



University of Jordan
Faculty of Medicine



Medical Committee
The University of Jordan




Community Medicine



Lecture Title:	Environment				
Date:	22	9	2013	Lecture Number:	4
<input type="checkbox"/> Slides	<input checked="" type="checkbox"/> Sheet		<input type="checkbox"/> Other:		
Lecturer:	Madi Al-Jagbbeer				
Done By:	Khalid Jbara				
Price:				

DESIGNED BY:
WASEEM KAMAL

M.D. University of Jordan Class of 2018

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Environment

* What is environment means?

It is everything surrounding us (if we stop here, who is going to be concern about it),affected by us (few people will be involved now like environmentalists) and affected us (now everybody should be concerned) .

So, environment is everything surrounding us , affected by us and affected us . that is why wherever you are; you should to be concerned about the environment .

* chlorofluorocarbons (غازات الفريون):

Has many uses :

- cooling : air conditioners and Refrigerators

- fire extinguisher : why ? it is a foamy material

Foam formed → surround the fire → prevent oxygen from reaching it → it helps in putting down the fire.

- Hair spray : it has chlorofluorocarbons to keep it fluid like .

- Cans

- Food industry : Food Containers

- Building : it keeps spaces in the walls as insulator , preventing loss of heat in winter and loss of cool in summer .

- **How can we tell whether this person or that person are of the same weight or different weight ?**

We weight them and see who is heavier .

- **How can we tell which material is more toxic Arsenic or lead ?**

There is something called LD50 (lethal dose 50 percent)

- **What is LD50 means ?**

The amount of a given chemical or material that can kill 50% of a given population .

-We just see it , we don't have to it because somebody else have done it , we refer to it and it helps us to know which one is more toxic .

Example :

Two materials X,Y one is 5 mg/kg (mg of a toxic material per kg of body weight , unit of LD50) other is 10 mg/ kg . which one of them is more toxic ?

5 mg/kg (it reversible relation , as LD50 decreases the toxicity increases)

- LD50 was measured for chlorofluorocarbons and they found that is not so toxic .
- If a material is not toxic , cheap , low LD50 and available. What makes people do with this ? it will be widely used and this what happens with chlorofluorocarbons .
- The scientists observed that chlorofluorocarbons is not as same as we think , it might affects the environment mainly the ozone layer .
 - When this chlorofluorocarbons leaks from Refrigerators , cars and conditioners it can reaches up to ozone level and start work on it .
 - One of chlorofluorocarbons can damage thousands of ozone molecules causing the ozone hole .
 - As we mentioned before , environment is anything surrounding us (ozone layer) , affected by us (we send chlorofluorocarbons to ozone level and make hole in it) and affected us (increase number of skin cancer) so that we have to be careful about what we are doing in the environment .
 - The first ozone depletion was not over Europe or United States , it was in the south pole (Antarctica). This means that when you damage an environmental place this effect not be limited to that place , it spreads to somewhere else .
- Although chlorofluorocarbons is not so toxic but it effects us and caused skin cancer, that is why not only the toxic effect we concern about .
- When we say everything surrounding us → huge . How can we make it smaller to be understood ? by classification

Components of the environment:

Living and non living

-**Living** : Humans, animals, plants and microorganisms (they are very important to be considered as a single group because we cannot survive without it) .

-**Non-living**: Physical factors, chemical factors, nature (landscapes)

Physical factors:

-**Temperature**: very important factor , it decides where living organisms can live .

For us as doctors there is which called : **tropical medicine**. You learned about disease and illnesses that can be formed in tropical areas . why ? it has certain temperature differ from other places ; which makes certain disease found there and not found something else, like : African sleeping sickness and Malaria (which has 4 types at least)

-Humidity : moist weather accompanied by high temperature is worse. It makes life very difficult .why ? we cannot get rid of sweat .

Altitude : the shape of the people might be affected by the altitude .

- chest become bigger to acclimate with the low level of oxygen .
- hemoglobin: more hemoglobin up, low hemoglobin down .

If we have two patients one of them live in high altitude region and the other live in low region and both of them have hemoglobin con. 16 , who has the worse case ?

Person who lives in high altitude region is more exposed to the risks .like : polycythemia
Large numbers of RBCs → clotting and other diseases .

- Climbers climb slowly to acclimatized with low level of oxygen .
- We cannot live in high altitude region because the physiology and activity of our bodies will be different and at a certain level we cannot survive .
- If we go below in seas → high pressure , divers when they go deep and they come back quickly they will have many disease may be kill them (sudden change in pressure) .

Chemical factors :

-What makes people happy about some places they do not like to live in ?

Certain factors (oil –gold....)

- Chemical factors can effect the distribution and presence of human beings ,animals and plants in those places .
- Some types of fruits produced by certain country are differ from other country due to difference in quality of soil → difference in flavor

Nature:

landscape; creatures which we can see it around us .like: Mountains and plains .

- people living in Mountains area are more tough than people live in other regions because they have to do an effort to move up and down and other things .
- Most of the world cities are built on plain areas .

Total environment : is a group of smaller environmental systems .
example ;

Jordan is small country but even though we have 5 environmental systems :

- Mountainous region
 - Desert region
 - Coastal region
 - Valleys region (Aghwar)
 - marginal region (between desert and mountain)
- Those 5 different systems differ in temp, physical factor, landscape and chemical factors . and people are living in those regions differ from each other .