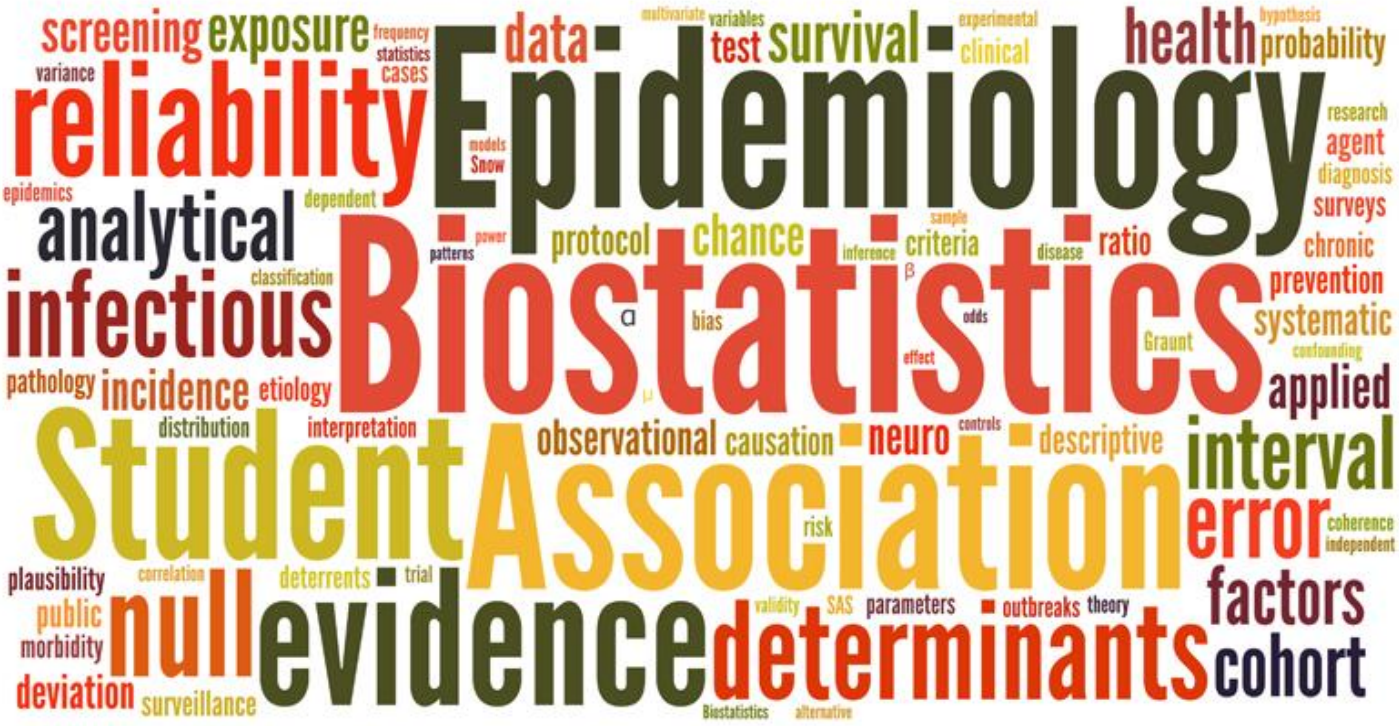
University of Jordan
Faculty of Medicine



☑ Sheet (Notes) ☐ Slide ☐ Handout

Number: 6

Done By: Dana Rida

Subject: Food Hazards and Contamination

Doctor: Sireen Al-Khalidy

Price:

Date:

Epidemiology and biostatistics

Food hazards and contamination

in this lecture we are going to have a look on food contamination, in the first slide(start numbering from this slide, not the cover) some cases you might face later on as a physician , a conclusion after reading theses cases, there is something in common between them, they are all resulting from something in the food they ate.

Slide 2

Food contamination is when the food has something not part of its content, not necessarily harmful, and might not cause a disease

Slide 3

If we added something to the food to improve its taste, color...etc., it's not considered as a contamination but actually a food additive.

Slide 5

Microbial contamination most widely found category

Slide 6

Food at the beginning is clean, then a contamination will be introduced to it from somewhere else causing cross contamination.

The examples on direct cross – contamination

First example, the raw meet has many microbes that only would be killed if it was cooked, so this contact with cooked meat will spread contamination.

The second example, since salad is eaten without cooking this makes it at more risk to contamination

The third example, is the most one that happens, it occurs during the prepare, process, serving of the food.

Slide 7

A vehicle: could be a knife, a cloth, an instrument used to prefer food, the surface.

In the examples

The first one, the knife and chopping board are considered vehicles

The second example, the cloth is the vehicle

The last one, hands are considered s vehicles

Slide 9

Bacteria found in food, but its presence is not the cause of toxification, its toxins that are being produced by it are harmful. Cooking the food kills the bacteria but the toxins stay in the food.

Slide 10

E.coli has two types one that is considered with food intoxication (entertoxigentic) the other type is considered with foodborne mentioned later

Staph.aureus is the most common

Slide 11

Temperature which food is stored in leads to proliferation of bacteria and produce more toxins, causing rapid onset of symptoms, usually it's emetic like vomiting and no fever because there is no harmful attacks of the bacteria in the body.

Slide 12

Cooking or sterilizing the food can get rid of the bacteria and not cause diseases because they don’t produce toxins.

Slide 13

Notice here (enteric) E.coli is considered a foodborne microorganism

Slide 15

It was placed my mistake here when we get to it' right place I will explain it.

Slide 16

Growth factors fond in food help microorganisms to grow if they have the favorable environment to help it grow. Temperature is the most important factor.

Slide 17

Heat treatment most commercially used

Slide 18

Dehydration used to keep food for longer time in homes

Direct effects by removing moisture which one of the microbial growth factor, the indirect effect is when we dehydrate something concentration of salt and sugar increases.

Now back to slide 15

Chemical contamination any material with chemical nature comes in contact with food during any stage of food production from growth to sale

Growth – veterinary drugs which are substances give to animals and go into their bodies that eventually we will eat. Fertilizers stay on the surface of the plants.

Processing- in the facility while packaging, freezing...

Transport – from field to sale place

Sale- supermarkets, stored or displayed or in fridges

Slide 20

Chemical hazards harm the body in two ways, acute or chronic

The major is chronic, small quantities over a long term of time, not easy to be traced to the source of the chemical, carcinogenices depend on the toxin

Risk assessment is very hard compared to biological hazards

In biological hazards we simply take a sample of the food examine it in the lab, see the bacteria and know it

Slide 21

How can food additives become harmful? If they were not suitable for this type of food, because each additive is for certain thing

Color additives can be harmful if wrong color was used or in high quantities

Lead has two sources : 1 leaded gasoline (the smoke from vehicles cause air contamination , some particles stay in are others precipitate on building, plats, soil which will be consumed with plants and animals) 2 is canned food the solder of the can contains high conc. Of lead

Allergens: some substances cause allergies to some people, for these allergic people it’s a hazard for normal people it's not.

Slide 22

Mushrooms: might have toxins in them

Seafood toxins major source

CDC: center of disease control

Slide 23

Physical contamination: any foreign sold object not supposed to be in the food at any part of its processing; from growth of raw materials to sales

Slide 24

Equipment maintenance: part of the equipements fall apart

Sabbotage: doing something on purpose to the food

Sorry for any mistake

By : Dana Rida