

Food Safety Manual for the Food Service Worker

(Revised July 2010)



New Fees Effective August 1, 2010

TESTING SITES & HOURS OF OPERATION

All offices are opened Monday - Friday, excluding the 10 major holidays
9:00am - 11:30am & 1:00pm - 4:30pm

Central Regional Office
1645 E. Roosevelt St.
Phoenix, AZ 85006
(SE corner of 16th St & Roosevelt)

Eastern Regional Office
1255 W. Baseline Rd., Bldg C, Ste #270
Mesa, AZ 85202
(SW corner of Baseline & Alma School
SW building of Mesa Executive complex)

Northern Regional Office
3101 E. Shea Blvd., #220
Phoenix, AZ 85028
(SW corner of 32nd St. & Shea)

Western Regional Office
8910 N. 43rd Ave, #101
Glendale, AZ 85302
(SW corner of 43rd Ave. & Olive)

Testing is conducted on a walk-in basis at our four locations.
Allow enough time to complete the test. Last exam will be given out at 11:15 am
and 4:15 pm; all exams are picked up at 11:30 am and 4:30 pm.
No testing is done on holidays. For further information, please call 602-506-2960.

FEES & ADDITIONAL INFORMATION

The card fees are as follows:

Food Service Worker test \$10.00 *per attempt required prior to taking the test*

Food Service Worker referral to class \$10.00

Food Service Worker card \$5.00

Food Service Manager card \$5.00

Duplicate copies with original are \$3.00 each.

Volunteer cards are free; however, to obtain a Food Service Worker card you must retest.

Please have exact change. Cash and credit cards accepted.

No bills larger than \$20.00 will be accepted.

Checks are NOT accepted.

Additional copies of this booklet are available at:

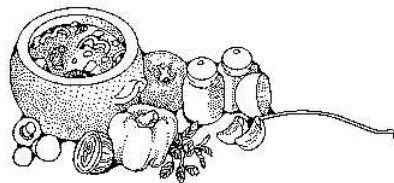
<http://www.maricopa.gov/EnvSvc/EnvHealth/SpecProg/FoodWorker/FoodWorker.aspx>



FOOD HANDLER CLASSROOM RULES

NOTE: We do not keep records of your card in our computer. Therefore, if you lose your card or it expires, you will have to re-test in order to get a new one.

- Your card must stay with your employer for the duration of your employment.
- The cards are valid for 3 years. Once your card expires, you must ***retest*** to obtain a new card.
- The exam consists of 25 questions, a passing grade is 20 or more correct answers.
- You may only take the test once a day. If you do not pass you may come back another day or have the option to be referred to a class.
- We are NOT able to show you the questions that were missed.
- Cheating will not be tolerated.
- Talking is not allowed while taking the test. If you have any questions, please raise your hand and the clerk will respond to you.
- You may take the study booklet home with you.
- Please keep all your personal belongings on the floor.
- Due to space limitations, the room is reserved for those who are studying and waiting to take the test.
- Anyone who creates a disturbance will be asked to leave.
- No food or beverages are permitted within the office or testing area.
- No profanity or foul language will be tolerated.
- Turn off all cell phones, pagers or any electronic device that may create a disturbance.
- Exams are available in the following languages: English, Spanish, Chinese, Vietnamese, and Serbo-Croatian.
- ***To obtain your Food Service Manager Card, bring your original certificate from an approved and recognized examination company (Prometric, ServSafe, National Registry of Food Safety, or any food certification examination approved and recognized by the Conference for Food Protection/American National Standards Institute) and a legal/valid photo ID.***



A permit holder shall immediately discontinue operations and notify the Department if an imminent health hazard may exist, such as a fire, flood, extended interruption of electrical or water service, sewage backup, misuse of poisonous or toxic materials, onset of an apparent foodborne illness outbreak, gross insanitary occurrence or condition, or other circumstance that may endanger public health.



Why Read this Manual?

Think about a restaurant where you recently ate or worked. Was the hot food hot and the cold food cold? Did the server have clean hands? Was there soap in the restroom? And paper towels? Was there trash on the floor? Was the table, equipment and counter clean? Maricopa County Environmental Services notices these things because any place where food is prepared and served to the public must be kept safe. You, your friends and family are also the public, and you should be interested in keeping a food establishment safe.

