



# Providing Safe Food

Nevada Aging and Disability Services Division (ADSD)

Food Safety Tutorial for Title III-C Food Service Staff and Volunteers

# Public Health Authority

- An agency or authority that is responsible for public health matters as part of its official mandate.
- Nevada Public Health Authorities:
  - Carson City: Carson City Health and Human Services, <http://gethealthycarsoncity.org/environmental-health/food-inspection/>
  - Clark County: Southern Nevada Health District, <http://www.southernnevadahealthdistrict.org/eh/index.php>
  - Washoe County: Washoe County Health District, <http://www.washoecounty.us/health/ehs/index.php>
  - All Other Areas: Nevada Division of Public and Behavioral Health (Formerly the State Health Division), [http://health.nv.gov/BFHS\\_EHS.htm](http://health.nv.gov/BFHS_EHS.htm)
- Health regulations should be reviewed on a regular basis. Always follow the most current local health ordinances, take training and obtain a health/food handler's card, if required.
  - Viewing this training and passing the food safety tutorial exam satisfies ADSD regulations for food service staff and volunteers only. Program directors and head cooks must also maintain ServSafe certification.

# Foodborne Illness

- A disease that is transmitted by eating or handling contaminated food.
- An outbreak is an incident in which two or more people experience the same illness after eating the same food.
- Those who are highly-susceptible to severe infections from foodborne pathogens include:
  - Infants and young children;
  - Pregnant women;
  - Elderly individuals; and
  - Others with weakened immune systems.
- Foodborne illnesses may be very severe and could be fatal.
- Lawsuits, increased insurance, and the loss of clients, staff, reputation and more could occur as a result of an outbreak.

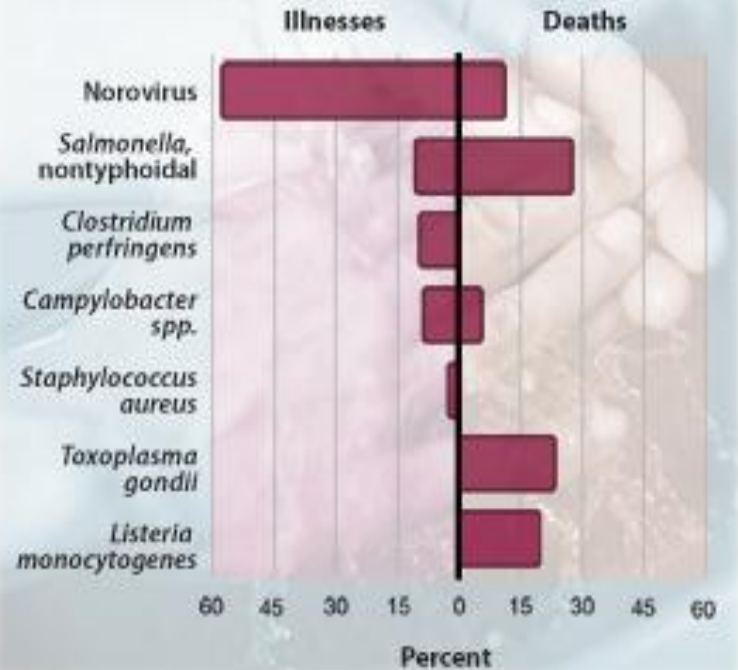


# 2011 Estimates of Foodborne Illness in the United States (CDC.gov)

The Centers for Disease Control and Prevention (CDC) estimates that each year roughly 1 in 6 Americans (or 48 million people) get sick, 128,000 are hospitalized, and 3,000 die of foodborne diseases. Estimating illnesses, hospitalizations and deaths for various types of diseases is a common and important public health practice. The 2011 estimates provide the most accurate picture yet of which foodborne bacteria, viruses, and microbes ("pathogens") cause the most illnesses in the United States.

<http://www.cdc.gov/Features/dsFoodborneEstimates>

**Top pathogens contributing to domestically acquired foodborne illnesses and deaths, 2000–2008**





# How Food Becomes Unsafe

Contamination ~ The presence of harmful substances in food.

