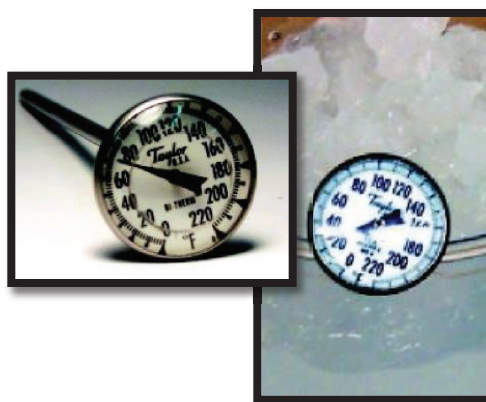
Taking Temperatures

1. Clean and sanitize first with an alcohol wipe or approved sanitizer.
2. Use a metal stem thermometer, digital thermometer, or thermocouple unit.
3. Place the probe in the center or thickest part of the food, between the fold of flexible packaged food or between packages of food. Do not puncture the packaging.
4. Allow time for the thermometer to register and record the temperature.



Calibrating Metal Stem Thermometers

- Calibrate thermometers frequently.
- Insert sensing area into a cup of ice slush.
- Allow indicator to stabilize.
- Adjust calibration nut to 32°F while in ice.
- Digital thermometer and thermocouple units can be checked for accuracy using this method.



Metal Stem Thermometer, Ice Slush Calibration

No Bare Hand Contact with Exposed Ready-To-Eat Foods

- Wear nails short, clean and unpolished. Restrict jewelry to plain bands.
- Cover open cuts and burns with finger cots, bandages or single-use gloves.
- Follow the single-use glove guidelines on Page 17 of *Focus on Food Safety In The First State*.

OBSERVE GOOD HYGIENIC PRACTICES

**Good Hygienic Practices are the
Responsibility of Both the Foodworker
and the Management!**



- Wash hands only in the hand sink – not in the dishwashing, food prep, or service (mop) sinks.
- Ill employees can transmit a foodborne illness. Enforce sick leave policy or reassign duties.
- Eat, drink, or use any form of tobacco only in designated non-food preparation and processing areas.
- Do not use a common cloth towel or apron for hand wiping.
- A food employee may not use a utensil more than once to taste food that is to be sold or served.

ILL FOOD WORKERS



RESTRICTION

Symptoms

- Diarrhea
- Vomiting
- Nausea
- Fever
- Jaundice
- Persistent sneezing, coughing, or a runny nose
- Open or infected wound (cut, lesion, or boil)
- A sore throat with a fever

EXCLUSION

Confirmed Big 6

- Salmonella Typhi
- Shigella
- Shiga Toxin-Producing E. coli
- Norovirus
- Hepatitis A virus
- Nontyphoidal Salmonella



FOOD SAFETY IS IN YOUR HANDS

Hand Washing is Important in Preventing Foodborne Illness

Wash Hands After

- Smoking, Eating or Drinking
 - Cleaning or Handling Garbage
 - Going to the Restroom
 - Using a Tissue
 - Handling Raw Food

Wash Hands Before

- Engaging in Food Preparation

Foodborne illness is not a menu item!

- **Wash your hands frequently and effectively:**
 - 10-15 seconds of friction rub
 - Adequate hand cleanser
 - Warm water clean water rinse
 - Paper towel to dry hands
- **Keep hand sinks accessible at all times.**
- **Wash hands at appropriate times.**



BARE HAND CONTACT

Prohibited with Exposed Ready-to-Eat (RTE) Food

Ready-to-Eat (RTE) food is any food that can be consumed without further preparation.

WHEN HANDLING RTE FOODS, USE:

- Deli Tissue**
- Spatulas**
- Tongs**
- Other Utensil**
- Dispensing
Equipment**
- Single-Use Gloves**



WEARING AND USING FOOD SERVICE GLOVES **Does Not Take the Place of Hand washing**