The fact is that people can get sick if food sits at room temperature, or if germs get into food or drinks. "Clean" is not the same as "safe." Hands may look clean, but if they have germs on them, they are not safe. If germs are in the food they are like poison, it is not safe.

According to the Center for Disease Control, it is estimated that each year in the United States alone there are 76 million cases of foodborne illness resulting in 325,000 hospitalizations and 5,000 deaths. This is why all food service workers, like you, must learn how to prevent illness by serving safe food. These safe habits will also help keep you and your family healthy. This manual will teach you these food safety methods.

After you read and study this manual, you will be ready to take the Food Service Worker Test. When you pass the test, you will receive a Food Service Worker Card; which is your license to work in food service.

What Makes People Sick from Food?



People can get sick when they eat food that has germs. Germs are too tiny to see with your eyes. If you do not wash your hands the proper way or keep food at the correct temperature, your customers may get sick from these germs. This is called **food-borne illness**, which is commonly called food poisoning. Some foods are more likely than others to support the rapid growth of germs that cause foodborne illness; these are called **potentially hazardous** foods. **Potentially hazardous** foods are moist, protein-rich foods that support the rapid growth of **germs**. These include meat, fish, poultry, eggs, dairy products, sliced melons and bean sprouts. However, the term also includes many other cooked foods such as rice, refried beans, soups, gravies, sauces and potatoes. Such foods must be held at proper temperature to avoid rapid multiplication of germs.

Unlike parasites, **bacteria** and **viruses** are not always killed by freezing. They will survive and start growing again under the right conditions. Not all **bacteria** and **viruses** are the same. Some make you sick by growing inside your body. Others make you sick by producing poisons called **toxins** in food if the food is not kept at the correct temperature. It is important to understand when a food is contaminated with germs the food will usually smell fine, look safe and taste good but can make someone very sick.

Germs grow very fast when they are kept warm in the "**Danger Zone**". Germs may still be found in or on dry foods such as tortilla chips, breads and cereals, but they are unlikely to grow there. All food service workers are responsible for making sure that the foods they serve are safe and wholesome. This study guide is designed to give you a basic understanding of how you can store, prepare and serve food safely. Almost all foodborne illnesses can be prevented by following the procedures outlined in this guide.

Germs are alive and need different conditions to survive and multiply, but in general they need the following conditions to grow: **food, moisture, temperature** and **time**. This guide examines ways on:

- How to prevent **bacteria, viruses**, and chemical poisons from transferring (**contaminating**) into food while it is under your control.
- Ways you can control the growth of harmful **germs** that may already be present in the foods you prepare and
- How to destroy the harmful **bacteria** in the food.



Four Causes of Food-borne Illness

1. There are different kinds of germs; **bacteria** are the most common. They are everywhere, they can grow fast, spoil food or cause foodborne illness. Some **bacteria** produce toxins which are poisonous and may make people sick. One kind of **bacteria** that you may have heard about is **Salmonella**; it is in dairy foods, poultry and eggs and it can cause very serious foodborne illness.
2. A **virus** is another kind of **germ** that causes **foodborne illness**. **Hepatitis A** is spread by a **virus**. Someone can have the **virus** and not know it. When a food worker with the **virus** does not wash his or her hands well after using the toilet, the **virus** can get on the food workers hands. This is one reason why there is a law that all food workers must wash their hands. Touching food with your bare hands is not allowed when handling **ready-to-eat food**. Suitable utensils such as spatulas, tongs, deli tissue, single-use, non-latex gloves, or dispensing equipment must be used.
3. **Parasites** are tiny worms or bugs that live in fish and meat. If they are frozen at a specific temperature long enough or cooked long enough, **parasites** will be destroyed.
4. **Chemicals**, such as rat bait or cleaners can cause some **foodborne illness**. You must be sure to keep all chemicals away from food.

