California School Nutrition Association

Food Safety: What You Need to Know

Richard Bellman

President and Lead Instructor

A Plus Food Safety

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EAT WELL & PROSPER

Foodborne Illnesses: Anyone can be a Victim

- Foodborne illnesses are debilitating and can lead victims to a life of suffering from symptoms and side effects long after the contaminated food was eaten.
- Foodborne illnesses can happen to anyone, anywhere, at home and in restaurants.
- Understanding victims' stories can put foodborne illnesses into the proper perspective.

Brianne Kiner: A Third Grader Who Likes to Eat Hamburgers

- When Brianne Kiner was 9 years old and still in the third grade, she visited the same Jack in the Box restaurant in Redmond, Washington on two separate occasions and ordered her favorite meal: hamburger and fries both times.
- A week later on January 13, 1993, her mother admitted her into Seattle Children's Hospital. Brianne had been experiencing gastrointestinal symptoms like vomiting, diarrhea and abdominal cramps and during a visit to the doctor, there was blood in her urine.

Brianne Kiner, 9 Years old, 1993

E-Coli Infection Leads to Organ Breakdown

- Brianne Kiner was diagnosed in the intensive care unit with E-Coli infection that leads to kidney failure. This infection lead to a breakdown of her organs. She was in a coma for 40 days and then had a miraculous awakening and a long recovery:
- 189 days in hospital
- 3 strokes
- Removal of her large intestine
- Organ failure
- Muscle atrophy
- Diabetes

https://www.youtube.com/watch?v=onVXbwqxdWI

Someone Has to Pay

- Foodmaker Inc., parent company of Jack in the Box awarded Brianne Kiner $15.6 Million in damages for her ordeal. She is now 30 years old, a diabetic who must inject insulin three times a day. She still enjoys an occasional hamburger, but now she makes sure it's well done.
- The E-coli outbreak was a result of undercooked ground beef. The hamburger patties were being cooked to 140 d F when they should have been cooked to 155 d F.

Why Richard and Linda Miller don't eat at Chi-Chi's

- On October 12, 2003, Richard and Linda Miller stopped for lunch at Chi-Chi's in Monaca, Pennsylvania. A few weeks later, the couple started to experience symptoms of Hepatitis A: lethargy, body aches, loss of appetite and jaundice.
- Linda recovered after a few days, but Richard continued to suffer until he couldn't stand up on his own, was incoherent and had to be admitted to hospital and put on life support. He needed a liver transplant and had a heart attack during surgery. Richard and Linda Miller sued Chi-Chi's for $6.25 Million.

Hepatitis A Outbreak at Chi-Chi's

- Green onions imported from Mexico that were served raw in the salsa at the restaurant were responsible for the Hepatitis A outbreak at the Chi-Chi's.
- The result: 650 cases of Hepatitis A, 4 deaths, 9000 people receiving immune globulin shots against the virus, 5000 claimants sharing a settlement worth $800,000.

"They say that time heals all wounds, but it will be a long time before this is healed. I'll never really recover." says Richard Miller, 1 of 660 victims of Chi Chi's 2003 hepatitis A outbreak

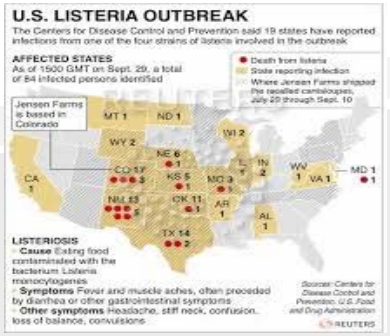
Cantaloupe: The Poisoned Fruit

- Take a walk with Jennifer Exley, whose father Herb Stevens died from eating Listeria contaminated cantaloupe which he had purchased from a King Soopers grocery store in 2011. The 86 year old retiree from Littleton Colorado suffered for months in hospital from hypoxia, or oxygen deprivation and had required constant, round the clock care.

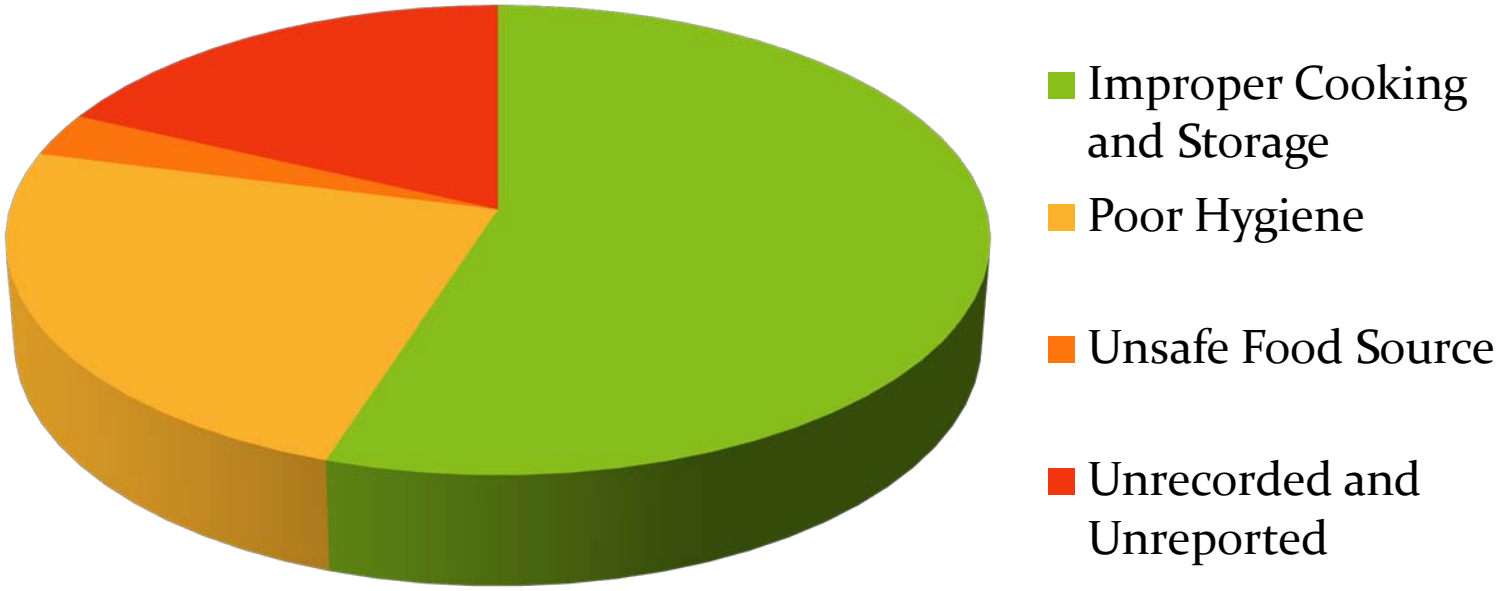
http://www.thedenverchannel.com/news/local-news/victims-of-listeria-tainted-cantaloupe-outbreak-meet-privately-with-jensen-farms-owners

