



## Food Safety Job Aids

The following job aids are included in the *Food Safety* training so that you can print them out and use them in your establishment. Some you may want to distribute to employees for discussion at regularly scheduled staff meetings, or you can post them on-site for employees to read. Others you can use as reference.

The following job aids are included:

[Foodborne Illness Chart](#)

[FAT TOM Chart](#)

[Temperature Danger Zone](#)

[pH Scale](#)

[The Five Steps for Proper Hand Washing](#)

[Good Personal Hygiene Habits Checklist](#)

[General Guidelines for the Effective Use of Chlorine, Iodine, and Quats](#)

[Basic Safety Procedures in the Kitchen](#)

[How to Use a Thermometer](#)

[Safe Time and Internal Temperature Requirements for Cooked Foods](#)

[Additional Safe Receiving Temperatures for Foods](#)

[Two-Stage Cool Down Process](#)

[HACCP Forms](#)

# Foodborne Illness Chart

## FOODBORNE ILLNESSES CAUSED BY BACTERIA

FOODBORNE ILLNESS AND DISEASE CAUSING AGENT	INCUBATION AND TYPICAL SYMPTOMS	SOURCE	CONTROL MEASURES
<p>Bacillus Cereus Gastroenteritis</p> <p><i>Bacillus cereus.</i></p>	<p>Incubation period: 1 to 12 hours</p> <p>Symptoms: The bacteria can cause two different toxins, resulting in two different symptoms: One to six hours in cases where vomiting is present and where diarrhea is predominant; six to 12 hours, may also cause nausea.</p>	<p><i>Bacillus cereus</i> is a bacterium that can be found in starchy foods, especially rice and rice dishes allowed to sit for over four hours in the Temperature Danger Zone. Often found in soil and dust.</p> <p>Main implicated foods: starchy foods such as rice, pasta, and potatoes; cooked vegetables, milk products and meat products.</p>	<ul style="list-style-type: none"> <li>• Cook and hold foods to required temperatures.</li> <li>• Cool properly</li> <li>• Avoid cross-contamination</li> </ul>
<p>Botulism</p> <p><i>Clostridium botulinum spore forming, bacteria</i></p>	<p>Incubation period: 12 to 36 hours, with a range of one to 10 days, depending on dose ingested</p> <p>Symptoms include nausea, vomiting, fatigue, double vision, difficulty in breathing and swallowing.</p>	<p><i>Clostridium botulinum</i> is found in soil and water.</p> <p>Main implicated foods: Canned foods (especially those canned in the home), ROP, MAP and Sous Vide foods; untreated garlic-and-oil mixtures.</p>	<ul style="list-style-type: none"> <li>• Properly can foods</li> <li>• Cook foods thoroughly</li> <li>• Refrigerate at proper temperatures.</li> </ul>
<p>Clostridium Perfringens Gastroenteritis</p> <p><i>Clostridium perfringens spore-forming bacteria</i></p>	<p>Incubation period: Six to 24 hours; typically 10 to 12 hours</p> <p>Symptoms include abdominal pain, diarrhea, sometimes nausea and vomiting.</p>	<p><i>Clostridium perfringens</i> is a bacterium found in the intestines of an infected person and in animals and soil.</p> <p>Main implicated foods: Contamination from improperly cooked meat and poultry products, stews, gravies, and sauces.</p>	<ul style="list-style-type: none"> <li>• Practice good personal hygiene.</li> <li>• Chill foods rapidly.</li> <li>• Hold-hot foods at 135°F or above.</li> </ul>

<p>Hemorrhagic Colitis</p> <p><i>Enterohemorrhagic Shiga toxin-producing Escherichia coli (EHEC)</i> 0157:H7</p> <p>026H11</p> <p>0111:H8</p> <p>0158:NM</p>	<p>Incubation period: Three to eight days, with a median of three to four days.</p> <p>May be asymptomatic, but associated with bloody stool, stomach cramps, and in extreme cases kidney failure.</p>	<p><i>EHEC</i> are bacteria that can be found in the intestinal tract of cattle.</p> <p>Main implicated foods:</p> <p>Undercooked ground beef and contaminated produce.</p>	<ul style="list-style-type: none"> <li>● Exclude infected worker from the food establishment.</li> <li>● Cook to proper internal temperature—especially ground beef.</li> <li>● Avoid raw and cooked cross-contamination.</li> <li>● Practice good personal hygiene.</li> </ul>
<p>Listeriosis</p> <p><i>Listeria monocytogenes</i></p>	<p>Incubation period: One day to 3 weeks.</p> <p>High-risk populations, especially pregnant women, are vulnerable.</p> <p>Pregnant women may miscarry; newborns may contract pneumonia, meningitis, or sepsis.</p>	<p>Listeriosis is a bacterial infection of the intestinal tract. It is caused by <i>Listeria monocytogenes</i> which is commonly found in cool, moist environments in the soil, plants, or water.</p> <p>Main implicated foods: Unpasteurized milk, cheeses, and ice cream.</p> <p>It can also be found in vegetables, poultry, meats, seafood, and ready-to-eat deli meats.</p>	<ul style="list-style-type: none"> <li>● Cook raw meat and hold as required.</li> <li>● Avoid cross-contamination.</li> <li>● Use pasteurized dairy products.</li> <li>● Throw out expired product.</li> </ul>
<p>Salmonellosis</p> <p><i>Salmonella</i> spp. bacteria</p>	<p>Incubation period: Six to 72 hours; usually about 12 to 36 hours.</p> <p>Symptoms include: stomach cramps, diarrhea, vomiting, and fever.</p>	<p>The salmonella bacteria is found in the feces of infected farm and wild animals</p> <p>Main implicated foods:</p> <p>Raw poultry, eggs, dairy, and produce, as well as foods that have been cross-contaminated from raw poultry.</p>	<ul style="list-style-type: none"> <li>● Cook foods thoroughly.</li> <li>● Use pasteurized egg products and milk.</li> <li>● Avoid cross-contamination from raw to cooked foods.</li> <li>● Practice good personal hygiene.</li> </ul>