Review Questions

1. What is a foodborne illness?
2. What is a potentially hazardous food?
3. What are the conditions in order for potential hazardous foods to grow?
4. What 4 things can cause foodborne illness? Which one is the most common?

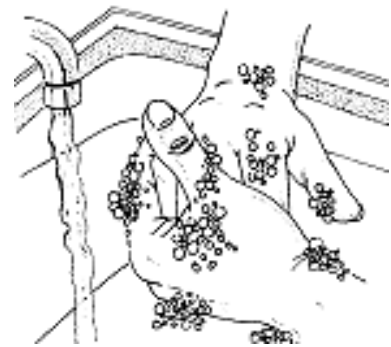
Keeping Contamination Out

Personal Hygiene and Cleanliness

Good personal hygiene practices are an essential part of providing safe food to your customers. Among these hygiene practices, the most important is hand washing. Washing your hands thoroughly and frequently is the most important thing you can do to keep harmful germs out of the foods you prepare. Most of us first learned how to wash our hands as children. Unfortunately, many food service workers fail to put what they've learned into effective practice.

Employees must wash their hands and forearms in an approved and dedicated hand washing sink using the following steps:

1. Moisten hands with warm water and apply hand soap.
2. Vigorously rub hands together scrubbing between your fingers, under your fingernails, your forearms, and the back of your hands. You must continue scrubbing for at least 20 seconds. It is the hand soap combined with the scrubbing action that removes the dirt and germs from your hands.
3. Completely rinse your hands under running water, dry them with a disposable paper towel and turn off the faucet with the same paper towel used to dry your hands.





Teach yourself to be aware of where your hands are at all times. Avoid bad habits like touching your hair or face, or wiping your hands on your clothes or apron. You must wash your hands everytime your hands or gloves become dirty or **contaminated**. Below are some examples of when to wash your hands:

- when you first arrive at work
- when you return to work after breaks
- before you touch food, clean utensils or work surfaces
- after you touch your face or mouth
- after covering a sneeze or a cough with your hands
- after you touch raw eggs, meat, fish, or poultry
- after you touch dirty dishes, garbage, or any other unclean surface
- after you use the toilet and before you start working with food again
- after you smoke or eat

Touching **ready-to-eat foods** with your bare hands is not allowed. **Ready-to-eat** foods are most often foods that will not receive further washing or cooking prior to consumption (Examples: salads, sandwich ingredients, fruit, bread, tortillas, cold salads, garnishes, chips and ice). A **barrier** is required such as non-latex gloves, deli papers, tongs, spatulas or utensils when you work with these foods. Non-latex gloves must be worn if you wear nail polish, fake nails, have sores, burns or cuts on your hands.

Be aware that neither gloves nor **hand sanitizers** are a substitute for proper hand washing. Before you put gloves on, you must still wash your hands in all the same situations you would if you were not using gloves, and you must switch to clean gloves whenever they become dirty or contaminated.

Smoking, eating or drinking in food preparation, service or storage areas is prohibited. You must wear a hat, hair net or hair restraint when working with open foods.

Do Not Work If You Are Sick

If you feel sick you should let your boss know and not go to work. Not only can you infect the people you work with, but you may also pose a danger of infecting others through the foods you prepare. This is especially true if you are sick with vomiting, fever, diarrhea, cold, flu, a runny nose, or a sore throat. For illnesses such as any of the **BIG FOUR: Hepatitis A virus, Salmonella typhi, Shigella spp. or Escherichia coli 0157:H7 (E. coli 0157:H7)**, you are required you to stay home until a doctor tells you it is okay to go back to work again.

Do not work with foods and tell your boss if you have an **infected** cut, burn or sore on your hand. If the sore or cut is not infected, cover it with a bandage and wear a non-latex glove over the bandage.

Personal Appearance and Behavior

You want to look clean and be clean when you are at work:

- Your clothes and apron must be clean.
- No painted or fake fingernails and fingernails must be cut and trimmed.
- All jewelry, with the exception of a simple wedding band, must be removed prior to handling food.
- Keep your hair clean and wear an effective hair restraint, such as a hat or hair net.
- Do not eat in the kitchen
- Use a lid and straw on your drink cup

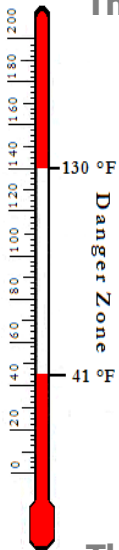
Review Questions

1. What is the most important personal hygiene practice?
2. When is it necessary to wash your hands?
3. What are ready-to-eat foods?
4. When must you stay home from work?