“Some Procedures Weren’t Just Quite Right”- Elaine Stevens, Widow

- Eric and Ryan Jensen, brothers and owners of Jensen Farms in Colorado pleaded guilty to “Introducing into interstate commerce cantaloupe contaminated with Listeria bacteria” . Processing equipment was old and contaminated and sanitizing machines were not being used to finish the sanitizing process of the fruits.
- 33 Deaths; 28 States; 147 Hospitalizations



Foodborne Illness Sources



Agenda:

- Introduction to Food Safety and How to Prevent Foodborne Illness
- Foodborne Illnesses: A Brief History
- Food Supply Chain: Where do we get our Food?
- Foodborne Illness by the Numbers
- Food Safety Management Systems
- Active Managerial Control
- Hazard Analysis Critical Control Points
- HACCP Review
- Food Service Equipment
- Develop a Cleaning Plan
- Food Safety at Home
- Food Safety Rules and Reasons
- Handwashing and Food Safety
- Safe Cooking Temperatures
- Thawing, Cooling and Reheating
- Service Guidelines
- Allergens
- Undercooked Foods
- Refrigerate and Rotate
- Order in the Cooler
- Holding times in Refrigerator/Freezer
- Criteria for Rejection
- Government Agencies
- Recalls
- Certification Programs
- Review
- Evaluation/Comments

Food Safety: Definition

- The safety of food for human consumption depends on a variety of factors such as safe and humane slaughtering practices, proper harvesting practices, distribution, purchasing, preparation and cooking. People who restrict their diet to fruits, vegetables and whole grains and cereals are also susceptible to foodborne illnesses since *meat, including poultry and produce may be unsafe for human consumption and may lead to foodborne illnesses.*

Food Safety: Fact or Fiction?

1. Overeating will lead to a foodborne illness.
2. Avoiding restaurants will prevent foodborne illnesses.
3. Eating foods that were purchased frozen will prevent foodborne illnesses.
4. Taking antacids before meals will prevent you from contracting symptoms of a foodborne illness.
5. Drinking milk or mineral water with food will prevent contracting a foodborne illness.
6. The use of salt or spices in food will keep the food safe for human consumption and prevent a foodborne illness.
7. Only food, not drinks can cause a foodborne illness.

Stuffed, Not Sick

1. Fiction! Overeating will not lead to a foodborne illness, but if you eat more food than average (2,000 calories daily) you might be increasing your chances of contracting one. Symptoms of bloating and stomach ache are similar to foodborne illness symptoms.(You may also experience feelings of regret, guilt and shame)

Are You Really Safe at Home?

2. Fiction! Some people think that if they only avoid eating at restaurants, they won't get a foodborne illness. If you don't cook the food properly or evenly, you could make yourself sick by eating at home! As you can imagine most foodborne illnesses contracted at home go unreported!

Frozen Foods Fallacy

3. Fiction! Eating only frozen foods will not protect you from contracting a foodborne illness. Frozen foods may have been contaminated in their natural state and bacteria present in the food is dormant until cooked. Also, some people thaw, cook and then re-freeze food without cooling cooked leftovers properly to reduce bacteria to safe levels for human consumption.

Prilosec, Nexium, GERD-Gastro esophageal reflux disease

4. Fiction! Taking antacids before eating a meal will not prevent you from contracting a foodborne illness. These medications are known to reduce incidences of heartburn and indigestion, symptoms that are unrelated to the safety of the food! (Tip: To avoid heartburn, indigestion or acid-reflux avoid overeating foods that are high in fat and sodium content and excessively spicy food!)

I'll have Water

5.Fiction! What you drink with your meal has no bearing on the food. Some groups advocate the benefits of mineral water and milk, but nothing can take the place of water with food since it helps with the digestion process.

Leave out the Spice!

6. Fiction! Using spices will not prevent a foodborne illness, but sometimes cause it. In August 2014, McCormick had to recall 1,032 cases of small, 0.75 ounce containers of Ground Oregano because of salmonella contamination, shipped to 41 states, Puerto Rico, The Virgin Islands shipped between April 4 and August 5, 2014. No one died or was hospitalized.

Tip: Spice before you cook foods!

I'll take Water Instead, Please

- 7. Fiction! In 1996, Odwalla, a juice processor and distributor based in Half-Moon Bay, California sold and distributed unpasteurized apple juice throughout North America that had been contaminated with E. Coli 0157:H7, a deadly strain of the bacteria that lead to the hospitalization of 25 children, 5 of them experiencing hemolytic uremic syndrome (HUS-Kidney failure). One child in Colorado died as a result. Spoiled apples were the source.

Foodborne Illness Outbreaks

- Foodborne illness: Transmitted to people through food!
- Foodborne illness outbreak: Two or more people eating the same food!