<p>Shigellosis</p> <p><i>Shigella</i> spp. bacteria</p>	<p>Incubation period: 12 to 96 hours; usually 1 to 3 days.</p> <p>Symptoms: Bloody diarrhea, stomach cramps, sometimes accompanied by fever.</p>	<p>Shigellosis is caused by the <i>Shigella</i> bacterium, which can be transmitted through the feces of an infected person and contaminated water.</p> <p>Main implicated foods:</p> <p>Foods that are handled, such as tuna, potato, macaroni and chicken salads.</p> <p>Foods that come in contact with contaminated water, such as produce.</p>	<ul style="list-style-type: none"> <li>● Exclude infected worker from the food establishment.</li> <li>● Practice good personal hygiene.</li> <li>● Protect and treat water.</li> <li>● Control flies.</li> </ul>
<p>Staphylococcal gastroenteritis</p> <p><i>Staphylococcal aureus</i></p>	<p>Incubation period: 30 minutes to eight hours; usually two to four hours.</p> <p>Symptoms: Nausea, vomiting, stomach cramps.</p>	<p><i>Staphylococcus aureus</i> is a common bacterium on human skin, and in the nose, throat, hair, and on open cuts.</p> <p>Humans are the primary source of contamination. It is easily transferred to TCS foods that are handled, such as TCS salads and deli meats.</p>	<ul style="list-style-type: none"> <li>● Cool, reheat, and hot-hold foods properly.</li> <li>● Practice good personal hygiene.</li> <li>● Avoid direct hand contact with food.</li> <li>● Cover open cuts and sores on hands and arms.</li> </ul>
<p>Vibrio Gastroenteritis</p> <p><i>Vibrio parahaemolyticus</i></p>	<p>Incubation period: Usually between 12 and 24 hours, but can range from four to 30 hours.</p> <p>Symptoms: Diarrhea, abdominal cramps, nausea, vomiting, headache, fever, chills.</p>	<p><i>Vibrio parahaemolyticus</i> is a common seawater bacterium.</p> <p>Main implicated foods:</p> <p>Raw shellfish, especially oysters, shrimp and blue crabs, and cross-contamination from contaminated seawater.</p>	<ul style="list-style-type: none"> <li>● Purchase seafood from approved vendors.</li> <li>● Avoid cross-contamination.</li> </ul>
<p>Vibrio Vulnificus Primary Septicemia</p> <p><i>Vibro vulnificus</i></p>	<p>Incubation period: 12 hours to three days.</p> <p>Symptoms: Diarrhea, vomiting, stomach cramps, nausea, fever, and chills.</p>	<p><i>Vibro vulnificus</i> is a bacterium in the same family as cholera. It normally lives in warm seawater.</p> <p>Main implicated foods:</p> <p>Oysters, sea water sediment, plankton.</p>	<ul style="list-style-type: none"> <li>● Only purchase shellfish from approved sources.</li> <li>● Properly cook all seafood.</li> <li>● Avoid cross-contamination.</li> <li>● Avoid exposing open wounds to warm seawater.</li> </ul>

## FOODBORNE ILLNESSES CAUSED BY VIRUSES

FOODBORNE ILLNESS AND DISEASE CAUSING AGENT	INCUBATION AND TYPICAL SYMPTOMS	SOURCE	CONTROL MEASURES
<p>Hepatitis A (Infectious Hepatitis)</p> <p>Hepatitis A virus</p>	<p>Incubation period: Ten days for serious cases; one-to-two months in slowly advancing cases.</p> <p>Symptoms: Stomach pain, nausea, weakness, fever. May cause jaundice.</p>	<p>Hepatitis A is a virus passed through the feces, urine, or blood, of an infected person, or through contaminated water.</p> <p>Main implicated foods: Ready-to-eat foods that are not heated after handling; shellfish from contaminated waters.</p>	<ul style="list-style-type: none"> <li>● Exclude infected worker from the food establishment.</li> <li>● Purchase from approved sources.</li> <li>● Dispose of sewage properly.</li> <li>● Practice good personal hygiene.</li> <li>● Avoid bare hand contact with ready-to-eat foods.</li> <li>● Immunize food workers.</li> </ul>
<p>Norovirus Gastroenteritis</p> <p>Norovirus</p>	<p>Incubation period: Usually 24 to 48 hours</p> <p>Symptoms: Diarrhea, vomiting, stomach pain. May cause nausea.</p>	<p>Norovirus is a gastrointestinal disease passed in a fecal-to-oral transmission by an infected person.</p> <p>Main implicated foods: Ready-to-eat foods that are not heated after handling; shellfish from contaminated waters.</p>	<ul style="list-style-type: none"> <li>● Exclude infected worker from the food establishment.</li> <li>● Purchase from approved vendors.</li> <li>● Dispose of sewage properly.</li> <li>● Practice good personal hygiene.</li> <li>● Avoid bare hand contact with ready-to-eat foods.</li> </ul>