Temperature Control

The Danger Zone



Temperature can be used to control the rapid growth of harmful **bacteria**. Many of the foods you serve are **ready-to-eat**. It is important to guard these foods against **contamination** because they will not be cooked to remove **germs**. Additionally, it is important to prevent the growth of any germs that may already be in the food by holding foods at a safe temperature.

Most **germs** do not grow well at cold temperatures. This is why we refrigerate foods. To be safe, cold foods must be held at 41° F or below. Most **germs** do not grow well at hot temperatures either. This is why hot cooked foods must be held at 130° F or above to keep **germs** from growing rapidly. The range of temperatures between 41° F and 130° F is called the **Danger Zone**. **Germs** grow very quickly in this temperature range. Whenever possible, you must avoid having foods in the **danger zone**. If you are cooling or heating foods, you must do it in such a way that they must pass through the **danger zone** quickly.

Thawing Foods



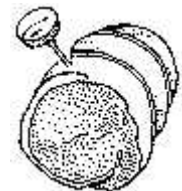
Improper thawing allows germs to rapidly grow in the outer layers while the core is still frozen. Do not thaw food at room temperature or in warm water. There are three acceptable ways to thaw foods:

1. Whenever possible, transfer the food from the freezer and place it in the refrigerator. This method is the safest since the food is not exposed to the **Danger Zone**. It will take several hours or days depending on the amount (be sure to put different raw meats in separate containers to prevent the juices from transferring or dripping into other foods).
2. Thaw the food under cold running water; never in warm or hot.
3. Thawing food in a microwave oven is appropriate only if the food will be cooked immediately.

Don't be tempted to cook a large roast or whole turkey when it is still partially frozen. The core will not reach a safe cooking temperature by the time the outer layer is done.

Cooking Temperatures

Cooking foods to the proper temperature is the best way to destroy any harmful germs that may be present in food. The table below shows safe **minimum** cooking temperatures for many common foods.

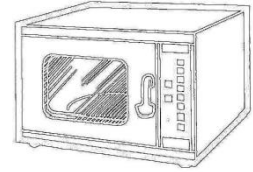


FOOD	TEMPERATURE	EXAMPLES
poultry	165° F	chicken, turkey, chicken patties
ground meats	155° F	hamburger, meat loaf, sausage, chorizo, gyros
eggs not consumed right away	155° F	custard, scrambled eggs on a buffet line
non-ground meats	145° F	steak, roasts, pork chops, corned beef
seafood	145° F	fish filet, shrimp, mussels
eggs consumed right away	145° F	eggs over easy, scrambled eggs to order



Any food cooked in a microwave oven must be cooked to 165 degrees, stirred at least once during cooking, and then left to stand covered for a minimum of two minutes prior to serving. The only way to know that the food has been cooked to the proper temperatures is to use a calibrated stem thermometer.

Hot Holding

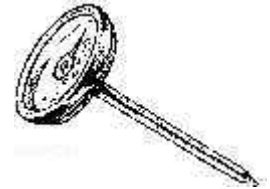


Once the food is cooked to the proper minimum cooking temperature, the food can be served. Some establishments use a steam table, oven or some sort of equipment to keep the food hot. Be sure to stir the food periodically in a steam table to ensure the food is maintained hot throughout. When cooked food is being held hot, the food temperature needs to be held at 130° F or above to ensure that the harmful **bacteria** are not multiplying rapidly in the food.

