

# SAFE STAFF<sup>®</sup>

## FOODHANDLER CERTIFICATE PROGRAM

DBPR's Contracted Food Safety Provider



DBPR Approved Program Provider No. 1752486



**FLORIDA  
RESTAURANT  
& LODGING  
ASSOCIATION**

For more information about the  
SAFE STAFF<sup>®</sup> FOODHANDLER TRAINING PROGRAM  
or to reorder more copies of this Foodhandler Training Guide, contact:

**SAFE STAFF<sup>®</sup>**

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Editorial Staff: Geoff Luebke, Susie McKinley and Elizabeth Sheffield.

# PLEASE READ THESE INSTRUCTIONS BEFORE TRAINING

## *Instructions for conducting the SafeStaff® Foodhandler Training Program*

Florida law requires that all employees of DBPR-licensed food service establishments receive basic food safety training, using a DBPR-approved program, within 60 days of the hire date. Employee training is valid for three years, at which time employees must be retrained. Food establishments are responsible for record-keeping and proof of training.

The food service establishment shall be issued an original certificate for each trained employee by the Certified Food Protection Manager (CFPM) that conducted the training, and the trained employee shall receive an original wallet card. Such certificate or card shall be produced by the food service establishment or employee, respectively, in its duly issued original form, when requested by a DBPR inspector.

This training program can be administered by any CFPM or can be taken online at [www.SafeStaff.org](http://www.SafeStaff.org). For questions regarding this program, contact SafeStaff® at 866-372-7233.

Before the training begins, provide each participant one SafeStaff® Foodhandler Training Guide and a #2 pencil. Failure to complete the steps below will result in training unverifiable by DBPR, and potentially cause serious compliance issues.

### **WHEN READY TO BEGIN:**

- Step 1** Have each employee read this instruction page to prevent common errors, and then carefully tear out the Bubble Form from the back of the SafeStaff® Foodhandler Training Guide.
- Step 2** Using a #2 pencil, have each employee complete the employee, trainer and business information. It is critical that the exact same spelling be used for the establishment's name and address to ensure correct database entry for each Bubble Form.
- Step 3** Collect the completed Bubble Form and place in a large envelope. One Bubble Form must be completed and received for each employee trained to ensure compliance with DBPR requirements.
- Step 4** Begin the training session. Review the entire SafeStaff® Foodhandler Training Guide. Allow time for questions and discussion to ensure understanding.
- Step 5** At the end of each chapter; have each employee answer the Chapter Review Quiz.
- Step 6** Upon completion of SafeStaff® training, have each employee complete the "Test Your Knowledge Self-test" at the end of the guide. Use this assessment to evaluate how well your employees understand the material.
- Step 7** Review employee errors on Self-test questions using the appropriate section in this guide to ensure proper understanding of all food safety principals covered herein.
- Step 8** In this Guide you will find a certificate, wallet card, and manager checklist. These should be completed for each trained employee. Retain the certificate in a safe and easily accessible place for review by DBPR inspectors. Check all topics covered on the manager checklist, and have the employee initial for confirmation. Keep these on file as proof of compliance and proof of your comprehensive food safety training program for employees. The Certified Food Protection Manager conducting the training should complete and sign each SafeStaff® Foodhandler Training Card and issue to the employee.
- Step 9** Upon completing Steps 1 through 8, send all completed original Bubble Forms by certified/traceable method to: SafeStaff®, 230 S. Adams Street, Tallahassee, FL 32301. Do not send photocopies. Obtain your completed training report online at [www.SafeStaff.org](http://www.SafeStaff.org) under Quick Links: Employee Foodhandler Database Search.

## FOOD SECURITY MESSAGE

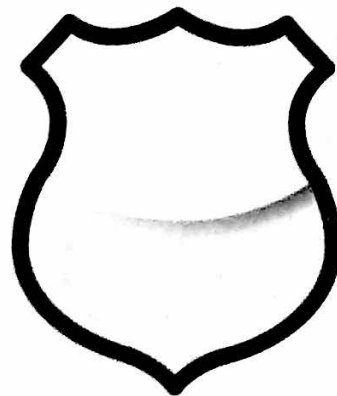
In a world requiring ever more vigilance from business owners and operators, food security is a top priority for public food service establishments. Food security, defined simply, is the prevention of deliberate food contamination. Operators have a responsibility to monitor all steps in the flow of food, and provide thorough protection from criminal acts. Preventative measures can minimize food safety risks. Operators must carefully construct and frequently review procedures and controls that identify and eliminate opportunities for criminal or terrorist activity through food. Success requires strong ongoing awareness and commitment from managers and employees.

### **Effective plans include preventative measures, such as to:**

- Ensure that no unauthorized persons, such as former employees, have access to or are permitted in food storage and preparation areas
- Carefully monitor food as it is received and stored
- Not allow employee personal items in work areas
- Frequently monitor any customer self-service areas

### **Immediately report suspicious behavior to appropriate authorities:**

- Local law enforcement - 911
- Florida Agricultural Law Enforcement / 800-342-5869
- Department of Homeland Security National Operations Center (Threat reporting) / 202-282-8101
- FDA 24-hour Emergency contact / 301-443-1240



# CHAPTER 1

## FOOD CONTAMINATION

A **foodborne illness** is a disease transmitted to people by contaminated food. Without proper employee training and careful attention to safe food handling procedures, food can easily be contaminated by any number of physical, chemical, or biological hazards. Food service workers must be knowledgeable and careful when handling and serving food products. Food, plates, glassware, and utensils can easily be contaminated by the transfer of bacteria or other microorganisms when incorrectly handled by food service employees. For these reasons, foodhandler training is mandatory for licensed restaurants and hotels in Florida.

The transfer of microorganisms from a worker's hands to food or food contact surfaces is called **cross-contamination**. Cross-contamination also occurs when contaminated equipment is used to prepare or serve food without first being washed, rinsed and sanitized. An example of this would be the use of a cutting board to prepare raw chicken, then using the same cutting board to prepare ready-to-eat foods such as chopping lettuce for a salad.



### TYPES OF FOOD CONTAMINATION

Microorganisms occur naturally and can be found virtually everywhere - in air, water, on surfaces, and on people. They can be transferred from surface to surface in many different ways. Being aware of how microorganisms are transferred is the first step to reducing the risk for foodborne illness. In addition to microorganisms, food can be contaminated by other hazardous substances. Food may become contaminated in one of three ways:

**Biological contaminants:** microorganisms such as viruses, bacteria, parasites, fungi and toxins

**Chemical contaminants:** cleaning products, toxic metal residue, pesticides

**Physical contaminants:** hair, bandages, dirt, metal shavings, artificial fingernails, pest droppings, chipped equipment

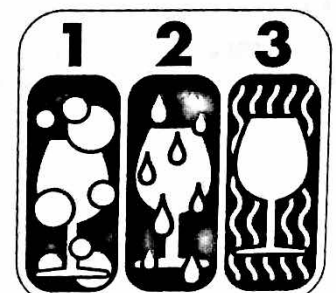
### WHAT CAUSES FOOD CONTAMINATION

#### Poor Personal Hygiene

According to the Centers for Disease Control (CDC), poor personal hygiene is one of the leading causes in the spread of foodborne illness. Foodhandlers must understand the importance of handwashing and eliminating the fecal / oral route of food contamination. Frequent and correct handwashing is extremely important in preventing cross-contamination when serving and preparing food. Good personal hygiene includes: clean work clothes, avoid touching one's hair, skin, nose or mouth, maintaining health, reporting illness, not working while ill, not wearing jewelry to work, and covering exposed cuts, burns or sores. Hair must be effectively restrained with a hairnet, cap or other technique. Fingernails must be clean, short, unpolished and may not have acrylic or other artificial products applied. Employees may not smoke or eat in a food preparation area, and may drink only from a covered cup with a lid and a straw.

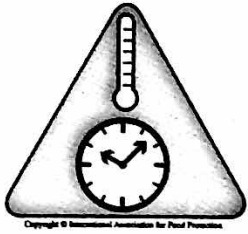
#### Cleaning and Sanitizing

Another critical area in preventing food contamination is proper cleaning and sanitizing of equipment, utensils, dishware and silverware. Even when food workers properly prepare food and have good hygiene, food can become contaminated if it comes into contact with unclean food contact surfaces or equipment. This can start a dangerous and costly chain reaction that results in a foodborne illness.



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## Time and Temperature Control



The Temperature Danger Zone is between 41°F to 135°F. This is the temperature range in which harmful microorganisms grow most rapidly. For this reason, potentially hazardous food or time / temperature control for safety (TCS) food may not remain in the Temperature Danger Zone for more than four (4) hours. Foods in the Temperature Danger Zone for more than four (4) hours must be thrown away. Examples of TCS foods are: eggs, poultry, dairy, ground beef, soy, meats, seafood and fish, cut leafy greens, tomatoes and melons, garlic in oil, baked potatoes wrapped in foil and pastry creams and custards.

According to the US FDA Food Code, potentially hazardous food is food that requires temperature control for safety (TCS) to limit pathogenic microorganism growth or toxin formation. To remain safe, food must always be held at proper temperatures:

**Frozen food** - hold at 0°F or lower - food must be frozen solid

**Cold food** - hold at 41°F or lower

**Hot food** - hold at 135°F or higher

When preparing food, work quickly and in small batches to minimize TCS food exposure to the Temperature Danger Zone. Using pre-chilled ingredients is a good way to protect food during preparation.

Cooking is one of the most critical points in the flow of food. Thoroughly cooking food destroys harmful microorganisms that may be present in food. Remember, cooking will not destroy existing toxins in food. Raw, frozen or chilled food should be cooked without interruption to the required minimum internal temperature unless it is cooked using the US FDA Food Code 2009 specifications for "non-continuous cooking."

## Approved Sources and Suppliers

All foods used in a public food service establishment must be from an "approved source." An approved food source is a supplier, vendor, or any other food source that is licensed and inspected under the jurisdiction of a governmental entity. Restaurants must obtain food only from approved food sources, such as licensed food distributors and wholesalers, licensed processing plants, licensed meat suppliers, or licensed grocery stores.

Documentation as to where food is purchased must be available if requested by a food safety inspector. Food prepared in a home or any other unlicensed facility is never allowed for sale in a restaurant or by other public food service providers such as a caterer.

Food received in a food service establishment must be properly labeled, transported and stored in food-grade containers. Reject any food not from an approved source, or not in acceptable condition. Reject food or packaging exhibiting signs of spoilage, damage (dents, bulges, leaks, tears, rust) or items past the expiration date.

## Food Allergens

A food allergen is a substance that when ingested prompts the generation of antibodies and a hypersensitive immune system response. This can result in damaging, discomforting or even fatal reactions from the immune system.

Individuals who are allergic to specific foods may experience a range of symptoms from mild (sneezing, coughing, itching) to severe (swelling, hives, difficulty breathing) or even death. Be alert and aware that some allergic reactions may require emergency responders for immediate assistance. All staff should know when it is appropriate to call "911."