## FOODBORNE ILLNESSES CAUSED BY PARASITES

FOODBORNE ILLNESS AND DISEASE CAUSING AGENT	INCUBATION AND TYPICAL SYMPTOMS	SOURCE	CONTROL MEASURES
<p>Anisakiasis</p> <p>"Sushi Stomach"</p> <p><i>Anisakis worm</i></p>	<p>Incubation period: Depending on the dosage, onset of symptoms could be from one hour to two weeks</p> <p>Symptoms: Coughing up worms, severe abdominal pain, vomiting, diarrhea, nausea, tingling in throat.</p>	<p>Anisakiasis is a parasitical disease.</p> <p>Main implicated foods: Raw and undercooked fish.</p>	<ul style="list-style-type: none"> <li>●Cook fish thoroughly.</li> <li>●For sushi, freeze the fish at <math>-4^{\circ}\text{F}</math> (<math>-20^{\circ}\text{C}</math>) for 7 days; or at <math>-31^{\circ}\text{F}</math> (<math>-35^{\circ}\text{C}</math>) for 15 hours, or freeze at <math>-31^{\circ}\text{F}</math> (<math>-35^{\circ}\text{C}</math>) and store at <math>-4^{\circ}\text{F}</math> (<math>-20^{\circ}\text{C}</math>) for at least 24 hours.</li> </ul>
<p>Intestinal Cryptosporidiosis</p> <p><i>Cryptosporidium parvum</i> parasite</p>	<p>Incubation period: Three to nine days</p> <p>Symptoms: Stomach cramps, nausea, watery diarrhea, weight loss.</p>	<p>The <i>Cryptosporidium parvum</i> parasite is found in the feces of infected humans.</p> <p>Main implicated foods: Salads and raw vegetables, ready-to-eat foods, milk, unpasteurized apple cider.</p>	<ul style="list-style-type: none"> <li>●Practice good personal hygiene.</li> <li>●Thoroughly wash produce.</li> <li>●Use properly treated water.</li> </ul>
<p>Giardiasis</p> <p><i>Giardia duodenalis</i> (G. lamblia or G. intestinalis) parasite</p>	<p>Incubation period: One to three weeks</p> <p>Symptoms: Initial fever, followed by stomach cramps, nausea, watery diarrhea.</p>	<p>The <i>Giardia duodenalis</i> parasite can be found in contaminated water and the feces of infected humans.</p> <p>Main implicated foods: unwashed vegetables, contaminated water and ice.</p>	<ul style="list-style-type: none"> <li>●Only use a sanitary water supply.</li> <li>●Wash raw vegetables.</li> <li>●Practice good personal hygiene.</li> </ul>

## FOODBORNE ILLNESSES CAUSED BY SEAFOOD TOXINS

FOODBORNE ILLNESS AND DISEASE CAUSING AGENT	INCUBATION AND TYPICAL SYMPTOMS	SOURCE	CONTROL MEASURES
<p>Amnesic shellfish poisoning (ASP)</p> <p><i>Domoic acid</i></p>	<p>Incubation period: Gastrointestinal symptoms typically appear within 24 hours after ingestion. Neurological symptoms can take up to three days to appear.</p> <p>Symptoms: Stomach pain, vomiting and diarrhea, with possible memory loss, seizures, and coma.</p>	<p>Shellfish become contaminated as they filter toxic algae. People get sick when they eat contaminated shellfish.</p> <p>Main implicated foods: Scallops, oysters, clams, and mussels.</p>	<p>Only purchase shellfish from approved vendors.</p>
<p>Ciguatera poisoning</p> <p><i>Ciguatoxin</i></p>	<p>Incubation period: Four to eight hours.</p> <p>Symptoms: Nausea, vomiting, joint and muscle pain, nervous system disorders, hot and cold spells.</p>	<p>Ciguatoxin is produced by an algae common to certain tropical reefs in the Pacific Ocean and the Caribbean.</p> <p>Main implicated foods: Several species of larger reef fish (barracuda, snapper, amberjack, grouper) that eat smaller fish that feed on these toxic algae.</p>	<p>Only purchase fish from approved vendors.</p>
<p>Neurotoxic shellfish poisoning (NSP)</p> <p><i>Brevetoxin</i></p>	<p>Incubation period: Symptoms can begin within minutes all the way up to 18 hours after consumption. Typical incubation period is three to four days.</p> <p>Symptoms: Vomiting and diarrhea, dizziness, hot and cold spells, tingling and numbness of the lips, tongue, and throat.</p>	<p>Shellfish become contaminated as they filter toxic algae. People get sick when they eat contaminated shellfish.</p> <p>Main implicated foods: Oysters, clams, and mussels.</p>	<p>Only purchase shellfish from approved vendors.</p>

