

Module 9: Nutrition and Food Handling

Lesson 1: Nutrition

Key Terms

- **Allergy:** high sensitivity and reaction to certain substances (e.g. certain foods, pollen, bee sting).
- **Calorie:** a measurement of energy that our body gets from the food we eat.
- **Dehydration:** not enough fluid in the body. This can lead to serious medical conditions as well as confusion.
- **Dysphagia:** difficulty with swallowing.
- **Eating pattern:** the foods we eat, how much and how often we eat them.
- **Malnutrition:** a condition that results from a lack of enough nutrients in the body. Caused by not eating enough, or not eating nutritious foods.
- **Nutrients:** substance plants or animals need to live and grow
- **Nutrition:** the body's process of taking in and using food
Processed food: any food that has been prepared or changed before sale such as bread, canned soup, frozen meals, potato chips, chicken nuggets, etc. includes fast food.

Healthy Eating

- Healthy eating is critical for good health.
- The nutrition in a healthy diet can:
 - increase overall health and energy - prolonging independence;
 - prevent or control certain diseases (e.g. diabetes, osteoporosis, heart disease, high blood pressure, cancer, tooth decay);
 - reduce bone fractures;
 - encourage weight loss or maintain a healthy weight.

Choosing a variety of healthy foods in balanced proportions gives the nutrition and hydration the body needs.

By balancing what we eat with daily activity, we can improve or maintain good health.

- There is no one-size-fits-all diet that every individual can (or should) follow. Everyone's body is different, and eating patterns develop throughout a person's life
- The client's service plan will have detailed instructions about eating habits, likes and dislikes, nutritional requirements and diet modifications.
- A healthy diet consists of mostly vegetables, fruit, and whole grains with some healthy fats and proteins
 - THE HEALTHY EATING PYRAMID: Each layer of the pyramid also shows us how much we should eat from each food group. In this food pyramid, healthy levels of activity are shown as the foundation of healthy eating
- Rather than viewing one's food choices as good or bad, it is helpful to see the overall picture of a person's food intake.

Guidelines of Good Nutrition

- To have a healthy diet, most people should drink more water and eat foods that are:
 - 1. lower in saturated and trans fats;
 - 2. lower in sodium;
 - 3. lower in sugar; and
 - 4. higher in dietary fiber

Fats

- Fat is an important nutrient that gives the body energy.
 - It helps the body absorb vitamins
 - and supports important body functions such as the brain and immune system.
 - Fat is also necessary for maintaining healthy skin and hair.
 - There are several types of fats in the foods we eat, and some are healthier than others.

A diet higher in unhealthy fats can lead to high levels of LDL (bad) cholesterol and cardiovascular disease.

Healthy Fats

- Unsaturated fats (both polyunsaturated and monounsaturated) do not raise blood cholesterol.
- These fats are normally plant oils that are liquid at room temperature. Examples include olive oil, avocado oil, and sesame oil.
- A healthy diet includes more foods that contain healthy unsaturated fats. • Almond butter • Avocado • Fish like salmon and tuna • Nuts like almonds, pecans, cashews, and walnuts • Olives • Seeds like pumpkin, sunflower, sesame, and chia

Unhealthy Fats

- Saturated fats and trans fats are unhealthy because they can increase the risks of heart disease, diabetes, cancer, and obesity.
- These kinds of fats are solid at room temperature.
- Eat less foods containing saturated fat. • Butter • Cheese • Chicken fat • Chicken skin • Coconut oil • Cream • Ice cream • Meat • Milk • Palm Oil
- Trans fats are harmful because they raise LDL (bad) cholesterol and lower HDL (good) cholesterol.
- Fried fast foods can also contain high levels of trans fat because of the high cooking temperatures used during frying. • Fried chicken • Battered fish • Doughnuts • French fries • Mozzarella sticks

Tips to Reduce Unhealthy Fats

- Read nutrition labels carefully to see if saturated or trans fats are listed on the label.
- Look for the words “partially hydrogenated” to find trans fats in the ingredients list.
- Choose lean meat or skinless chicken and trim all visible fat before cooking.
- Use low fat cooking methods such as grilling, barbecuing, steaming, stir-frying, dry roasting, or poaching.
- Skim the fat off the top of cooled gravies, sauces, soups, or stews.
- Cook with unsaturated fats such as olive oil.
- Limit cream-based sauces and soups

