

# Summary of Community Medicine

## Part 2

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### The environment

\*\*\* The environment is everything that surrounds us, we affect it, and affects us

\*\*\*CFCs: used in refrigeration (refrigerators, gas) - fire suppression (because it is a foam material to prevent access of oxygen and thus extinguish the fire) - Spray hair - food cans - insulator in construction

\*\*\* LD50 (lethal dose 50 percent) : The required amount of certain chemicals that can hurt 50 percent from a pool of specific human ( تقاس بوحدة الملي غرام لكل كغم ، ويجب أن نعلم أنه كلما زاد عدد الملي غرامات من المادة المدروسة لكل كيلو غرام من وزن الكائن المُطبَّقة عليه الدراسة ، تقلّ سميّة المادة ، وبالتالي كلما زادت قيمة LD50 تقلّ سميّة المادة والعكس بالعكس )

\*\*\* CFC gases qualities that made him widely used

(( ( Nontoxic (LD50 is few, and this does not mean that toxic , quantity of (LD50) define it big or small when compared with other ) - Available – Cheap )))

\*\*\* CFCs molecules affect the ozone layer, one molecule of this gas can destroy thousands of ozone molecules, and must know that the effect is wide-ranging, The first case of impact (the hole in the layer) was at the South Pole, reaching impact for Europe and America.

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### Components of the environment

1. living components : humans, animals, plants and micro-organisms .

2. Non-living components: physical and chemical factors and nature .

Physical factors: temperature – humidity – altitude

\*\*\* (((You))) should know that the people who live in upland areas are characterized by a number of recipes including: chests dilated so as to adapt to the amount of oxygen low - and also the high proportion of hemoglobin in their bodies and so to be able to transfer additional amounts of oxygen, and this leads in cases subsequent to (polycythemia ) and .the high number of blood cells, and thus a stroke

\*\*\* And also high pressure in the deep sea as in the case of divers who repeat dives exposed to the disease as a result of the sudden pressure difference

- Chemical factors: (The existence of wealth such as gold or oil in the area without the other affect the population density and distribution)

\*\*\* Sometimes people move from one place to fall down and especially farmers to look for a good soil for agriculture, because the quality of the soil affect the taste plantings

Nature: Landscape: the mountains and the plains (The city is a plain areas)

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## TOTAL ENVIRONMENT

is a group of smaller environment systems such as (Mountainous areas - desert areas - the coastal areas - Aghwar - extreme areas (marginal) ...The inhabitants are distributed in Jordan on previous areas

### Food pyramid

(The food pyramid or the food chain: has 3 or 4 levels, where the rise of energy moves from one level to another)

\*\*\* Products: Objects capable of producing energy and be at the base of the pyramid ((plants - algae () in the ocean - seaweed

\*\*\* Consumers : including primary and secondary, and tertiary (up from the bottom to the top of the pyramid), and comes in the top of the pyramid human

المفككات They transfer of complex objects, such as dead objects to simple object

\*\*\* Decomposers :

\*\*\* الكائنات الكانسة Sweepers :

The objects that cleans the system, such as ants - birds in deserts - the hyenas in the forest (These objects are eating dead organisms and rid the system of them).

\*\*\* The existence of the pyramid of food inverted upside down means start consumers and thus the lack of products (in theory), and thus the collapse of the system << BUT there is a negative point of presence of producers at the base of pyramid is the possibility of entering amounts significant pollutants to the base of the pyramid and thus affected the rest of the levels>>.

### Minamata case

Minamata is located in Japan, when the spread of toxic mercury sharp that has occurred in this city, 1952, so-called disease Minamata (He noticed the population born children, heads a small (microcephaly) as a result of eating fish contaminated with mercury, scientists have discovered 1964 that mercury comes from the remnants of nearby factories of the city.

### The issue of DDT (pesticide)

The chemical taking a sample from the milk of the issuance of ten women, and found that DDT, was later learned that this pesticide is used in the Jordan Valley against mosquitoes and malaria, DDT contaminated food cows, and thus arrived pollution to the man who feeds on meat and milk cows. , As well as many surgeons find some of this pesticide in the joints .or tissues and other parts of the body

So the German doctor advised the following breastfeeding women not to breast-feed the .baby more than 6 months to avoid the accumulation of large amounts of DDT in the body

The radioactivity plants after the Fukushima disaster in Japan affected the Fisheries and \*\*\*tarnished them

\*\*\*An examination of food in third world countries is very expensive, and some states are using cheap knock such as lead Reagent where that if found lead in the food then the food contains heavy metals .

\*\*Biodegradation: Is a biodegradable material and disappearance of the environment during a certain period (We note that the material is divided in such a case to the ((biodegradable materials - and non-biodegradable).

\*\*Persistent: Is the time, which needs 80 percent of the material degrades and disappears from the environment.

