Community sheet no. 19

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 # Water is one of **the major component** of our environment, nothing can live without water ,

# Water is the major component of our body , its percentage varies in our bodies from **55 up to 70 , but in our planet its 75%**

- We are **not among most** containing water organisms, there is organisms that have 90-99% of their body water, like some vegetables as cucumber contains more than 95% water, and

Algaes around 95% water

**What makes water important and why it’s the major component?**

1) it’s universal solvent

2) dissolve majority of things

3) media for all biochemical rxns in our body , without it nothing can continue

4) it helps to cool down our body temp by regulating it by sweating

5) transfer good things ( nutrient)+ excrete bad things

6) it support our body

- Water is not equally distributed world wide, and because its in our planet 75% so earth from outside looks blue>> called blue planet

**- Fresh water** : doesn’t contain high saline , can be palatable, so its differ from fresh vegetables which means recent ones

But why we complain of water problems although its 75% ??-

Because amount of fresh water is so small its around one tea spoon of each cubic meter

And this fresh water has a lot of problems as: pollution , which reduce its availability

- The other problem that water is not distributed equally world wide, on the map our country is within the brown area ( on of the poorest with water)

- So one of the common problems in Arab countries **is lack of water**, when we come to Jordan its worse, it comes third country that suffer from water lack

- This is measured by : how much water in the country divided by no. of people = how much to each one>> if below thousand meters >> we have stressful condition( as in Jordan)

Morocco on north , Algeria, Saudi Arabia , Yemen , Lebanon, Syria have more water than others , otherwise >> we are in bad shape

97% of water is saline, the rest 3% >> 70% of it in north and south pool and ( I cant hear it)

- Worldwide >> most water goes to agricultures , then industry, finally domestic( at home)

- If you look to Africa >> it has a very little industry, but in south America there is a balance btw agriculture and industry and the rest goes to domestic needs

- Water cycle : movement of water starting from evaporation from the ocean, becomes clouds, then come down

- Scientist knows exactly how much of water exist in soil, oceans …. All are calculated

- What we do as human being to affect water?

1) changing the surface of earth> means that this will affect the way that water will moves >>like if it was agriculture area water will be absorbed inside it ,, but if we convert it to streets And buildings it wont be absorbed instead it will continue moving till it finds area to be absorbed into

2) polluting the water cycle ( industry , cars ,……)

3) withdrawing water supply >> taking water more than we should especially in summer time>> its consequences :

Inferable?? shortage and a ecological effect

Withdrawal types : water fall , tapered , depletion-

- We used to find water at certain depth= 20-30 m, but in some places in Jordan u should go in depth = 700-800m >> shortage of water> the same happened in al Azraq lakes >> there was water in it but now its Called the blue salt >> cuz we took water and leave salts in

4) late subsides >> changing the use of lands from agriculture to building areas

5) salt water intrusion >> like Libya and north countries ( meditarian) >> sea water comes into the wells with the salt>> so people cant take this water for drinking>> so salt water goes inside fresh water

- One risk of this is complex housing >> collapse because the take water from under them>> so there is no enough support and no rocks also to support it, but in jordan rocks

Will support houses >> not to collapse

Health part:-

What are the sources of water polution ?

Industries , cities, agriculture activities, vehicles,……

Types of pollutants :-

Chemical , biological, physical

In third world countries as Jordan >> no. 1 type is biological problems-

What would happened if water get contaminated??-

The outcome is called water related diseases >> it could be chemical , biological , and physical

What would happen if we have biological contamination of water?-

80% or more of disease in third world countries are water related and mainly biological ( according to WHO)

And we have 5 groups of diseases related to biological contamination :

1) water born diseases: means the pathogen that cause the disease is found in water, and we have to drink that water to get the disease >> ex : cholera ,typhoid , paratyphoid , fungus, hepatitis ( virus), ameba( any of the microorganisms) >> so it is quality problem >> means there is pathogens inside the water that shouldn’t be there otherwise will cause problem>> the commonest outcome ( presentation) in All these disease is diarrhea

Water borne diseases in Jordan:-

Last time Jordan has cholera outbreak was 1982 but that was not water born,it was seconed type water washed, second outbreak was in 6-7 years ago where we have thousands of people have sudden منشية بني حسن

Diarrhea and abdominal pain,, so it was huge issue and took long time to handle, and two ministers were asked to step back from their position , the minister of water and health. That was criptoscrodium and for the first time in the country

Cryptosporidium is found in the excreta of animals( sheep) .. so how did it reach our water? We don't have water continuously pumped so when the contaminated excreta is in the water it will go to the pipes and in few days when the pump the water to the people the first part will be contaminated with these excreta
in 1974..many people suffered from severe abdominal pain and diarrhea due to this and that was the first time there was any case diagnosed by contamination by water (
so these type of diseases(can happen anywhere in the world not only in jordan) which can be reduced by giving clean and pure water indicates that there is no enough clean water for us to use (quality) and if we did we will use for drinking ..showring not for irrigating plants so we get the disease through the plants
**example**: cholera,typhoid… how can we differentiate if the disease is water borne or water washed?

**1-Waterborne diseases** include those where transmission occurs by drinking contaminated water, particularly contamination by pathogens transmitted from human excreta. These include most of the enteric and diarrheal diseases caused by bacteria and viruses. Waterborne diseases also include typhoid and over 30 species of parasites that infect the human intestines

**2-Water-washed diseases** occur when there is insufficient clean water for washing and personal hygiene, or when there is contact with contaminated water. These include trachoma, typhus, and diarrheal diseases that can be passed from person to person.

\*so we can get the same disease but by different routes

**eye and skin diseases:**

- Trachoma: eye infection caused by bacteria and it can be dangerous and cause blindness (like what happened with Taha hussain)
-scapies : contagious skin disease

**3-Water-based diseases** come from hosts that live in water or require water for part of their life cycle. These diseases are usually passed to humans when they drink contaminated water or use it for washing.

Example: schistosomiasis (infect the water by fecal material).. if you are in contaminated water , it will not harm you just by being there.. it should get into certain snails to complete their life cycle after that if you are in this contaminated water it will infect you ( if it doesn't complete it's life cycle it won't be harmful)

In far east ,we may have other diseases like,liver flukes but schistosomiasis is the most common here

**4-Vectored water related disease:**

A- Mosquitos transmit malaria, yellow fever, dengue fever, rift valley fever(West Nile Virus), Japanese encephalitis… those are caused by different types of mosquitos

Malaria is now reoccurring in the world affecting millions of people due to lack of money of the control programs ( every year we have half a billion people in risk of getting malaria)

In Jordan we might get malaria from people coming from other countries like Saudi Arabia,Egypt,alsudan

In Jordan we have controlled malaria bu 1970 but in 1985 we start cutting back on our control programs

B- Black fly transmitted a disease called onchocerciasis( river blindness): it gives you a certain microbe that gets in your body and change into a warm that creeps under your skin until it reaches you optic nerve

Note: mosquitos and black flies need water to breed

 Tci-tci Doesn't breed in water but needs water for humidity and causes African sleeping sickness

**5-Water dispersed infections:**

Those pathogens are transmitted by water droplets(example: swimming pools) which may cause severe diseases( sometimes fatal) like,encephalitis

legionnaires' disease caused by Legionella living in the humidity of ACS ( air conditioning systems) : when you turn the AC they come out and enter our bodies and causes pneumonia

note:80% of all the previous diseases happen in the 3rd world countries ( or something like that I didn't hear it clearly)