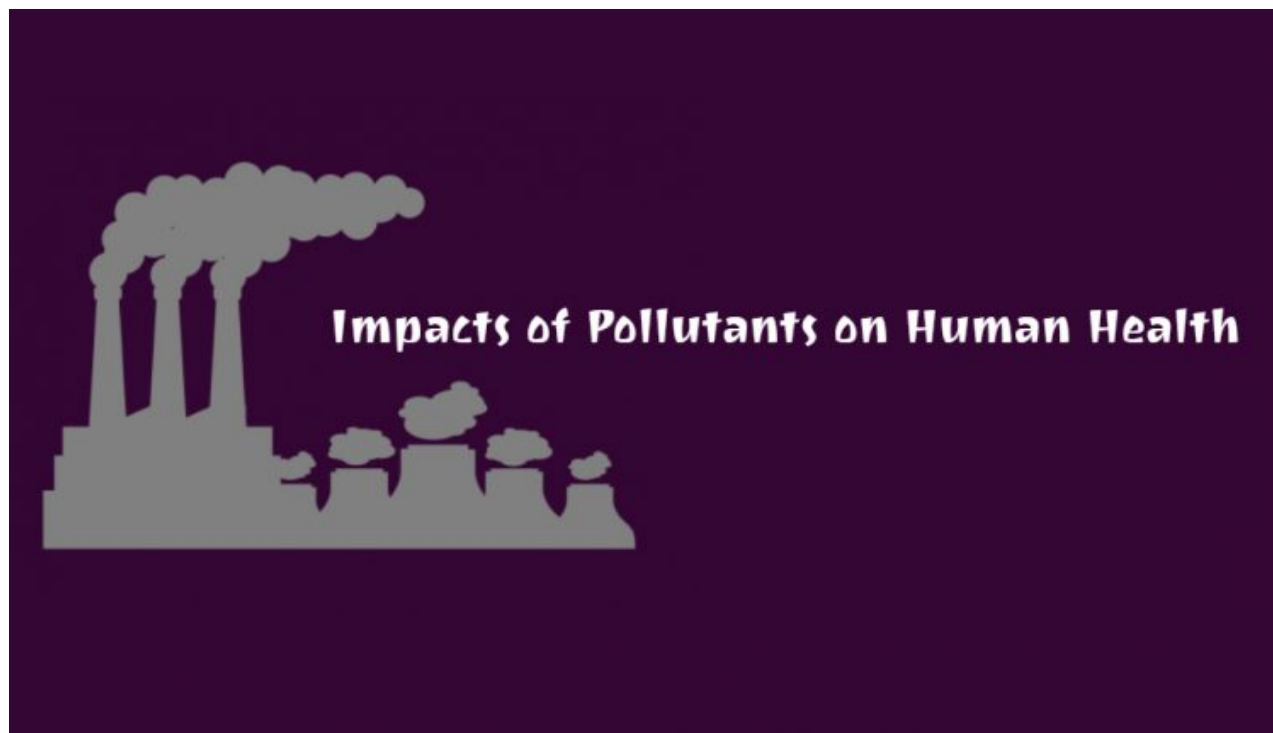


Impacts of Pollutants on Human Health | Short Notes For NET EXAM

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Impacts of Pollutants on Human Health

Unit-IX People, Development and Environment

The existence of harmful substance causing an adverse effect on the environment and on human health is known as pollution. It can occur in different forms like,

- Air pollution
- Water pollution
- Soil pollution
- Noise pollution
- Radioactive pollution
- Light pollution

Air pollution has a major impact on human health.

With the onset of industrialization, there has been a change in the atmosphere due to the fire used for generating energy.

Not only industrialization but

- different modes of transport
- the burning of fossil fuels

- forest fires
- burning of leaves
- large scale agricultural waste
- industries and power plants are some of the main sources of air pollution. They are consisting of odours, gaseous pollutants, suspended particulate matter (SPM) in the form of dust, smoke, mist and fume.

These sources of air pollution release harmful gases and substances that are poisonous for human beings.

Some of them are

- sulphur tropospheric ozone
- sulphur dioxide
- nitrogen dioxide
- suspended particulate matter

Common atmospheric pollution sources and their pollutants

Category	Source	Emitting pollutants
Agriculture	Open burning	Suspended particulate matter, carbon monoxide, volatile organic compounds
Mining and quarrying	Coal mining; crude oil and gas production; stone quarrying	Suspended particulate matter, sulphur dioxide, oxides of nitrogen, volatile organic compounds
Power generation	Electricity; gas; steam	Suspended particulate matter, sulphur dioxide, oxides of nitrogen, carbon monoxide, volatile organic compounds, sulphur trioxide, lead
Transport	Combustion engines	Suspended particulate matter, sulphur dioxide, oxides of nitrogen, carbon monoxide, volatile organic compounds, lead
Community service	Municipal incinerators	Suspended particulate matter, sulphur dioxide, oxides of nitrogen, carbon monoxide, volatile organic compounds, lead