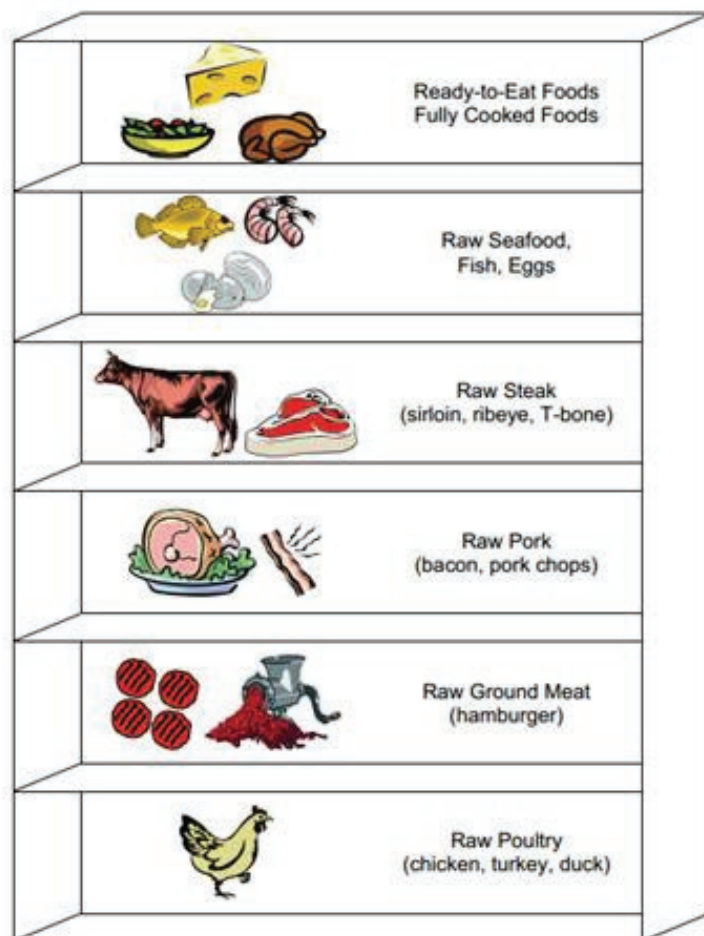
- First, wash your hands.
- Then, put on clean food grade gloves.
- Use gloves for only one task.
- Replace gloves if soiled or torn.
- Remove and discard gloves after use.



CROSS CONTAMINATION

How You Can Avoid the Risk

SAFE REFRIGERATOR STORAGE



- No bare hand contact with exposed ready-to-eat food.
- Good hand washing.
- Use utensil / gloves.
- In the cooler, store raw poultry, raw meat and shell eggs below cooked and ready-to-eat foods.

CLEAN AND SANITIZE ALL UTENSILS THAT COME IN CONTACT WITH FOOD

- After each use
- When changing product – Meat to Poultry
- Between species of meat – Beef to Pork
- Between raw and cooked or Ready-To-Eat
- When preparing large quantities > 4 hours

How to Sanitize Utensils

- Immerse utensils in 171°F water for at least 30 seconds.
- In a mechanical dishwasher with a hot water sanitizing rinse at a temperature of 165°F for a stationary rack, single temperature machine and 180°F for all other machines with temperatures not to exceed 194°F for any; achieving a utensil surface temperature of 160°F as measured by an irreversible registering temperature indicator.
- Chemical manual or mechanical operations; contact times shall be consistent with those on EPA-registered use instructions and temperatures shall be consistent with the State of Delaware Food Code.



Use separate cutting boards for, or clean and sanitize between raw foods and RTE.

PROTECTING FOOD DURING PREPARATION

FOUR WAYS TO THAW FOOD SAFELY

1

Never Thaw Foods at Room Temperature

In a Cooler or Refrigerator at 41°F or Less



2

In Cold (70°F) Running Water for 2 Hours or Less



3

During the Cooking Process, Continuous Cooking with No Interruption



4

By Microwaving as the First Step in a Continuous Cooking Process



PROTECTING FOOD DURING COOKING

Critical Cooking Temperatures

Category	Food	Temperature (°F)	Rest Time
Ground Meat & Meat Mixtures	Beef, Pork, Veal, Lamb	160	None
	Turkey, Chicken	165	None
Fresh Beef, Veal, Lamb	Steaks, roasts, chops	145	3 minutes
Poultry	Chicken & Turkey, whole	165	None
	Poultry breasts, roasts	165	None
	Poultry thighs, legs, wings	165	None
	Duck & Goose	165	None
	Stuffing (cooked alone or in bird)	165	None
Pork and Ham	Fresh pork	145	3 minutes
	Fresh ham (raw)	145	3 minutes
	Precooked ham (to reheat)	140	None
Eggs & Egg Dishes	Eggs	Cook until yolk and white are firm	None
	Egg dishes	160	None
Leftovers & Casseroles	Leftovers	165	None
	Casseroles	165	None
Seafood	Fin Fish	145 or cook until flesh is opaque and separates easily with a fork.	None
	Shrimp, lobster, and crabs	Cook until flesh is pearly and opaque.	None
	Clams, oysters, and mussels	Cook until shells open during cooking.	None
	Scallops	Cook until flesh is milky white or opaque and firm.	

*

Cook foods to a minimum of the temperature above for 15 seconds.