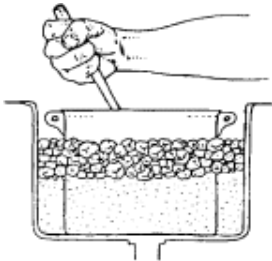
Cooling Foods

Cooling is a risky step in food preparation since the temperature of the food will be exposed and pass through the **Danger Zone**. Germs can grow very quickly while in the **Danger Zone**. It is very difficult to cool foods fast enough to keep them safe, especially during the summer in Arizona. Most refrigeration equipment are not capable of rapidly cooling large volumes of food. Food should not be left out to cool at room temperature. Once the temperature of the food falls below 130° F, it should be cooled on ice or in the refrigerator.

The best approach to cooling is to avoid it whenever possible. Many popular menu items such as chicken wings, deep fried tacos, and egg rolls are often cooked in two separate steps. But, these foods are much safer if the steps are combined into just one longer cooking step.



To avoid the risk of cooling, businesses plan and prepare all their menu items on a daily basis, discarding any leftovers. Rather than cooking enough of a particular food to last all week, they prepare only enough to last through that day, and hold it hot until served. They prepare the food as closely as possible to the time they serve it.



For some foods, cooling is unavoidable. Knowing ways to quickly cool these foods will minimize rapid bacterial growth and the risk of potential spoilage:

- For foods you can stir like soups, gravy or refried beans, setting up an ice bath and placing the container of food into it will greatly speed up cooling. Splitting large containers of hot food into multiple small shallow containers, no greater than 4 inches in thickness, uncovered allows for faster cooling too. Place them in an area in the refrigerator where there is good air circulation.
- For large solid food like meat loaf or turkey, cut the food into smaller pieces and spread it out on a tray, placing the tray uncovered into the refrigerator with plenty of room for air circulation.
- Ice wands which are filled with water and then frozen can be placed into hot food. Combining these methods, ice bathing while stirring food with an ice wand provides very effective cooling for soups, gravies and sauces. If you are preparing a cold salad, like potato salad or egg salad, from hot ingredients, cool all the ingredients first, prior to mixing.



Whatever the method used, the food must cooled down from 130°F to 70°F within two (2) hours and from 70°F down to 41°F within another four (4) hours.

Six (6) hours may seem like a long time to cool foods, but most foods will not cool this quickly unless you're giving them some help. Use a calibrated stem thermometer to make sure the cooling methods you're using are adequate.



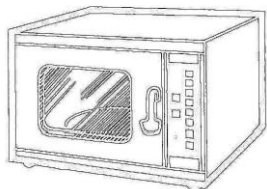
Cold holding

When holding cold **potentially hazardous food** in the refrigerator, salad bar, refrigerated display case, in ice or another approved method, always keep cold foods at 41° F or below. Use the calibrated metal stem thermometer to check the food's temperature.

If you use ice to keep the food cold on a salad bar or food display, be sure that the ice comes up to the level of the food that is in the pan or dish. Be sure to replace the ice as it melts. If the food temperature is maintained between 45°F and 41° F (the code allows for 45 degrees F for refrigeration equipment older than October 2001) the food must be discarded after 4 days but if the temperature is below 41° F, then it must be discarded after 7 days.

Reheating Food

Food that has been cooked and then cooled may need to be heated again. When you reheat food, do it quickly (within one hour) to 165° F, regardless of its original cooking temperature. For example, if you cook meatloaf on Monday to 155° F and you cool it down properly. Now you want to serve leftovers on Tuesday's buffet line, you must reheat the meatloaf to 165° F.



The right way to do this is using stove burners, microwave ovens, convection ovens or steamers. Do not use anything that will heat the food slowly (example: steam table), because it will take too long to pass the "**Danger Zone.**" Stir the food if possible to be sure that all parts of it are hot. Then use your calibrated metal stem thermometer to check the temperature.

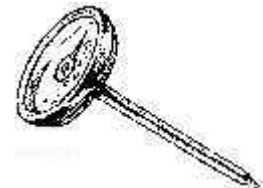
Do not place cold foods onto a steam table as they will not reheat quickly enough and will be exposed to the **danger zone** for a long time. Food should only be reheated once.

Thermometers

Any refrigeration equipment you use must be equipped with a thermometer that measures the internal temperature. It is a good idea to keep logs as a way of making sure that someone will actually be checking on the temperature regularly.