<p>Paralytic shellfish poisoning (PSP)</p> <p><i>Saxitoxin</i></p>	<p>Incubation period: Within 15 minutes to ten hours after consumption. Symptoms typically appear within two hours.</p> <p>Symptoms: Vomiting and diarrhea, dizziness, hot and cold spells, tingling and numbness of the lips, tongue, and throat</p>	<p>Shellfish become contaminated as they filter toxic algae. People get sick when they eat contaminated shellfish.</p> <p>Main implicated foods: Oysters, clams, and mussels.</p>	<p>Only purchase shellfish from approved vendors.</p>
<p>Scombroid (Histamine) poisoning</p> <p><i>Scombroid toxin</i></p>	<p>Incubation period: A few minutes to two hours.</p> <p>Symptoms: Reddening of the face and neck, burning and tingling in the mouth and throat, sweating, headache, followed by possible vomiting and diarrhea.</p>	<p>The Scombroid toxin occurs in partially spoiled fish that have high amounts of histamine in their tissues.</p> <p>Main implicated foods: Scombroid (mackerel), tuna, mahi mahi, bonito.</p>	<ul style="list-style-type: none"> <li>● Avoid time and temperature abuse during preparation and storage.</li> <li>● Only purchase fish from approved vendors.</li> </ul>



## FOODBORNE ILLNESSES CAUSED BY FUNGI

FOODBORNE ILLNESS AND DISEASE CAUSING AGENT	INCUBATION AND TYPICAL SYMPTOMS	SOURCE	CONTROL MEASURES
<p>Aflatoxin</p> <p><i>Aspergillus flavus</i> and <i>Aspergillus parasiticus</i> mold</p>	<p>Incubation period: Undetermined—depending on the dose, it can be from a few days to a few weeks.</p> <p>Symptoms: Can cause liver damage.</p>	<p>Aflatoxin is a toxin created by the <i>Aspergillus</i> mold.</p> <p>Main implicated foods: Peanuts, corn, milk, cottonseed, tree nuts.</p>	<ul style="list-style-type: none"> <li>●Aflatoxin is rare in developed countries. In the U.S., peanuts are screened for <i>Aspergillus</i>.</li> <li>●Heat food to 135°F (57°C) for 10 minutes.</li> </ul>

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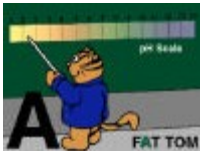
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## FAT TOM--TIME AND TEMPERATURE CONTROL FOR SAFETY FOODS (TCS)

Generally, bacteria thrive in Time and Temperature Control for Safety Foods (TCS), which are often warm, moist, protein-rich, and chemically neutral, or low in acid. These conditions and related food safety controls can be remembered by the anagram F-A-T T-O-M.



**Food** -- High-protein foods are likely to enter the foodservice operation carrying bacteria, or may be easily contaminated once there.



**Acidity** -- Acidity is measured on a scale from 0 (acidic) to 14 (alkaline). A food with a pH (acidic-alkaline measurement) level of 7.0 is neutral. Potentially Hazardous Foods have a pH range between 4.6 and 7.0. Most bacteria will not grow well at pH levels below 4.6. Highly acidic foods, such as fruit, rarely allow growth of harmful bacteria. Adding vinegar or lemon juice to food items will help slow bacterial growth -- but does not guarantee prevention and should not be used as a sole protection without consistent preparation procedures and monitoring controls.



**Time** -- Time and Temperature Control for Safety Foods (TCS) should not remain in the temperature Danger Zone (see temperatures, below) for more than four hours during the entire food handling process.



**Temperature** -- The Danger Zone for Time and Temperature Control for Safety Foods (TCS) is 41 to 135°F (5 to 57°C) However, since bacteria can survive and some grow at lower temperatures, refrigeration is not absolute protection. Discard food that has remained in the Temperature Danger Zone for more than four hours.



**Oxygen** -- Some bacteria require oxygen to grow, while others require an oxygen-free environment. However, most of the bacteria that can cause foodborne illness can grow either with or without free oxygen.



**Moisture** -- The availability of water in food is expressed as *water activity* ( $A_w$ ). The lowest  $A_w$  in which harmful bacteria will grow is 0.85. Most Time and Temperature Control for Safety Foods (TCS) have water activity that are in a range of 0.97 to 0.99 -- values that are ideal for bacterial growth. Water activity can be reduced to safer levels by freezing, dehydrating, adding sugar or salt, or cooking. Dry foods, such as beans, rice, and pasta, become potentially hazardous when water is added.

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## Temperature Danger Zone

41 to 135°F (5 to 57°C)



Time and Temperature Controlled for Safety (TCS) should spend no more than a total of four hours in the Temperature Danger Zone.

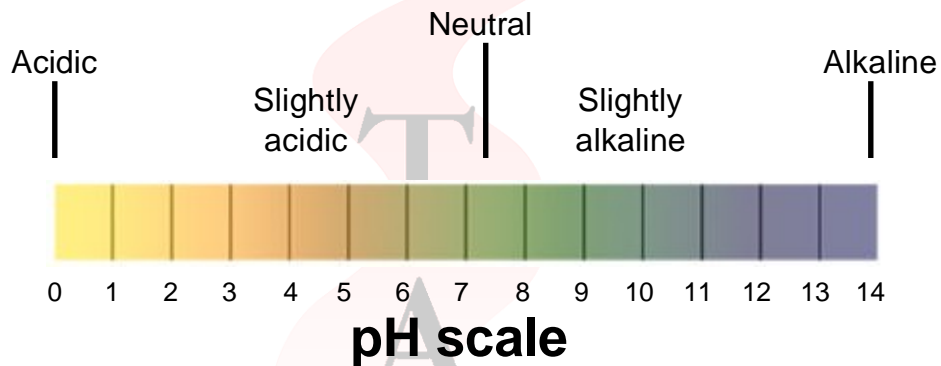
“When in doubt, throw it out.”