Sodium

- Sodium (a mineral in salt) helps to maintain the body's water balance, blood pressure, and prevents dehydration. Too much sodium can lead to high blood pressure and heart disease.
- The Dietary Guidelines for Americans recommend that healthy adults consume less than 2,300 mg of sodium per day (1 teaspoon). The American Heart Association recommends an ideal limit of no more than 1,500 mg per day for most adults

Tips to Reduce Sodium

Look for and use sodium-free, low, reduced, light in sodium, or no salt added processed foods.

Compare the level of salt in processed foods

Choose fresh, frozen, or canned vegetables and meats without salt added.

Be “spicy” instead of “salty” when cooking. Flavor foods with a variety of herbs, spices, lemon, lime, or vinegar.

Avoid the salt shaker or fill it with an herb substitute instead.

Limit canned, ready-cooked, or boxed meals such as noodle casseroles or rice dishes.

Limit highly salted foods such as corned beef, bacon, luncheon meats, pickles, chips, crackers, pretzels, or preserved meats.

Sugar

- Sugar is a carbohydrate that naturally occurs in fruit, milk, and vegetables.
- Other carbohydrates are found in grain products like bread and pasta.
- Many processed foods also contain added sugar.
- The body uses sugar and other carbohydrates for energy.
- Too much sugar can lead to diabetes, obesity, tooth decay, and cardiovascular disease.
- Avoid or reduce added sugar as much as possible.
- The Dietary Guidelines for Americans recommends that most Americans eat less than 50 grams (about three tablespoons) of added sugar per day.

- Tips to Reduce Sugar
 - Avoid or strictly limit foods that have added sugars.
 - The most common foods that have added sugars include the following.
 - Sweetened coffee • Soda • Energy drinks • Fruit juice drinks • Candy bars • Cookies • Puddings • Candies • Cakes or other sweets or desert items
- In addition to the word “sugar,” the following words on a food package’s nutrition label also mean sugar.
 - Glucose • Fructose • Sucrose • High-fructose corn syrup (HFCS) • Evaporated cane juice • Barley malt • Corn syrup • Dextrose

Dietary Fiber

- Dietary fiber is a kind of carbohydrate from which the body gets little or no calories (energy).
- It naturally occurs in beans and peas, fruits, nuts, seeds, and vegetables.
- Dietary fiber can lower LDL (bad) cholesterol and help control blood glucose (blood sugar).
- It also helps make you feel full, increase the frequency of bowel movements, and reduces the risk of cardiovascular disease
- Most Americans should get about 28 grams of fiber per day.
- Most people can get the recommended amount of fiber by eating five servings of fruit and vegetables daily.

- Tips to Increase Dietary Fiber

- Add beans, peas, and lentils to soups, stews, salads, and rice dishes.
 - Substituting beans for meat will provide fiber and lower fat intake.
 - Choose whole-grain breads and cereals with “whole wheat flour,” or “100 percent whole wheat flour” as the first ingredient.
 - Experiment with different whole grains such as couscous, barley, bulgur, quinoa, and kasha in salads, soups, and casseroles to increase fiber.
 - Eat fruits such as apples, pears, bananas, berries, melon, or oranges. Peels and seeds in fruits increase fiber.
 - Eat vegetables such as carrots, sweet potatoes, broccoli, spinach, or green beans.
- To keep the fiber content of vegetables high,
 - eat them raw or steamed just until tender and leave the skins on.
 - Add dried fruits to cereal, muffins, and quick breads to increase fiber.

Water

The human body needs water to live.

The body uses water to:

- digest food;
- remove waste;
- carry nutrients and oxygen to every cell in the body;
- cool the body;
- lubricate joints and tissues; and
- maintain healthy skin.

The thirst sensation tends to decline as we age, making it harder for older adults to realize they need more fluids.

