

Food Safety 101



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A Little Background...

□ What do we do at the Health Department?

1. Public Health Nursing
2. Vital Records
3. Environmental Health
 - a. Food and Septic
 - b. Pools
 - c. Vector Control
 - d. Lead
 - e. Air and Water Quality
 - f. Environmental Complaints
 - g. Education and Emergency Preparedness



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What is a Foodborne Illness

- ❑ Illness resulting from ingestion of contaminated foods or water
 - Infections - bacteria themselves make you sick
 - Intoxications - Poisons that the bacteria make



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Foodborne Illness

**How many of you have had the “24
hour flu”?**



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Foodborne Illness

- Symptoms and Complications
 - ▣ Diarrhea
 - ▣ Vomiting
 - ▣ Nausea
 - ▣ Fever
 - ▣ Fatigue
 - ▣ Jaundice
 - ▣ Dehydration



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Foodborne Illness



- Highly Susceptible Populations
 - Infants
 - Elderly
 - Pregnant women
 - Immune-compromised populations (i.e. cancer, organ transplant, HIV)



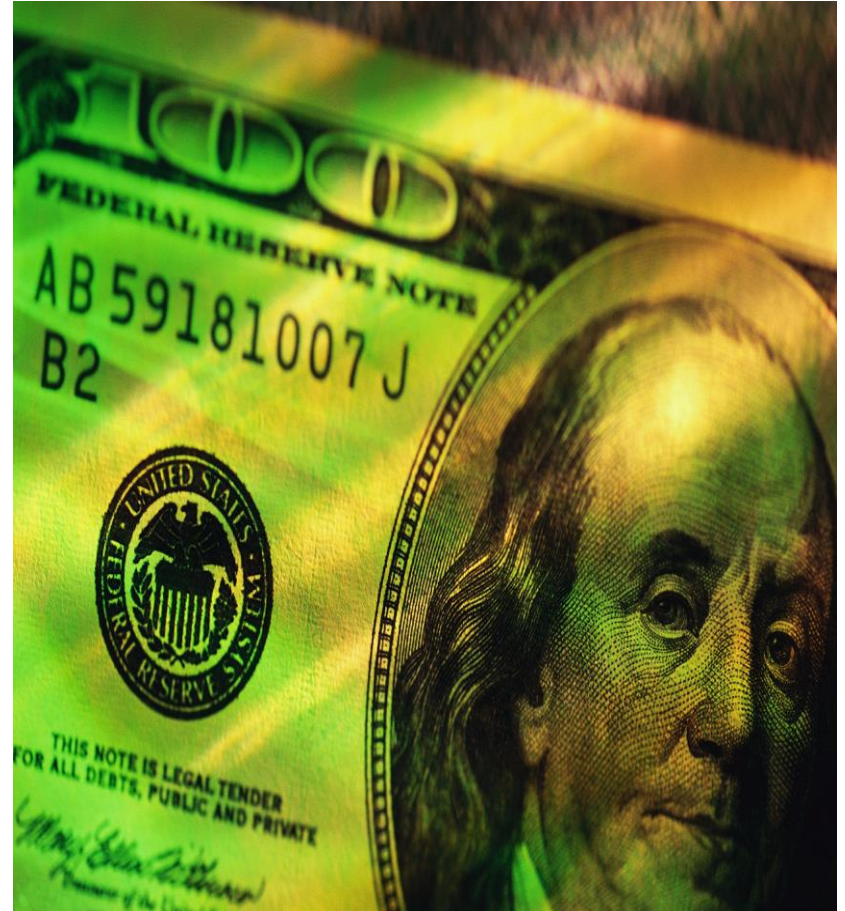
What is a Foodborne Outbreak?