Contamination can occur from:

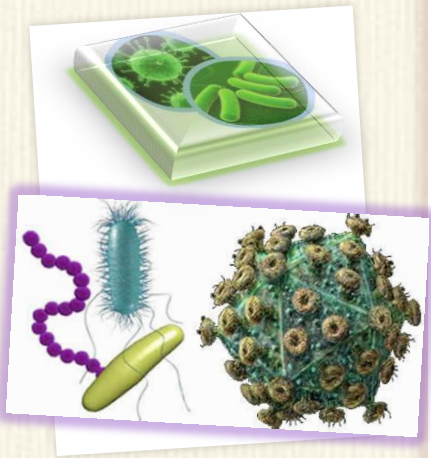
- Biological Hazards
- Chemical Hazards
- Physical Hazards

Some contaminants are naturally found in food, others are introduced from an outside source.

Do not serve food that is, or may be, contaminated. Contact your supervisor immediately!

# Biological Contaminants

- Harmful microorganisms, or pathogens.
- Four types of pathogens can contaminate food and cause illness:
  - Bacteria (*E. Coli*, *Salmonella*, *Shigella*, etc.)
    - Found almost everywhere. Some keep people healthy, others cause illness.
    - Cannot be seen, smelled or tasted.
    - Will grow in rapid numbers if certain conditions are present (See FAT TOM).
    - Some survive freezing temperatures.
  - Viruses (*Hepatitis A*, *Norovirus*, etc.)
    - Require a living host to grow/reproduce.
    - Do not grow in food, but can be transferred through food and remain infectious.
    - Usually transmitted due to poor personal hygiene.
    - Viruses may survive both freezing and cooking.
    - Preventing contamination is key.



# Biological Contaminants (2)

- Parasites
  - Require a host to live and reproduce.
  - Commonly associated with seafood, wild game and food processed with contaminated water.
- Fungi (*yeasts, molds, mushrooms*)
  - Some molds and mushrooms produce harmful toxins. Throw out food that has become, and isn't intended to be, moldy.
  - Toxins are also naturally present in some plants and fish, or can develop in fish that have not been time/temperature controlled.
  - Toxins are not destroyed by cooking or freezing.

# Conditions that Encourage Rapid Growth of Bacteria ~ FAT TOM

Bacteria need six conditions to grow: Food, Acidity, Temperature, Time, Oxygen and Moisture. These conditions are known by the acronym FAT TOM:

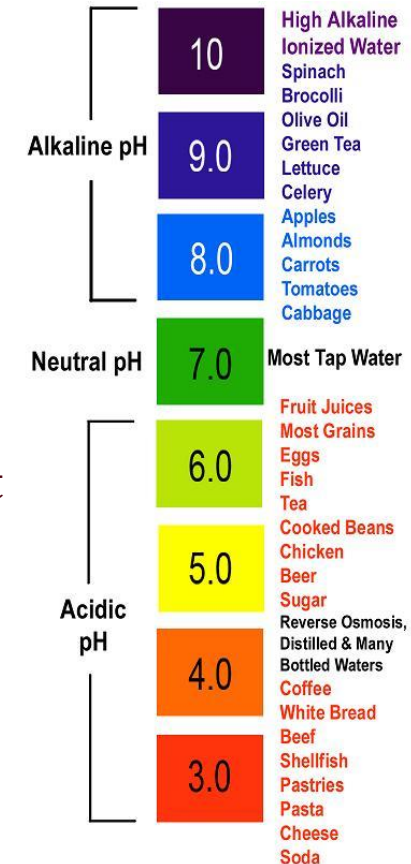
**F = Food**



Potentially Hazardous Food, also known as TCS (Time and Temperature Control for Safety) food, better support the growth of bacteria. Many TCS foods are high in protein.

**A = Acidity**

Bacteria grow best in food that is neutral to slightly acidic.