\*\*Bioaccumulation: Tendency for the accumulation of chemicals within the body of an organism.

\*\*Bio- magnification: Is a high concentration of a substance as we head for the upper levels of the food pyramid.

\*\*Eco-balance: Is harmony between the components of the ecosystem.

### \*\*\* Notes

- Fluorescent imaging reveals the presence of heavy metals in the body

-DDT is the material is biodegradable and accumulate over time, so it was found that DDT in the Arctic, although there is no agricultural production there (even use DDT), but the reason it is non-biodegradable and remain in the environment for a long time.

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## Factors of environmental balance

1) growth factors : the bigger the system - to make it more complicated as we head towards the top of the food pyramid

A) biological growth factors : \*\*\* (reproduction ) is working to increase the growth and reproduction \*\*\* ( Immigration ) : move objects from one place to another to ensure the availability of appropriate conditions for living and continuity such as salmon

B) non- biological growth factors : the abundance of food - and the abundance of ( water - air conditions ( note that the flowers bloom in spring

2) reduction factors : slow down the growth process

A) reducing biological factors : \*\*\* diseases that disrupt the ability of organisms to reproduce \*\*\* death

B) reducing non - biological factors : lack of food - lack of water - Air conditioning ( some plants die in the summer for the lack of rain).

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## Biodiversity

it means to have eco-system a number of different organisms, (affects the number of these organisms to determine if the ecosystem health or bad, because when

pollution system and the start of the death of organisms will remain there some organisms that are resistant to pollution and thus define our degree of contamination of the system, but if the little biodiversity, we cannot know the degree of contamination of the studied system ).

### Ways to influence the ecological balance in the negative

\* Pollution

\*(Abuse of resources)

\*Man-made disasters

\* Overlap between the reducing factors and growth factors

\* Simplification of the ecosystem (converted from the complex system to the simple system example: forests, which are a complex system which include components of non-living and living components and are thus not need to (cultivation), transformed into agricultural lands simple need to (cultivate) because they system lacks many of the factors continuity life, BUT the lack of attention which turns it into a fragile system.)

NOTE: Europeans who destroyed the land in Africa a hundred years ago to convert it to farm animals is considered an example of simplistic, but a sad example ☹

### RESOURCES

\*\* Include many of the materials and the wealth and power exists in nature (1. Renewed constantly, such as solar energy 2. Renewed but you need thousands of years to regenerate, such as oil 3. Renewable but depend on productivity so that if the increase in production will lead to its destruction, such as overfishing of Fisheries in Dead Sea, which ended the existence of the fish) .

\*\* (Environmental tolerance ): Is the system's ability to contain the environmental components of living and non-living it and provide support for the life (the ability of certain land to pasture for a hundred sheep - When graze 200 sheep, the system loses its ability to support life and destroy agricultural land).

Note: Countries differ levels spread of contamination types, and also vary trials taking place, whether in the field of pollution or other, for example, the French scientist conducting experiment landfill for a range of detergents has is produced and found that the process of decomposition takes 20-30 days, but the application of this experiment in Jordan, we find that fails, to vary environmental conditions such as rain and soil and difference in (Environmental tolerance ).

### Pollution

Is a change in the original ecosystem components to add or remove any material to the system, and this change affects the health of creatures in general

### Disasters

These include the word either to influence a group of people or a certain area (such as (airplanes or trains collision - or traffic accidents are not considered disasters

**1) Man-made: (directly: Israel sending bulldozers to murder and expulsion of Palestinians - indirectly: the use of uranium in Iraq or killings yards ).**

**\* Also nuclear power plants can occur if attacked militarily disasters or an error occurred \* in the enrichment as Chernobyl**

**2) Natural disasters.**

### **An old rule**

**The introduction of a new object on the system balanced without taking into account reducing factors and growth factors -----> This may lead to malfunction, resulting in disasters .**

**Example1) Bring rabbits to Australia, after a hundred years has become millions, and has become the main factor of desertification as a result of not taking into account the region's ability to withstand fed.**

**Example2) Bring Flowers (lilies.... Znba8 ☺ ) to Florida and the increase in their number, in the sunny weather there, and growth above the water surface led to prevent people from using water in their locations, while not grow in Boston because the reduction factors there (the rainy air) prevented it .**

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### **Water pollution**

**\* Each person on earth requires about two liters of clean drinking-water each day, which amounts to 10 million m per day for the world's population**

**\* Animal consumption is considerably more, but does not require the same quality as the water for human consumption**

**\* Fresh water is a renewable resource, constantly purified and redistributed by the hydrologic cycle, but the distribution is uneven. Much global precipitation falls when or where it is not useful to humans**

**\* Uneven distribution, inequitable access, and increasing pollution of water supplies may become the next major environmental crisis**