- ❑ Two or more individuals who are made sick from a common food or water source
 - ❑ Restaurants
 - ❑ Cookouts
 - ❑ Pitch-in-Dinners
 - ❑ Conventions
 - ❑ Water Sources



Foodborne Outbreaks

- Every year in the USA:
 - Over 250 billion meals are prepared
 - An estimated 48 million foodborne illnesses occur (1 out of every 6 Americans)
 - 128,000 food-related hospitalizations
 - Over 3,000 deaths occur due to foodborne illness
 - Very costly to business (not only money but reputation)



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Sources of a Foodborne Illness

□ Foodborne illnesses have many different sources...

▣ Viruses

▣ Bacteria

▣ Parasites (Crypto)

▣ Physical Hazards

▣ Chemicals

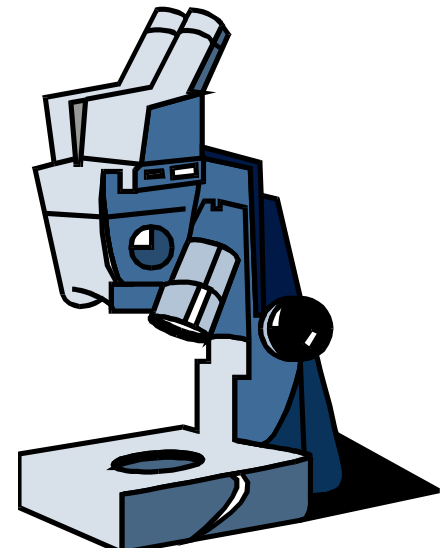


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Virus vs. Bacteria

- Viruses need a living host cell to replicate.
- Bacteria can grow on most surfaces as long as certain conditions are met:
 - Food
 - Moisture
 - Temperature
 - pH



Foodborne Viruses

- Viruses are spread via a fecal-oral route
- Easily spread from person-to-person
- Most foodborne viral outbreaks can be prevented by washing your hands



Foodborne Viruses

- Hepatitis A:
 - Gastro-intestinal symptoms within 15-50 days.
 - Chi-Chi's Restaurant Outbreak (Green Onions)
 - The outbreak claimed three lives and sickened at least 660 people



- Norwalk Virus
 - Gastro-intestinal symptoms within 24-48 hours.
 - Most common form of foodborne illness
 - Olive Garden (December 2006) - 600 suspected illnesses
 - only 3 confirmed cases



Foodborne Bacteria

- ❑ Bacteria are typically spread through cross contamination
- ❑ Bacteria multiply due to time and temperature abuse
- ❑ Some can survive freezing
- ❑ Some turn into spores



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Foodborne Bacteria

- Escherichia coli 0157:H7 (E coli)
 - Gastro-intestinal symptoms within 3-8 days
 - Normally found in intestines of farm animals
 - Meat is contaminated during processing
 - Produce is contaminated in the fields
 - California spinach (2006) – 26 states, 204 ill and 3 deaths
 - Totino's Frozen Pizza (2007) – pepperoni was contaminated



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Foodborne Bacteria

□ Salmonella

- Gastro-intestinal symptoms within 6-48 hours
- Most commonly thought of in poultry and their eggs
- Can also be found in fish, meat products, unpasteurized milk, and sliced fruits
- Reptiles (turtles, snakes, etc...)
- Peter Pan and Great Value Peanut Butter (2007)
- Banquet Frozen Chicken and Turkey Pot Pies (2007) – public believes this product is fully cooked

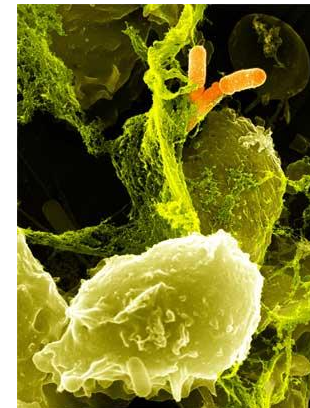
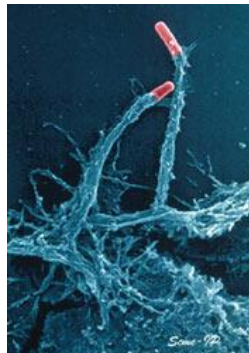


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Foodborne Bacteria

- Shigella
 - ▣ Gastro-intestinal symptoms within 12-50 hours
 - ▣ Easily spread from person-to-person
 - ▣ Infected person can be contagious for up to 4 weeks
 - ▣ Prevented by proper hand washing
 - ▣ Commonly found in salads: potato, tuna, macaroni, etc...