Foodborne Illness Symptoms

- Diarrhea
- Vomiting
- Abdominal Cramps
- Nausea
- Fever
- Jaundice
- Liver damage
- Brain damage
- Paralysis
- Organ Breakdown

Foodborne Illness: How it Happens

- Contaminants can make food become unsafe:
- Biological: Viruses, parasites, fungi, bacteria, toxins
- Chemical: Cleaners, detergents, sanitizers, polishes
- Physical: Metal shavings, glass,

Contamination on Main Street, USA

- 1993 Jack-In the Box E-Coli outbreak, 732 people infected with Escherichia coli 0157:H7 bacterium from undercooked beef patties sold as hamburgers at 73 restaurants in California, Idaho, Washington and Nevada. The majority of victims were children under 10 years old. Four children died and 178 victims were left with permanent kidney and brain damage.

More Contamination Near You

- August, 2014:Dickey's Barbecue Pit, South Jordan, Utah, retired teacher Jan Harding ,67 burned by drinking iced tea that had been tainted with an industrial oven cleaner which an employee had accidentally mistaken for sugar. Mrs. Harding spent the rest of the week in hospital with deep ulcerated burns covering the upper esophagus. https://www.youtube.com/watch?v=-PlsTRKyUGU

Give Me Some Skin

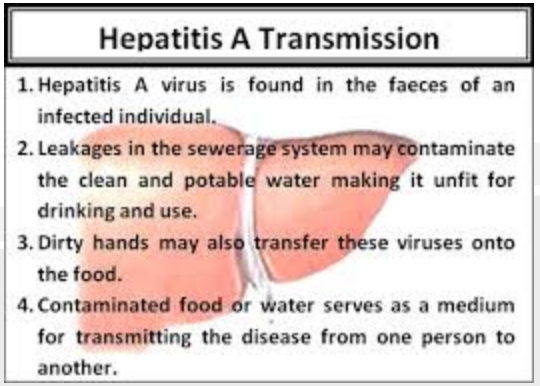
- April, 2005, Dayton, Ohio: A man sued the fast food restaurant operator for $50,000 after finding a piece of human skin on his chicken sandwich. The skin in question on one of Arby's signature sandwiches was ¾ of an inch long and "had fingerprints on it". Health inspectors interviewed the manager after the incident was reported and found him wearing a bandage on his right thumb. The manager had been chopping lettuce when he cut his thumb. He cleaned and sanitized the area, but did not discard the contaminated batch of lettuce.

Other Greatest Hits!

1. 1963: Botulism from canned tuna in Washington state.
2. 1974:Salmonella in unpasteurized apple cider in New Jersey.
3. 1978: Botulism at a restaurant in Clovis, New Mexico traced back to potato salad and bean salad served at a banquet.
4. 1985: Listeriosis outbreak in Southern California due to Mexican soft cheese produced by Jalisco Cheese (52 deaths, 19 stillbirths, 10 infant deaths)
5. 1997: Hepatitis A on frozen strawberries, grown in Mexico and packed by Andrew and Williamson Sales Company of San Diego. Thousands of students from Arizona, California, Georgia, Iowa, Michigan and Tennessee exposed to the virus by eating strawberries as part of their school lunches.
6. 1999:Salmonella in unpasteurized orange juice from Sun Orchard in Arizona, transported from the country of origin, Mexico in a tanker cooled with contaminated ice.

The Big 5: Major Foodborne Illnesses and Their Sources

- Hepatitis A: Virus which causes disease of the liver leading to symptoms of jaundice, nausea, diarrhea, fever, fatigue, loss of appetite and cramps. Sources: Ready to eat foods, shellfish and contaminated water.
- Prevention: Proper hand washing, purchase shellfish from approved suppliers.



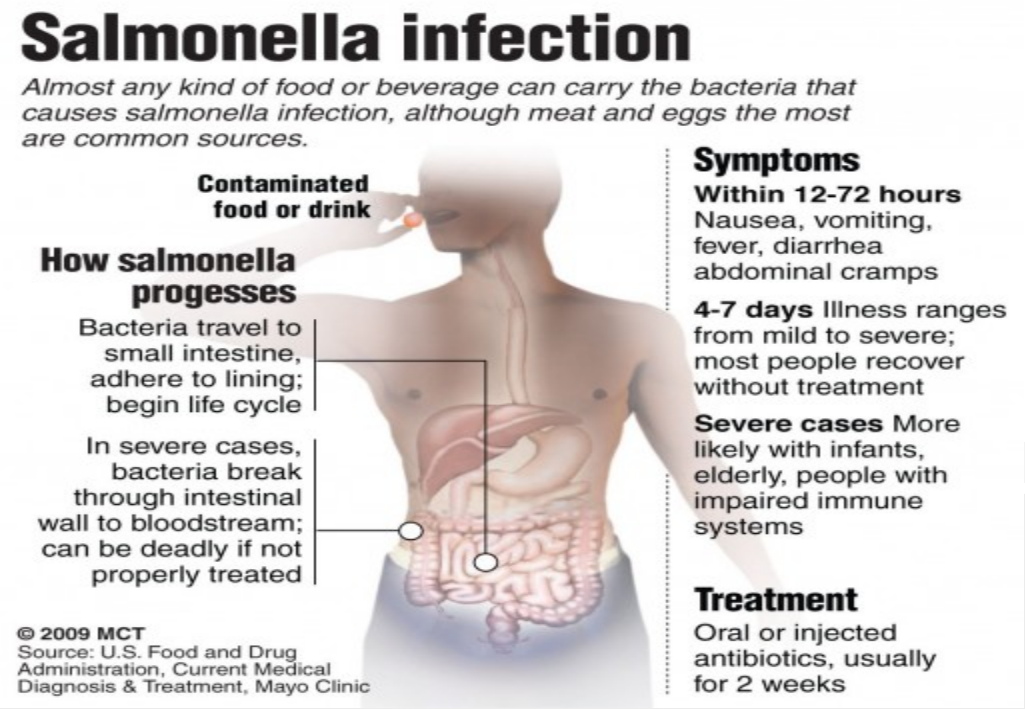
E.Coli

- E-coli bacteria can taint ground meats and produce. If the bacteria is not reduced to safe levels either by cooking, sanitation or refrigeration, before being consumed in food, patients can suffer from urinary tract infections and hemolytic uremic syndrome: kidney failure and a store or urine in the body, leading to complete organ breakdown and death.
- Tip cook ground meats to 155 d F or higher, Use whole lettuce for salads, drink juices that have been pasteurized.