Common food allergens are: wheat and wheat products, fish, shellfish, peanuts, tree nuts, soy and soy products, eggs and egg products, and milk and dairy products. Oils derived from these common sources, such as peanut oil, are also considered allergens.



The US FDA Food Code 2009 requires customer disclosure of food ingredients that are common known allergens. To help customers identify allergens, menus should disclose foods that contain potential allergens, and self-service foods should likewise be clearly labeled. Additionally, employees are required to be knowledgeable about the eight most common food allergens: fish, shellfish, eggs, milk, wheat, soy (tofu), peanuts, tree-nuts.

**The 2009 US FDA Food Code requires all food service employees to be trained in food allergen awareness. All staff should know the most common allergens listed above. Service staff should be trained to ask guests about any food allergies and food prep staff must be trained in preventing allergen cross-contamination.**

When working with food items that are common food allergens, be careful not to cross-contaminate other foods. Employees should take the same precautions recommended to prevent cross-contamination from allergens as they do between raw and ready-to-eat foods. Remember, allergen cross-contamination can occur on cooking equipment such as woks, flat-top or charbroil grills, and even in fryer oil. Allergen-exposed equipment should be segregated, or washed, rinsed and sanitized before using for an allergic patron.

## Food Contamination Prevention Steps

- Enforce correct personal hygiene habits
- Prevent cross-contamination
- Keep food covered
- Separate raw food and cooked food at all stages of preparation, storage and service
- Minimize bare hand contact with cooked or ready-to-eat foods by using tongs / utensils, gloves and service trays
- Ensure food equipment, like cutting boards, prep tables and slicers, are cleaned, sanitized and in good condition
- Wash food only in properly sanitized, designated prep sinks
- Prevent the liquid from raw or thawing frozen foods from contacting cooked or ready-to-eat foods, potentially hazardous / TCS foods, or food contact surfaces and equipment
- Clean and sanitize all food contact services using clean wiping and sanitizing cloths
- Practice strict time and temperature controls for all TCS food
- Store TCS food at 41°F or lower and 135°F or higher, out of the Temperature Danger Zone
- Work with small batches of food to minimize the time food spends in the Temperature Danger Zone during preparation
- Dispose of potentially hazardous / TCS foods that have been in the Temperature Danger Zone for four hours or longer
- Destroy bacteria present in food by thoroughly cooking all foods to their recommended minimum internal temperature for a minimum of 15 seconds
- Discard any food that is suspected to be contaminated
- Store chemicals away from food



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Remember, food safety can be maintained by following these four basic principles: clean, separate, cook and chill.

## BEST EMPLOYEE PRACTICE

### Cross-Contamination

Employees must be constantly aware of the potential risks for cross-contamination. It is best to prepare raw poultry, meats and seafood on a separate surface as far as physically possible away from fresh produce and ready-to-eat food preparation areas. For best results, use color-coded cutting boards; Red for raw red meat, yellow for raw poultry, blue for raw seafood, green for produce and white for dairy.

# CHAPTER ONE REVIEW QUIZ

## True or False

1. T\_\_\_\_ F\_\_\_\_ If work surfaces and utensils are not properly cleaned and sanitized food can become unsafe.
2. T\_\_\_\_ F\_\_\_\_ A leading cause of foodborne illness is unsafe food handling by food service workers.
3. T\_\_\_\_ F\_\_\_\_ Salt is a common food allergen.
4. T\_\_\_\_ F\_\_\_\_ Florida law requires food safety training for food service workers.

## Complete each sentence

1. TCS food must not remain in the Temperature Danger Zone for more than \_\_\_\_\_ hours.
2. TCS food that has been in the Temperature Danger Zone for longer than the allowed time must be \_\_\_\_\_.
3. The three types of hazards which can cause contamination of food are: \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
4. Scientific research has proven that poor personal \_\_\_\_\_ is a leading cause in the spread of foodborne illness.

## Multiple Choice

1. The Temperature Danger Zone, between 41°F to 135°F, is the temperature range in which harmful \_\_\_\_\_ grow most rapidly.
  - a. plants
  - b. microorganisms
  - c. fish
  - d. diseases
2. \_\_\_\_\_ occurs when there is a transfer of microorganisms from one surface to another.
  - a. Cross-contamination
  - b. Physical contamination
  - c. Time and temperature abuse
  - d. Sanitizing
3. When preparing food, work in \_\_\_\_\_ batches to \_\_\_\_\_ the time food spends in the Temperature Danger Zone.
  - a. large, maximize
  - b. large, guarantee
  - c. small, minimize
  - d. small, increase
4. \_\_\_\_\_ is an extremely important factor in preventing contamination when preparing and serving food.
  - a. Temperature abuse
  - b. The use of dirty dishes
  - c. Using paper products
  - d. Proper handwashing



# INTERNATIONAL SYMBOLS YOU SHOULD KNOW



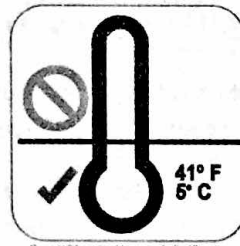
Wash Hands



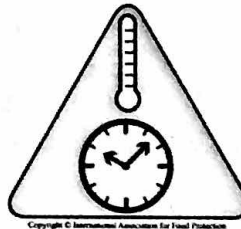
No Bare Hand Contact



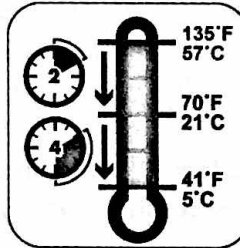
Cook Foods to Temperature



Proper Cold Holding



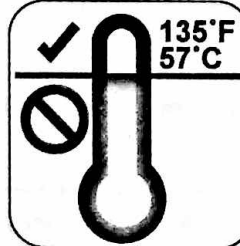
Time / Temperature Control for Safety



Proper Cooling



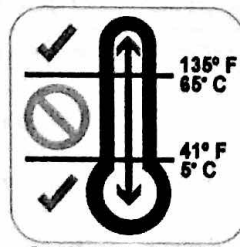
Don't Work Sick



Proper Hot Holding



Prevent Cross-Contamination



Temperature Danger Zone (TDZ)

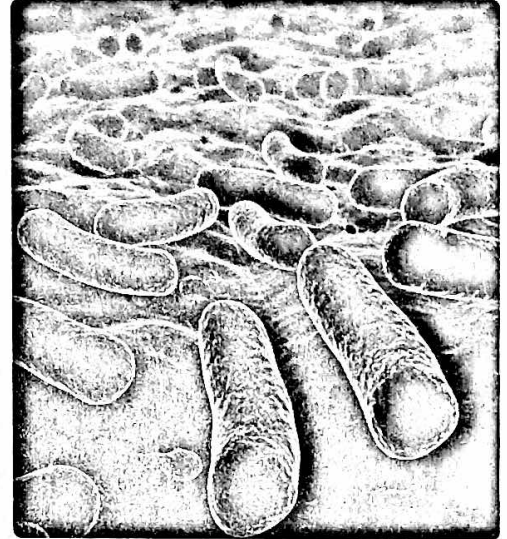
# CHAPTER 2

## FOODBORNE ILLNESS

Chapter 1, "Food Contamination", provided some basics on how food becomes contaminated. This is extremely important to understand and prevent, because food contamination directly causes foodborne illness.

A foodborne illness is a disease transmitted to people by contaminated food. A foodborne illness outbreak is when two or more people contract the same illness from the same food source, as confirmed through laboratory tests.

Every person is at risk of foodborne illness, and this risk can be easily reduced by properly training food service employees to carefully prepare and serve food.



### TYPES OF MICROORGANISMS

As noted earlier, biological contamination is the presence of microorganisms or their toxins. Biological contamination is caused by four types of microorganisms:

- Viruses
- Bacteria
- Parasites
- Fungi

These microorganisms fall into two groups: pathogenic microorganisms and spoilage microorganisms.

**Pathogenic microorganisms** are invisible to the eye, cannot be smelled nor tasted, and are the primary cause of foodborne illness. **Spoilage microorganisms** can be seen and smelled, and usually do not cause a foodborne illness, but result in spoiled food.

### HOW BACTERIA GROW

Conditions that provide a favorable environment for bacteria to grow are easily remembered using the acronym "FAT TOM," which stands for:

<b>F</b>	Food	Potentially Hazardous / TCS foods allow growth
<b>A</b>	Acidity	Foods with slightly acidic or neutral pH allow growth
<b>T</b>	Temperature	Temperatures between 41°F to 135°F allow growth
<b>T</b>	Time	Foods stored or held in the Temperature Danger Zone for 4 hours or longer allow growth to unsafe levels
<b>O</b>	Oxygen	Most microorganisms require oxygen to grow
<b>M</b>	Moisture	Moisture in food allows microorganisms to grow

## POTENTIALLY HAZARDOUS OR TEMPERATURE CONTROL FOR SAFETY (TCS) FOOD

A potentially hazardous or TCS food is any food that is capable of supporting the rapid growth of harmful microorganisms. Any food can become contaminated and cause foodborne illness, but these common foods have been frequently linked to foodborne illness:

- Milk and milk products
- Fish, shellfish & crustacea
- Shell eggs
- Sprouts and raw seeds
- Meat – beef, pork & lamb
- Soy-protein foods
- Poultry
- Cooked rice or beans
- Cut tomatoes
- Garlic in oil
- Sliced melons
- Cut leafy greens
- Baked potatoes wrapped in foil

## FOODBORNE ILLNESSES

When a foodborne illness occurs, sick customers may experience common symptoms like nausea, vomiting, diarrhea, headache, fever and other flu-like symptoms.