Use a metal stem thermometer to check foods you are cooking, holding hot or cold, or cooling. Keeping a log of these temperatures is also recommended.

Make sure the thermometer's range includes the temperature you are looking for. You cannot use a cooking thermometer for cold or cooling foods because the range does not go down to 41 degrees. Test the accuracy of your thermometer by placing it in a glass of ice water for a couple of minutes. If it does not give you a reading of 32° F, it needs to be adjusted.



Be aware that stem thermometers usually measure from a point halfway up the stem. To give an accurate reading, the stem must be pushed deep into the food. Thermometers must also be cleaned and **sanitized** between uses. You don't want to insert a dirty thermometer into the food as it may introduce germs into the food.



The Importance of Time

Most (but not all) harmful germs need time to grow to dangerous levels. This is why holding food at safe temperatures is important. This is also why cooling and reheating should take place as quickly as possible. In general, four hours is the longest possible time you want to hold **potentially hazardous foods** in the temperature **danger zone**. Remember that this limit is "additive". For example, if it takes three hours for the cooked potatoes in your potato salad recipe to cool down to 41° F, you do not want the potato salad to sit out above 41 degrees for more than one additional hour.

Many refrigeration units now in use cannot keep foods at 41 degrees. This is particularly true of "prep tables" with trays of foods arranged in the top. Often these tables are on hot cook lines and the food in the trays will not stay cold enough. If this is true of your kitchen, make sure that all foods are pre-chilled before placing them into the prep table and then remove all trays on a strict time schedule discarding the contents. Do not hold any **potentially hazardous food** in the **danger zone** for more than 4 hours.

If you discover that a food has been held at an unsafe temperature, but you're not sure how long, discard it. The rule is "When in doubt, throw it out!"

Food Storage Limits

Food should always be used in the order it was received. All arriving foods should be marked with a date so that you know which inventory to use first and always use the **FIFO** method; First In, First Out.

In addition, any **ready-to-eat potentially hazardous food** must be marked with a discard date at the time of opening or preparation. The discard date depends on the temperature at which the food is held; no more than four days if refrigerated between 41° F and 45° F; no more than seven days if refrigerated at 41° F or less.



Review Questions

1. What is the "Danger Zone?"
2. Why potentially hazardous food must be kept out of the "Danger Zone?"
3. What is the proper cooking temperature for chicken, pork, hamburger, and fish?
4. What is the right way to cool foods?
5. What is the right way to thaw foods?
6. What is the right way to reheat foods?
7. What should you do if your refrigerator is not holding food cold enough?

Foods From Approved Sources

Use food that comes from sources that are approved by the Health Authority. Meat, poultry and dairy products must come from facilities regularly inspected by the "USDA". Look for "Pasteurized" on milk. Shellfish, such as raw clams, oysters, scallops, and mussels, must come from legal sources and carry a tag that states where it came from. These shellfish tags must be saved and kept on file for at least 90 days after the product is sold or consumed. Canned foods, fresh foods and dairy products must come from companies, brokers or dairies that have been inspected by a regulatory agency. All packaged food must have a label or seal on the packaging that says the name of the processor or distributor, the name of the food, and the ingredients.

It is illegal to serve foods prepared at home or from any unlicensed kitchen and the food cannot be sold. Food for the public must be prepared in a licensed kitchen approved for that purpose. Health Inspectors (people trained by the Health Authority) must check the kitchen to make sure food is prepared and stored in a safe manner.



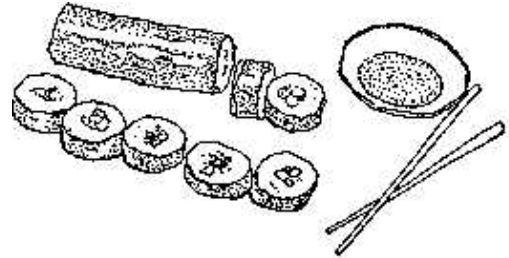
All foods arriving at your workplace must be free of spoilage. All foods served in your workplace or at a special event must come from an approved source and can not be **adulterated**. Packaged food must carry a label indicating where it comes from.