Guidelines for Water Intake

- Everyone's water requirements are different. Most healthy people need between 9 and 13 cups each day, with 1 cup equaling 8 ounces.
- Since fruits and vegetables are mostly water, eating at least “five a day” will also help with hydration.
- About 20% of a person's total daily water intake comes from water-rich foods like lettuce, leafy greens, cucumbers, bell peppers, summer squash, celery, berries, and melons.
- Coffee and tea can contribute to daily fluid intake.
- Too much water can flush out electrolytes that are needed by your body and this can have a negative impact

- Encourage a client to drink before they become thirsty.
- Offer fluids frequently throughout the day. It is also a good idea to keep a glass of water by a client's chair or bed.
- Fill a 20-ounce water bottle four times a day or drink a large glass of water with each meal and snack.
- Add flavor to water by adding – sliced citrus, – crushed mint, – peeled sliced ginger or cucumber

Planning, Shopping, and Preparing Meals

- Use the Healthy Eating Plate to include enough foods from each food group.
- Use the Healthy Eating Pyramid to choose the best kinds of foods from each group.
- Fresh fruits, vegetables, and proteins have more nutrients and less added ingredients than processed foods
- Always try to eat before you go shopping so you won't be tempted to purchase snack foods.
- Read the nutrition facts labels on packaged foods. Try to buy products that follow the guidelines of good nutrition. ” Look for products that are: • low in saturated fat, cholesterol, sodium, and added sugars; and • high in dietary fiber and protein

Dietary Modification: Requirements and Restrictions

- A client may have a special diet due to a disease, condition, medication, or food allergy.
- A special diet can limit or increase the intake of certain foods or how foods must be prepared.
- If the client is making unhealthy food choices or not following their prescribed diet,
 - 1. explain your concerns to the client;
 - 2. offer safe alternatives;
 - 3. report your concerns to the appropriate person in your care setting; and
 - 4. document your concerns and what you did.

Food Allergies

- Some people have allergies to food that can cause sudden, life-threatening reactions.
- Even a small amount of the food can make a person who has a food allergy sick.
- Foods that cause the most allergies include milk, soy, eggs, wheat, peanuts, nuts, fish, and shellfish.
- Foods to avoid should be listed on the client's service plan.
- Symptoms of an allergic reaction to a food can include the following.
 - A tingling or itching sensation • Hives (raised welts on the skin) • Swelling of the mouth or throat, eyelids, face, lips, and tongue • Abdominal pain • Diarrhea • Nausea • Vomiting • Difficulty breathing • Light-headedness • Loss of consciousness

Dysphagia

- Dysphagia is a common condition which makes swallowing more difficult.
- Warning signs of dysphagia include:
 - taking a long time to begin a swallow or needing to swallow 3-4 times for each bite of food;
 - having pain while swallowing;
 - being unable to swallow;
 - fullness or tightness in the throat or chest or a sensation of food sticking there;
 - difficulty controlling liquids in the mouth or drooling out of the front or side of the mouth;
 - bringing food back up; regurgitation
 - having frequent heartburn;
 - having food or stomach acid back up into the throat;
 - unexpected weight loss;
 - coughing or gagging before, during or after a swallow;
 - having to cut food into smaller pieces or avoiding certain foods because of trouble swallowing; or
 - pocketing food in mouth (storing food in the cheek), spitting food out, or refusing to eat

- Clients with dysphagia will have a prescribed special diet.
- Depending on the severity of the condition, the consistency of foods and liquid must be changed to make it easier and safer for the client to eat or drink (e.g. making foods soft and easy to swallow or thickened or thinned to prevent choking).
- Diet modifications should be noted in the client's service plan.

General Tips when Helping a Client with Dysphagia to Eat

- Let the person see, smell, and taste the food to encourage saliva to flow and to improve their appetite before they start eating.
- Avoid having the client talk while eating.
- Watch for pocketing of food. If this happens, remove the pocketed food and have client slow down or ask the client to do a “tongue sweep” if they are able.
- You may need to prompt the swallowing process with statements like “chew thoroughly,” “swallow again,” “hold your breath while you swallow,” and “clear your throat.”