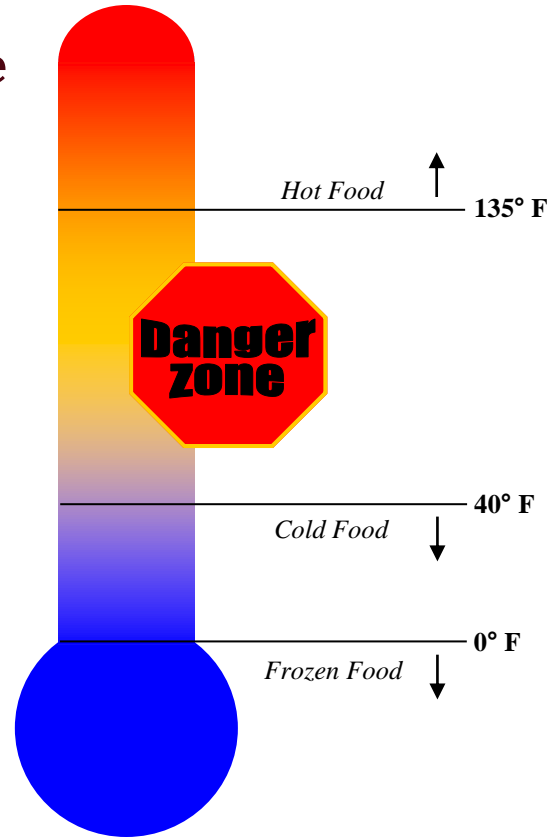




# Conditions that Encourage Rapid Growth of Bacteria ~ FAT TOM (2)

## T = Temperature

Bacteria grow rapidly in the **temperature danger zone**, which is between 41° F and 135° F\*, and even more rapidly between 70° F and 120° F.

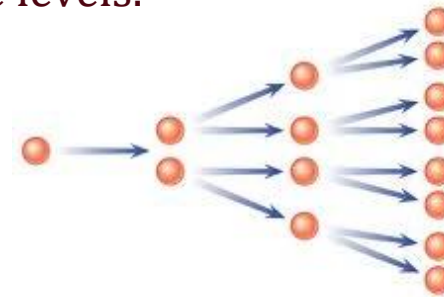


**\*135° F is the FDA recommendation. Your local health authority may use 140° F.**

## T = Time



The longer food is kept in the temperature danger zone, the more opportunity bacteria has to multiply to unsafe levels.



# Conditions that Encourage Rapid Growth of Bacteria ~ FAT TOM (3)

**O** = Oxygen



Some bacteria require oxygen to grow. Others can grow in spite of the absence of oxygen.

**M** = Moisture



Bacteria grow well in food high in moisture.

# Potentially Hazardous, or Time and Temperature Control for Safety (TCS) Foods

Foods that favor rapid growth of pathogens. Examples include:

- Milk, shell eggs and other dairy products
- Sliced melons, cut tomatoes, cut leafy greens, baked or broiled potatoes
- Cooked rice, beans or other heat-treated plant foods
- Fish, shellfish, crustaceans
- Untreated garlic and oil mixtures
- Poultry, beef, pork, lamb
- Sprouts, raw seeds , tofu and other soy-protein foods



**Time and temperature control with these types of food is crucial!**



# Chemical Contaminants

- Examples include:
  - Cleaning and sanitizing agents
  - Polish, lubricants, pesticides
  - Personal hygiene products, such as hand lotion and hairspray
  - Certain types of kitchenware and equipment that are not food grade (pewter, zinc, copper, painted pottery)
- Only use chemicals that are approved for food service.
- Store chemicals away from food and food preparation areas. Never store chemicals above food or food-contact surfaces.
- Follow the manufacturer's instructions. Use test strips to measure the amount of chemical in sanitizing solution.
- Keep a current Material Safety Data Sheet (MSDS) for each chemical used in the facility and store the documents in an area all staff and volunteers can access.



# Physical Contaminants

- Examples include:
  - Fruit pits, bones, feathers, stems, broken glass
  - Hair, fingernails, jewelry, bandages, gum
  - Metal shavings from opening a can or debris from the can opener itself
  - Staples, pencil lead, piece of a glove
  - Dust and dirt – Don't forget to clean the stove's hood and fire suppressant system, as well as the ceiling, including air vents and light covers. If your facility allows you to use a fan in the kitchen, keep it clean!