Salmonella

- Salmonella can be found in poultry and eggs, deli meats and produce. Symptoms include nausea, vomiting, diarrhea, abdominal cramps, fever and chills. Hospitalization due to dehydration from excessive diarrhea is common.

- Prevention: Wash all produce thoroughly, cook poultry and eggs to required minimal temperatures.

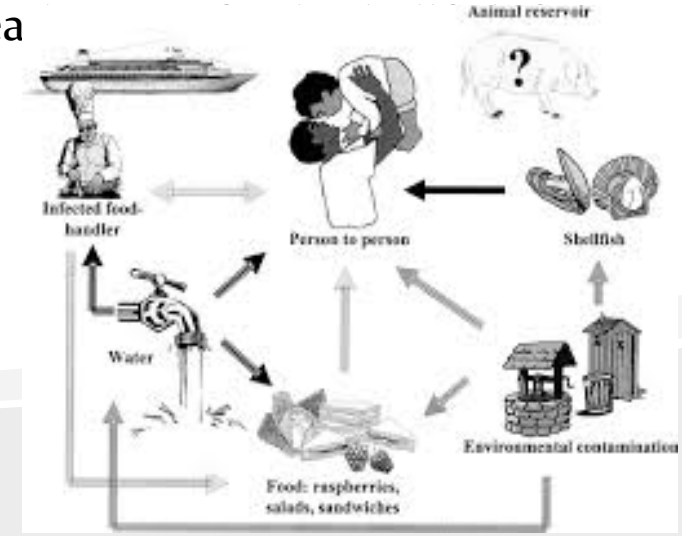


Shigella

- Sources of Shigella are: ready to eat foods, salads and sandwiches, contamination is spread through an infected food handler or through contamination of the water and unsanitary conditions preparing produce. Symptoms include diarrhea, fever and dehydration.
- Food handlers who prepare ready to eat food with soiled fingers contaminated with dirt and feces, who don't wash their hands after using the restroom can spread the bacteria to the food being prepared. Proper hand washing is required.

Norovirus

- People infected with Norovirus can suffer from vomiting, watery diarrhea, abdominal pain, lethargy, weakness. Transmitted to people through shellfish, ready to eat foods and contaminated water. Prevention methods include: Frequent hand washing especially after using the restroom, wash vegetables, buy food from approved sources.
- Infected food service workers responsible for 70 % of all Norovirus cases in the United States, 20 million cases, #1 cause of foodborne illnesses .
- Sources sewage, contaminated water, rea contaminated water, fecal oral routes.



Food Safety Risks in Food Chain

- Where do you get your food? Before food gets to your local supermarket shelves, it goes on a journey. On the farm, contaminated water, seed, equipment, workers and animals can taint food.
- $ 143 Billion Crops, $153 Billion Livestock (8 Billion chickens and 33 million heads of cattle)
- Top five agricultural states: CA: $44.7 B; IA: $31.9B; NE: $24.4 B; TX:$22.7B; MN: $20.5 B

Where are you taking me? Food Processors in the United States:

- Processors of food: Lack of supervision and poor process controls can lead to unhygienic conditions that allow harmful pathogens to grow in the food being processed.
- Pepsi: $33 M; Tyson: $32 M; Kraft: $14M

Are we there yet?

- Food can become contaminated in transit from the processor to the vendor. If not stored and held at proper temperatures, food in transit can spoil and be unsafe to eat!
- Sysco: 125 Distribution centers; US Foods: 100 Distribution centers
- 2.6 million trucks on US roads each year.
- 70% of all US agriculture carried by truck.

Prime Real Estate: Your Local Grocery Store

- Vendors of Food profit from selling a variety of wholesome fresh food to the consumer. Warm temperatures, poor sanitation and poor rotation and display of products in stores can allow bacteria to multiply.
- Rotation of products is crucial, First In, First Out (FIFO): This method of stock rotation will ensure that the oldest product is sold to the consumer first!

Order Up! Is your food safe at the plate?

- When your food is on the plate it still might not be safe to eat. Unclean kitchens, insufficient cooking and poor personal hygiene of food handlers can further raise the risk of getting sick from eating food.

And Around We Go.....

Foodborne Illnesses by the numbers

Every year one in six Americans get sick from food poisoning.

In the United States each year:

- 48,000,000 People sickened by food.
- 128,000 Hospitalized for treatment.
- 3,000 Deaths from foodborne illnesses.

Food Safety Management Systems

- In retail establishments, such as restaurants, schools or hospitals, food safety management systems help employees to run the operation effectively. These programs include:
- Personal Hygiene program
- Supplier selection and specification
- Cleaning and sanitizing program
- Facility design
- Equipment maintenance
- Food Safety Training
- Quality control and assurance
- Standard operating procedures
- Pest Control Program

Active Managerial Control

- Five Common Risk factors for Foodborne Illness:

1. Purchasing food from unsafe sources.
2. Failing to cook food correctly
3. Holding food at incorrect temperatures
4. Using contaminated equipment
5. Practicing poor personal hygiene

Hazard Analysis Critical Control Points (HACCP)

1. Conduct a hazard analysis.
2. Determine Critical Control Points.
3. Establish Critical Limits
4. Establish monitoring procedures.
5. Identify corrective actions
6. Verify that the system works.
7. Establish procedures for record keeping and documentation.

HACCP: Review

HACCP Principles

1. **Hazard Analysis_____**
2. **Critical Control Points_____**
3. **Critical limits_____**
4. **Monitoring_____**
5. **Corrective action_____**
6. **Verification_____**
7. **Record Keeping_____**

Definitions

A) Checking critical limits

B) Keep HACCP plan documents

C) Assessing risks through flow of food

D) Specific places within the flow of food where hazards can be prevented or reduced to safe levels,

E) Predetermined step taken when a critical limit is not met.

F) Minimum or maximum boundary that must be met to prevent a hazard.