### Illness Caused by Viruses

Foodborne illnesses caused by viruses are the most common. A virus is a very small, infectious agent that can only grow inside the living cells of other organisms - humans, animals, and plants. Most are not effectively treated with antibiotics. Viruses are commonly transmitted by infected food workers, and cause sicknesses such as the common cold, flu, measles, chicken pox, and yellow fever. Good personal hygiene, including not working while ill, is the best preventative measure to avoid spreading viruses in a food service establishment. The following are the most common foodborne illnesses caused by a virus:



Illness	Hepatitis A
Caused by	<i>Hepatovirus</i>
Food sources	Shellfish, water, ice, lettuce, salads, sandwiches (cold cuts), fruits, juices, milk and ready-to-eat foods
Prevention	<ul style="list-style-type: none"><li>▪ Use good personal hygiene practices, particularly proper handwashing</li><li>▪ Obtain foods from an approved source</li></ul>

Illness	Norovirus
Caused by	<i>Norovirus</i>
Food sources	Ready-to-eat food, contaminated water which contaminates raw shellfish, fruits and vegetables
Prevention	<ul style="list-style-type: none"><li>▪ Use good personal hygiene practices, particularly proper handwashing</li><li>▪ Avoid cross-contamination through proper cleaning and sanitizing</li><li>▪ Properly wash and handle produce</li><li>▪ Obtain shellfish from an approved source</li><li>▪ Use water and ice from an approved source</li></ul>

### Illness Caused by Bacteria

Foodborne bacterial illnesses are preventable, if measures are taken to protect food. Careful attention to time and temperature control, correct personal hygienic practices, cross-contamination prevention, and obtaining food supplies only from approved sources will greatly reduce the risk of foodborne illness. The following are some common bacterial illnesses, foods they are associated with, and best preventive measures:

## Best Preventative Measure - Prevent Cross-contamination

Illness	Salmonellosis
Caused by	<i>Salmonella spp.</i>
Food sources	Poultry, raw eggs, raw milk
Prevention	<ul style="list-style-type: none"><li>▪ Avoid cross-contamination with raw foods and ready-to-eat foods</li><li>▪ Cook foods to their recommended internal temperature for a minimum of 15 seconds</li><li>▪ Chill and refrigerate food properly</li><li>▪ Use good personal hygiene practices, particularly proper handwashing</li></ul>

## Best Preventative Measure - Purchase Foods From an Approved Source

Illness	Gastroenteritis / Primary Septicemia
Caused by	<i>Vibrio parahaemolyticus</i> / <i>Vibrio vulnificus</i>
Food sources	Naturally occurs in seawater and seafood: oysters, shellfish
Prevention	<ul style="list-style-type: none"><li>▪ Purchase shellfish only from approved sources</li><li>▪ Avoid serving raw seafood, particularly oysters</li><li>▪ Cook seafood to an internal temperature of 145°F for a minimum of 15 seconds</li><li>▪ Avoid cross-contamination from raw seafood products</li><li>▪ Post consumer warning regarding dangers for consumption of raw seafood</li></ul>

## Best Preventative Measure - Time and Temperature Control

Illness	Hemorrhagic Colitis
Caused by	<i>E. coli - producing shiga toxin</i>
Food sources	Raw or undercooked ground beef, produce, unpasteurized dairy products
Prevention	<ul style="list-style-type: none"><li>▪ Cook ground beef to an internal temperature of 155°F for a minimum of 15 seconds</li><li>▪ Use good personal hygiene practices, particularly proper handwashing</li><li>▪ Avoid cross-contamination</li><li>▪ Use only pasteurized dairy and juice products</li></ul>

Illness	Botulism
Caused by	<i>Clostridium botulinum</i>
Food sources	Home-canned goods, food from damaged packaging, garlic and oil products, reduced-oxygen packaged food
Prevention	<ul style="list-style-type: none"><li>▪ Practice proper time and temperature controls for storage</li><li>▪ Do not use home canned items - use only food from approved vendors</li><li>▪ Throw away any food from damaged packaging</li></ul>

Illness	Listeriosis
Caused by	<i>Listeria monocytogenes</i>
Food sources	Unpasteurized milk, cheese or other dairy products, deli meats and imported seafood
Prevention	<ul style="list-style-type: none"><li>▪ Cook all raw meats to recommended internal temperatures</li><li>▪ Use pasteurized milk and dairy products</li><li>▪ Properly wash and handle fruits and vegetables</li><li>▪ Avoid cross-contamination through proper cleaning and sanitizing</li></ul>

## Best Preventative Measure - Good Personal Hygiene Habits

Illness	Shigellosis
Caused by	<i>Shigella</i>
Food sources	Salads, raw vegetables, dairy products, other ready-to-eat foods, contaminated water
Prevention	<ul style="list-style-type: none"><li>• Use good personal hygiene practices, particularly proper handwashing</li><li>• Use sanitary and approved food and water sources</li><li>• Control flying insects</li><li>• Avoid cross-contamination</li></ul>

Illness	Staphylococcal Gastroenteritis
Caused by	<i>Staphylococcus aureus</i>
Food sources	Foods not reheated properly, foods not cold-held at proper temperatures; cold-cuts / lunch meat, ready-to-eat mixed salads; such as egg salad and tuna salad
Prevention	<ul style="list-style-type: none"><li>• Use good personal hygiene practices, particularly proper handwashing</li><li>• No bare-hand contact with ready-to-eat food</li><li>• Store and hold food at proper temperatures</li><li>• Avoid cross-contamination through proper cleaning and sanitizing</li></ul>

## Illness Caused by Parasites

**Parasites** are organisms that grow, feed, and are sheltered on or in another organism - the "host" - while contributing nothing to the survival of the host. Parasites can survive on food, and worms and their larvae are commonly found in animal foods such as hogs and fish. Parasites can cause foodborne infections that may include symptoms such as nausea, diarrhea, abdominal pain, fever, fatigue, and cramping.

## Illness Caused by Fungi

**Fungi** occur naturally in air, soil, plants, animals, water and some foods. Common fungi includes molds, yeast, and mushrooms. Some fungi are harmful or even fatal when consumed by humans. Food with visible mold that is not an intended part of the product (such as the rind on certain cheeses) should be discarded. While fungus is typically considered a spoilage microorganism, some molds produce toxins that can cause illness. Aflatoxins produced by fungi, are found on nuts and oilseeds and can be toxic. Yeast causes rapid fermentation (spoilage) of food and may produce an alcoholic smell or taste. Yeast, like mold, grows well in sweet, acidic foods with low water activity, such as jellies, jams, syrup, and fruit juice. Food that has been spoiled by yeast should be discarded.



## HANDLING EMPLOYEE ILLNESS

### Exclusion from Work

It is extremely important that all food service employees pay close attention to their health and report any illness or symptoms of illness to management. Sick employees can be the cause of foodborne illness and must not be allowed to work. Employees that have been diagnosed with certain illnesses are prohibited by law from working in a food service establishment. This prohibition is called an "exclusion" from work. Carefully follow all rules and regulations for employee exclusion to prevent the spread of illness. Employees diagnosed with any of the following illnesses must be excluded from work, in accordance with Florida law:

1. Hepatitis A
2. Hemorrhagic colitis (*E. Coli*)
3. Salmonellosis
4. Shigellosis
5. Norovirus

Diagnosed employees may return to work only after having been cleared to do so in writing by a medical doctor.



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### Restriction from Work

In addition to the legal obligation to exclude certain employees from work as described above, food service employees and managers must watch closely for the following symptoms, and restrict or exclude employees from work when exhibiting the following symptoms:

#### Restrict:

- Sore throat with fever, unless released in writing by a medical practitioner
- Running nose
- Lesions containing pus, such as boils or infected wounds that are open or draining

The restriction must keep symptomatic employees from working with exposed food, food contact surfaces, and food equipment.

#### Exclude:

- Diarrhea
- Vomiting
- Jaundice (yellowing of the eyes and skin), unless released in writing by a medical practitioner and approved by your inspector

Excluding or restricting ill employees, using proper handwashing techniques and elimination of bare hand contact with food, can all be effective in the prevention of foodborne illness.

## BEST EMPLOYEE PRACTICE

### Customer Complaints

It is extremely important to correctly and urgently handle any customer's claim that they became ill from eating at your food service establishment.

Whether at the time of service, or later by telephone or in person, all employees must know how to handle these claims according to company policy. Do not argue with the customer, but treat the situation as urgent and immediately notify your manager or supervisor.

# CHAPTER TWO REVIEW QUIZ

## True or False

1. T\_\_\_\_ F\_\_\_\_ A foodborne illness is a disease caused when people eat contaminated food.
2. T\_\_\_\_ F\_\_\_\_ Wheat is a common food allergen.
3. T\_\_\_\_ F\_\_\_\_ "Excluded" employees may return to work as soon as they feel better.
4. T\_\_\_\_ F\_\_\_\_ Employees have a legal responsibility to notify their supervisor when ill.

## Complete Each Sentence

1. A potentially hazardous or \_\_\_\_\_ food is capable of supporting the rapid growth of harmful microorganisms.
2. \_\_\_\_\_ illnesses are commonly caused by poor personal hygiene.
3. Employees must report certain diagnosed illnesses and certain symptoms of illness to their \_\_\_\_\_.
4. Microorganisms capable of causing foodborne illness include: virus, fungi, parasites and \_\_\_\_\_.

## Multiple Choice

1. Which of the following is not a type of microorganism?
  - a. Fungi
  - b. Bacteria
  - c. Virus
  - d. Acidity
2. Which of the following is the acronym used to remember the conditions in which microorganisms grow best?
  - a. TALL BILL
  - b. MAD MARY
  - c. FAST CAR
  - d. FAT TOM
3. Which of the following illnesses result in a food employee being "excluded" from work?
  - a. Salmonellosis
  - b. Hemorrhagic colitis
  - c. Hepatitis A
  - d. All the above
4. Employees must report which of the following symptoms of illness to his or her manager:
  - a. Headache
  - b. Sore throat with fever
  - c. Aching teeth
  - d. Hair loss

## CHAPTER 3

# IMPORTANCE OF PERSONAL HYGIENE

Working in the food service industry requires employees to maintain good personal hygiene.

### **BASICS FOR GOOD PERSONAL HYGIENE**

Good personal grooming is essential to preventing foodborne illness, and must be part of every food employee's regular routine. Bathing daily and wearing clean clothes to work is mandatory.

Aprons should not be used to wipe hands, and must be removed before using the restroom or taking out garbage. Dirty aprons and other soiled uniforms or clothing should be stored in laundry bags.

Hair must be neat, clean, and effectively restrained. Hairnets, hats or caps are all considered effective hair restraints. Ask a manager for your employer's policy.

Jewelry may not be worn on a food preparation employee's hands or arms, except a single ring with a plain metal band. It is best to leave all other jewelry at home. If any other jewelry is worn it must be removed before preparing food. Fingernails must be neatly trimmed and clean. Fingernail polish and artificial fingernails are prohibited while preparing food, as are false eyelashes and hair accessories that pose a risk for contamination.

### **Correct Handwashing is a Must!**

The majority of foodborne illnesses are transmitted to food by the hands of those preparing and serving food. You must always wash your hands or change gloves after doing any of the following:

- Touching bare skin
- Using the restroom
- Coughing, sneezing, using a handkerchief or tissue
- Tobacco use, gum chewing, eating, or drinking
- Handling soiled equipment, utensils, or clothing
- Working with raw foods
- Clearing a table or dirty dishes
- Removing and disposing of garbage / trash
- Using chemicals or pest control
- Engaging in any activity that may contaminate hands, like answering the phone
- Changing tasks during food preparation
- Handling money, pens, or anything touched by customers
- Touching or petting live animals; dogs

Wash hands during food preparation, and as often as necessary to remove soil and prevent cross-contamination. The following section clearly demonstrates correct handwashing techniques for food service workers and the importance of frequent and proper handwashing to prevent against foodborne illness.



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# TECHNIQUES FOR CORRECT HANDWASHING

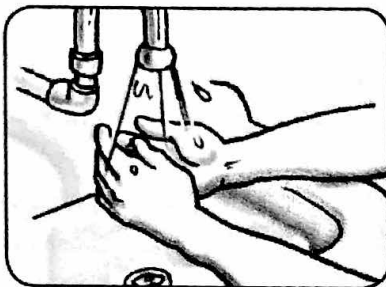
Washing hands properly is critical. If hands are not washed thoroughly, the risk of contaminating food increases dramatically. Improper handwashing has been directly associated with the outbreaks of diseases such as: Salmonellosis, Shigellosis, Staphylococcal gastroenteritis, Hemorrhagic colitis, and Norovirus.