***Chart from FoodSafety.gov**

Consumer Advisory Statement

If an animal food such as beef, eggs, fish, lamb, pork, poultry, or shellfish is served or sold raw, undercooked, or without otherwise being processed to eliminate pathogens, either in ready-to-eat (RTE) form or as an ingredient in another RTE food, the permit holder shall inform consumers of the significantly increased risk of consuming such foods by way of a disclosure and reminder using brochures, deli case or menu advisories, label statements, table tents, placards, or other effective written means.



A disclosure shall include: Identification of animal-derived foods by asterisking them to a footnote that states that the items are served raw or undercooked, or contain (or may contain) raw or undercooked ingredients. The reminder shall include asterisking the animal-derived foods and may be stated with the wording:

- “Regarding the safety of these items, written information is available upon request”;
- “Consuming raw or undercooked meats, poultry, seafood, shellfish, or eggs may increase your risk for 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.

MAINTAIN SAFE SELF-SERVICE

Keep Hot Foods Hot and Cold Foods Cold



Hot Holding

- Provide sneeze guards (food shields) where needed.
- Wipe up spills promptly.

- No raw unpackaged animal food such as meat, poultry, and fish.
- Provide suitable utensils that protect food from contamination.
- Have trained employees monitor consumer self-service operations.

Cold Holding

- Provide clean plates and bowls for return trips.
- Stir foods frequently.
- Check food temperatures frequently. Remove and discard food if out of correct temperature range.



SAFELY HOLD HOT AND COLD FOOD

Keep Hot Foods Hot and Cold Foods Cold



Hot Holding

- Use proper equipment to hot hold,
- Stir frequently to maintain temperature, and
- Promptly cover food to keep hot longer.

Hot foods must be maintained at an internal temperature of 135°F or higher.

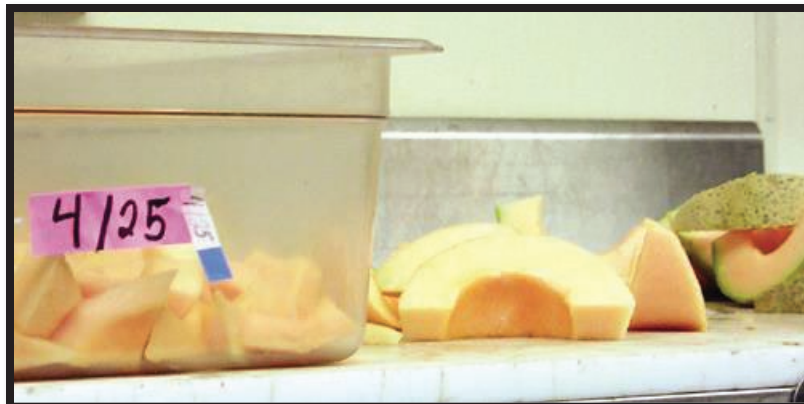
Cold Holding

- Use proper equipment to cold hold,
- Stir frequently to maintain temperature, and
- Promptly cover food to keep cold longer.



Cold foods must be maintained at an internal temperature of 41°F or below.

DATE MARK YOUR Ready-to-Eat TCS FOOD



- Date mark foods that are prepared on premises and held more than 24 hours.
- Indicate date to consume or discard food.
- Maximum seven days at 41°F.
- The day of preparation shall be counted as Day 1.

**You've heard it many times before:
WHEN IN DOUBT, THROW IT OUT!**

- Opened commercially processed food can be stored for seven days at or below 41°F.
- The day the original container is opened shall be counted as Day 1 and date to discard may not exceed the manufacturer's use-by date.
- Exception: portions of cured or processed deli meats in original casings; hard cheeses; semi-soft cheeses; cultured dairy products; preserved fish; shelf stable (salt-cured) meats.



COOL FOODS QUICKLY AND SAFELY

Use the Two Stage Cooling Process



Cool hot foods rapidly before storing →

- Stage 1: 135°F to 70°F in 2 hours or less.
- Stage 2: 70°F to 41°F in 4 hours or less, for a total of 6 hours.

TCS food must move quickly through the Danger Zone to reduce the risk of foodborne illness.

COOLING METHODS

- Divide into small portions and place into shallow pans, 2-4 inches deep.
- Put food pans into ice bath, stir frequently, and replenish ice as it melts.
- Check temperature and time to make sure food is being properly cooled.
- Refrigerate cooled food promptly to 41°F or below.
- May also use “Rapid Pull Down” or blast chiller refrigeration unit to cool.
- Never allow foods to cool at room temperature in the Danger Zone!

Check with your Person-In-Charge for other proper cooling methods.

REHEAT FOODS QUICKLY AND SAFELY

Reheating for Hot Holding

- Reheat cooled foods rapidly to 165°F or above internal temperature within 2 hours or less.
- Stir frequently to distribute heat evenly.
- Hot hold at 135°F or above after reheating.

TCS food must move quickly through the Danger Zone to reduce the risk of foodborne illness.