**Note:** There is only one exception to this rule. If a food is removed from cold holding at 41°F or less, it may be out of temperature for up to six hours as long as the internal temperature of the food does not exceed 70°F. This exception cannot be used with a highly susceptible population.

## pH Scale

pH is the unit of measurement for the hydrogen ion concentration in foods. This concentration results in foods being acidic (tart or sour), or alkaline, meaning the acids have been neutralized.

When the pH value of a food is less than 7.5, it is acidic. If the pH value of a food is more than 7.5, it is alkaline, and if the pH value is 7.5, the food is considered neutral.



Examples of <b>acidic foods</b> include:	Examples of <b>neutral foods</b> include:	Examples of <b>alkaline foods</b> include:
Citrus juices Tomatoes Rhubarb Cranberries	Milk Meats Chicken Fish	Egg whites Soda crackers Black olives

It is important to be aware of the pH level of foods, since bacteria grow best when foods are slightly acidic, neutral, or slightly alkaline, and contain enough water for microorganisms to grow.

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## The Five Steps for Proper Handwashing

The basic practice of hand washing is *the single most important action* that can be taken to prevent the spread of disease. This process should take at least 20 seconds.

1. Use warm water.
2. Wet hands and exposed arms up to the elbow.
3. Apply the proper amount of an approved hand washing soap. Rub hands and forearms briskly for 10-15 seconds.
4. Rinse thoroughly under clean, warm water.
5. Dry hands and arms by sanitary means, such as a disposable paper towel or an air-drying device.

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Wash your hands:

- \* Before starting work
- \* Before putting on gloves
- \* After using the restroom
- \* After touching your hair, face, or body
- \* After eating, drinking, smoking, or touching gum
- \* Every time you enter a food preparation area
- \* After working with raw or ready-to-eat food
- \* After cleaning or taking out the garbage
- \* After touching anything that might contaminate your hands

After you have washed your hands, get in the habit of using a paper towel to turn off the faucets and touch the doorknobs.

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## Good Personal Hygiene Habits

- Bathe daily with soap and water. Use deodorant.
- Keep fingernails clean, short, and well trimmed. Do not use fake nails or nail polish.
- Wear an appropriate hairstyle, and restrain hair properly. Wear clean clothing on the job.
- Use clean, protective clothing, such as an apron, whenever necessary. Never use an apron as a hand towel.
- Limit jewelry to a plain ring band; better yet, wear none at all.
- Cover cuts or sores with a water-resistant bandage, and change bandages often. Wear plastic gloves or a finger cot if the cut or sore is on your hand.
- Do not come to work if you are ill. Stay home if you have a fever or diarrhea, if you are vomiting, or if you are sneezing and coughing.

### When handling foods, DO NOT:

- Sneeze or cough.
- Scratch or touch your head, hair, skin, or mouth. Drip sweat onto equipment or food.
- Wipe sweat with your hands, or cloths that are used on food contact surfaces.
- Wear gloves away from the food preparation area.
- Engage in activities such as smoking, eating, or chewing gum, which can result in hand-to-mouth contact.

If a sneeze or cough is unavoidable, use a disposable tissue, and wash your hands.

When a cough is unavoidable and you do not have access to a tissue, cover your mouth and nose with your upper arm—never with your hands.

### When handling foods, DO:

- Wear plastic gloves when preparing ready to eat foods.
- Change gloves every time you change a food preparation job, or every four hours. Wash hands and change gloves after any action that might contaminate
- foods, such as coughing, handling raw meat or poultry, picking up objects from the floor, or putting out trash.

## GENERAL GUIDELINES FOR THE EFFECTIVE USE OF CHLORINE, IODINE, AND QUATS

	Chlorine		Iodine	Quats
<b>Water temperature</b>	≥ 100°F (38°C)	≥ 75°F (24°C)	68°F (20°C)	75°F (24°C)
<b>Water pH</b>	≤ 10	≤ 8	≤ 5 or as per manufacturer's recommendation	As per manufacturer's recommendation
<b>Water hardness</b>	As per manufacturer's recommendation		As per manufacturer's recommendation	500 ppm or as per manufacturer's recommendation
<b>Sanitizer concentration range</b>	50-99 ppm	50-99 ppm	12.5-25 ppm	As per manufacturer's recommendation
<b>Sanitizer contact time</b>	≥ 7 sec	≥ 7 sec	≥ 30 sec	≥ 30 sec

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## Basic Safety Procedures In the Kitchen

### How to Minimize Cuts

- Use the right knife for the right job.
- Never use knives as screwdrivers, can-openers, or box openers.
- Keep knives sharp.
- Use knives with built-in guards or shaped handles.
- Wear protective mesh gloves and cuff guards.
- Cut away from the body; never toward it.
- Never reach blindly for a knife.
- If you drop a knife, don't grab for it. Get out of the way.
- Store all sharp knives in a knife holder.
- If stored in a drawer, place knives in a rack.
- Wash all sharp tools and knives separately.
- Throw out chipped and broken china, glassware, and utensils.
- Replace damaged equipment.
- Read the manufacturer's instructions before operating equipment, such as a meat slicer.

