**FOOD-BORNE ILLNESS & FOOD SAFETY**

**STUDY GUIDE**

**Name:\_\_\_\_KEY\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_**

**Hazards in Food Safety**

1. Biological: Pathogens that cause illness
2. Chemical: Cleaners, sanitizers, polishes
3. Physical: Bandages, dirt, glass/metal shavings

**Pests in Food Safety**

1. Pests can cause two types of contamination: Biological & Physical
2. If you spot these signs, alert the manager.
3. Droppings, nests or damage to products, packaging and the facility due to pests

**Food-Borne Illness**

1. Results from eating contaminated foods containing poisonous toxins.
2. Three microbes (PATHOGENS) that cause food-borne illness:
   1. Bacteria
   2. Viruses
   3. Fungi (Yeast and Mold)

**General Conditions for Bacterial Growth**

1. Warmth
2. Moisture
3. Food
4. Time

**Causes of Food-Borne Illness**

1. Food from unsafe sources
2. Inadequate cooking
3. Improper holding temperature
4. Contaminated equipment
5. Poor personal hygiene (not washing hands)
6. Sick employees - Notify manager
   1. Vomiting, diarrhea, jaundice, sore throat with a fever
7. Any food can cause food-borne illness

**Symptoms of Food-Borne Illness**

1. Nausea
2. Vomiting
3. Abdominal Cramps
4. Diarrhea
5. Headaches
6. Fever
7. Fatigue & Body Aches
8. Digestive Problems

**Populations In Danger**

1. Y: Young Children
2. O: Older Adults
3. P: Pregnant Women
4. I: Immune-Compromised

**Types of Food-Borne Illnesses**

1. Botulism
   1. Most Common Source: Improperly Canned Foods/Bulging Cans
2. E. coli
   1. Most Common Source: Undercooked Ground Beef
3. Hepatitis A
   1. Most Common Source: Feces (Human Waste) from Improper Hand Washing
4. Salmonella
   1. Most Common Source: Raw Poultry and Eggs
5. Staphylococci (Staph)
   1. Most Common Source: Human Mucous (Coughing/Sneezing)
6. Norovirus
   1. Most Common Source: Infected Food Handler
7. Clostridium Perfringens
   1. Most Common Source: Time & Temperature Abused Foods
8. Campylobacter SPP
   1. Most Common Source: Unpasteurized Milk and Contaminated Water

**Preventing Food-Borne Illness**

1. When in doubt… throw it out!
2. Keep hot foods hot and cold foods cold.
3. Use proper hand washing techniques.
4. Keep foods out of the Temperature Danger Zone.
5. Cook, reheat and serve foods to the proper internal temperatures.
6. Avoid cross-contamination

**Avoiding Cross-Contamination**

1. Never place cooked food on a plate which has previously held raw meat, poultry or seafood.
2. Always wash hands, cutting boards and food prep surfaces with hot soapy water after they come in contact with raw meat, poultry or seafood.
3. If food becomes cross-contaminated, set the food aside and ask the manager what to do.
4. Never scoop ice with your bare hands or a glass. Always use ice scoops or tongs to get ice.
5. Do NOT hold utensils by the part that comes into contact with food.
6. Use tongs, gloves or deli-sheets to serve ready-to-eat foods like bagels.
7. Change gloves after handling raw meat, poultry and seafood.
8. Change gloves after they get dirty or torn.
9. Wear bandages over wounds and use a water-proof finger cover over bandages and under gloves.

**Allergens**

1. Proteins that cause allergic reactions are called allergens.
2. Cross-Contact is when one food allergen comes into contact with another food item and their proteins mix.
3. The BIG 8 refer to the allergens that cause the most reactions:
   1. Milk, Soy, Eggs, Fish, Tree Nuts, Peanuts, Crustaceans Shellfish, and Wheat.

**Temperature Controls for Safety (TCS)**

1. Some foods have a greater risk for microbe (PATHOGEN) growth.
2. The best way to control this growth is to control the factors of time and temperature.
3. Foods Most At Risk:
   1. Milk/Dairy, Meat, Fish, Eggs, Poultry
   2. Shellfish, Baked Potatoes, Tofu, Sprouts, Cooked Rice
   3. Beans, Vegetables, Sliced Melons, Tomatoes, Lettuce

**Temperature Danger Zone**

1. Any temperature between 41°F and 135°F.
2. Cold foods should be kept lower than 41°F and hot foods should be kept higher than 135°F.
3. Foods should not be in the *TDZ* for more than 2 hours.
4. Foods in the *TDZ* for more than 4 hours should be thrown out.
5. Temperature Control Safety (TCS) abuse is allowing food to stay in the danger zone

**Important Temperatures**

1. Always check the INTERNAL temperature of foods with a food thermometer. Always check the THICKEST part of the food.
2. Seafood, beef, veal, lamb and pork: 145°F
3. Ground Meats: 155°F
4. Poultry: 165°F
5. Reheating Foods (Leftovers): 165°F

**Food Storage**

1. Refrigerators should be 40°F or below.
2. Freezers should be 0°F below.
3. Separate food into smaller containers to cool more rapidly.
4. Mark and date food properly.

**Thawing Foods**

1. In the refrigerator for 2-3 days. This is the safest method*.*
2. Under cold, running water.
3. In the microwave if used immediately.
4. As part of the cooking process
5. NEVER defrost frozen food at room temperature.