Canned foods must have an intact seal and be discarded if swollen. **Potentially hazardous foods** should be rejected if they arrive at an unsafe temperature. Packaged foods should be rejected or discarded if they arrive damaged.

Vacuum packed foods must be held at a safe temperature and consumed by the date indication on the package.

Food Left At The Table

Once customers have eaten and they leave food like chips, rolls and bread on a plate or at the table, you must throw it away. You **CANNOT** serve it again. Unopened packages of crackers, jelly, butter, candy or sugar may be served again.



Cross Contamination and Food Storage

As a food handler you must prevent **cross-contamination**. **Cross-contamination** happens when germs are spread or transferred from one place to another, such as when raw or unclean foods get into foods that are **ready-to-eat** or that will not be cooked again before you serve them. Here are some important ways that you can prevent cross-contamination:

- In the refrigerator: Don't let raw meat, fish, poultry or eggs drip onto foods that will not be cooked before serving; store raw meat, fish, and poultry in separate containers on the lowest shelves of the refrigerator.
- Wash your hands immediately after handling raw meat, fish, poultry, or eggs.
- Never store foods that will not be cooked before serving in the same container as raw meat, fish, poultry or eggs.
- Use a hard cutting surface or a board that is smooth and non-absorbent, with no splits or holes where germs can collect.
- Wash, rinse and sanitize the cutting or work surface and all the utensils and knives after cutting raw meat, fish or poultry.
- Properly wash your hands after handling raw foods.



The same accidental transfer can occur if raw foods are improperly stored. Never store raw meat, poultry or eggs over **ready-to-eat foods** in a refrigerator or freezer. Reserve the lowest shelves for storing raw meat and eggs.

All foods must be stored at least six inches off the floor. Stored foods should always be kept covered. The only exception is foods that are being cooled, which should be left uncovered in the refrigerator until it reaches 41° F or below.

Review Questions

1. What type of food are you allowed to use in your food business?
2. How do you store raw meat in a refrigerator?
3. How can you prevent food from being contaminated?
4. What is cross-contamination and how can it be prevented?
5. What are some **ready-to-eat** foods that are served in your establishment?

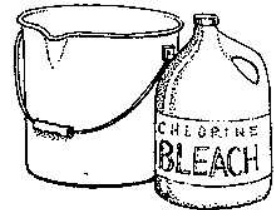


Sanitizing

Using a **sanitizer** improperly can be dangerous. Using too much **sanitizer** can be toxic to humans and having too little will not **sanitize** or destroy **bacteria**, so make sure you know how to prepare and use sanitizer. Chlorine bleach is the most common **sanitizer**.

You should always use clean **wiping cloths** to sanitize counter tops, tables, cutting boards and equipment. **Bacteria** grow very quickly in damp cloths. That is why all **wiping cloths** should be stored in the sanitizing solution that is mixed to proper concentration between uses. Use the appropriate test strips to verify the concentration of the sanitizer. Chlorine sanitizing solution should be between 50 and 100 parts per million (ppm); Quaternary Ammonia should be at 200 ppm.

Be sure the sanitizing solution is always at proper concentration by changing the sanitizing solution as needed, usually every 2-3 hours depending on usage. Do not let it become dirty; food debris uses up the sanitizer quickly. Do not mix in other chemicals or soap because it changes the effectiveness of the sanitizer.