# Hazard Analysis and Critical Control Points (HACCP)

Each facility should have a HACCP system in place. The system identifies hazards within the flow of food and implements controls based on the hazards identified.

*Flow of food:*



- A well-designed food safety system will establish controls to prevent time-temperature abuse, cross-contamination and poor personal hygiene.

# Receiving Food

- Purchase food from approved, reputable suppliers.
- Food used to prepare meal cannot be donated from a client.
- Inspect all food when it is delivered and store it quickly in first in, first out order.
- Food should be received at the proper temperature. Check the temperature.
  - Refrigerated food at 41° F or lower
  - Frozen food at 0° F or lower
- Food must be unexpired and sealed with no holes or tears in the packaging.
- Check for signs of pest infestation and/or contamination.
- Bulging cans is a sign of Clostridium botulinum, which can cause botulism - a rare but serious paralytic illness.
- Dented cans may be contaminated by metal fragments. Food in rusted cans may also be contaminated.
- Work with your supervisor to identify food that needs to be denied and sent back to the supplier.

# Storage

- Storage Temperatures:
  - Refrigerator = 40° F or lower
  - Freezer = 0° F or lower
  - Dry Storage = 50° to 70° F
- Keep all storage areas clean and dry.
- Store items away from the walls and at least 6 inches off the floor. This includes cookware, cutting boards and other equipment that touches food.
- Store cups and bowls inverted on a clean, sanitized surface. Store utensils with the handles up.
- Store chemicals and cleaning supplies according to the manufacturer and only where designated by your supervisor - never near food or food prep areas.



# Storage (2)

- Do not overload the refrigerator and freezer, as performance will be affected and food may not achieve or retain proper temperature.
- Wrap or cover all food completely. Use containers intended for food. Do not use a container if you don't know where it came from. It could have contained chemicals or other toxins.
- Labeling:
  - All food must be labeled with a use-by date and stored to ensure the oldest food is used first (first in, first out).
  - All food prepped at the facility that is ready to eat, must be stored with a label containing the name of the food and a use-by or expiration date.
  - Do not use food past its use-by date. Contact your supervisor. Remember to log discarded food on your food inventory. Label it clearly as unusable.

# Storage (3)

- Store ready-to-eat food separately from raw seafood, meat and poultry to help prevent cross-contamination. If that is not possible, store food in the following order from top-to-bottom within the appliance:
  - Cooked and ready-to-eat food
  - Cleaned, prepared fruits and vegetables
  - Unwashed fruits and vegetables
  - Raw seafood, whole cuts of meat and shell eggs
  - Raw ground meat
  - Raw poultry and stuffed foods
- Keep temperature logs for the dry storage area, refrigerator(s) and freezer(s). Notify your supervisor if temperatures exceed the maximum allowable for the area.

# Thawing Food

- Never thaw food at room temperature.
- Foods should be thawed:
  - Under refrigeration at 40° F or less;
  - Under potable running water at 70° F for no more than two hours;
  - In the microwave, if cooked immediately afterwards; or
  - As part of the cooking process.
- Use the food as soon as possible after it has been thawed.
- Pay attention to the temperature of the food as it thaws.



# Cooking Food

## Key Preparation Practices:

- Prepare food in small batches.
- Chill ingredients prior to use.
- Return prepped food to the refrigerator quickly to maintain proper temperature until cooked or served.
- If leftover meat is used, make sure it was cooked and cooled properly, and follow guidelines for using leftovers as provided by the local public health authority.
- Cook food to its proper minimum internal temperature and maintain the temperature for the amount of time required by the local public health authority.
- Do not use any spoiled food, as cooking will not destroy spores or toxins.
- Use a thermometer and log the temperatures.
- Keep a test meal in the freezer for 30 days in case of a foodborne illness outbreak.