To correctly wash hands:

1. Wet hands and exposed portions of arms with hot running water of at least 100°F.
2. Apply an adequate amount of soap.
3. Scrub vigorously for 10-15 seconds, ensuring that the soap covers and cleans every part of hands, wrists and exposed forearms.
4. Clean between fingers and under and around fingernails.
5. Rinse thoroughly, using warm water, ensuring that all traces of soap are rinsed from hands.
6. Dry hands with disposable, single-use paper towel, hot-air dryer or high-velocity room temperature air dryer.
7. Use a paper towel to turn off the faucet.
8. If using a FDA approved hand sanitizer, apply to hands and allow time to dry before handling food or equipment.
9. Use a paper towel to open any doors between assigned stations and wash hands again if necessary.
10. Correct handwashing should take at least 20 seconds to complete. Wash hands frequently throughout the work shift and every time tasks are changed.

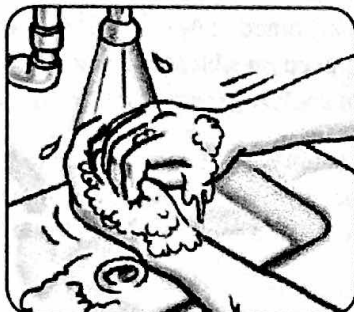
Take extra precautions when washing hands after using the restroom. After following the above steps for washing hands, wash hands again outside the restroom using the same steps. Be sure to thoroughly clean under fingernails. These additional precautions have been shown to significantly reduce the spread of virus and bacteria after using the restroom.

Designated handwashing stations must be convenient, accessible, and properly stocked with soap, sanitizer (if applicable), and paper towels. Expensive and dangerous food inspection violations can result when hand sinks are blocked, inoperable or not properly stocked. At no time may hands be washed in food prep sinks or dishwashing sinks.



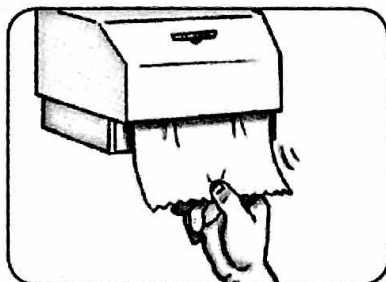
1) Rinse hands in warm running water (at least 100° F)

2) Apply hand soap



3) Scrub hands and exposed arms for 10-15 seconds. Concentrate on fingertips, between your fingers and palms.

4) Rinse



5) Use a single use paper towel to dry your hands. Turn off faucets with the paper towel.

6) Apply a FDA-approved hand sanitizer (must be used if operating under a DBPR approved AOP bare-hand contact plan)



## Gloves and Bare Hand Food Contact

It is crucial to remember that gloves - just like hands - can become contaminated, and thus cross-contaminate food, equipment, utensils, dishes and glassware. Prior to using gloves, hands must first be correctly washed to ensure a clean and sanitary start to food preparation.

Proper glove use also includes changing gloves:

- When switching tasks, such as after finishing a cleaning task, and before beginning a ready-to-eat food task
- When they become soiled or torn
- After handling raw meat, seafood or poultry
- Before handling ready-to-eat or cooked food
- After handling money
- As often as needed to prevent contamination



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Florida law currently requires that there be no direct hand contact with ready-to-eat foods unless the establishment has an approved Alternative Operating Procedure (AOP) in place.

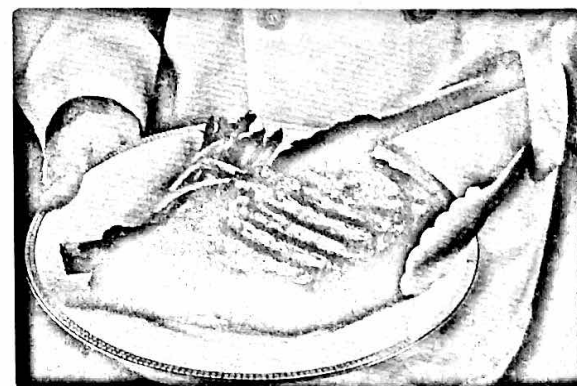
Alternative Operating Procedures are acceptable under the US FDA Food Code 2009, Section 3-301.11 (B) provide specifications for no bare hand contact of exposed ready-to-eat food unless otherwise approved. Food employees may contact ready-to-eat foods with bare hands immediately prior to service if the operator of the public food service establishment maintains a written operational procedure which addresses all of the components in the Food Code and is approved by the inspector. Contact FRLA to obtain an AOP program at 866-372-7233.

Hand antiseptics / sanitizers are chemical solutions applied to hands to kill bacteria that may remain behind after handwashing. It should never be used as a replacement for handwashing. After washing hands, you may use a FDA approved hand sanitizer as an additional precautionary step. Hand sanitizer is only mandatory if it is part of your company policy or when using an approved AOP program.

## Serving Food Properly

The simple act of picking up or otherwise touching plates, utensils, glasses or other items that will be served to guests can cause contamination that may result in foodborne illness. To maximize safety, follow these guidelines:

- Hold plates by the bottom or at the edge; never touch the food contact surface.
- Hold cups by the handle or the bottom; never put fingers on the rim of the glass, inside the glass, or on the beverage contact surface.
- Hold silverware by the handle; never touch the food contact surface. Store silverware so that it can be picked up by handles.
- When preparing to serve breads, salads, or other ready-to-eat items, use proper utensils such as tongs, deli-tissues, scoops, or spatulas, and use separate utensils for each type of food. Hands should never come into contact with food.
- Use tongs or other utensils to retrieve serving utensils that fall into food.
- Scoop ice with long handled, non-breakable utensils. Never use a glass, cup, or bowl — these become contaminated by hands and then cross-contaminate ice, and can easily break. Do not store scoops or utensils directly in ice machines. The best practice is to store scoops outside the ice bin in a protected sleeve or on a sanitized surface.

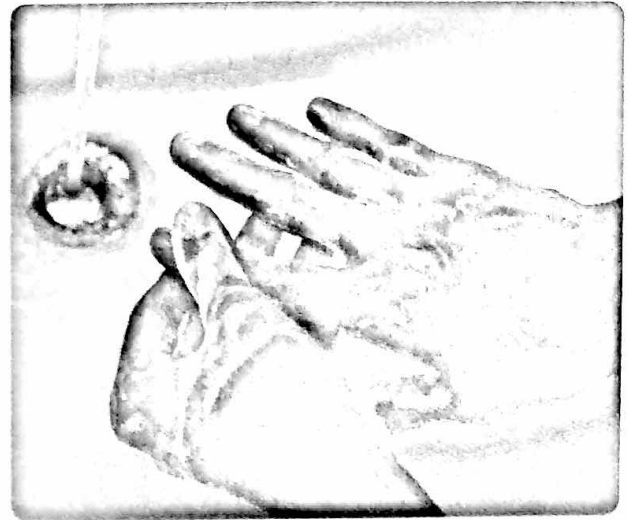


## Employee Breaks

Smoking, eating, and chewing gum while working can result in contamination when saliva is transmitted from the mouth to hands, and are therefore prohibited in food preparation areas. Drinking beverages in food preparation areas is prohibited unless the beverage is in a covered container with a lid and a straw. Ask a manager for your employer's policy and if there are designated areas for these activities.

As highlighted throughout this guide, handwashing is one of the easiest and most important factors in controlling foodborne illness. In accordance with Florida law, food service employees must wash hands after:

- All breaks
- Using the bathroom
- Smoking
- Eating
- Chewing gum
- Drinking a beverage



While these are all activities that require handwashing, employees should also wash hands frequently throughout the work shift, especially when changing work tasks, such as when switching from using cleaning chemicals to preparing food, or changing from working with raw food to ready-to-eat food.

## Proper Treatment of Cuts, Burns, Sores and Skin Infections

To ensure employee health and safety, and minimize foodborne illness risk, all cuts, burns, sores, infected wounds or skin infections must be immediately reported to a manager or supervisor. Each of these skin conditions is required to be covered with a clean dry bandage, and protective moisture-proof barrier (such as a glove or finger cot) when appropriate. Employees may also be reassigned to duties that do not involve food preparation to minimize risk. Hands must be washed before and after attending to the wound, such as when applying medicated ointments or changing bandages. Ask your employer if bright blue bandages and / or finger cots are available. This new bright color makes bandages and finger cots easy to locate if they fall off during a work shift.

### BEST EMPLOYEE PRACTICE

#### Handwashing

To avoid food contamination, employees must thoroughly scrub all surfaces of the hands for at least 10-15 seconds using warm water and soap. Rinse thoroughly, and then dry using a disposable paper towel before beginning any food preparation. The entire process should take at least 20 seconds. To ensure you are devoting enough time and attention to washing your hands, try singing yourself the ABC's or the Happy Birthday song twice while you are washing your hands. Employees must pay close attention to hand hygiene and wash frequently.

# CHAPTER THREE REVIEW QUIZ

## True or False

1. T\_\_\_\_ F\_\_\_\_ Employees may eat a meal and cook for customers at the same time.
2. T\_\_\_\_ F\_\_\_\_ Employees should wash hands in the nearest prep sink.
3. T\_\_\_\_ F\_\_\_\_ A plain metal ring, such as a wedding band, is the only jewelry allowed on hands and arms while preparing food.
4. T\_\_\_\_ F\_\_\_\_ Employee hands must be scrubbed thoroughly for 10-15 seconds when handwashing.

## Complete the Sentence

1. Cuts, burns or sores on fingers should be covered with a clean and dry \_\_\_\_\_ and protective moisture-roof barrier, such as a finger cot.
2. Expensive and dangerous food inspection violations can result when handsinks are not \_\_\_\_\_.
3. Employees must \_\_\_\_\_ hands after employee breaks.
4. Never wipe or dry \_\_\_\_\_ on your pants or apron.

## Multiple Choice

1. Research has shown that a common cause of foodborne illness is:
  - a. poor personal hygiene.
  - b. cross-contamination.
  - c. time and temperature abuse.
  - d. All of the above.
2. Food employees must wash hands:
  - a. in between tasks.
  - b. after using the bathroom.
  - c. after taking out the garbage.
  - d. All of the above.
3. Sick employees should:
  - a. work as long as able.
  - b. prepare food away from others to avoid making them ill.
  - c. immediately tell a manager or supervisor they are ill.
  - d. call a friend.
4. To reduce foodborne illness employees should:
  - a. bathe daily.
  - b. report illness to managers.
  - c. wash hands frequently.
  - d. All of the above.

