

Medical Chemistry

First stage

Collage of Dentistry

Lecture : 2

pollution

by

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Chemical Pollution:-

The contamination of air, water, or soil by chemical substances that are harmful to living organisms. Pollution can occur naturally, for example through volcanic eruptions, or as the result of human activities, such as the spilling of oil or disposal of industrial waste.

Types of Pollution:-

There are several types of pollution, may come from different sources and have different consequences, In general, there are nine recognized sources of pollution in the modern world. These sources of pollution don't simply have a negative impact on the natural world, but they can have a measurable effect on the health.

1- Air Pollution:-

is defined as any contamination of the atmosphere that disturbs the natural composition and chemistry of the air. This can be in the form of particulate matter such as dust or excessive gases like carbon dioxide or other vapors that cannot be effectively removed through natural cycles, such as the carbon cycle or the nitrogen cycle.

Air pollution comes from a wide variety of sources include:

- Forest fires, volcanic eruptions, dry soil erosion, and other natural sources.
- Building construction or demolition

Depending on the concentration of air pollutants, several effects can be noticed. Smog increases, higher rain acidity, and higher rates of asthma. Many scientists believe that global warming is also related to increased air pollution.

2-Water Pollution:-

involves any contaminated water, whether from chemical, particulate, or bacterial matter that degrades the water's quality and purity. Water pollution can occur in oceans, rivers, lakes, and underground reservoirs.

Causes of water pollution include:

- Increased sediment from soil erosion
- Improper waste disposal and littering
- Leaching of soil pollution into water supplies
- Organic material decay in water supplies

The effects of water pollution include decreasing the quantity of drinkable water available, lowering water supplies for crop irrigation, and impacting fish and wildlife populations that require water of a certain purity for survival.

3- Soil Pollution :-

is contamination of the soil that prevents natural growth for cultivation, habitation, or a wildlife preserve. Some soil pollution, such as the creation of landfills is deliberate and can have widespread effects.

Soil pollution sources include:

- Hazardous waste and sewage spills
- Non-sustainable farming practices, such as the heavy use of inorganic pesticides
- Strip mining, deforestation, and other destructive practices

Soil contamination can lead to poor growth and reduced crop yields, loss of wildlife habitat.

4- Noise Pollution :-

Noise pollution refers to undesirable levels of noises caused by human

activity that disrupt the standard of living in the affected area. Noise pollution can come from:

- Traffic
- Airports
- Railroads
- Manufacturing plants

5- Radioactive Pollution:-

is rare but extremely detrimental, and even deadly, when it occurs. Because of its intensity and the difficulty of reversing damage.

Sources of radioactive contamination include:

- Nuclear power plant accidents or leakage
- Improper nuclear waste disposal
- Uranium mining operations

Radiation pollution can cause birth defects, cancer, sterilization, and other health problems for human and wildlife populations.

6- Thermal Pollution:-

is excess heat that creates undesirable effects over long periods of time.

Thermal pollution may be caused by:

- Power plants
- Air pollution particulates that trap heat
- Deforestation

temperatures increase causes climatic changes and wildlife populations may be unable to recover from swift changes.

Ways to Stop Pollution:-

A- Clean Energy:-

Clean energy is renewable energy which doesn't deplete natural resources or cause environmental harm. Renewable energy includes bio energy, wind, hydroelectricity, solar and geothermal energy.

- Bio energy :- is produced from living things such as trees and plants.
- Wind :- convert kinetic energy by moving air into mechanical energy, which is then converted into electricity.
- Hydroelectricity :- is electricity produced by the gravitational force of falling or flowing water.
- Solar power is energy produced from the heat and light of the sun.
- Geothermal energy:- is the naturally occurring thermal energy that is produced by the Earth's molten inner core.

B- Preventing Water Pollution:-

There are several things you can do to stop water pollution and they are very easy. Steps you can take to help prevent water pollution include:

- Don't litter, especially in or near water sources.
- Organize a community cleanup event near a river or lake where you live .
- Dispose of hazardous materials, such as paint, motor oil, never down household drains.