### How to Minimize Burns

- Use dry, flameproof potholders.
- Before lifting, check that pot and panhandles are sturdy.
- Remove lids carefully; allow steam to escape away from face and hands.
- Turn the handle of the pan inward on the stove; be sure it is not over an open flame or too near heat.
- Keep doors of stoves, ovens, and broilers closed; do not touch hot edges.
- Avoid hot edges of heat lamps.
- Never place food items with excess moisture directly into hot shortening.
- Never clean glassware, dishes, ovens, stoves, or equipment until they have cooled.
- Keep stovetops and hoods free of grease.
- Wear gloves and an apron for protection when changing or filtering shortening.
- Keep papers and other flammable materials away from hot areas.
- Read the manufacturer's instructions before operating coffee urns and other hot beverage machines.



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## How to Use a Thermometer

Use thermometers to check the temperatures of:

- Incoming shipments of food products.
- Final cooking temperatures.
- Cooling temperatures.
- Food in refrigerators, freezers, and hot holding units.

When testing the temperature of food:

- Insert the clean probe into the food up to the dimple.
- Test various parts of a roast or bird, including the thickest part.
- Do not touch bones or the bottom or sides of the container.
- Test in the center of a casserole, pot, or chafing dish.
- Clean the thermometer after use.

Cleaning a thermometer:

Sanitize a thermometer with either rubbing alcohol or a sanitizing solution. The most effective sanitizing method is to dip the thermometer stem in boiling water for seven to ten seconds.

To test the temperature of **vacuum-packed foods**, insert the thermometer between two packages.

With other **packages or bags**, insert the thermometer in the fold.

Insert the thermometer into one **carton or bottle** to test a shipment.

To monitor the temperature of **equipment**, use a mounted thermometer.

**Safe Time and Internal Temperature Requirements  
(FDA 2013 Food Code)**

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

**Partial Cooking for Later Service:**

Initial cooking time is no longer than 60 minutes. Cool food immediately after cooking. Then freeze, or refrigerate at 41°F or cooler. Reheat food to 165°F before serving.

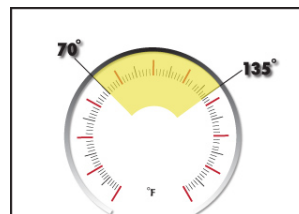
## Safe Time and Internal Temperature Requirements (FDA 2013 Food Code)

OPERATIONAL STEP	SAFE FOOD TEMPERATURE
<b>Receiving</b>	Refrigerated foods 41°F or below
<b>Storing</b>	Refrigerated foods 41°F or below Frozen foods 0°F or below
<b>Holding</b>	Cold foods at 41°F or below Hot foods at 135°F or above
<b>Serving</b>	Cold foods below 41°F Hot foods above 135°F
<b>Reheating</b>	165°F for 15 seconds within two hours
<b>Transporting</b>	Cold foods 41°F or below Hot foods 135°F or above

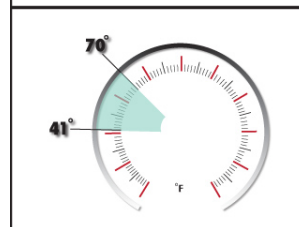
### TWO-STAGE COOL DOWN PROCESS

Cool food as quickly as possible. The FDA FOOD CODE requires that foods be cooled:

From 135°F to 70°F within 2 hours



From 70°F to 41°F within an additional 4 hours



If food is not cooled from 135°F to 70°F within 2 hours, the food must be reheated to 165°F for 15 seconds, and the cooling process must start again.

Take actions to speed the cooling process, such as dividing food into smaller portions, use ice water baths, and ice paddles to stir foods.

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## HACCP System and Forms

There are seven steps to the HACCP system:

1. Conduct a Hazard Analysis
2. Determine Critical Control Points (CCP's)
3. Establish Critical Limits
4. Establish Monitoring Procedures
5. Establish Corrective Actions
6. Establish Verification Procedures
7. Establish Record-keeping and Documentation Procedures

The following sample HACCP forms are included with this program. Customize them to meet the needs of your establishment, and use them to implement your own HACCP plan.

[Hazard Analysis Critical Control Point Flowchart Worksheet](#)

[Hazard Analysis Critical Control Point Monitor Worksheet](#)

[Hazard Analysis Critical Control Point Monitoring Procedure Report](#)

Series<sup>TM</sup>

# Point Flowchart Worksheet

Date:	Time Started:
Product:	Time Ended:

Ingredients:

Steps	Problem/Hazard	CCP	Control/Solution

Comments:

Signature:

# Point Monitor Worksheet

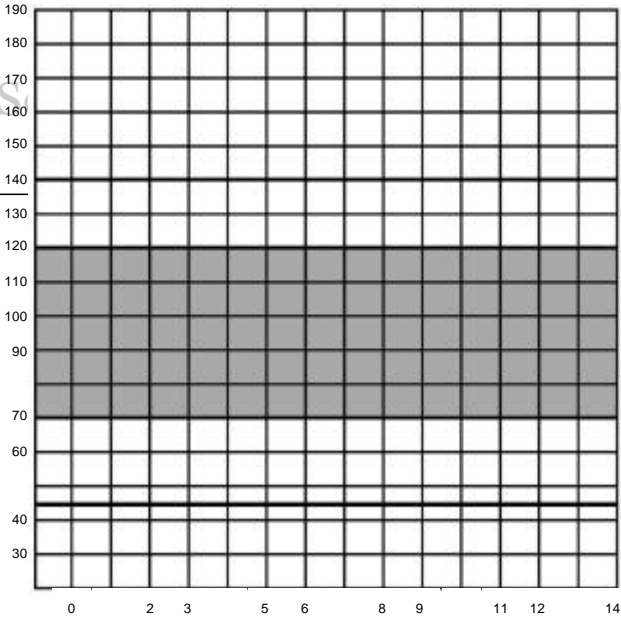
Product: \_\_\_\_\_  
 Ingredients: \_\_\_\_\_