## CHAPTER 4

# FLOW OF FOOD

Good food safety practices begin with purchasing from approved suppliers and properly inspecting food deliveries upon arrival. Careful attention to these steps can dramatically reduce foodborne illness risk factors, food cost, and ensure food quality. All deliveries must be immediately and thoroughly inspected, then quickly and correctly stored. If food is unsafe when received, there is no way to make it safe to serve later.

When accepting food deliveries, use these general guidelines to ensure food arrives in a safe condition, and remains so while being checked in and stored:

- Deliveries should be scheduled during off-peak times – not during busy meal periods – so employees have time to carefully examine items and move them quickly into storage. It is difficult to devote the proper care and attention to this step during busy service times.
- Speak to a manager or supervisor about the specific procedures where you work, including who is responsible for accepting deliveries, rejecting questionable items, and safely storing food.
- Ensure TCS foods have been transported under proper refrigeration or frozen conditions.
- While unloading, ensure that all food items have been transported for delivery in clean conditions. Check food packaging and the delivery vehicle for signs of insect or rodent activity. These pests carry disease-producing bacteria and parasites that can contaminate food.
- Ensure that non-food items, such as cleaning chemicals, are safely packaged and appropriately separated from food to prevent contamination during transit.
- Carefully inspect all cartons and containers – broken, crushed or otherwise damaged packaging may be contaminated and should not be accepted.
- Open sealed boxes and inspect individual food items.
- Using a calibrated food thermometer, check refrigerated food temperatures to verify they are at 41°F or lower.
- Frozen food should be delivered frozen solid. Partially thawed food can lose quality and freshness, or worse allow harmful microorganisms to multiply. Reject frozen foods with ice crystals or signs of thawing.
- Keep the receiving area secure, clean and well-lighted.



## WHEN THE DELIVERY ARRIVES

### General guidelines when receiving food deliveries:

**Schedule** deliveries during slow periods (not a lunch time) when food products can be carefully examined and moved quickly into storage.

**Check** temperatures in refrigerated shipments, particularly frozen foods which should be delivered in a freezer section or freezer truck.

**Sample** random food containers and check contents for damage, contamination and possible unacceptable food quality.

**Observe** the condition of the delivery truck; mud, dirt, water, oil stains, or foul odors, may indicate that food products inside were exposed to contaminants while in transit. Also, check for signs of insect or rodents. These pests can be carriers of disease and parasites.

**Reject** products if cartons or containers are broken, crushed or otherwise damaged as their contents may be contaminated.

**Beware** of carriers that include non-food items in the shipment. Non-food items like chemicals may contaminate food products.

**Maintain** the receiving area clean and well lit.

Be sure to inspect "key drop," or after hours deliveries, immediately upon arrival the next business day.

## Inspecting and Accepting Deliveries

When accepting deliveries, use your sense of touch, smell and sight to help get the job done quickly and efficiently. Judge delivered food items for acceptable quality. If it smells, looks, or feels wrong, reject it.

Reject food when:

- Signs of pests are present – live or dead insects, cartons looked chewed, etc.
- Ice crystals have formed inside or on frozen food packaging
- Containers are torn, broken or damaged
- Expiration / use-by dates have passed
- Dry goods packages are have visible liquid damage or feel wet.

Using the temperature checking techniques from Chapter 5 of this manual, check food temperatures upon delivery and verify critical limits are met:

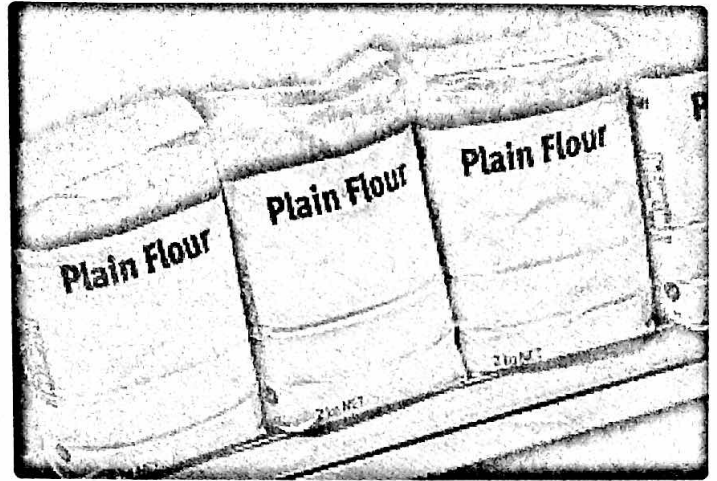
FOOD TYPE	RECEIVING TEMPERATURE
Meat	Receive at 41°F or lower
Poultry	Receive at 41°F or lower
Fish	Receive at 41°F or lower
Eggs	Receive at ambient air temperature of 45°F or lower, check for quality and condition
Dairy products	Receive at 41°F or lower; check the expiration or use-by date
Shellfish, live	Receive on ice or at ambient air temperature of 45°F or lower, check for quality and live condition
Shellfish, prepared	Receive at 41°F or lower
Crustacea, live	No temperature requirement; check for quality and live condition
Crustacea, prepared	Receive at 41°F or lower
Packaged TCS food	Receive at 41°F or lower
Produce, whole	No temperature requirement; check for quality and condition
Produce, cut or prepared	Receive at 41°F or lower
Frozen food	Receive frozen solid; check for ice crystals or signs of thawing

If your job responsibilities include receiving and inspecting food deliveries, ask your employer how to handle deliveries that are of unacceptable quality.

## Safe Food Storage

Establishments must quickly check food deliveries to ensure invoices match actual goods, confirm goods are of acceptable quality, and store foods quickly into the appropriate refrigerated, frozen or dry storage area. Ensure all storage areas are clean, secure, and holding foods at proper temperature.

- **Protect** - all food while being transported, stored, prepared, held, displayed, or served must be protected against contamination. Store food only in secure, protected areas designed and intended for food storage. Never store food in restrooms, utility rooms, garbage areas, or public spaces and hallways.
- **FIFO** - stands for "First In, First Out," and is a common method of stock rotation. It means using food products in the order in which received so the oldest inventory is always used first. To ensure proper stock rotation, label all foods upon delivery with the received date.
- **Stocking** - be careful to load slotted shelves so that air easily circulates and it keeps food at correct temperature. Tightly packed shelves can insulate food and prevent proper storage temperatures. Store all food products a minimum of six inches above the floor, on clean shelves or racks, and allow space between food items. Allow clearance between the stored food and walls and ceiling.
- **Containers** - keep stored foods in the original packaging whenever possible. When re-packing into working containers for storage or use, take care to safely transfer food to a clean, food-grade container and label the container with a common food name, and the date it must be discarded.
- **Separate** - be very careful to separate raw foods and ready-to-eat foods, and store them so that raw food cannot cross-contaminate ready-to-eat food. Store all raw foods below or away from cooked or ready-to-eat foods.



Correct food storage is critical to safely operating any restaurant or food service establishment. Consistent standards for proper cleanliness, temperature control, storage conditions, and stock rotation must be maintained. Failure to do so can cause not just costly food quality problems like contamination and spoilage, but may also pose serious danger to customers from insect and rodent infestation, and other foodborne illness risks.

### BEST EMPLOYEE PRACTICE

#### Deliveries

Food should be received during slower business periods so that it can be thoroughly inspected for signs of contamination prior to acceptance and be stored quickly so that it doesn't spend excessive time in the Temperature Danger Zone. If it appears as though food is frequently delivered during busy periods, notify your manager or supervisor so that corrections in delivery times can be made.

# CHAPTER FOUR REVIEW QUIZ

## True or False

1. T\_\_\_\_ F\_\_\_\_ It is not necessary to label stored food with a date.
2. T\_\_\_\_ F\_\_\_\_ FIFO is a foodborne illness.
3. T\_\_\_\_ F\_\_\_\_ Lunch rush is a good time for deliveries because lots of employees are on duty.
4. T\_\_\_\_ F\_\_\_\_ If food is unsafe when received; it can be made safe later.

## Complete the Sentence

1. Reject food when containers are \_\_\_\_\_, ice crystals are in packaging or on food, signs of pests are present, use-by / expiration dates have passed and when dry goods are damp or wet.
2. FIFO stands for \_\_\_\_\_.
3. When food is stored properly, ready-to-eat foods must be stored \_\_\_\_\_ or away from raw foods.
4. Frozen food should be delivered \_\_\_\_\_ solid.

## Multiple Choice

1. The proper temperature for meat at delivery is:
  - a. 45°F or lower.
  - b. at room temperature.
  - c. 41°F or lower.
  - d. ambient (air) temperature of the truck.
2. When inspecting a produce delivery, which of the following is acceptable:
  - a. cut produce at room temperature.
  - b. produce boxes that are wet and damaged.
  - c. produce from a foreign country without a label.
  - d. whole produce in good condition at room temperature.
3. A food thermometer is required for each of the following except:
  - a. when checking in or receiving food deliveries.
  - b. when cooling food for overnight storage after a meal period.
  - c. when making a trash run.
  - d. when calibrating a thermometer.
4. The receiving area should be well-lighted, secure and \_\_\_\_\_.
  - a. open.
  - b. clean.
  - c. dirty.
  - d. filled with boxes.



## CHAPTER 5

# CONTROLLING TIME AND TEMPERATURE OF FOOD

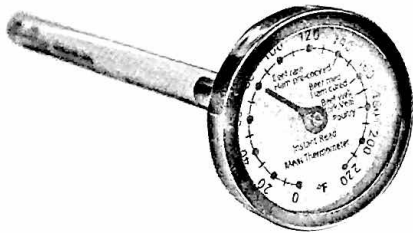
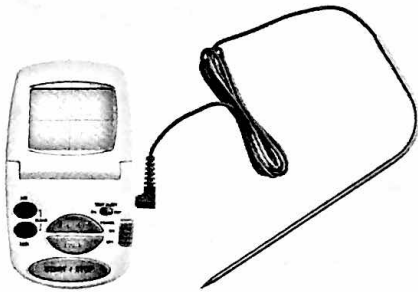
Learning safe methods to prepare, cook, store and serve food requires that employees take food safety seriously. Knowing, using, and closely monitoring proper time and temperature controls ensures safe thawing, cooking, cooling, holding and reheating of food.

### USING FOOD THERMOMETERS

Because microorganisms can grow quickly in food that is exposed to the Temperature Danger Zone, between 41°F to 135°F, strict adherence to correct time and temperature control is essential to safe storing, thawing, cooking, cooling and holding food. The only sure way to know food temperatures are safe is to check food temperatures frequently. In commercial food service, this is done with a calibrated, food thermometer at least once every four hours.

There are a number of different types of food thermometers, such as a digital instant read thermistor, thermocouple and infrared laser thermometers. Users should rely on the manufacturer's instructions for proper use and maintenance. For this section, we'll refer to the least expensive and most common type of thermometer: a bimetallic stem or probe thermometer.

The proper use of a food thermometer includes knowing proper techniques to calibrate the thermometer, accurately measuring the internal temperatures of food items, correctly sanitizing the thermometer, and keeping accurate records of food temperatures in a log. Food service thermometers must read from 0°F to 220°F.