Skill: Assist a Client to Eat

- See Assist a Client to Eat in the Skills Checklists on page 426 for the specific steps of this skill.
- Tips for Assisting a Client to Eat
 - Never assist a client to eat who is lying down, reclining, or very sleepy.
 - Make sure the client's head is forward and their chin is down.
 - Put a small amount of food on the spoon or fork.
 - Give the client plenty of time for chewing and swallowing. Never rush.
 - Tell the client what food is on the fork or spoon before putting it in their mouth.
 - Treat the client as an adult not a child.

Assistive Devices to Help with Eating

- Many assistive devices can help maintain a client's independence
- while eating including
 - silverware with built-up handles to make them easier to grasp,
 - two handled cups,
 - straws,
 - a divided plate

Recognizing and Reporting Signs of Malnutrition and Dehydration

- Malnutrition occurs when a person's body does not get enough nutrients.
- This can be because of
 - digestive problems, dental problems, or a medical condition.
 - Problems chewing, mouth pain, or dentures that don't fit
 - An upset stomach, constipation, bloating, or gas
 - Living alone
 - Taking multiple medications
 - Substance abuse
 - No appetite
- Malnutrition can lead to medical complications,
 - weakness that leads to falls and injuries, and hospitalization.
 - A client with malnutrition can have a decreased ability to resist infection, heal wounds, or recover from illness, surgery or other treatments
- Observe clients for these warning signs of malnutrition.
 - Unintended weight loss (e.g. clothing that is now too big)
 - Eating less than half of meals and snacks
 - Constant fatigue or dizziness
 - Depression, loneliness, grief
 - Confusion

- Dehydration

- can be caused by losing too much fluid, not drinking enough water or fluids, or certain medications.
- A common cause of dehydration is loss of fluids through vomiting, diarrhea, and/or high fever.
- can be mild, moderate, or severe.
- severe, dehydration is a life-threatening emergency. Many factors can affect how quickly a client becomes dehydrated including heat, medications, diet, how active they are, and body size.

- Warning Signs of Dehydration

- prolonged vomiting or diarrhea • thirst • dry or sticky mouth • cracked lips • headache • fatigue • dizziness • confusion • heavy perspiration • fever • dark urine • constipation • leg cramps

Lesson 2 Safe Food Handling

Key Terms

- **Contaminated:** containing harmful substances such as dangerous germs or chemicals.
- **Cross-contamination:** the spread of germs from raw meat to other foods or when a person spreads germs by moving from a “dirty” task to a “clean” task without first removing disposable gloves and performing hand hygiene.
- **Danger zone:** the temperature range of 41°F - 135°F (5°C - 57.2°C) where germs grow on potentially hazardous foods
- **Fecal-oral route:** the way harmful germs from the feces of one person can get into the mouth of another person, ultimately causing illness.
Foodborne illness: any illness caused by eating contaminated food (also called foodborne disease or food poisoning).

- **Highly susceptible population (HSP):** people who are more likely to experience food borne illness. Includes people younger than 5 years old, older than 65 years old, pregnant, or immunocompromised (due to cancer, AIDS, diabetes, certain medications or other conditions).
- **Potentially hazardous foods (PHF):** food that require temperature control to prevent germs from growing (also called time/temperature control for safety (TCS) foods).
- **Ready to eat foods (RTE):** food that does not require additional preparation or cooking to achieve food safety.
- **Sanitize:** making a surface safe for food contact

Foodborne Illness

- Older adults and people with chronic illness- are at higher risk for eating contaminated food and are considered highly susceptible.
- People in highly susceptible populations include people younger than 5 years old, older than 65 years old, pregnant, or immunocompromised (due to cancer, AIDS, diabetes, certain medications or other conditions).
- Symptoms of foodborne illness may appear within several hours to several weeks after eating contaminated food.
- They can be mild or severe, depending on the cause.
- The most common symptoms include
 - upset stomach, stomach cramps, diarrhea, nausea, vomiting, fever, and dehydration.
 - Serious long-term effects include kidney failure, chronic arthritis, brain and nerve damage, and death.