Date: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time End: \_\_\_\_\_

Time	Temperature	Action



Time/Temperature (°F) Chart



Signatures of observers:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Time in Hours

# Hazard Analysis Critical Control Point Monitoring Procedure Report (pg. 1)

New York State Department of Health  
Bureau of Community Sanitation and Food Protection

**THIS FORM CONSISTS OF TWO PAGES AND BOTH MUST BE COMPLETED**

County	Dist.	Est. No.	Month	Day	Year

**Establishment Name** \_\_\_\_\_ **Operator Name** \_\_\_\_\_

**Address** \_\_\_\_\_

**(T)(C)(V)** \_\_\_\_\_ **County** \_\_\_\_\_

**Food** \_\_\_\_\_

PROCESS (STEP) CIRCLE CCPs	CRITERIA FOR CONTROL	MONITORING PROCEDURE OR WHAT TO LOOK FOR	ACTIONS TO TAKE WHEN CRITERIA NOT MET
RECEIVING/ STORING	<input type="checkbox"/> Approved sources (inspected) <input type="checkbox"/> Shellfish tag <input type="checkbox"/> Raw/Cooked/Separated in storage <input type="checkbox"/> Refrigerate at less than or equal to 45°F  <input type="checkbox"/>	<input type="checkbox"/> Shellfish tags available <input type="checkbox"/> Shellfish tags complete <input type="checkbox"/> Measure food temperature <input type="checkbox"/> No raw foods stored above cooked or ready to eat foods	<input type="checkbox"/> Discard food <input type="checkbox"/> Return food <input type="checkbox"/> Separate raw and cooked food <input type="checkbox"/> Discard cooked food contaminated by raw food <input type="checkbox"/> Food temperature: More than 45°F more than 2 hours, discard food More than 70°F, discard food
THAWING	<input type="checkbox"/> Under refrigeration <input type="checkbox"/> Under running water less than 70°F <input type="checkbox"/> Microwave Less than 3 lbs., cooked <input type="checkbox"/> frozen More than 3 lbs., do not cook until thawed	Observe method Measure food temperature	Food temperature: More than or equal to 70°F, discard More than 45°F for more than two hours, discard
PROCESSING PRIOR TO COOKING	Food temperature less than or equal to 45°F	Observe quantity of food at room temperature Observe time food held at room temperature	Food temperature: More than 45°F for more than 2 hours, discard food More than 70°F discard food
COOKING	Temperature to kill pathogens Food temperature at thickest part more than or equal to _____°F	Measure food temperature at thickest part	Continue cooking until food temperature at thickest part is more than or equal to _____°F
HOT HOLDING	Food temperature at thickest part more than or equal to _____°F	Measure food at thickest part during hot holding every _____ minutes	Food temperature: 135°F - 120°F More than or equal to 2 hours, discard; less than 2 hours, reheat to 165°F and hold at 135°F 120°F - 45°F More than or equal to 2 hours, discard; less than 2 hours, reheat to 165°F and hold at 135°F

## Hazard Analysis Critical Control Point Monitoring Procedure Report (pg. 2)

COOLING	<p>Food 120°F to 70°F in 2 hours: 70°F to 45°F in 4 additional hours by the following methods: (check all that apply)</p> <p><input type="checkbox"/> Product depth less than or equal to 4"</p> <p><input type="checkbox"/> Ice water bath and stirring</p> <p><input type="checkbox"/> Solid piece less than or equal to 6 lbs.</p> <p><input type="checkbox"/> Rapid chill refrigeration</p> <p><input type="checkbox"/> No covers until cold</p>	<p>Measure temperature during cooling every ____minutes</p> <p><input type="checkbox"/> Food depth</p> <p><input type="checkbox"/> Food iced</p> <p><input type="checkbox"/> Food stirred</p> <p><input type="checkbox"/> Food size</p> <p><input type="checkbox"/> Food placed in rapid chill refrigeration unit</p> <p><input type="checkbox"/> Food uncovered</p>	<p>Food temperature: 120°F - 70°F More than 2 hours, discard food</p> <p>70°F - 45°F More than 4 hours, discard 45°F or less but cooled too slowly, discard food</p>
<p>PROCESSING SLICING DEBONING MIXING DICING ASSEMBLING SERVING</p>	<p>Prevent contamination by: Ill workers not working Worker hands not touching ready to eat foods</p> <p>Worker hands washed</p> <p>Cold Time and Temperature Control for Safety Foods (TCS) at temperature less than or equal to 45°F</p> <p>Hot Time and Temperature Control for Safety Foods (TCS) at temperature more than or equal to 135°F</p> <p>Equipment and utensils clean and sanitized</p>	<p>Observe: Worker's health Use of gloves, utensils Handwashing technique Wash &amp; sanitize equipment and utensils Use pre-chilled ingredients for cold foods Minimize quantity of food at room temperature Measure food temperature</p>	<p>If yes to the following, discard: Ill worker is working Direct hand contact with ready to eat food observed Cold potentially hazardous food: more than 45°F more than or equal to 2 hours, discard; more than 70°F, discard Hot potentially hazardous food: 135°F - 120°F More than or equal to 2 hours, discard; less than 2 hours, reheat to 165°F and hold at 135°F 120°F - 45°F More than or equal to 2 hours, discard; less than 2 hours, reheat to 165°F and hold at 135°F</p> <p>If yes to the following, discard or reheat to 165°F: Raw food contaminated other foods Equipment/utensils are contaminated</p>
REHEATING	<p>Food temperatures at thickest part more than or equal to 165°F</p>	<p>Measure food temperature during reheating</p>	<p>Food temperature less than 165°F, continue reheating</p>
<p>HOLDING FOOD, HOT/COLD  TRANSPORTING FOOD</p>	<p>Food temperature</p> <p><input type="checkbox"/> More than or equal to 135°F at thickest part</p> <p><input type="checkbox"/> Less than or equal to 45°F at thickest part</p>	<p>Measured food temperature during holding every ____minutes</p>	<p><input type="checkbox"/> Hot holding potentially hazardous food: 135°F to 120°F More than or equal to 2 hours, discard; less than 2 hours, reheat to 165°F, and hold at 135°F 120°F to 45°F More than or equal to 2 hours, discard; less than 2 hours, reheat to 165°F and hold at 135°F</p> <p><input type="checkbox"/> Cold holding potentially hazardous food: 45°F to 70°F More than or equal to 2 hours, discard; less than 2 hours, serve or refrigerate More than or equal to 70°F, discard</p>