Botulism

- ❑ Symptoms include onset of double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, or muscle weakness.
- ❑ If untreated, the illness may progress from head to toe, with paralysis of the face, arms, breathing muscles, trunk, and legs.
- ❑ Symptoms generally begin 18 to 36 hours after eating a contaminated food, but they can occur as early as 6 hours or as late as 10 days.
 - ❑ Castleberry's Food Company (2007) – Hot dog chili sauce and pet food.
 - ❑ New Era Canning Company (2007-2008) – Green, Garbanzo and Chili Beans – Well water had unsatisfactory sample and products were not heat treated to proper levels.



Recalls

- ❑ Hallmark/Westland Meat Packing Company
 - ❑ 143,383,823 lbs. recalled
 - Biggest beef recall in history
 - ❑ Downer cows are prohibited from entering the food supply
 - Animal rights video
 - ❑ Some of product had been consumed
 - ❑ No reported illnesses at this time



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Food Safety

- Hand Washing
- Cross Contamination
- Time and Temperature



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Hand Washing

- When should you wash your hands?
 - ▣ After using the toilet.
 - ▣ After coughing, sneezing, or after blowing your nose.
 - ▣ After scratching your face (or other body parts).
 - ▣ Before preparing or eating food.
 - ▣ Between handling of raw meats and switching to ready-to-eat foods.



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Hand Washing Steps

1. Warm water
2. Soap
3. Lather
4. Friction for 20 seconds
5. Rinse
6. Dry with paper towel



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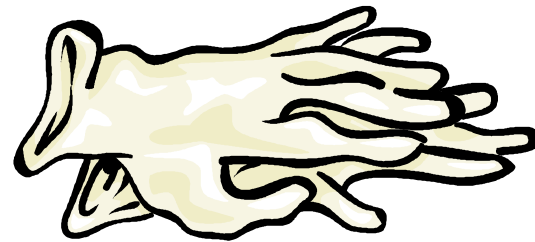
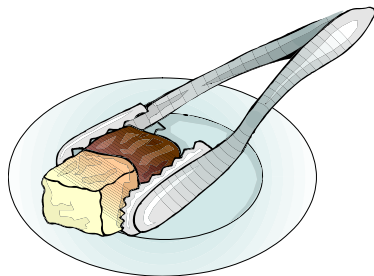
No Bare Hand Contact

When handling food for the public:

Hands must be washed properly

AND

Hands may not touch **ready-to-eat* food*
foods that are cooked or do not need cooked



**Items such as tongs, spoons, gloves,
single-use tissues must be used**



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Cross Contamination



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Cross Contamination

- The transfer of a harmful substance from one food to another food
 - ▣ Human hands
 - ▣ Contaminated food contact surfaces of equipment
 - ▣ Utensils
 - ▣ Directly from a raw ready-to-eat food