Causes of Foodborne Illness

- **Viruses** are tiny germs that can pass from person to person through food. If a person is sick or does not wash their hands, they can spread viruses to others. Viruses do not grow on food like bacteria do.
- **Bacteria** are tiny germs that are the most common cause of foodborne illness. Bacteria come from soil, animals, raw meat, and humans. They can grow on food very quickly and become dangerous if food is stored at the wrong temperature for a short time.
- **Parasites** are organisms that live inside other animals. Parasites like roundworms and tapeworms can infect people who eat undercooked meat or drink contaminated water.

Chemicals can contaminate food at any stage of processing. Pesticides from the farm, metal from storage containers, and cleaners or too strong sanitizers from the kitchen can all make people sick.

- **Physical Objects** like broken glass, jewelry, bandages, staples, and fingernails can fall into food and cause injury
- **Fungi**, including mold and yeast can make food unsafe to eat. Molds, which look like fur growing on the food, can produce toxins. Yeast looks like round, dot-shaped patches and can help harmful bacteria to grow
- **Allergens** in foods can cause dangerous reactions in people with food allergies. Some foods that commonly cause allergic reactions are nuts, milk, eggs, fish, crustacean shellfish, tree nuts, peanuts, wheat and soybeans. A small amount of these can be enough to cause a deadly reaction.

Sources of Foodborne Germs

- **People:** Many people touch our food before we eat it. If they are sick or their hands are not clean, they can spread diseases. Viruses like Norovirus and Hepatitis A spread from person to person in this way.
- **Animals:** Healthy animals such as cows and chickens carry bacteria inside their bodies and on their skin. Bacteria like Salmonella, Staph, and E. Coli can contaminate meat, eggs, and milk. If we eat these foods raw or undercooked, the bacteria can make us very ill.
- **Storage:** Bacteria multiplies quickly on food that is stored improperly. For example, C. perfringens grows in food at temperatures from 54°F - 140°F (12°C - 60°C). Botulism can grow in foods that are not canned or jarred safely.
- **Environment:** Some dangerous bacteria live in water and soil. Fruits and vegetables can carry Listeria from the places where they grow. Vibrio lives in saltwater, and can contaminate the seafood and shellfish there.

Potentially Hazardous Foods (PFHs)

- Any food can become contaminated and cause foodborne illness
- However, some foods have more potential to cause foodborne illness than others.
- Certain foods, called potentially hazardous foods (PFHs), are more likely to cause foodborne illness if stored at improper temperatures.
 - These foods must be kept hot (at 135°F / 57.2°C or above) or kept cold (at 41°F / 5°C or below) to ensure safety.
- Common potentially hazardous foods include meat, poultry, eggs, fish, cooked starches, cooked vegetables, sprouts, cut melons, cut tomatoes, and cut leafy greens.
- For more details, see Potentially Hazardous Foods (PFHs) in the Resource Directory on page 344.

Preventing Foodborne Illness

- Practice Good Personal Hygiene
 - When preparing food, you may use alcohol-based hand rub after washing your hands, but you may not use it instead of washing your hands.
 - Nothing takes the place of proper handwashing
- When you feel sick, you should not work with food. The germs that make you sick may spread to a client's food and other people.
 - Home Care Aides should not work with food if they have:
 - symptoms of diarrhea, vomiting or jaundice;
 - been diagnosed with infections that can be spread through food such as Salmonella, Shigella, E. coli, or hepatitis A;
 - infected, uncovered wounds; or
 - continual sneezing, coughing, or runny nose.
 - . Workers should not return to work until they are symptom-free for at least 24 hours

- Prevent Bare Hand Contact with Ready to Eat Foods
 - Workers should use utensils such as tongs, scoops, deli papers, or single-use gloves to keep from touching ready to eat foods
- Personal habits can affect food safety.
 - When you work with food:
 - wear a hair covering when preparing or handling food;
 - keep fingernails trimmed so they are easy to clean;
 - avoid touching your nose, mouth, or other parts of your face;
 - wear clean disposable gloves while handling food if you have wounds or infections on your hands or wrists; and
 - use a clean spoon or fork to taste food. Do not reuse it before cleaning and sanitizing.