# Cooling Food

- Food must be cooled quickly to get it out of the temperature danger zone as soon as possible. TCS food must be cooled to 41° F or lower. Cover food tightly after it has been properly cooled.
  - The local public health authority may require the use of a loose covering help avoid contamination of the food as it cools.
- Follow your local public health authority's guidelines for the amount of time allowed for cooling.
  - Some indicate it must be cooled within four hours; others say you may take six hours, but only if the food cooled from 135° F to 70° F within the first two hours and to 41° F in the remaining four hours.
- There are various cooling methods. Choose the one that best fits the type of food being cooled:
  - Divide large quantities of food into smaller portions and refrigerate.
  - Place into shallow pans or trays and refrigerate.
  - Use a blast chiller or other equipment designed to cool food rapidly.
  - Use an ice water bath. Be sure to add ice when needed and stir the food.
  - Other methods approved by your local public health authority.



# Reheating Food

- Do not reheat food using hot holding equipment, such as steam tables or heat lamps. Return the food to the stove, oven, microwave or other food preparation equipment.
- If using leftovers (as approved by the local public health authority), you must ensure the food is safe for consumption (received, stored, cooked, held and cooled properly).
- Reheat TCS food for hot-holding to an internal temperature of 165° F for 15 seconds within two hours from start to finish, unless otherwise directed by the health authority.
- Home-delivered meal programs should provide clients with instructions on reheating food properly.

# Temperature Controls

- Check the temperature of food in the refrigerator and freezer each morning and several times during the day to ensure the equipment is working properly. If the equipment has an external temperature gauge, utilize an internal gauge to verify its accuracy. Maintain temperature logs.
- Cook food to its proper minimum internal temperature and maintain the temperature for the amount of time required by the local public health authority to finish the cooking process.
- Hold **cold** food at 40° F or lower.
- Hold **hot** food at 135° F or higher unless the local public health authority requires 140° F.
- Check the temperature of food held in the steam table often. A good practice is to check the temperature every two hours to allow for corrective action before the food must be thrown out. Keep temperature logs.
- Food must be covered when you're not serving. Stir the food frequently and scoop from the bottom when serving.

# Temperature Controls (2)

- Do not mix fresh food with food being held.
- Never let food remain in the temperature danger zone for more than four hours. This includes time accumulated during receiving, preparation and serving, as well as delivery time for home-delivered meal programs that do not utilize a temperature control system to keep food out of the danger zone.
- Notify your supervisor if food is not being kept at the proper temperature for guidance on properly reheating or discarding the food, as applicable according to the amount of time spent in the danger zone.
- Don't overdo it! When food is held long, or too hot or cold, the quality of the product may be compromised and clients may become dissatisfied with the service.





# Using a Thermometer



- Select the correct thermometer for the job. Ask your supervisor for assistance.
  - Bi-metallic, stemmed thermometers are commonly used.
  - Do not depend on a time-temperature indicator (TTI) in a roast, turkey or other type of food, as it may not produce accurate results.
- Calibrate the thermometer regularly, or when bumped or dropped, according to manufacturer's specifications. One calibration method, an ice slurry, is below.
  - Fill a glass with crushed ice, add clean water and stir well.
  - Immerse stem of thermometer into the water at least two inches without touching the sides or bottom of the container.
  - Wait a minimum of 30 seconds and check the temperature.
  - The thermometer should read 32° F. If it doesn't adjust the thermometer by holding the nut under the head of the thermometer with a wrench or other tool, and turn the head so the pointer reads 32° F.
  - There is also a method for calibrating a stem thermometer using boiling water, which can be found online.

## Using a Thermometer (2)

- Only use clean, sanitized thermometers to avoid introducing contaminants into the food. Don't assume the last person cleaned the thermometer properly; do it again.
- When taking the temperature of food, insert the thermometer into the thickest part, which is usually the center of the food item, away from bones. Make sure the dimple on the stem of the thermometer is fully inserted into the food, as applicable.
- Wait until the pointer or digital reading has stopped and is displaying a steady reading before documenting the temperature.
- Check a second spot on the food item to be sure you've collected a valid temperature.
- Clean and sanitize the thermometer and allow it to air-dry before inserting it back into its case. Keep the case clean.