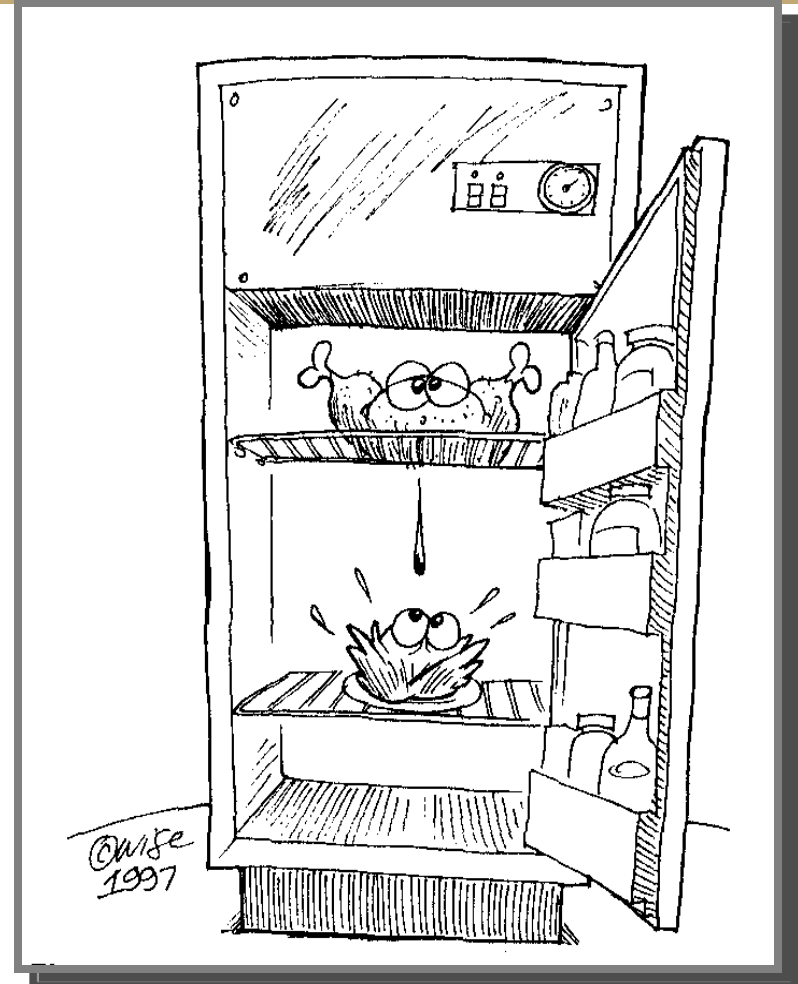


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In Other Words...

Cross contamination is when germs from one food (raw chicken) are transferred onto another food (lettuce).



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ClickArt ClickEdit product, © 1998

How does it happen?

- ❑ Improper storage practices
- ❑ Improper food handling
- ❑ Food and/or ingredient contamination
- ❑ Contact with contaminated equipment, utensils, and wiping cloths
- ❑ Contamination from ice
- ❑ Contamination by others



Cross Contamination

- Common Towels
 - Don't use common towels to wipe down food contact surfaces after using the towel to wipe your face...
 - Don't leave a common towel that was used to wipe your face or to clean up a spill out on a counter unwashed.



Cross Contamination

- How to stop cross contamination
 - Separate meats and vegetables in the refrigerator
 - Use a different cutting board for meats and vegetables
 - Plastic and glass cutting boards harbor less bacteria than wooden cutting boards
 - Sanitize cutting boards with a bleach water solution



Cross Contamination

- How to stop cross contamination cont.
 - Wash hands between handling meats and vegetables
 - When cooking/grilling, do not use the same plate to remove the cooked meat as was used when placing the raw meat on the grill.



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Time and Temperature

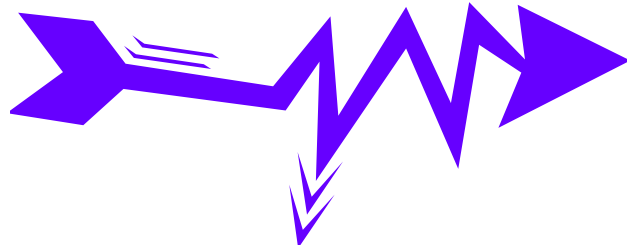


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The “Temperature Danger Zone”

