

Name: _____ **Key** _____

Period: _____

Introduction to Food-Borne Illness

Video Active

Section Questions

Section 1: Introduction

True/false

- ___ **F** ___ 1. Food-borne illness is not a major concern for food service establishments.
(Especially in food service)
- ___ **T** ___ 2. The primary responsibility of food service personnel is to protect the safety of the consumer.
(Provide safe and wholesome food)
- ___ **F** ___ 3. Home-cooked food is free of microscopic organisms that cause food-borne illness.
(All food has naturally occurring microorganisms)

Short Answer:

4. Name the three major potential hazards to food safety.

Chemical- pesticide residues, chemical sanitizers, additives, preservatives, toxic metals (lead, copper, cadmium in China plates) are found on fresh fruits and vegetables

Physical- glass chips, metal fragments, toothpicks- always inspect for signs of tampering

Biological- Salmonella, Listeria, E.Coli

5. Which of the potential hazards to food safety is responsible for the most food borne illnesses?

Biological- caused by many different microorganisms

Micro (tiny) Organism (living being)- can't be seen with eyes must use a microscope

6. What are the four types of microorganisms associated with food borne illness?

Parasites

Viruses

Fungi

Bacteria

Section 2: Parasites

True/False

- ___F___ 1. Parasites are most commonly associated with fruits and vegetables
Commonly found in meat products and contaminated water supplies
- ___T___ 2. Parasites may be transmitted when animals or humans consume infected flesh.
Form cysts in muscles or fat- tissue infections- when eaten diseases spread to host
- ___F___ 3. Roundworms and flatworms can be killed by cooking infected meat products to 130°F.
Killed by cooking to 142°F or freezing to -5°F

Short Answer:

4. Name the three groups of parasites and how they are controlled.

Protozoans- Controlled by proper handling and personal hygiene

Flatworms- Controlled by proper handling and disposal of waste and sewage

Roundworms- Controlled by preventing animals (like pigs) from consuming infected tissues

Discussion:

5. Briefly discuss why parasitic food-borne illness is not a major problem in the United States.

Parasites are no longer a major problem in the US because of better sanitation, education, and handling of meat products. Prevention- cut the cycle of transmission from one host to another

* **Trichinosis-** parasite in pork industry- was strongly linked to slop fed pigs; spread through slaughter. 1 infected pig slaughtered in one day would infect whole herd. Is prevented by always cooking pork until it is well done.

Section 3: Viruses

True/False:

- ___T___ 1. Viruses are not complete cells, but genetic material wrapped in protein.
- ___F___ 2. Humans rarely serve as hosts for viruses.
Animals, humans, insects, bacteria, are all hosts; Viruses require a host to survive but can survive for a limited time on foods until eaten
- ___T___ 3. Hepatitis A is a fecal-oral contamination and may be traced to an infected employee.
Fecal oral contamination- found in intestinal tract- have a bowel movement- do not wash hands properly- hands contaminate foods- Hepatitis A ends up in a new host's mouth

Discussion:

4. Briefly discuss the method by which viruses reproduce.

Viruses enter living cells and take over the genetic processes of the cell. The viruses force the cell to reproduce more viruses rather than carry out its normal metabolic process. After the cell dies, the new viruses are released into the body.

Hepatitis A- if contracted must contact CDC –Center for Disease Control- to make a report

Treatment – must receive gamma globulin shots to prevent liver damage

Section 4 Fungi:

True/False

- ___F___ 1. All fungi are microscopic, single celled plant.
Can be giant mushrooms
- ___F___ 2. Foods are the only carriers of fungi.
Present everywhere; naturally present in air, soil, water, animals, and some foods
- ___F___ 3. Fungi can grow only in very specific conditions.
Very adaptable and prolific; can grow almost anywhere, on any food, at any temperature, in any moisture content, at any pH level, on any salty or sugary food

Short Answer:

4. Name the two types of fungi associated with spoilage and food-borne illness.

Yeasts }
Molds } Must keep under control to prevent spoilage

Discussion:

5. Briefly discuss the beneficial uses of fungi in food production.

Molds- used in antibiotics such as penicillin

Ripening of cheeses- bleu cheese and gorgonzola

Yeasts- used for leavening bread

Fermentation of beers and other products

Section 5: Bacteria

conditions they like to grow in- warm, moist, protein rich nutrients, neutral pH, low salt & oxygen rich

True/False

- ___ **T** ___ 1. Bacteria are the most common cause of food-borne illness.
Should be greatest concern
- ___ **F** ___ 2. Bacteria are easily killed by freezing or drying foods.
Slows down growth but doesn't kill- bacteria are hardly-can become dormant
- ___ **F** ___ 3. Bacteria grow best in a highly acidic pH.
Grows best in 6.6 - 7.5 pH- neutral; acids like vinegar and citrus juices don't allow for growth
- ___ **F** ___ 4. All bacteria produce toxins.
Only a few make toxins and the toxins are poisons

Short Answer:

5. The availability of water in a food is called _____ **Water** _____ **Activity** _____.
Must have water to reproduce
Can reduce water activity by drying, freezing, salting or adding sugar
Optimal water activity level for growth- .97-.99/Below .85- bacteria don't die but growth halted

6. What is the range of the temperature danger zone?

40°F- 140°F- Temperature Danger Zone

Body temperature ideal for growth; most killed at 140°F; Grow well at 60°F- 110°F or 110°F-130°F

Discussion:

7. Briefly discuss what are spores and vegetative cells.

Vegetative- living bacteria cell, producing waste products, consuming nutrients, & actively reproducing and is killed by high temperatures

Spores- not able to reproduce; bacteria form a spore for protection from cold or hot temperatures or chemical sanitation; basically dormant; most bacteria form spores

8. Briefly discuss aerobic, anaerobic, and facultative bacteria

Aerobic- bacteria must have oxygen to grow; aerobic conditions

Anaerobic- bacteria grow without oxygen; anaerobic conditions

Facultative Anaerobes- can grow in anaerobic or aerobic conditions but they prefer oxygen

9. Briefly discuss food intoxication and food infection.

Food Intoxication- bacteria create toxins that are usually heat stable and are made from waste products or dead cells; Example: Botulism- cause by improper canning of foods that do not kill the bacteria Clostridium Botulinum; the bacteria releases a toxin and when eaten paralyzes vocal cords, lungs, must go to hospital for antitoxin

Food Infection- illness caused by ingesting living bacteria cells which causes the illness

Section 6: Conclusion:

True/False

___T___ 1. Foods should be washed thoroughly before cooking

___T___ 2. Hot foods should be kept hot and cold foods should be kept cold.

Short Answer:

3. What is the key personal hygiene practice related to controlling food-borne illnesses?

Handwashing

4. In general, who is at risk of contracting a food-borne illness?

Anyone who eats

5. What are the six important steps to reduce the risk of food-borne illness?

1. Proper handling- wash food properly
2. Proper storage- refrigerate or freeze until needed. Promptly refrigerate left-overs
3. Proper Cooking- cook according to directions-when in doubt cook longer
4. Cross-Contamination- vegetables and meats should be cut on separate cutting boards with separate knives. Wash and sanitize equipment
5. Temperature- keep hot foods hot and cold foods cold & avoid temperature danger zone
6. Personal hygiene- wash hands, tie hair back, cover clothing; wash hands after touching raw meats; wear gloves if hands have a cut

Discussion:

6. Briefly discuss why harmful bacteria on and in our bodies does not make us ill.

Bacteria don't make us sick because they are naturally occurring in small amounts on or in our bodies

We have E-coli in our intestinal tract and Staph in our upper respiratory tract, cuts, pimples, and skin lesions

Bacteria need to be in large quantities or contain toxins to create a food-borne illness