G) Determining if the HACCP plan is working as intended.

Food Service Equipment

- Floors, walls and ceilings must be smooth and durable for easy cleaning.
- Maintain flooring walls and ceilings: missing tiles must be replaced, fix and fill crevices in walls.
- Equipment selection: All food service equipment must bear the NSF emblem, which shows that the equipment has been reviewed and tested to meet certain established standards for equipment that comes into contact with food.
- Floor mounted equipment on legs must be kept 6 inches off the floor, Table top equipment on legs should extend at least 4 inches above the table.

Develop a Cleaning Program

1. **Create a master cleaning schedule**: this should outline what should be cleaned, who should clean it, when it should be cleaned, how it should be cleaned. **USE CHECKLISTS!**

2. **Train staff to follow procedures**: Give staff regular training on cleaning food service equipment, and have managers train new employees as needed.

3. **Monitoring the Cleaning Program**: Supervise daily cleaning routines; check all cleaning tasks are performed; check cleaning schedule for updates; ask staff for feedback or recommendations during meetings.

Food Safety at Home

Four Ways Food Can Become Unsafe:

- Time Temperature Abuse
- Cross Contamination
- Poor Personal Hygiene
- Poor Cleaning and Sanitizing

Time Temperature Abuse:

Food can be time temperature abused when it has stayed too long at temperatures that promote the growth of pathogens. A foodborne illness can develop if:

- Food is not stored or held at the correct temperature.
- Food is not cooked correctly.
- Food is not reheated or cooled properly to reduce pathogen growth.

Cross Contamination

Cross contamination occurs when pathogens are transferred from one food or surface to another.

- Contaminated ingredients are added to food that receives no further cooking.
- Ready to eat food touches contaminated surfaces.
- Contaminated food drips fluids onto cooked or ready to eat food.

Poor Personal Hygiene

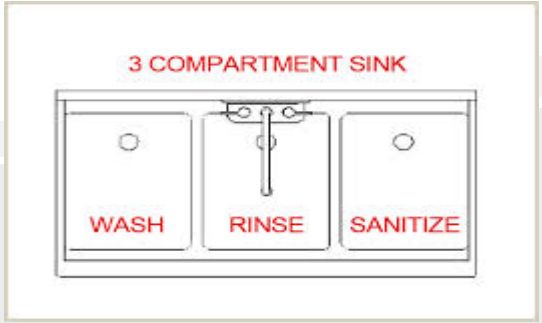
Food Handlers or Home cooks can cause a foodborne illness if they:

- Fail to wash their hands after using the restroom.
- Cough or sneeze onto or near food
- Scratch wounds and then touch food
- Work while sick

Poor Cleaning and Sanitizing

Pathogens can be spread to food if equipment used to prepare food has not been cleaned and sanitized correctly:

- Equipment and utensils are not washed, rinsed and sanitized between uses.
- Food contact surfaces are wiped clean, but not sanitized.
- Wiping cloths containing sanitizing solution are stored in apron pockets and not in a sanitizing solution.
- Heat sanitizing: Hot water, 171 d F for 30 seconds or Chlorine, Iodine and Quats acceptable in foodservice operations.
- Use a test kit to check concentration!



Do you Practice Chicken Safety? Survey Says.....

From Consumer Reports, February 2014, 1005 Respondents participated in a survey about chicken safety:

Do you use a cutting board designated for raw meat? 57% of Respondents said they did.

Tip: Get different color cutting boards to prevent cross contamination.

Safe Chicken Preparation

Do you wash hands after handling raw poultry?

93% of Respondents scrub away!

Tip: Wash hands for 20 seconds using warm water (100 d F) and soap every time you touch raw meat, frozen or fresh.

Is Washing Chicken a Safe Practice?

Do you wash chicken before cooking it?

72% of Respondents still do.

Tip: Stop washing chicken! Doing so can increase your risk of getting sick. Bacteria can be spread up to 3 feet from the sink and these areas may not get disinfected, causing further contamination.

Checkout Lane: The order you buy food at the store helps to keep food safe

Do you buy chicken last at the store

32% of Respondents said they did.

Tip: Keeping chicken cold helps to prevent bacteria from growing. Put your chicken and meat in the grocery cart last.

Bag It to Prevent Cross Contamination

Do you put chicken in a plastic bag at the store?

65% of Respondents said they do.

TIP: You should, too. It's always a good idea to prevent juices from chicken from contaminating other food you have in your cart.

Cook Your Meat Till It's Done!