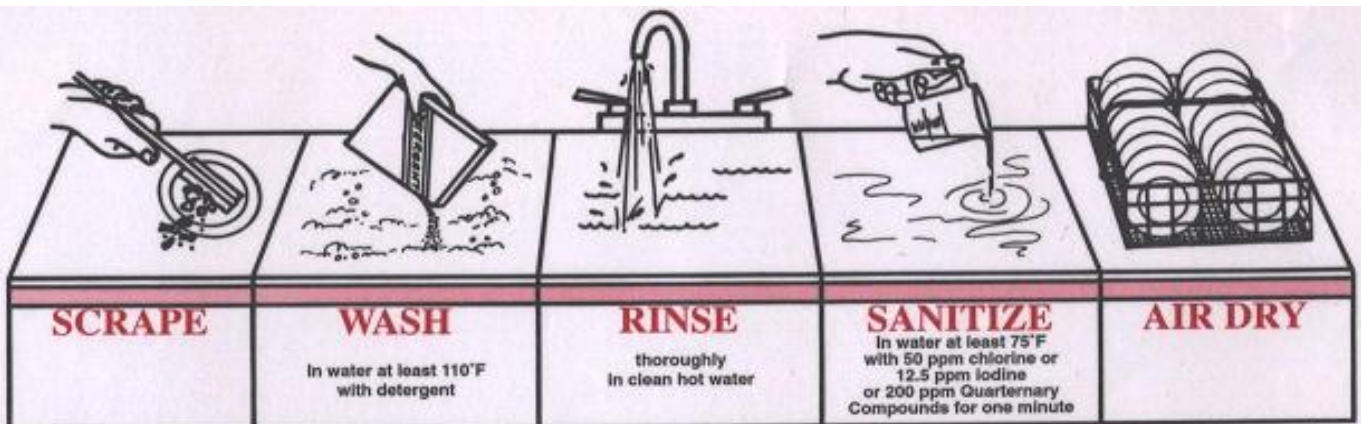
Clean and **sanitize** to prevent **cross-contamination**. Wash, rinse and sanitize each surface that comes in contact with food such as slicers, grinders and cutting boards. Sanitize equipment after each use. Make sure the equipment is broken down for proper cleaning.

Manual Dish Washing

Keeping kitchens and equipment clean is important for food safety. Clean kitchens will discourage unwanted pests like cockroaches and mice. But even surfaces that look clean may still have harmful germs on them that you can't see. Sanitizing removes these germs.

Dishes, utensils, and equipment that touch food must be washed using the following 5 steps:

1. Pre-scrape. Remove leftover food and grease from the dishes and throw it away.
2. Wash. In the 1st sink, thoroughly wash the dishes with detergent and hot water.
3. Rinse. In the 2nd sink, rinse the dishes in clean hot water to remove the soap. (Mixing detergent with sanitizer can prevent the disinfectant from killing the germs.)
4. Sanitize. In the 3rd sink, the dishes must be sanitized in room temperature water. You must make sure that the sanitizer is at the right concentration by using the appropriate chemical test strips. The dishes should remain completely submerged in the solution for at least 30 seconds.
5. Air-dry. Place all dishes and utensils on the drain board or rack and let air-dry. Do not use a towel to dry them because a towel will put germs back on your clean dishes.



Change water often. Utensils cannot be sanitized unless they are properly cleaned.



Toxic Chemicals and Pest Control

Accidental poisonings from careless use of chemicals in food operations happen frequently. All items such as lotions, medicines, soaps, detergents, sanitizers and other chemicals must be stored separately from food, utensils and food work areas. If the chemical is not necessary to the functioning of the food business, it should not be kept there at all. Any container used for chemicals must be labeled. If the chemical is transferred into another container, such as a spray bottle, this container must be labeled too.

Pest Control

Pesticide use in food facilities is very restricted. No **pesticide** may be applied except by a licensed **pesticide** applicator. Any **pesticide** the licensed applicator uses must be specifically approved for food service use. No **pesticides** or **pesticide** equipment can be stored at the food business.



Any **pesticide** used should only be used as a last resort, after every available preventive step has been taken. The best way to control cockroaches, mice, flies and other pests is to keep the establishment and garbage areas clean, and to eliminate hiding places and routes of entry and seal all cracks and crevices.

Cockroaches, flies, weevils, mice and rats are some of the pests that can get into a food business. Don't let them in and don't let them eat.

Review Questions

1. What is the difference between washing and sanitizing?
2. What is the right concentration for chlorine sanitizing water?
3. What are some of the critical food contact surfaces that must always be washed and sanitized?
4. What are the 5 steps for washing dishes by hand?
5. How can you prevent pests from getting into your food business?

Acknowledgments

Food Protection Program – Environmental Health Services Division of Seattle and King County and the USDA, FSIS Cooperative Agreement FSIS-C-05-2003.