REHEATING METHODS

- **DIRECT HEAT** – Range or Stove, Steamer Units, Ovens
- **MICROWAVE OVEN** – Within two hours to 165°F, rotate or stir food, then cover and allow to stand two minutes after reheating.
- Check temperature and time to make sure food is properly reheated.
- Do not use steam tables or crock pots to reheat foods.

Check with your Person-In-Charge for other proper reheating methods.

PHYSICAL FACILITIES

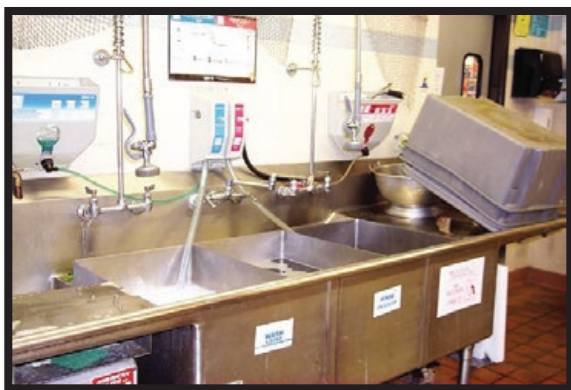
All utensils and food contact surfaces must be:

- Long lasting, rust-resistant, and non-absorbent.
- Able to withstand repeated washing and sanitizing.
- Have smooth and easily cleanable surfaces.



CLEANING AND SANITIZING

Manual and Mechanical Ware Washing Methods



MANUAL WAREWASHING IS A 3-STEP PROCESS

Step 1 - Wash in water at least 110°F with detergent.

Step 2 – Rinse in clear water by immersion or by pressure spray.

Step 3 – Sanitize with chemical sanitizer for time/concentration specified by manufacturer.

Always have the correct type of test strip or device to measure chemical concentration of the sanitizer being used.

MECHANICAL WAREWASHING METHODS

HIGH TEMPERATURE FINAL SANITIZING RINSE

- Wash cycle temperatures vary by type – see Data Plate on machine.
- Sanitizing rinse cycle: 180-195°F manifold; min 160°F for utensils; with irreversible registering temperature indicator provided and readily accessible.

LOW TEMPERATURE CHEMICAL SANITIZING RINSE

- Wash cycle temperature at least 120 °F.
- Sanitizing rinse - Chlorine (FAC) min 50 ppm residual on utensils.

KEEP PHYSICAL FACILITIES SAFE

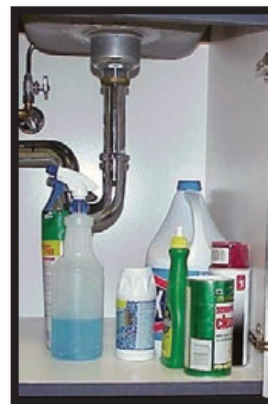
Protect Your Health and Safety at Work

INSECT AND RODENT CONTROL

- Outer openings – tight-fitting self-closing exterior doors.
- Window screens in good repair.
- Eliminate harborage areas.
- Plan and Use an “Integrated Pest Management” Program.
- Report Infestations to P-I-C.
- Pesticides must be approved for use in a Food Establishment and in accordance with manufacturer’s instructions.



INCORRECT
←
CORRECT →



POISONOUS AND TOXIC MATERIALS

- Must be in original container and have legible manufacturer’s label.
- Must be in working container and have common name clearly identified.
- Store separately from food and food contact surfaces.
- Use only according to label instructions – Read and Heed!
- Includes personal care items, medications, and first aid supplies.

USEFUL RESOURCES ON THE WEB

FEDERAL

FOOD & DRUG ADMINISTRATION

<http://www.fda.gov/Food/FoodbornellnessContaminants/default.htm>

USDA FOOD SAFETY & INSPECTION SERVICE

<http://www.fsis.usda.gov>

CENTERS FOR DISEASE CONTROL AND PREVENTION

<http://www.cdc.gov>

STATE OF DELAWARE

DELAWARE HEALTH AND SOCIAL SERVICES, DIVISION OF PUBLIC HEALTH

<http://www.dhss.delaware.gov/dhss/dph/index.html>

OFFICE OF FOOD PROTECTION

<http://www.dhss.delaware.gov/dhss/dph/hsp/ofp.html>

ACADEMIC, CONSUMER

NATIONAL CENTER FOR FOOD SAFETY AND TECHNOLOGY

<http://www.ncfst.iit.edu/main/home.html>

JOINT INSTITUTE FOR FOOD SAFETY AND APPLIED NUTRITION

<http://www.jifsan.umd.edu/>

GATEWAY TO GOVERNMENT FOOD SAFETY INFORMATION

<http://www.foodsafety.gov>