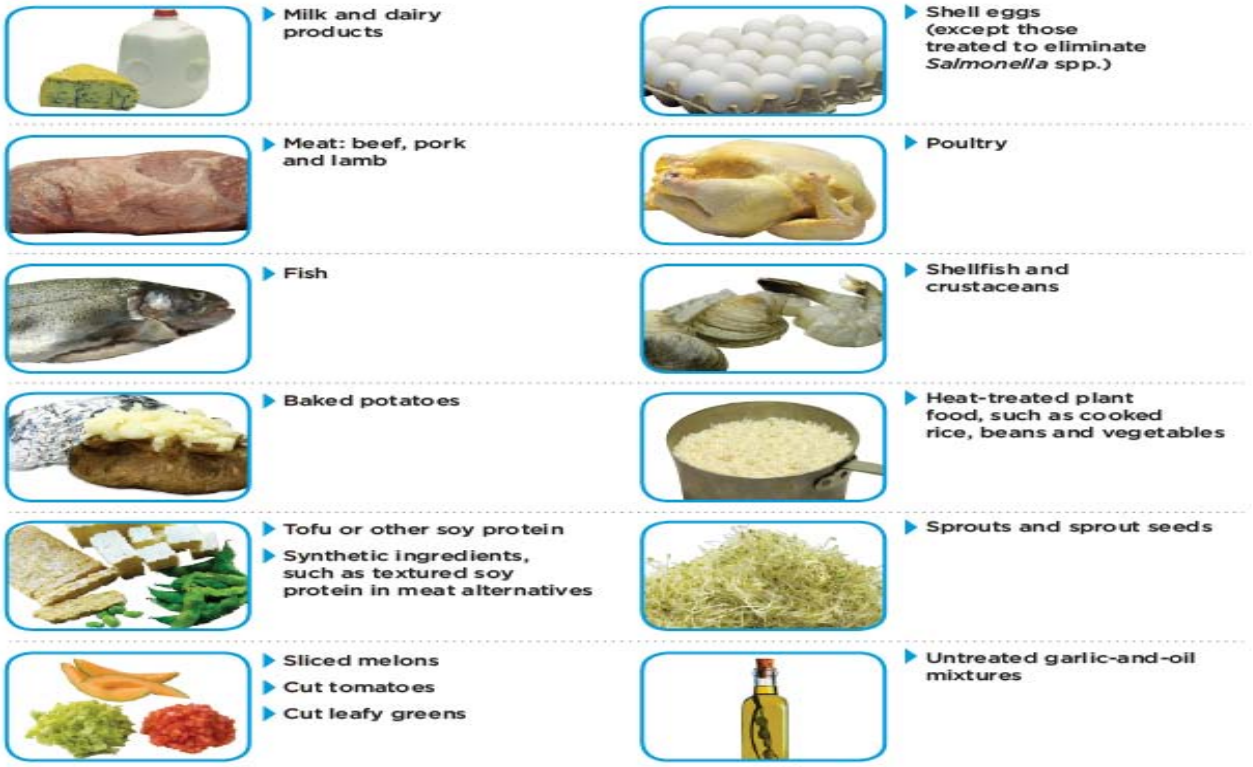
Do you use a meat thermometer to check the internal temperature of food you are cooking?

Only 30% of Respondents said they did.

Tip: Get one next time you go to the grocery store. 82 % of Respondents claimed they cooked chicken to 165 degrees Fahrenheit, the recommended (by the FDA) temperature for chicken but without a thermometer. you can't really tell.

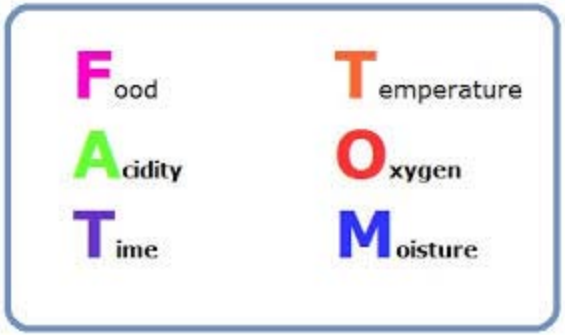
Time and Temperature Control for Safety Foods (TCS Foods)

Time and Temperature Control for Safety Foods (TCS Foods): Most Likely Foods to Become Unsafe:



Conditions That Favor the Growth of Illness-Causing Bacteria

- Food: Pathogens, or illness causing microorganisms grow well in foods that are high in protein or carbohydrates: meat, poultry, seafood, milk, rice and eggs.
- Acidity: The acidity or alkalinity of a food: Most disease-causing bacteria multiply best between 5-8 on the alkaline scale, low to neutral.
- Temperature: Pathogens grow best if left in the temperature range of 41 d F and 135 d F, known as the temperature danger zone(Keep cold foods below 41 d F and keep hot foods above 135 d F).
- Time: Micro-organisms need time to grow in food: They can double in number every 20 minutes under ideal conditions.
- Oxygen: Some pathogens will only grow when oxygen is present (aerobic organisms) and some can only grow when oxygen is not present in the food (anaerobic organisms)
- Moisture: Micro-organisms need water to grow and multiply.



High Risk Populations

Certain groups of people have a higher risk of getting a foodborne illness:

- Pre-Schoolers: Have not built up strong immune systems
- Elderly People: Immune systems have weakened with age.
- People with Compromised immune systems:

Patients, transplant recipients, people with HIV/AIDS.

Food Safety at Home: Preventing Time Temperature Abuse

Many foodborne illnesses occur because food has been time temperature abused. To avoid time-temperature abuse, try the following practices:

1. Keep food out of the temperature danger zone 41 degrees-135 degrees. ***This is where harmful pathogens grow the most.***

2. Cook food to its correct internal temperature. ***Doing so will reduce bacteria to safe levels.***

3. Hold food at correct temperatures. Hold cold food at 41 degrees or lower, Hold hot foods at 135 degrees F or higher. ***This will slow the growth of harmful illness causing bacteria.***

Food Safety at Home: Preventing Cross Contamination

Illness-causing pathogens move quickly around your kitchen spread through cross contamination. Here's what you could do to prevent cross contamination:

1. Use separate equipment: Use color coded cutting boards for poultry, red meat, dairy and produce**. *Doing so will make sure that foods do not come into contact with each other.***

2. Prep food at different times. If you need to use the same table to prep different types of food, then you should prep raw meat, fish or poultry, wash rinse and sanitize the surface and then use it to prepare ready to eat foods like salads and sandwiches**. *Doing do will minimize the chance for cross contamination.***

Food Safety at Home: Practicing Good Personal Hygiene

Good Personal hygiene practices are crucial for keeping food safe: Since hands are a vehicle of contamination, extra care must be given to their care and Food Handlers must watch what they do with their hands while prepping food>

Here are some pointers:

1. Wash your hands after taking a break to smoke. ***If you do this you will be washing off any saliva that you exhaled onto your fingers before returning to work.***

2. Wash your hands after coughing or sneezing into a gloved hand. ***Doing so will prevent you from spreading mucous and other fluids onto cooked or ready to eat foods***.

3. Don't work when you are sick with a cold, fever, have diarrhea or stomach cramps**. *Doing so will spread the virus around the kitchen and make other people sick while also contaminating the food you are serving.***

Food Safety at Home: Practicing Good Cleaning and Sanitizing

Good cleaning and sanitizing practices reduces the risk of cross contamination and the growth of harmful, illness causing practices. Here are some cleaning pointers:

1. Never store cleaning materials and sprays above prep counters. ***Doing so may spread chemical contaminants on cooked and ready to eat food.***

2. Never re-use containers that once stored chemicals and store food in them. ***This action will lead to chemical contamination of the food, since chemical containers must be disposed of per the manufacturer's directions and can not be cleaned properly in order to store food in them***

Hand Washing: Keeps Food Safe

This is How We Do It!