### Calibrate

To ensure accurate temperature measurements, thermometers must be regularly calibrated. Calibrate thermometers using the following steps:

Fill a clean food-grade container with ice and add drinkable water to cover the ice. A drinking glass or small food storage container works well.

Allow the ice water mixture a minute or two to reach minimum temperature and then stir to ensure the temperature is even throughout.

Place the thermometer probe into ice water, fully submerging and covering the tip or sensing area of the stem. The sensing area is clearly marked with dimples. Leave the thermometer submerged in the ice water for 30 seconds, allowing the indicator needle to stop moving. The indicator needle should point directly at 32°F.

If the needle does not indicate 32°F, use pliers to securely grasp the adjusting nut located below the dial and gently rotate the adjusting nut until needle reads 32°F.

### Measure

To take a food temperature reading, completely insert the thermometer stem or probe into the center or thickest part of the food item, and away from bones or gristle. Soups, sauces, and other liquids should first be thoroughly stirred to ensure the temperature is even throughout before checking temperatures. Allow the needle to reach the maximum or minimum food temperature then stop moving. Wait 15 seconds and then read and record the food temperature.

## Sanitize

Ideally, the thermometer should be washed, rinsed and sanitized after each use. It is also acceptable to sanitize the thermometer between uses by swabbing with a disposable alcohol wipe.

## Record Keeping

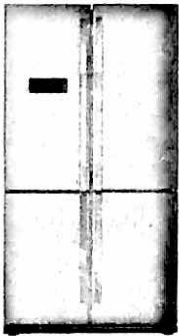
Correct temperatures are only half of the two main critical controls that keep food safe. The other main component is time. Therefore, check temperatures every two hours as a best practice to allow time for corrective action. To ensure both temperature and time control, keep a written record of food temperatures each time they are measured, and document that critical limits are met or corrective actions are taken.



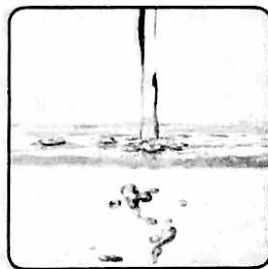
## SAFE METHODS FOR THAWING FOOD

Thawing is a critical step in food preparation and when done improperly, increases foodborne illness risk.

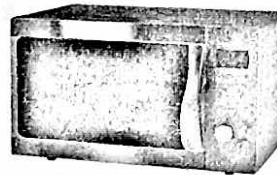
Never thaw frozen food by placing it on the counter at room temperature. To prepare frozen food for service, or as an ingredient in other preparations, safely thaw the item using one of these four procedures:



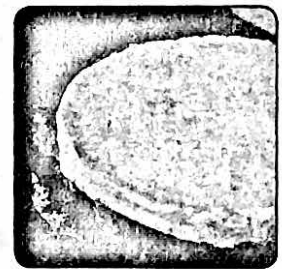
**Refrigeration:** The safest method for thawing is to place frozen food in refrigerated storage, at 41°F or lower, until thawed. Place the food in a container sufficient to capture and hold any liquid that the food will release during thawing, and place below all other foods in storage, especially ready-to-eat items, to prevent cross-contamination.



**Cold Water:** Place frozen food into a container and place under running, potable (drinking) water at 70°F or lower so the item is covered and submerged with running water until thawed. Running water allows loose particles to run over the edge of the container and down the drain. Be certain to clean and sanitize the prep sink and surrounding splash area after thawing, and before placing any other food item in the prep sink.



**Microwave:** Place frozen food in a microwave oven, and select power and time settings specifically for thawing. This method should be used only if the food will be immediately and completely cooked after thawing. Be certain to stir or turn food frequently during thawing to ensure even temperature distribution.

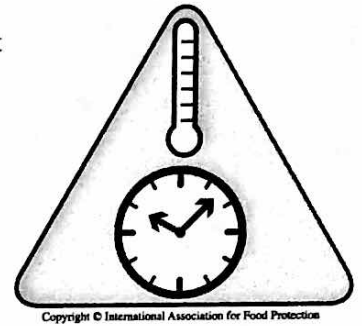


**Cooking:** Cook frozen food items and allow the item to thaw during the cooking process. Be sure to cook food completely before service.

Thawed food must be completely cooked to its correct temperature, or stored under refrigeration so that its internal temperature is 41°F or lower within four hours.

## RECOMMENDED MINIMUM INTERNAL COOKING TEMPERATURES

Cooking foods to recommended internal cooking temperatures will destroy most harmful micro-organisms. Temperature requirements differ according to each type of food. Each food item must be cooked until reaching the recommended minimum internal temperature for 15 seconds, as measured at the thickest part of the item. Remember cooking will not destroy toxins.



### Internal Cooking Temperatures Chart

Food is recommended to be cooked to the internal temperature indicated for at least 15 seconds in order to be considered safe for consumption.

### Food Type

FOOD TYPE	MINIMUM INTERNAL TEMPERATURE
Fruits & vegetables (that will be hot-held for service)	135°F
Commercially prepared, ready-to-eat food (that will be hot-held for service)	135°F
Eggs (for immediate service)	145°F
Solid / whole fish	145°F
Solid / whole meat (pork, beef, lamb, commercial game)	145°F
Ground meat and fish	155°F
Injected or mechanically tenderized meat	155°F
Eggs (that will be held for service)	155°F
Solid / whole poultry	165°F
Stuffing and casseroles	165°F
Stuffed meats	165°F
Microwaved potentially hazardous / TCS foods	165°F
Previously cooked potentially hazardous / TCS foods	165°F

### Internal Cooking Temperatures for Whole Meat Roasts

Including beef, corned beef, lamb, pork, and cured pork roasts such as ham. Use these requirements also for unused portions of whole meat roasts, cooked as noted above, then reheated.

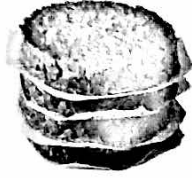
TEMPERATURE	TIME IN MINUTES
130°F	112
131°F	89
133°F	56
135°F	36
136°F	28

TEMPERATURE	TIME IN MINUTES
138°F	18
140°F	12
142°F	8
144°F	5
145°F	4

**It is important to cook foods to their recommended internal cooking temperature to destroy microorganisms.**



**Poultry**  
Cook to 165°F for  
15 seconds



**Ground Meats**  
Cook to 155°F for  
15 seconds



**Solid/Whole Meats**  
Cook to 145°F for  
15 seconds



**Fish/Eggs**  
Cook to 145°F for  
15 seconds

### **Food Cooked in a Microwave**

When cooking food in a microwave, all foods regardless of type, must be cooked to an internal temperature of 165°F for fifteen seconds. After cooking, allow microwave-cooked foods to stand for two minutes. Stir foods and take a temperature reading to ensure food is evenly heated throughout.

### **Food for Children**

The US FDA Food Code 2009 recommends that all foods offered on a Children's Menu be served fully cooked. For example, a hamburger offered on a children's menu should be cooked well-done, or to 155°F for 15 seconds.

### **NON-CONTINUOUS COOKING**

To improve speed of service, many food service operations partially cook food items prior to peak service times. Whether "par-cooked," "pre-cooked," the process is now covered in the 2009 US FDA Food Code. For raw meats cooked using a "non-continuous" cooking process, the process is:

1. Cook initially for no longer than 60 minutes
2. Cool in accordance with potentially hazardous / TCS food requirements
3. Hold at 41°F for non-frozen food or 0°F for frozen food
4. Reheat all components of the final food product to 165°F for a minimum of 15 seconds
5. Any food not served immediately or hot-held for service must be properly cooled and stored

*Note: The regulatory authority may require a written plan approved in advance, prior to allowing this process in the food service operation.*

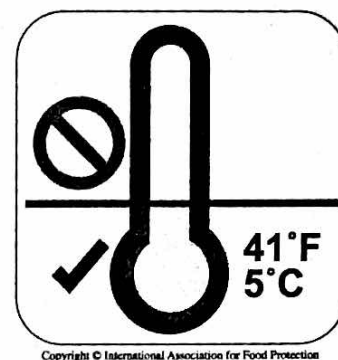
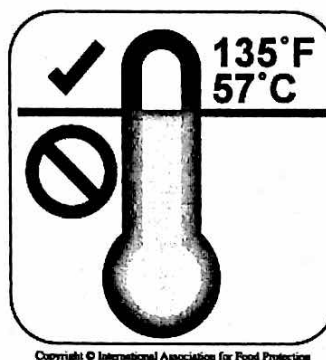
Cooking is a critical step in the flow of food. The safety of the cooked or ready-to-eat (RTE) food must be maintained until service. Once cooked correctly, food should be served, properly hot-held, or cooled immediately for cold storage

## HOT & COLD HOLDING READY-TO-EAT FOOD

After TCS foods have been cooked correctly, be sure to hold foods at proper temperatures to minimize microorganism growth. Foods allowed to fall into the Temperature Danger Zone, between 41°F and 135°F, can allow microorganisms to grow to a level that will cause illness or result in toxic by-products. Either case will result in food that may cause foodborne illness when consumed.

Foods being held for service must have temperatures checked at least every four hours to ensure compliance with temperature requirements. Cold foods must be held at 41°F or lower and hot foods must be held at 135°F or higher. A best

practice for time and temperature control is to check temperatures of TCS foods being held for service at least every two hours. This allows time for corrective action should food temperatures fall into the Temperature Danger Zone.



## COOLING FOOD PROPERLY

Cooling food is not as simple as placing the item in a refrigerator. Never place hot food directly into cold storage. Using correct cooling techniques will minimize the amount of time ready-to-eat food spends in the Temperature Danger Zone and help keep food safe.

### The Two-Stage Cooling Method

Two-stage cooling refers to the process of cooling food to safe storage temperatures in two steps.

The first step, or Stage 1, requires the hot food item be cooled from 135°F to 70°F within two hours, and Stage 2 requires the food item be cooled from 70°F to 41°F or lower within an additional four hours. The total time for both stages combined may not exceed six hours.

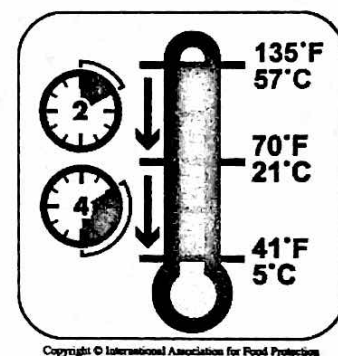
If the food is not cooled to 70°F or lower within the first two hours, the food must be immediately reheated to 165°F for fifteen seconds in less than two hours, or thrown away.

The Temperature Danger Zone, between 41°F to 135°F, is the temperature range that allows harmful bacteria to rapidly multiply in food. The most dangerous part of the Temperature Danger Zone is the range between 125°F to 70°F. Therefore, using approved cooling techniques help to move food rapidly through these temperatures to keep food safe.

### Cooling Techniques

The following are techniques that will result in quickly and safely cooling food for cold storage.