# Cross-Contamination

- The act of spreading bacteria and viruses from one surface to another. Juices from raw meats or germs from unclean objects touch cooked or ready-to-eat foods.
- Just a few examples of how to avoid cross-contamination:
  - Clean, rinse and sanitize all surfaces after each task, wash your hands and change your gloves.
  - Practice good personal hygiene.
  - Store food in the correct order (see Storage). Do not use the same container for raw and cooked foods without properly cleaning and sanitizing it between uses.
  - Wash fruits and vegetables before placing on a cutting board, cutting or cooking from a whole state.
  - If your facility has a salad bar or other self-service food station, be sure to provide a serving utensil for each food item, which has a long handle that will not fall into the food.
- If possible:
  - Prepare and store raw and ready-to-eat food in separate areas.
  - Use color-coded cutting boards and assign colors to different types of food, such as raw meat, raw poultry, raw fish, cooked meals/poultry/fish, vegetables, fruit and dairy products.

# Hand Hygiene

- Hands must be washed following any activity that may have introduced contaminants. Examples include:
  - After using the restroom, handling soiled tableware, using a tissue, scratching your face, head or body, touching your hair, eating, drinking, smoking, wiping your hands on or touching any unsanitary surface, cleaning equipment or tables, handling potentially hazardous food, touching a drawer handle or opening the refrigerator or freezer, and numerous other activities.
- Hands must be washed prior to putting on gloves. Gloves must be changed, and hands re-washed, after each activity that may have introduced contaminants.
- Hands must also be washed, and gloves changed, if applicable, every four hours when continuously working on a single task. Never wash, rinse or reuse gloves.
- Hand sanitizers must not be used as a substitute for washing hands. If sanitizers are used, hands must be properly washed first. Let the sanitizer dry before you touch any food or equipment.
  - Store and dispense sanitizers according to the manufacturer's and local public health authority's instructions.

# Hand Hygiene(2)

- Wash your hands using only a designated hand washing sink. Do not use the sink for other activities, such as dumping mop water. Do not block access to the sink.
  - The sink should have warm running water, soap, single-use paper towels and a garbage receptacle.
- Hand washing procedure\*:
  - Wet your hands and exposed portions of your arms with running water as hot as you can comfortably stand.
  - Apply soap – use enough to build up a good lather.
  - Scrub hands and arms for at least 15 seconds.
    - Be sure to clean under your nails and between your fingers.
  - Rinse thoroughly with running water.
  - Dry hands and arms with a single-use paper towel or hand dryer. Do not use a cloth towel, your clothes or apron.
  - Use a paper towel to turn off the faucet and open the bathroom door, if applicable.

\* If the local public health authority requests a differently procedure, such as a longer scrubbing duration, the program must abide.

# Cleaning and Sanitizing

- Always follow the manufacturer's directions when using cleaners and sanitizers.
  - Prepare sanitizing solution as directed and change it often; it will lose its effectiveness.
- Clean and sanitize any surface that touches food, including cookware, equipment, cutting boards, prep tables, and other surfaces. Also clean and sanitize all handles knobs and other items that may have become contaminated. Keep the facility clean; wipe up spills immediately.
  - Clean, rinse, sanitize and allow to air-dry.
  - Do so before working with a different kind of food, anytime you are interrupted and the surface could have become contaminated, after four hours of continuous use, and when you are done using the surface.
- Check chemical levels for the dishwasher, as applicable, and in the sanitizing solution, with test strips designed for the specific chemicals used.
- Ensure dishwashers are cleaning and rinsing at the proper temperature. Follow the manufacturers instructions.

# Cleaning and Sanitizing (2)

- If a three-compartment sink is used, ask your supervisor for the proper cleaning and sanitizing procedure.
- Wash hands between loading and unloading dishwasher.
- Allow all items to air dry; towel-drying is prohibited.
- Worn, cracked and/or pitted equipment cannot be thoroughly cleaned and sanitized; it may hold pathogens. Notify your supervisor when equipment appears to be unsafe to use – this includes cutting boards.
- Wiping cloths should be designated for a specific use and stored in sanitizing solution between uses.
- Store cleaning equipment and supplies away from food.
- Store mops to ensure they air-dry properly.