This is When You Should Wash Your Hands:

After:

- Using the restroom.
- Handling raw meat, poultry and seafood. (before and after)
- Touching the hair, face or body
- Sneezing, coughing or using a tissue
- Eating, drinking, smoking or chewing gum or tobacco
- Handling chemicals
- Taking out the garbage
- Handling money.

Turn Up the Heat: Safe Cooking Temperatures

Cooking Requirements: 165 Degrees F for 15 Seconds

These Foods must be cooked to an internal temperature of 165 for 15 seconds:

- Poultry: Whole or ground chicken, turkey or duck
- Stuffing made with fish, meat or poultry
- Stuffed meat, seafood, poultry or pasta
- Dishes that include previously cooked TCS ingredients(stews, paellas)

Cooking Requirements: 155 Degrees F for 15 Seconds

These foods must be cooked to an internal temperature of 155 for 15 Seconds:

- Ground meat-including beef and pork
- Injected meat-including brined ham and flavor injected roasts
- Mechanically tenderized meats
- Ratites-such as ostrich and emu
- Ground seafood-including chopped or minced seafood
- Shell eggs that will be hot held for service

Cooking Requirements: 145 Degrees for 15 Seconds

These foods must be cooked to an internal temperature of 145 d F and hold for 15 seconds:

- Steaks/chops of pork, veal and lamb
- Seafood- Including fish, shellfish and crustaceans
- Commercially raised game
- Shell eggs for immediate service

Cooking Requirements; 145 Degrees F for 4 Minutes

These foods must be cooked to a minimal internal temperature of 145 d F and hold that temperature for 4 minutes:

- Roasts of pork, beef, veal and lamb

Cooking Requirements: 135 Degrees F for 15 Seconds

These foods must be cooked to a minimum internal temperature of 135 d F for 15 Seconds:

Fruit, vegetables, grains (rice, pasta) and legumes (beans, refried beans) that will be hot held for service

Cold Holding:
Cold Foods Must be Held at 41 Degrees F or lower

In a self-service buffet line, these foods must be held at 41 d F or lower:

- Potato salad
- Pasta salad
- Tuna salad
- Sardines, herring and smoked
- Fruit salads

Cooking in the Microwave

Meat, poultry, seafood and eggs cooked in a microwave must reach a minimum internal temperature of 165 Degrees F for 15 Seconds. Here are some other guidelines to keep food safe:

- Cover the food to prevent the surface from drying out
- Rotate or stir halfway through cooking, to distribute heat evenly
- Let the food stand for two minutes after cooking to let the temperature even out
- Check the temperature in two places to make sure that the food is cooked all the way through

Thawing Frozen Food

When frozen food is thawed and exposed to the temperature danger zone, harmful pathogens can begin to grow on food. ***Never thaw food at room temperature or in standing water!***

Frozen food can be safely thawed in the following ways:

1. Thaw frozen food in the refrigerator at 41 Degrees F or lower
2. Thaw frozen, packaged foods under running warm water at 70 Degrees or lower
3. Thaw frozen food in the microwave as long as it is cooked right after thawing by conventional cooking methods
4. Through direct cooking you can safely thaw frozen foods, i.e. putting frozen hamburger patties on a correctly heated grill

Safely Cooling Food

Safely cooling food means bringing the internal temperature of hot foods down quickly and safely. The rule is to cool foods from 135 d F to 70 d F in 2 Hours and from 70 d F to 41 d F in 4 Hours by using the following methods:

1. Cut large portions of food like meats into smaller pieces.
2. Divide large vats of food into smaller, shallow pans
3. Put smaller containers in an ice water bath
4. Use an ice paddle to stir hot foods while cooling

Reheating Food for Service

You must reheat TCS foods for hot-holding to a minimum internal temperature of 165 d F for 15 Seconds within two hours

Garcon! Service Guidelines

- You have come this far and still need to protect the food you are going to serve from contamination when serving it. Kitchen staff must follow the following guidelines:
- Food Handlers must properly wash hands and wear single-use gloves when handling ready to eat foods or use utensils such as spatulas, tongs, deli-sheets to avoid bare-hand contact with ready to eat foods.
- Use clean and sanitized utensils which are stored handles up
- Don't touch food contact surfaces such as the rim of a glass or the top of a plate, the tines of a fork (use the handle)
- Never scoop ice with a glass (the glass can chip and accidentally contaminate the ice chest and the drink)

Allergens

Food allergens are proteins present in certain foods which some people are sensitive to. If people who are allergic to these foods eat even a small amount of the allergen, they can experience a serious allergic reaction. It is important that you know which foods are common allergens and how to prevent allergic reactions.

Allergic Symptoms

An allergic consumer can exhibit any one or all of the following symptoms after consuming an allergen:

- Nausea
- Wheezing or shortness of breath
- Hives or itchy rashes
- Swelling of the face, eyes, hands or feet
- Vomiting and/or diarrhea
- Abdominal pain.
  https://www.youtube.com/results?search_query=imagine+peanut+allergy

Preventing Allergic Reactions

Many common allergens are already blended in condiments such as soy sauce, or used to prepare specific foods that use oils or other derivatives from the allergen. These are some guidelines to prevent allergic reactions:

1. Know all the ingredients of the food you are serving, especially pre-packaged foods
2. Identify all secret ingredients and be prepared to explain them
3. Avoid cross-contact, i.e. preparing food that contains allergens with foods that do not, or cooking allergens like crab cakes in the same fryer as the chicken tenders
4. Cook food for allergic customers in a separate area wi[illegible] sanitized equipment.