- Keep Food Surfaces and Utensils Clean
 - Wash and sanitize cutting boards and countertops especially after they've held raw meat, poultry, seafood, or eggs.
 - Clean dining area tables, chairs, and floors regularly, and keep them free of food particles.
 - Keep pets, household cleaners, and other chemicals away from food and surfaces used for food.
- Kitchen equipment and appliances can also carry harmful contaminants.
 - Keep refrigerators, freezers, and ice makers clean.
 - microwave, stove, or oven
 - fans
 - blenders, food processors, and mixers
 - can opener
 - Wipe off can lids before opening to remove dust and particles.
 - Clean and sanitize food thermometers
- The things we use to clean can also spread disease.
 - Dangerous bacteria grow quickly in damp places such as sponges, dishcloths, sink drains and faucet handles.
- After Cleaning
 - Keep pots, pans, and utensils off of the floor.
 - Put cups and glasses away upside down on clean surfaces. When you pick them up again, do not touch the rims
 - When you put away eating utensils, touch only the handles

- All raw produce should be rinsed under running water to remove dirt and debris before cutting.
- Scrub firm produce like melons or cucumbers with a clean produce brush while rinsing

Separate to Prevent Cross Contamination

- Raw meat, poultry, eggs, and seafood can contaminate other food with harmful germs. It is important to keep raw foods and their juices away from cooked food, ready to eat food, and produce.
- Wash your hands after handling raw meat, poultry, or seafood.
- Never use the same cutting boards, dishes, or utensils for both raw foods and cooked foods.
- Wash, rinse, and sanitize cutting surfaces, utensils and knives after cutting raw meat, poultry, or seafood.
- Store raw meat, fish, and poultry in leakproof containers on the lower shelves of the refrigerator.
- If you use marinade for raw food as a sauce for cooked food, boil it first.
- Always use clean dishes to serve food.

Store Foods Safely

- Freeze any raw meat, poultry, and seafood that you will not use within 2 days.
- Keep eggs in their original carton and store them in the main compartment of the refrigerator.
- Never store cooked food, ready-to-eat foods or fresh produce in the same container as raw meat, fish, or poultry.
- Don't store perishables, such as eggs, in the refrigerator door. Because the door is opened frequently, its temperature is generally higher than the rest of the refrigerator and may not be safe.
- In your grocery cart, keep raw meat, poultry, seafood, and eggs away from other foods.
- Never store food on the floor, soiled surfaces, or near rust.
- Store cleaning supplies and chemicals below and away from food.
- Do not store food in galvanized cans or containers with metal coatings because some foods can "pull off" the metal which can cause poisoning.
- Check canned and jarred foods for proper seals. If the food looks or smells bad, or if the can is damaged, throw it away.

Cook and Maintain Food at Proper Temperatures

- Cooking hazardous foods to a high temperature kills harmful germs and makes the food safe to eat.
 - These foods can become dangerous again if they stay at room temperature for too long.
 - Bacteria grow fast, and can double in number in as little as 20 minutes.
 - You must cook food and keep it at safe temperatures to avoid foodborne illness.
 - The Danger Zone 41°F - 135°F (5°C – 57.2°C)
- Serve food as soon as possible after cooking.
- Never leave food out of the refrigerator for more than 2 hours. If the temperature is above 90°F, do not leave food out for more than 1 hour.
- Keep hot food hot: Store PHFs at or above 135°F.
- Keep cold food cold: Store PHFs at or below 41°F.

Food Thermometers

- Using a food thermometer is the only reliable way to check the temperature of food.
- When cooking, use a thermometer to make sure the food reaches a safe minimum internal temperature.
- For both hot and cold foods, use a thermometer to make sure they stay at safe holding temperatures.
- Digital food thermometers reach and display internal temperatures within 2 to 5 seconds
- Wash, rinse and sanitize the thermometer before use and after using on raw animal foods to prevent cross contamination

- The correct way to measure internal temperature depends on the type of food:
- Always insert the thermometer in the thickest part of the food, away from bone, fat, or gristle.
- For foods with irregular shapes like chickens and roasts, also check the temperature in several places.
- For foods cooked in a microwave, stir to help the food cook evenly, and check in several places.
- For thin foods such as hamburger patties, make sure the thermometer probe does not touch the pan or cooking surface.
- For mixed dishes like casseroles and quiches, also check the temperature in several places.