41° F



135° F



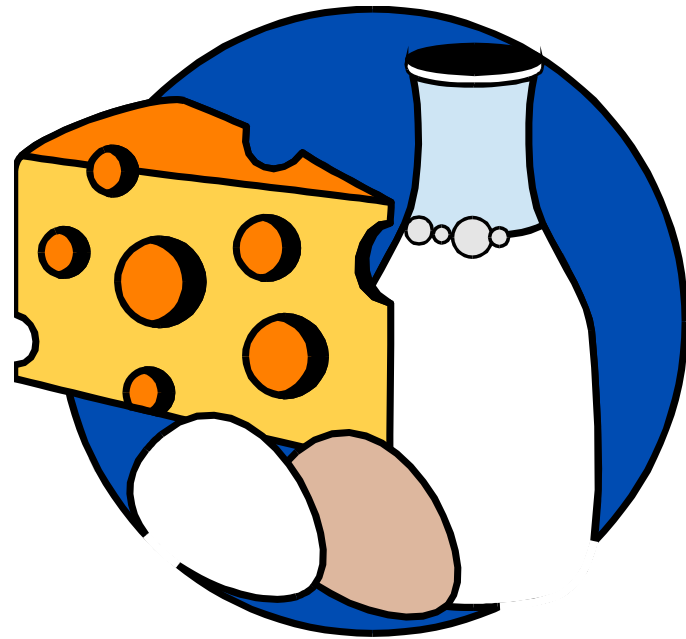
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What is a Potentially Hazardous Foods

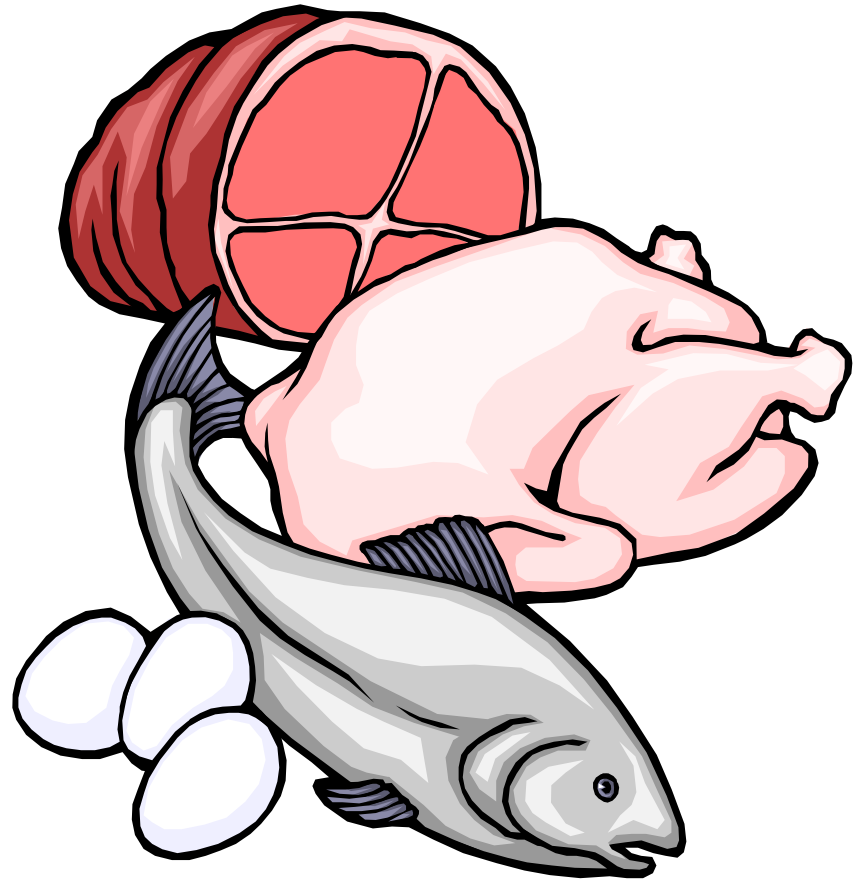
“...foods that can support the growth of harmful bacteria...”