Undercooked Foods

In many cultures, undercooked foods such as meats (rare steak 125 d F) and raw fish such as sushi are considered delicacies. Since food must be cooked to required minimum internal temperatures, food service establishments must display a disclosure known as a Consumer Advisory. This advisory states: This item and others specified in this menu may be served raw or undercooked ingredients ***and may increase the incidence of a foodborne illness.***

Refrigerate and Rotate

- All leftover TCS food can be kept under refrigeration at 41d F or lower for up to 7 days.
- Check all expiration dates before cooking, preparing or eating.
- Set expiration dates for food prepared in house, for 7 days , counting the date of preparation.

EXAMPLE: Tuna salad prepared on November 1, must be discarded on November 7.

EXAMPLE: If mixing ingredients with different use by dates on December 1, like sausage that expires on December 6 and fish that expires on December 8, stay with the earliest use by date, December 6.

Practice FIFO: First In, First Out, even for frozen or canned foods. This will ensure that you use the oldest product first.

Order in the Cooler!

- Ready to Eat foods on top
- Fish and Seafood
- Whole cuts of meat, and pork, roasts and chops.
- Ground meats and fish
- Poultry: Chicken, turkey, duck

Order is based on the minimum internal cooking Temperatures: The food that has to be cooked the longest, poultry is on the bottom since heat Rises in a cooler!

How Long Has This Been Goin' On? Refrigeration vs. Freezing

Food	Refrigerator/Freezer
Salads: Egg, Chicken, ham, tuna and macaroni	3-5 days/Freezer not recommended
Hot Dogs	1-2 weeks/1-2 months
Deli meats	3-5 days -2 weeks/1-2 Months
Bacon	7 days/1 month
Sausage-raw: chicken, turkey, beef, pork	1-2 days/1-2 months
Ground meats- beef, veal, pork, lamb	1-2 days/3-4 months
Steaks and roasts	3-5 days/4-12 months
Poultry, whole or pieces	1-2 days/9-12 months

Thanks for Coming, Now Go Home: Rejection Criteria

- Reject raw meats, fish or poultry if temperature of food upon delivery is not below 41 d F!
- Reject any hot foods that are not delivered at temperatures below 135 d F!
- Reject any frozen foods with evidence of thawing and re-freezing, ice crystals in packaging, boxes or case bottoms.
- Reject any swollen or dented cans!
- Reject bags with punctures, water stains.
- Reject bloating or leaking ROP foods!
- Reject items with evidence of pests or pest droppings.
- Reject expired foods.

Government Agencies

1. The Food and Drug Administration, or FDA inspects all food except meat, poultry and eggs. Every 4 years, the FDA publishes an updated Model Food Code which outlines in minute detail its recommendations for food safety regulations for city, county, state and tribal agencies.

2. The United States Department of Agriculture regulates and inspects meat, poultry and eggs and transport of food across state lines.

3. The Center for Disease Control and Prevention

4. Or CDC and the Public Health Service, or PHS work to research causes of foodborne-illness outbreaks and their prevention.

5. State and local Regulatory Authorities are known to the public as Health Inspectors who monitor, audit and enforce food safety violations at the local level.

FDA, UFSDA, CDC, Public Health Service and State or Local Regulatory Authorities

Food Recalls

Government agencies work with each other and food processors to recall food deemed unfit for human consumption. In many cases the recall is voluntary by the manufacturer or distributor when it is found that products already for sale in supermarkets may be unfit for human consumption. Food may be recalled for any one of the following reason: the food contains pathogens that are known to cause illnesses; the food may contain an allergen unintentionally or the packaging is mislabeled (the manufacturer knowingly put the allergen in the product, but didn't put it on the label)

Food Safety Certificate Programs

- By Definition, from the 2013 Model Food Code, Food protection manager certification occurs when individuals demonstrate through a certification program that they have met specified food safety knowledge standards. Certificates earned by candidates must be renewed every 3-5 years to learn of any changes to the Model Food Code.

Review: True or False

1. The USDA inspects meat, poultry and eggs.
2. A Consumer Advisory informs customers who order undercooked food in a restaurant.
3. Milk is a common allergen.
4. It is safe to thaw food in a cooler at 41 d F or lower.
5. Ground beef patties should be cooked to a minimum of 155 d F.

Answers

1. True
2. True
3. True
4. True
5. True

Review: True or False

1. It's okay to use your hands to serve muffins to customers.
2. You don't have to wash your hands after taking out the garbage.
3. You can only smoke e-cigarettes in the prep area.
4. Teenagers are high risk populations.
5. Tortillas need time and temperature control for their safety.

Answers

1. False
2. False
3. False
4. False
5. False

Review

1. Cooking food to its required minimal temperatures reduces the growth of bacteria.
2. You should always use an ice scoop to avoid physical contamination in drinks.
3. You should wash your hands for 20 seconds.
4. There are on average 48,000,000 foodborne illnesses in the United States every year.
5. You should wash your hands before and after handling raw meat, poultry and seafood.

Answers

1. True
2. True
3. True
4. True
5. True

Review

1. The CDC inspects and regulates foodservice establishments at the local level.
2. It is okay to put crab cakes and chicken tenders in the same fryer oil.
3. Only restaurant owners have to be concerned about food safety.
4. You can thaw frozen food at room temperature.
5. Contamination can only occur at the source of the supply chain, the farm.

Answers

1. False
2. False
3. False
4. False
5. False

Congratulations!

- Thank you for your attention!
- Food Safety starts with you!
- Cook! Cool! Clean! Separate!

Richard Bellman , MA, CFPM, FMP
A Plus Food Safety, Los Angeles

- Richard Bellman is a Certified Instructor and Proctor for the ServSafe Food Protection Manager Program and has sponsored close to 3,000 ServSafe Food Protection Manager certificates since 2010.
- Richard also trains foodservice employees on the California Food Handler Program in English or Spanish.
- He serves as a ServSafe Responsible Alcohol Service Instructor.
- He has earned the designation of Certified Food Protection Manager and Foodservice Management Professional from the National Restaurant Association.

Contact Information

- If you feel that you benefitted from this training and would like to get more information about related services, please fill out the enclosed contact sheet and return it to the instructor.
- Name_____
- EMail_____
- Phone_____