**\* Conflict between regions for limited water supplies could cause social, political, and economic disruption .**

**\*The importance of water (solvent - regulate temperature through sweating - gives the body aware, we note the shrinkage, which affects the body when water loss - the secretion of toxic substances out of the body ) .**

**\*Jordan is the fourth in the world in terms of water scarcity**

**\*The melt the fat in the body through the bile secreted from the gallbladder before it is absorbed, for example, on the role of water in the solvent, but not to the presence of these bile leads to the accumulation of fat and thus severe pain even secrete fat, with feces )**

**\*The functions of water in the body (solubility, absorption, and then facilitates the transmission of material to the liver, then a center suitable for digestion and then move digested food for the cells, and excretion ) .**

\* The planet is a blue planet because 75 percent of it water, but when we talk about the problem of water scarcity, we mean fresh water (potable water use, low salinity)

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## The water Cycle

\*\*\*The water cycle consists of evaporation, condensation, and precipitation

\*\*\*There are three principal "loops" in the cycle

1) The surface runoff loop, in which water runs across the ground surface and becomes part of the surface water system

2) The evapotranspiration loop, in which water infiltrates, is held as capillary water, and then returns to the atmosphere by way of **التبخر والنتح** evapotranspiration

3) The groundwater loop, in which water infiltrates, percolates down to join the groundwater, and then moves through aquifers, finally exiting through springs, seeps, or wells where it rejoins the surface water.

\*\*\*The amount of rainwater always characterized by stability, but the reason for the lack of rainfall in a particular area !!! Is falling elsewhere )

\*\*\*The world's water crisis began: for example, the confluence of the Egyptian government with Uganda to try to prevent them from setting up a dome, which prohibits Egypt and Sudan of their right to their waters, and also the Turkish government's attempt to control the main headwaters of the Djilia and Euphrates rivers .....> We note that most of the Arab water sources are inherently non-Arab sources.

## Water resources

Of all the worlds water, 97% is in saline oceans and of the remaining 3% ,of which by far the largest part-69%-is in the form of snow and ice , .fresh water upon which humans depend accounts for only 0.008% Humans take fresh water from whatever source they can. In some cases this means capturing precipitation directly in a rain barrel under a downspout. The major sources of fresh water, however, are surface water, namely rivers and lakes, and groundwater .

## Uses of fresh water

The major uses of fresh water are divided among three major :categories

Domestic

Industry

Agriculture

(Worldwide, far and away the largest use of water is for irrigation (70% second is for industry (23%); and third is for direct human consumption ,these percentages vary greatly from one region to another.(%8) .depending on natural precipitation and degree of development

Water is also used in the generation of hydroelectric and thermoelectric power. Water is used as a vehicle for the transportation of goods and people, as a means of recreation through swimming and boating, and as a natural habitat for many forms of fish and wildlife.

## notes

- Central and North America: a good amount of water used in industry and agriculture (the balance between them makes the state No. 1 production

-Africa: the amount of good in agriculture only

### Distribution of water in the world

- South America has the most (Brazil, of Argentina )
- (Far East has a good amount (Indonesia)
- Middle East does not have a good amount in general
- The southern parts of Saudi Arabia - Yemen - the northern parts of Morocco, Algeria and parts of a few parts of Lebanon and Syria have good rainfall

\*\*\*Desalination include (evaporation - condensation - the separation of salt), a process that is expensive, requiring oil.

(((The main reason of the scarcity of water is the unequal distribution of water in the world)))

\*\*Saudi Arabia tried an experiment, the transfer of water ice, but lost in large quantities, to melt during transport

\*\*Twenty years ago, the water crisis occurred in Jordan for a period of five consecutive years, the government was forced to take water from neighbors such as Israel, which allowed it to take water from Tabraea , but the water was very bad, the Jordanian government has been unable purified to higher prices

\*\*Number of lakes in the Arab world a few (Tiberias, not a lake, but the source of the Yarmouk River - artificial lake behind the Aswan High Dam ( el sd el 3ali ) - Lake Bin Ghazi in Libya - lakes in Morocco

\*\*Number of rivers in the Arab countries are very few (major rivers such as the Nile and the Dijla and Euphrates are not the rivers of Arab origin because their headwaters outside the Arab world)

\*\* The number of lakes in the Scandinavian countries such as Sweden and Canada, is large.

\*\*Groundwater is the water that formed over thousands of years, such as Al- Disi in Jordan (which is a major source of water in Jordan, and the expected depletion after 100 years) .

## Water in Amman

Old was dependent on the water in them, but now with the increase in population change case:

West Amman take the Yarmouk River from the north, which runs 60 kilometers through - the King Abdullah Canal until it starts to pump 1 km to the zone (Zay), a water treatment plant and then going to a water tank in the area (Dabouq) and then distributed .

Amman South: Takes from the Madaba

But now became the main reliance on Disi water in the South at 394 km from Amman ) .