- ❑ Foods high in protein
- ❑ Foods low in acid
- ❑ Foods high in moisture



Examples of Potentially Hazardous Foods

- ❑ Milk and dairy products
- ❑ Beef, pork, and poultry
- ❑ Eggs
- ❑ Seafood
- ❑ Sliced melons and bean sprouts
- ❑ Rehydrated beans
- ❑ Cooked rice, potatoes, and pasta



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Three Rules for Temperature Control

1. Keep potentially hazardous foods out of the temperature danger zone.
2. Pass potentially hazardous foods through the temperature danger zone as quickly as possible.
3. Pass potentially hazardous foods through the danger zone as few times as possible.



Thawing

**How does your family thaw food
at home?**



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Thawing

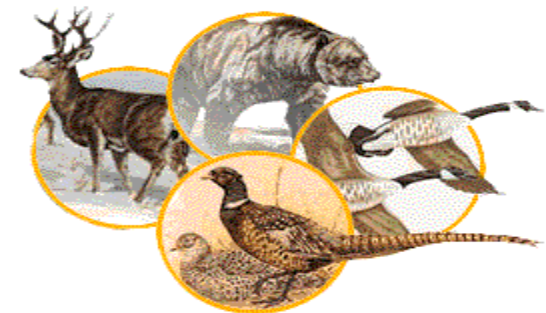
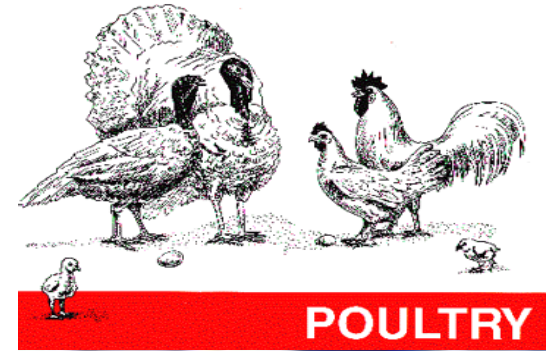
- ❑ In the refrigerator: less than 41° F
- ❑ Under cool running water: less than 70° F for less than 2 hours
- ❑ In the microwave oven, cook foods immediately after thawing

NEVER thaw at room temperature!



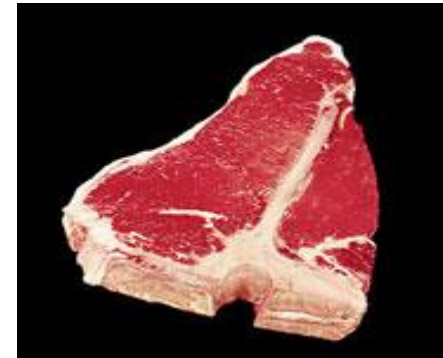
Time and Temperature

- ❑ Poultry
 - ▣ Must be cooked to 165°F
- ❑ Stuffed meats, fish, or pasta
 - ▣ Must be cooked to 165°F
- ❑ Game animals
 - ▣ Must be cooked to 165°F



Time and Temperature

- Hamburger
 - Must be cooked to 155°F
 - Turning brown doesn't always mean thoroughly cooked
- Beef / Steak
 - Medium rare is a minimum 145°F
 - Most bacteria is found on the surface of a steak
- Pork and Fish
 - Should be cooked to 145°F