Refrigerator walk-ins or reach-ins are designed to keep cold food cold, not make hot food cold. Refrigerators cannot cool hot food to 41°F within the required cooling time requirements. Also, placing hot food into refrigeration can raise the temperature of other TCS foods in storage into the Temperature Danger Zone causing them to become unsafe. Therefore, use the following techniques to safely cool food for storage.



**A blast chiller** - place hot food into the chiller until cooled. Although a relatively expensive piece of equipment to acquire, high volume establishments may find the cost is offset by faster cooling times. This is one of the fastest and safest methods for cooling food. Monitor temperature and time to ensure cooling requirements are met.

**Ice bath** - place hot food into a container and submerge it into ice water. When appropriate, stir foods frequently to release heat and reduce the temperature evenly throughout.

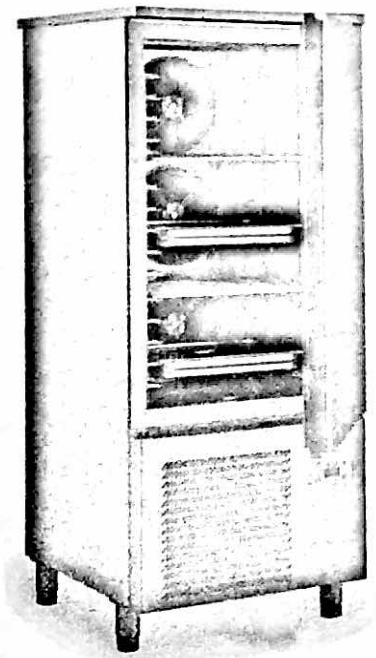
**Chill sticks or paddles** - use these hollow containers, constructed of durable food-grade plastic, by filling with water and freezing or filling with ice. When ice paddles or sticks are inserted into bulk foods, such as soups and sauces, the food temperature is quickly lowered. Monitor temperature and time to ensure cooling requirements are met.

**Small batch cooling** - divide food into smaller portions and store in shallow metal pans. Use an ice bath to cool divided food down to 70°F within two hours, then place into refrigeration. Monitor food temperature to ensure the food reaches 41°F according to two-stage cooling method.

All ready-to-eat or TCS food prepared in-house must be date marked before storing and is good for up to seven days. Include the day it was made or prepared as Day One.

## REHEATING FOOD PROPERLY

Food that has been previously cooked and properly cooled and stored may be prepared again for service if properly reheated. When reheated food will be hot-held, the item must be heated to an internal temperature of 165°F for 15 seconds, in two hours or less. This time limit minimizes exposure to the Temperature Danger Zone.



Blast chiller



Ice paddle

## BEST EMPLOYEE PRACTICE

### The Temperature Danger Zone

Employees must know the temperature ranges that make up the Temperature Danger Zone, between 41°F and 135°F. Employees must ensure that food spends as little time as possible in the Temperature Danger Zone. By following guidelines for proper thawing, cooking foods to their recommended minimum internal temperature for 15 seconds, cooling food according to the two-stage method, and always reheating food to no less than 165°F, employees are doing their part to ensure they are serving safe food.

# CHAPTER FIVE REVIEW QUIZ

## True or False

1. T\_\_\_\_ F\_\_\_\_ When cooling for storage, hot food must measure 70°F or lower within the first two hours.
2. T\_\_\_\_ F\_\_\_\_ Food on menus for children must be cooked well-done.
3. T\_\_\_\_ F\_\_\_\_ All microwave foods must be cooked to 165°F for 15 seconds and stirred to ensure that the heat is evenly distributed throughout.
4. T\_\_\_\_ F\_\_\_\_ To ensure accurate temperature measurements, thermometers must be regularly calibrated.

## Complete the Sentence

1. To measure the temperature of a food, completely insert the stem of the \_\_\_\_\_ into the center of the thickest part of the food item.
2. Four safe methods of cooling foods are: ice bath, small batch cooling, chill sticks or paddles and a \_\_\_\_\_ chiller.
3. \_\_\_\_\_ thaw food at room temperature.
4. Cooking food to its recommended internal \_\_\_\_\_ will destroy most harmful microorganisms.

## Multiple Choice

1. The Temperature Danger Zone is between:
  - a. 39°F to 135°F.
  - b. 40°F to 135°F.
  - c. 35°F to 135°F.
  - d. 41°F to 135°F.
2. All of the following are safe ways to thaw frozen food except:
  - a. Placing the frozen food in a refrigerator at 41°F or lower.
  - b. Placing the frozen food under drinkable running water at 70°F or lower.
  - c. Carefully covering the frozen food then place in a sanitized container at room temperature.
  - d. Cooking the frozen food as part of a regular cooking procedure.
3. Poultry must be cooked to a minimum internal cooking temperature of:
  - a. 165°F for 15 seconds.
  - b. 185°F for 15 seconds.
  - c. 120°F for 30 seconds.
  - d. 70°F for 15 seconds.
4. To correctly use a thermometer, it must be calibrated and \_\_\_\_\_.
  - a. chilled.
  - b. reheated.
  - c. sanitized.
  - d. insulated.

## CHAPTER 6

# CLEANING & SANITIZING

Cleaning and sanitizing are critical responsibilities for food establishments. To ensure that equipment and food preparation surfaces are safe, and to minimize foodborne illness risk, every establishment should have a master cleaning schedule for each shift, and also a “deep cleaning” schedule for each day. All employees must be properly trained in sanitation and committed to food safety. Cleaning and sanitizing are critical to food safety and have different roles; knowing the difference between the two and how to correctly perform each process will help ensure safe food for customers.

**Cleaning** is the removal of food residues, dirt and grease. Proper cleaning is the first step in the process of making food contact surfaces like plates, utensils, glassware, cutting boards and cookware safe for use.

**Sanitizing** reduces harmful microorganisms to safe levels. This is done through the use of a chemical sanitizing solution or heat. Training on proper use of sanitizers and other chemicals used in your position should be explained by your manager as part of your employer’s Hazard Communication program.



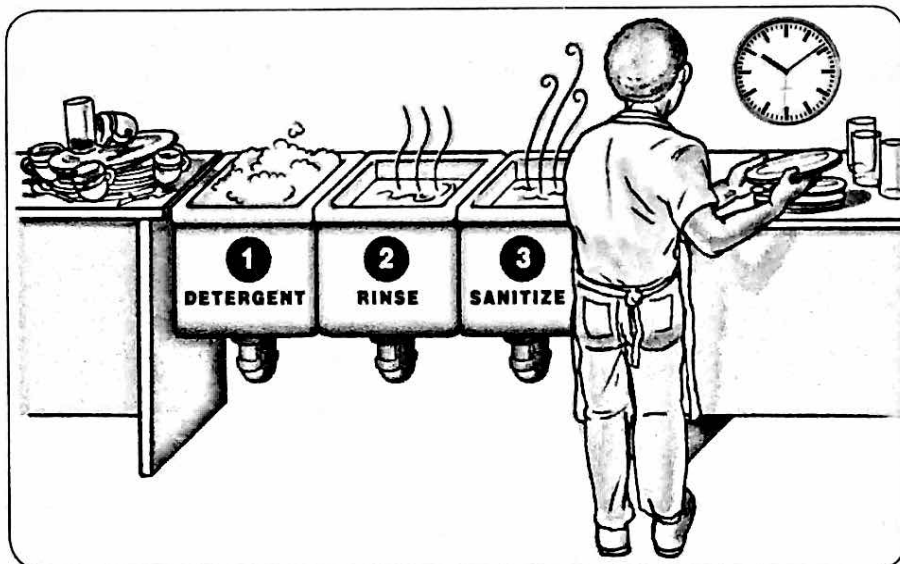
### Sanitizing Equipment and Food Contact Surfaces

Food contact surfaces and equipment such as prep tables, cutting boards, slicing machines, utensils, and refrigeration door and drawer handles must be cleaned and sanitized often, typically several times each day. Equipment must not only be cleaned and sanitized, but must be maintained and in good repair to prevent physical contamination and cross-contamination.

If an individual becomes ill on premise and discharges vomit or diarrhea, follow policies for controlling the spread of these contaminants. Employees cleaning up the mess must take personal precautions with gloves, and masks when necessary, to also protect themselves from these contaminants.

### CLEANING AND SANITIZING TECHNIQUES

Non-food contact surfaces and equipment must be regularly cleaned and in good condition.



### Manual / Three Compartment Sink

To manually clean and sanitize in a three compartment sink, follow these steps:

1. Pre-scrape
2. Wash
3. Rinse
4. Sanitize\*
5. Air-dry

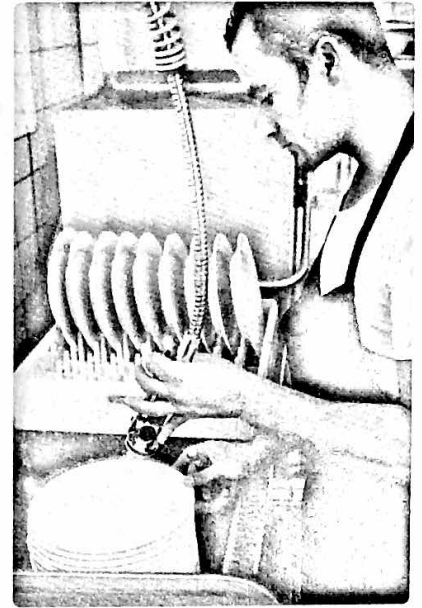
\* NEVER RINSE ITEMS AFTER SANITIZING



## Warewashing Machines

The two primary types of commercial dish machines are distinguished by whether they sanitize using high temperature water or chemical solutions. It is essential to follow the manufacturer's instructions and recommendations for proper use. These steps apply to both types of machine:

1. Begin by removing any loose or heavy soil and dirt by scraping and rinsing surfaces.
2. Load machine so all surfaces of items will be sprayed by the wash, rinse and sanitize cycles. Do not overload the racks or pack items too closely together.
3. Run the items through the cleaning cycle following the manufacturer's instructions.
4. Remove racks from the machine. Allow racks to drain and air dry on a clean, sanitized surface. Only touch clean wares and equipment when dry, and with properly washed or gloved hands.
5. Warewashing machines should be checked and cleaned frequently to ensure proper operation. Be sure all manifolds and water jets are free of food debris, lime or calcification build up, and open and fully functioning.



**Chemical Sanitizing:** Solutions made with chlorine, iodine or quaternary ammonium are approved for sanitizing in a food service operation, when used according to directions for correct water temperature and concentration. Follow label directions when using any chemical sanitizing product. Always use a test kit to measure and maintain correct concentration. Do not rinse surfaces after sanitizing and do not wipe dry. Always allow clean items to air dry.

**Hot Water Sanitizing:** For heat sanitizing, the final rinse cycle water temperature should be 180°F for moving racks and 165°F for stationary racks. Be certain that the machine is maintaining the proper temperature. If the temperature is too low, then it is not sanitizing. If the temperature is too high, the water will evaporate before it sanitizes. High-temperature machines should be checked frequently to verify water temperatures.