Safe Cooking Temperature

- Food is safely cooked when the internal temperature is high enough to kill the germs that can make you sick.
- Most harmful germs are destroyed between 140 °F and 165 °F.
- Different foods have different minimum safe temperatures.

- 165°F (73.9°C) for 15 seconds
 - Poultry (chicken and turkey)
 - Stuffed pasta,
 - fish,
 - meat,
 - poultry,
 - ratites (emu, ostrich)
 - Stuffing or casseroles containing fish, meat, poultry, or ratites
 - All raw animal foods cooked in a microwave
- 155°F (68.3°C) for 15 seconds
 - Ground, chopped, restructured, or combined fish or meat, such as hamburger and sausage
 - Ratites (emu, ostrich)
 - Mechanically tenderized or injected meats
 - Unpasteurized eggs cooked for hot holding (pasteurized eggs have no required cooking temperature)

Minimum Cooking Temperatures (with required durations)

- 145°F (62.8°C) for 15 seconds
 - Unpasteurized eggs cooked for immediate consumption (pasteurized eggs have no required cooking temperature)
 - Fish or meat, including pork, that is not stuffed or comminuted (not including roasts,
 - Game animals that are inspected by the USDA
- 145°F (62.8°C) (surface
 - Whole-muscle,
 - intact beef steaks (as labeled by the processor) that have not been scored or tenderized must be cooked to have a color change on the surface
- 135°F (57.2°C
 - Plant foods that will be hot held

Reheating

- As soon as food cools below 135 °F, bacteria can start to grow.
- Reheat food to 165 °F within 2 hours to kill any new harmful germs.

Follow these guidelines to safely reheat food.

- Only reheat food that has been safely prepared and refrigerated promptly.
- If the food has been in the danger zone for more than two hours, throw it away.
- If leftovers have been in the refrigerator for more than 3 days, throw them away.
- Use the burner on a stove, microwave, oven, or a double boiler.
- In the microwave oven, cover the food, stir, and rotate so it heats evenly.
- Use a food thermometer to check the temperature of reheated food.

Thawing Frozen Food

- Never thaw food at room temperature, on a counter, or in warm water.
- These methods let harmful bacteria grow quickly to high, possibly unsafe numbers.
- The inside of the food may be at a safe temperature, but the outside could be perfect for bacterial growth.

There are 3 safe ways to thaw foods. Plan ahead to allow enough time to do it right!

- 1. Thaw food inside the refrigerator. It may take longer, but this is the best and safest way.
- 2. Thaw the food under cool, running water - never under warm or hot water.
- 3. Use a microwave and follow the manufacturer's defrosting instructions

Cooling Foods

- To keep foods safe, refrigerate them as soon as possible after cooking. Bacteria can grow quickly in cooling food.
- To cool food to a safe temperature quickly --use the shallow pan method.
- Divide the food into small portions (less than 2 inches thick) in separate small uncovered containers.
- Place the containers directly into the refrigerator or freezer.
- Do not overpack the refrigerator or stack containers. Air must be able to circulate freely in order to chill foods effectively.
- Use a thermometer to check that the food is below 41°F / 5°C and then cover, wrap, or seal the containers.
- Label and date refrigerated or frozen foods.

Special consideration for cold salads

- Potato, pasta, macaroni, egg, and chicken salads have to be cold enough to prevent bacteria from growing.
- When making these foods, cook all ingredients to safe temperatures and then chill to below 41°F / 5°C.
- Then mix the ingredients quickly and serve.

Storing Cold Food

- Throw away foods that are past their expiration date. Leftovers can stay in the refrigerator for up to 3 days.
- Your refrigerator should be set to a temperature that keeps foods at 41°F / 5°C or below and your freezer should be set to a temperature that maintains food in a solid, frozen state.
- It is safe to refreeze any food remaining after reheating previously frozen leftovers to the safe temperature of 165°F / 73.95°C as measured with a food thermometer.