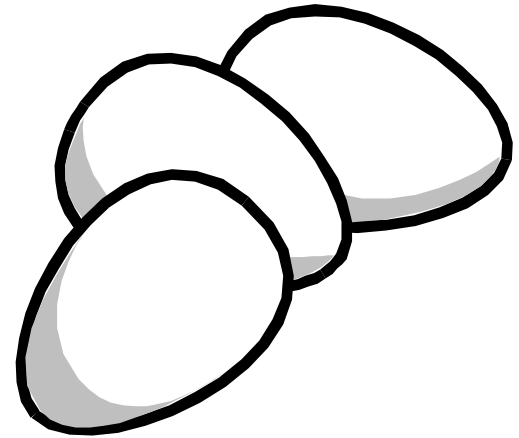
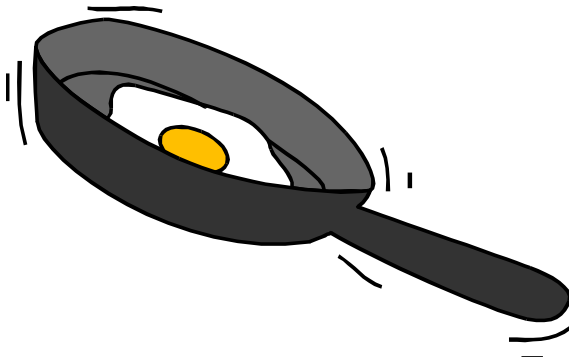


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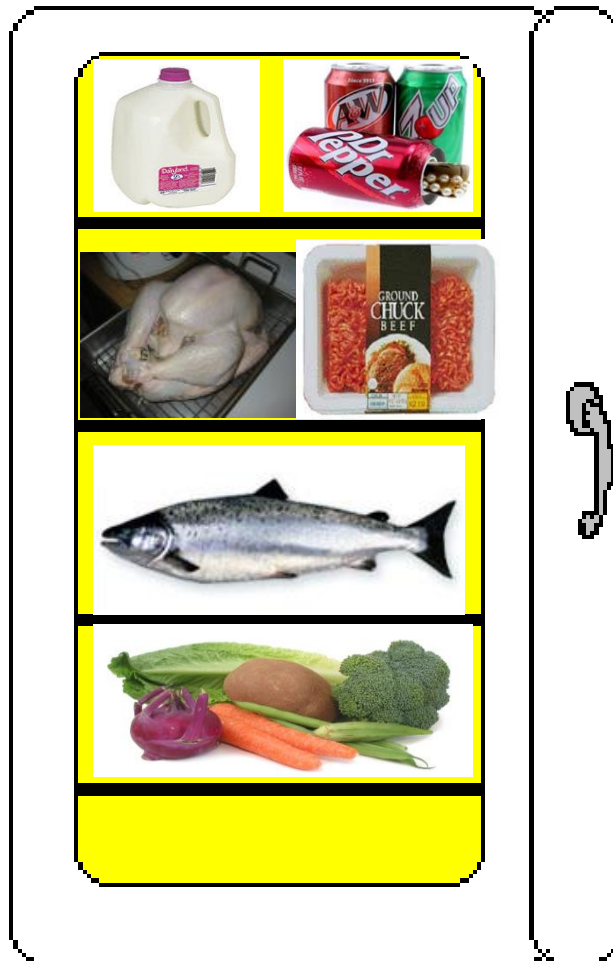
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Time and Temperature

- Eggs
 - ▣ Should be cooked up to 145°F or 155°F
 - ▣ Cooked until white and yolk are firm
 - ▣ Raw cookie dough



Is This Right?



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Cooling Foods Rapidly

- ❑ Smaller portions: break larger food products down to smaller sizes
- ❑ Shallow pans: no more than 2 inches deep for thick foods and no more than 3 inches deep for thinner foods
- ❑ Ice bath: place containers of hot food into a sink or other containers filled with ice



Summary

- ❑ Do not work with food when ill.
- ❑ Wash your hands.
- ❑ Keep cold foods cold and hot foods hot.
- ❑ Cook foods to their proper temperatures.
- ❑ Cool foods rapidly.
- ❑ Clean and sanitize equipment and utensils.
- ❑ Avoid touching foods. Use utensils when possible.



Any Questions?



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