# Home-Delivered Meals

- Wash your hands before leaving the facility. Keep hand sanitizer in your vehicle and use it when you're unable to wash your hands after leaving.
- Do not place bags to be delivered to a client on the ground or any other unsanitary surface, as contaminants could spread to the client's kitchen counter, refrigerator, freezer or other surface that could come into contact with ready-to-eat food. Make sure the delivery vehicle and food compartments/bags/holding areas are clean.
- Keep food temperature logs to monitor the safety of the food. If a hot shot vehicle is used to keep food hot and/or cold, hang a thermometer inside of the heating/cooling compartments to gauge the accuracy of the external reading. Log these temperatures as well and notify your supervisor immediately should the compartment not maintain the proper temperature.
- Ensure the client is aware that they must eat the meal right away (if hot), or place the meal(s) in the refrigerator or freezer, as applicable.
  - Ask the client if he/she needs assistance in putting away the food.
  - Check the refrigerator for expired and/or uneaten food and report that information to your supervisor for follow-up. Be sure to ask the client for permission to go into the refrigerator.
  - Make sure the client has been provided instructions on reheating his/her meal to the proper temperature if it is frozen or stored in the refrigerator. Also make him/her aware of the label on the meal(s), which should have an expiration date listed.



# Do Your Part to Keep Food Safe!

- Ask your supervisor for your agency's personal hygiene and illness reporting policies.
- If a client tells you he/she has a food allergy, seek assistance from your supervisor before providing the client any food.
- Do not work when you have jaundice (yellowing of the eyes or skin), or when sick with diarrhea, vomiting, fever, or any contagious illness.
- Properly care for and completely cover all wounds with an impermeable cover.
- Do not sneeze or cough on or near food or into your hand, without properly washing it afterwards.
- Do not touch your face, head, body, or hair. Doing such can cause particles to fall into food and/or will contaminate your hands/gloves.
- Wear clean clothing, including a clean hat or hairnet, bathe, and keep fingernails short and clean with no polish or false nails, unless you'll be wearing gloves and as approved by the local public health authority.
- Remove your apron when leaving the food prep area. Remove jewelry except items allowed by the local public health authority.

# Do Your Part to Keep Food Safe! (2)

- Do not drink, eat, smoke, or chew gum or tobacco when preparing or serving food, in food preparation areas or areas of sanitation, such as near clean equipment or kitchenware. Only perform these activities, as applicable, in an area designated by your agency.
- Do not pick up ready-to-eat food with your bare hands. Do not use the same utensil to handle raw and ready-to-eat food. Use a separate serving utensil for each food item.
- Do not pick up kitchenware where contact will be made with food, or the client's mouth. Do not stack glasses. Do not let tong or other utensil handles fall into food or ice.
- Ice must be handled, transported and stored in a manner which protects it from contamination. Only use a clean, sanitary, stainless steel scoop and do not store the scoop in the ice machine, unless otherwise allowed by the local public health authority.
- When taste-testing, use a clean utensil each time, or ladle a small amount of the food into a separate dish for tasting. Remove the dirty tableware from the food prep area immediately.
- Notify your supervisor when there is any evidence of insects or rodents in the facility. Effective, regular pest control measures must be in place.
- **WASH YOUR HANDS!**

# Almost Done...

- Time to take the ADSD Food Safety Tutorial Exam!
- Work with your supervisor to obtain the exam and answer sheet online at [www.nvaging.net/grants/IIC/food\\_safety\\_training.htm](http://www.nvaging.net/grants/IIC/food_safety_training.htm) or from your agency's assigned ADSD Resource Development (RD) Specialist.
- Do not copy answers from someone else. It is important that **you** understand food safety standards to help avoid an outbreak of foodborne illness, which could be fatal to those you serve.
- Email or fax your completed answer sheet to the ADSD RD Specialist for grading.
- Results will be sent to your supervisor.
- If you pass, a certificate of completion will be sent as well.
- Good luck!