When manually sanitizing dishes and equipment, items must be completely immersed in water of at least 171°F for at least 30 seconds. Water temperature must be continually checked and replaced if not at least 171°F. Remove items from the sanitizing solution and allow to drain and air dry on a clean, sanitized surface. Be sure to wash hands before handling dry sanitized dishes.

## Cleaning and Sanitizing Fixed or Clean-in-Place Equipment

Manufacturers will typically provide instructions for cleaning. However, the following are good guidelines should instructions not be available.

1. Do not disassemble equipment or begin cleaning unless the power is disconnected.
2. Disassemble equipment, and manually or machine wash, rinse and sanitize any individual removable parts.
3. Using manual washing and sanitizing steps: wash, rinse, and sanitize all food contact surfaces of the equipment.
4. Wash, rinse, and sanitize all non-removable surfaces of the equipment.
5. Allow all parts to air dry.
6. Reassemble the equipment with clean hands.
7. Re-sanitize any food contact surfaces that were touched during reassembly.

## Sanitizer Buckets and Wiping Cloths

Always keep cleaning cloths separated by what they are used for - use different cloths to clean food contact surfaces and non-food contact surfaces. Between uses, rinse and store cloths in sanitizing solution, with separate buckets clearly labeled for food surfaces or non-food contact surfaces. Do not use sponges on food contact surfaces such as dishes, utensils, and cutting boards. Use test kits to ensure proper concentration of sanitizer solutions.

Remember, always review the concentration levels recommended by the sanitizer's manufacturer. If there is a conflict between the chart in this chapter and the manufacturer's guidelines, use the guidelines established by the manufacturer.

## Manual & Mechanical Sanitization Levels

MINIMUM CONCENTRATION (PARTS PER MILLION - PPM)	pH 10.0/MINIMUM TEMPERATURE	pH 8.0/MINIMUM TEMPERATURE	CONTACT TIME (SECONDS)
Chlorine: 50 - 99 ppm	100°F (38°C)	75°F (24°C)	7
Iodine: 12.5 to 25 ppm	pH=5.0 or per label and H <sub>2</sub> O is at least 68°F (20°C)		30
Quaternary Ammonium: per label	Water hardness ≤ 500 ppm or per label and H <sub>2</sub> O is at least 75°F (24°C)		30
Hot water sanitizing in a three compartment sink requires a water temperature of 171°F and items immersed for at least 30 seconds.			

## General Cleaning

It is necessary to clean spills as they occur to maintain general sanitation standards and safety in the establishment. When cleaning floors, use a mop and bucket with a cleaning solution mixed according to label directions and be sure to post warning signs for wet floors.

When cleaning floors, walls and ceilings, be sure food is protected. Reduce risk of contamination by cleaning after closing or between shifts. Protect food contact surfaces from contamination by covering them as appropriate during cleaning. Use only dust-less methods of cleaning floors and walls, such as vacuum cleaning or wet cleaning.

Guest areas, especially floors, must be thoroughly cleaned as frequently as needed to maintain safety and sanitation.

## Cleaning Equipment and Chemical Storage

Maintain and store cleaning equipment away from food, utensils or other food contact surfaces. Use a mop sink for cleaning mops and other cleaning tools; never use handsinks, three compartment sinks or food prep sinks. Hang all cleaning tools to dry. Never leave a wet mop in the bucket overnight. Mop water should always be disposed of as sewage and emptied into a floor or mop drain. Never dispose of mop water or sanitizing solutions in a hand, prep or three compartment sink, toilet, urinal, or out the back door of the building.

To prevent cross-contamination of food, cleaning supplies, equipment, and chemicals should be stored separately and well away from food, dishes, utensils and food preparation areas. All cleaning chemicals, solutions, and compounds must be in their original container or clearly re-labeled in a dispensing or storage container.

### BEST EMPLOYEE PRACTICE

#### Cleaning and Sanitizing

**Awareness** - detailed attention to cleaning and sanitizing ensures a better environment for food safety. It is also a fundamental step in the prevention of foodborne illness.

**Knowledge** - discuss the correct use of chemicals with your supervisor and post sanitizing times, temperatures and concentrations on the walls in the dishroom to serve as a visual reminder.

# CHAPTER SIX REVIEW QUIZ

## True or False

1. T\_\_\_\_ F\_\_\_\_ Sanitizing is the first step in creating a safe food contact surface.
2. T\_\_\_\_ F\_\_\_\_ Cleaning involves removing dirt, food residue and grease.
3. T\_\_\_\_ F\_\_\_\_ After sanitizing, dishes should always be dried with a clean towel.
4. T\_\_\_\_ F\_\_\_\_ Cleaning and sanitizing are critical to food safety in food service operations.

## Complete the Sentence

1. \_\_\_\_\_ involves the removal of food residue, dirt and grease.
2. \_\_\_\_\_ is the step that eliminates harmful microorganisms on a food contact surface.
3. The two ways to sanitize surfaces and equipment in food service establishments are with \_\_\_\_\_ or \_\_\_\_\_ solutions.
4. To prevent \_\_\_\_\_ of food, cleaning supplies, equipment and chemicals should be stored separately and well away from food, dishes, utensils and food contact surfaces.

## Multiple Choice

1. Which of the following must be cleaned and sanitized?
  - a. Utensils
  - b. Food prep surfaces
  - c. Clean-in-place equipment
  - d. All of the above
2. Which of the following are approved for sanitizing food contact surfaces and equipment?
  - a. Zinc
  - b. Mercury
  - c. Chlorine
  - d. All of the above
3. Sanitizing is done to reduce what?
  - a. Drying time
  - b. Microorganisms
  - c. Platelets
  - d. Dirt particles
4. Proper three compartment sink cleaning procedures are:
  - a. pre-wash, wash, rinse, sanitize and air-dry.
  - b. wash, rinse, sanitize, towel dry.
  - c. pre-wash, rinse, sanitize, towel dry.
  - d. wash, rinse, air-dry.

# CHAPTER 7

## PEST CONTROL

Pests and insects carry and spread microorganisms that can contaminate food and food contact surfaces resulting in the transmission of diseases. Pest control must be a top priority for all employees to help maintain a sanitary food service facility.

Common insects and pests, which are attracted to food service establishments, include:

- Rodents – rats, mice, squirrels
- Insects – flies, cockroaches, weevils, silverfish, wasps, ants
- Birds – seagulls, crows, pigeons, sparrows

### INSPECTING FOR PESTS

Routine self-inspections for pests are necessary to minimize risk of pest infestation. Food service employees should carefully inspect all food deliveries and report observations of signs of pests. Be sure to look in storage rooms, areas around the receiving area and back door, trash receptacles, and any dark, undisturbed area.

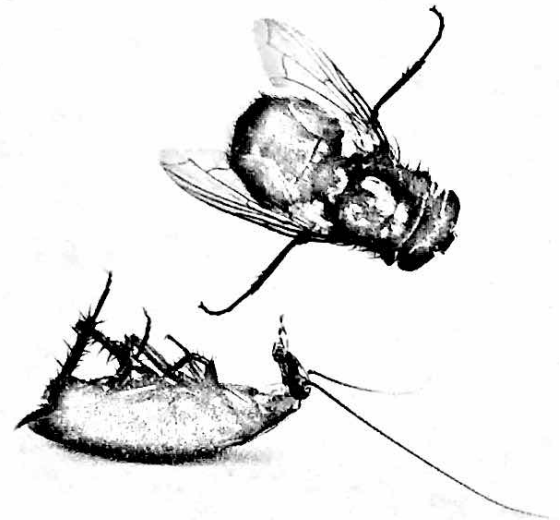
When inspecting the premises, look for these signs:

- Live or dead rodents, insects, eggs or larvae
- Rodent or insect droppings
- Damage to boxes or cases of food; wood, plaster, cardboard
- Gnaw or chew marks directly on food packaging
- Food spills in storage areas
- Unusual odors – associated usually with mice or cockroaches
- Tracks or tail marks in dust or powder (such as flour)
- Black, greasy-looking smears or marks on walls, pipes or counters

### PREVENTING PESTS

Pest control can be easily maintained with careful attention to the facility and consistent ongoing sanitation and maintenance practices. No one wants to work or eat in a place infested with pests. The easiest way to combat pests is to prevent them from entering the operation. Following these simple steps can prevent pests from becoming a problem in a food service establishment:

- Carefully inspect all deliveries for pests
- Refuse deliveries containing insects or showing signs of pests
- Dispose of trash properly and frequently
- Keep trash cans and dumpsters areas clean and free of debris
- Be sure all trash gets inside the dumpsters, and keep dumpster doors closed
- Keep screens on windows and vents in good repair
- Be sure exterior doors have self-closing devices, door-sweeps, and tightly seal
- Never prop exterior doors open
- Cover all holes and openings around pipes, or other exterior accesses that can invite pests in
- Cover exterior and roof ventilation pipes and ducts with approved screens
- Seal wall and floor cracks



- Use a professional pest control service
- Be sure restrooms are clean and pest free, and enclosed to minimize pests
- Frequent sanitation and housekeeping should be performed during every shift

## **BEST EMPLOYEE PRACTICE**

### **Pest Control**

If you observe any uncovered openings to the outside of the food establishment, be certain to notify your manager and supervisor. The best way to control pests is to keep them out. Immediately notify a manager or supervisor if any risk factors or signs of pests are observed.



# CHAPTER SEVEN REVIEW QUIZ

## True or False

1. T\_\_\_\_ F\_\_\_\_ Pests carry microorganisms that can contaminate food and food contact surfaces.
2. T\_\_\_\_ F\_\_\_\_ Pest control is only the manager's responsibility.
3. T\_\_\_\_ F\_\_\_\_ Pest control includes tight sealing, self-closing exterior doors.
4. T\_\_\_\_ F\_\_\_\_ Rodents, insects and birds are considered pests.

## Complete the Sentence

1. Regular self \_\_\_\_\_ of the establishment are necessary to look for signs of pests.
2. Carefully inspect all food deliveries for \_\_\_\_\_ of pests.
3. If you see damage to food packaging, gnaw marks and rodent or insect droppings, your establishment may have a \_\_\_\_\_ infestation.
4. It is very important to remove \_\_\_\_\_ from the establishment so as not to feed pests.

## Multiple Choice

1. When self-inspecting for pests, a sign that pests are present is:
  - a. the season is spring or summer.
  - b. the back door does not tightly seal.
  - c. black, greasy-looking marks on walls, pipes or counters.
  - d. the dumpster has not been emptied.
2. Pests can contaminate food and food surfaces by spreading:
  - a. fur.
  - b. microorganisms.
  - c. amoebas.
  - d. arthropods.
3. If an employee observes signs of pests, he or she should:
  - a. tell a friend.
  - b. tell a coworker.
  - c. tell a manager.
  - d. be quiet and keep working.
4. Pests can be easily controlled with careful and consistent attention to \_\_\_\_\_ and maintenance.
  - a. sanitation
  - b. temperature control
  - c. time management
  - d. none of the above