I have read the above food preparation procedures and agree to follow and monitor the critical control points and to take appropriate corrective action when needed. If I want to make any changes, I will notify the Health Department prior to such a change.

Signature of person in charge \_\_\_\_\_

Signature of inspector \_\_\_\_\_



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You may want to start a resource file with laws, codes, and materials that provide useful information on food safety. The following contacts can help you get started and answer any of your questions.

## **FEDERAL REGULATORY AGENCIES**

Regulation by federal government agencies focus on the sources of food and protection of the products until they are purchased, processed, and consumed by the public.

### **Centers for Disease Control and Prevention (CDC)**

The CDC is charged with protecting the public health through the prevention and control of diseases, and responding to public health emergencies. The CDC monitors foodborne illness, and is located in Atlanta, Georgia. This agency is responsible for determining how outbreaks occur, and publishes statistical information about the incidence and severity of illnesses. The CDC also supplies educational materials about sanitation.

<http://www.cdc.gov/>  
1600 Clifton Rd  
Atlanta, GA 30333

24 hours, 7 days a week:  
800-232-4636  
TTY: (888) 232-6348

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## **Environmental Protection Agency (EPA)**

The mission of this agency is to control and battle pollution related to the air, water, solid waste, pesticides, radiation, and toxic substances. The agency works with state and local governments to wage a coordinated attack on environmental pollution. It conducts research and monitoring activities, sets standards, and enforces anti-pollution activities.

<http://www.epa.gov/>  
401 M Street SW  
Washington, DC 2046

## **Food and Drug Administration (FDA)**

The activities of the FDA are directed at protecting consumers against impure and unsafe foods, drugs, cosmetics, and other potential hazards. The FDA develops and enforces regulations for the safety, composition, quality, nutritional content, and labeling of foods, food additives, colors, cosmetics, drugs, and medical devices. It also enforces mandatory provisions and regulations concerning food service operations by interstate carriers.

The FDA is a resource for state and local agencies that require assistance in formulating local codes and regulations. This agency publishes documents on food service sanitation, lists of food additives and the amounts allowed in food products. It also publishes the Food Code, in cooperation with the Department of Health and Human Services, which provides guidance for the food service industry.

<http://www.fda.gov/>  
10903 New Hampshire Avenue  
Silver Springs, MD 20993  
1-888-463-6332

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The Milk Safety Branch, HFF-346, provides the *IMS List Sanitation Compliance and Enforcement Ratings of Interstate Milk Shippers*.

The Shellfish Sanitation Branch, HFF0513, provides the *Interstate Certified Shellfish Shippers List*.

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## **Occupational Safety and Health Administration (OSHA)**

OSHA was established after the Occupational Safety and Health Act of 1970. The agency develops and promotes occupational safety and health standards, develops and issues regulations, conducts investigations and inspections, and issues citations. It also proposes penalties for non-compliance with safety and health standards and regulations.

Employers are required by OSHA to provide employees with safe working conditions. OSHA sets safety standards for a hazard-free working environment, safe equipment, and job procedures.

<http://www.osha.gov/>  
200 Constitution Avenue, N.W.  
Washington, DC 20210  
800-321-6742  
TTY: 877-889-5627

## **U.S. Department of Agriculture (USDA)**

Through its inspection and grading services, the USDA works to provide safeguards that ensure standards of quality in our daily food supply, and it also protects the soil, water, forests, and other natural resources. The agency works to improve food production and eliminate malnutrition.

Inspection of food processing plants and supervision of labeling practices is shared by the USDA and the FDA. The USDA inspects meat, meat products, poultry, poultry products, eggs, egg products, dairy products, fruits, and vegetables.

Food Safety and Inspection Service Information Office  
<http://www.usda.gov/>  
South Agriculture Building  
Independence Avenue S.W.  
Washington, DC 20250  
(202) 720-8732

USDA Food Safety and Inspection Service  
USDA Meat and Poultry Hotline  
Monday - Friday, 10:00am to 4:00pm ET  
1-888-674-6854  
Or send email to: [mphotonline.fsis@usda.gov](mailto:mphotonline.fsis@usda.gov)