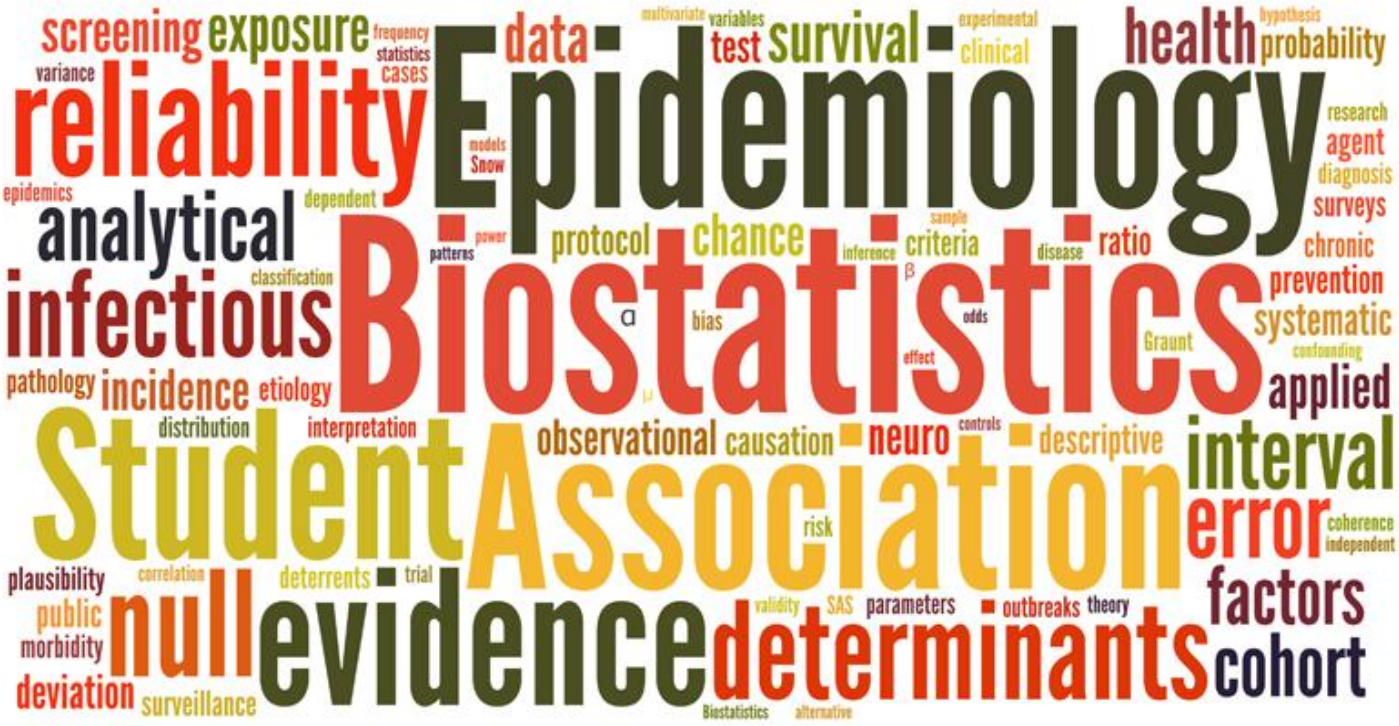
University of Jordan
Faculty of Medicine



☑ Sheet (Notes) ☐ Slide ☐ Handout

Number: 7

Done By: Dana Rida

Subject: Radiation in occupational health

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Price:

Date:

Epidemiology and biostatistics

Radiation in occupational health

Slide 1 (skip the cover, start numbering from here)

Usually workers work 6 times a week, many of them around the world live in an environment that affects their health negatively, the hazards of the work depend on the type of the work.

Slide 2, 3

Paracelsus :was a physician, a chemist, a magician, microbiologist ,pathologist, molecular biologist (I'm just kidding about the last three) he was from Austria and he basically studied the places where people work for long hours and the effect of this work might affect their health.

Then later on in the 18th century came the father of occupational medicine Bernando Ramazzini ,he was from Italy ,he studied the effect of work places on people and how they can endanger their lives and he wrote a large book, about what could happen to people because of what they work or what they do, each occupation and what hazard it has.

Then later on in the US doctor Alice Hamilton. This was very late to work on occupational health in comparison when it started in Europe. Europeans precede the Americans in working, studying and taking care of workers health (this sentence is really important).

Slide 4

Regulations related to workers health and safety are very highly enforced and there are penalties for employers that don't provide safety measures for their workers and they can be penalized.

Slide 7

Each work place gas its own hazards depending on where the work is and stuation the workers are in. all measures should be taken to reduce hazards.

Slide 8

Ionizing radiation is usally used in medicine and nursing

Asphyxiation :gases, fumes that can constrict air ways

Slide 9

Blood-borne pathogens usally who work in medical fields get highly exposed to it.

Slide 10

Heavy metals : lead , mercury

Slide 12

Don’t memorize dates at all only the sequence of events.

Nuclear bomb dropped on japan was the first major use of nuclear powers.

Slide 14

Radium was accepted by AMA(American medical association) but they didn’t know its effect

When the radium girls knew the bad effects they were exposed to, they sued the factory.

Slide 15

Atmosphere has a role in protecting earth from radiation, making a big concern about the hole in the ozone.

Slide 16 (very important)

Memorize what's written here because there is nothing written on the slide.

Electromagnetic spectrum : all types of radiation, useful to our life in normal concentrations, like photosynthesis for plants, and to our vision (by visible light)

Nonionizing radiation (from the pic) :it contains every type starting from ultraviolet moving right to power transmission , you can notice that they have very long wave lengths with short frequencies.

A small part of ultraviolet can be considered as ionizing radiation.

Ionizing radiation : starting from X-rays moving left to cosmic rays , very small wave length, but very high frequency (that what makes it harmful)

Slide 17

Alpha and beta are less harmful than gamma and penetrate less.

Slide 19

Due to the hole in the atmosphere more waves are getting to earth, usually the harmful ones get absorbed by the upper layers of the atmosphere.

To prevent damage to the eye from welding we should use a shield.

Slide 21 (don’t memorize any wave length)

Visible light can be harmful if very high or very low.

Slide 23

Molecular vibration cause heat

Microwaves have not been proved yet if harmful or not, but if there is any leaking then it can be harmful, it is also used in sterilization of food.

Slide 25

Ionizing radiation mainly X-rays

Cause mutations and cancers because they attack cells

Slide 26

Notice how gamma rays can penetrate more than alpha and beta because it has higher energy.

Slide 30

If the damage due to ionizing radiation is very high then our body can't deal with it, which eventually cause tumors ,cancer and so on.

Slide 31

Sievert most likely used

Slide 32 (memorize the numbers very important)

Anyway 100 Sv /5 years is for people who work in that work place as for general people it's background 3Sv – guideline 1Sv/year

Slide 33

It's how our body responds to the doses of ionizing radiation, very important.

Slide 34

Not for memorizing numbers but for getting the idea of it that is; the more doses you get exposed to the more organs get effected the shorter the time to death and the higher the death percentage.

Slide 35

Carbon is a standard background to compare other things with, like fossils, old findings that you want to know the time they lived in.

Slide 36

Lead is used for shielding

Sorry for any mistake

By: Dana Rida