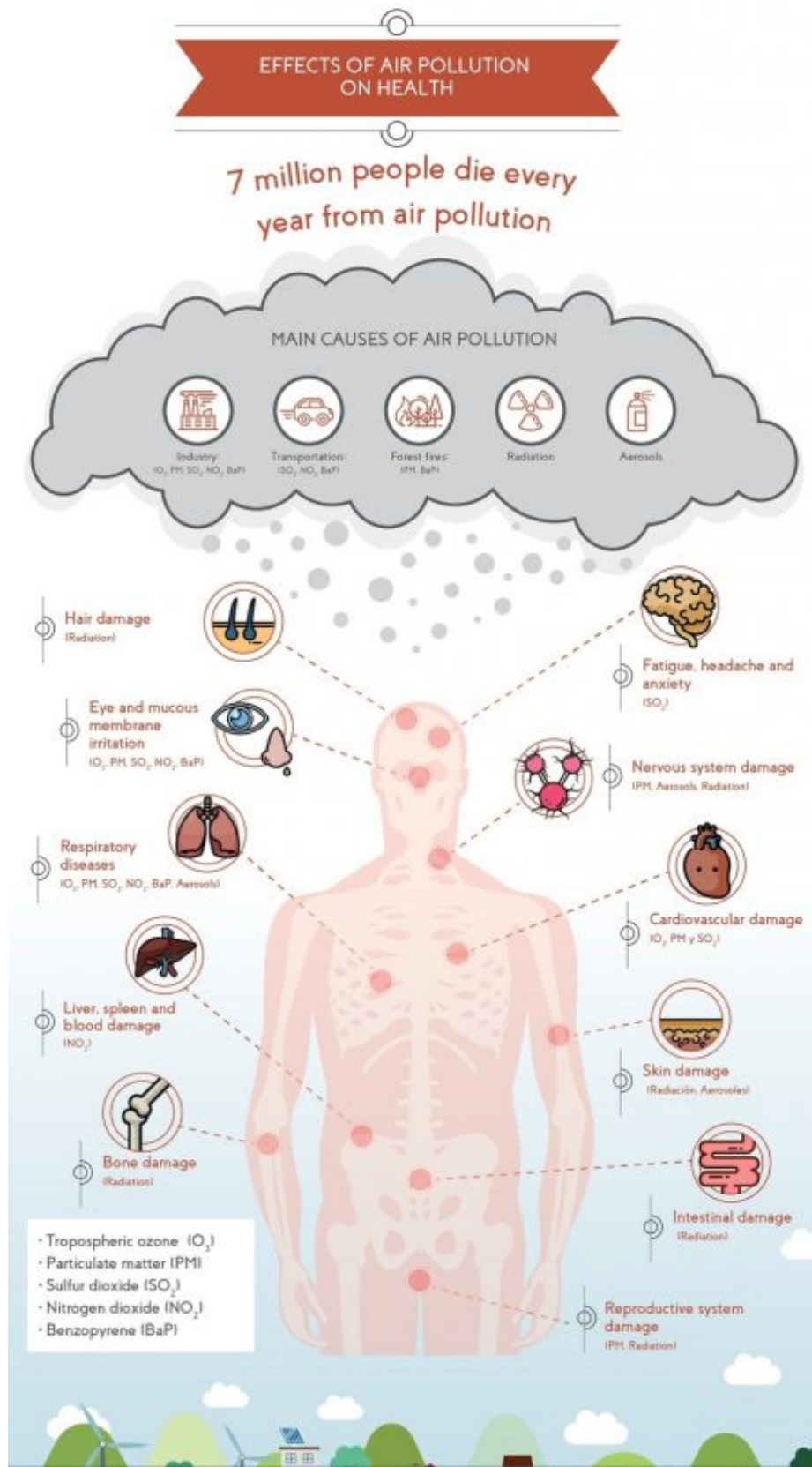
Source:www.sustainability.com

The effects of air pollution on human health depend upon the physical and physiological of the person who is affected by air pollution. Many organs or body functions can be harmed by this. Some of the consequences are:

- Respiratory diseases
- Cardiovascular damage
- Fatigue, headaches and anxiety

- Irritation of the eyes, nose and throat
- Damage to reproductive organs
- Harm to the liver
- Damage of nervous system

People living in urban areas are the sufferers as they are more exposed to this air pollution.





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Health impacts of some specific air pollutants

- **Tobacco smoke** – it generates harmful chemicals and causes cancer to the smoker. It also affects the passive smoker like burning sensation in the eyes or nose, throat irritation, etc.
- **Volatile organic compounds** – they can cause irritation of the eyes, throat, nose, headaches and nausea. They even can damage the liver and other parts of the body.
- **Lead** – the exposure damages the nervous system, digestive problems, cancer. It is also dangerous to small children.
- **Ozone** – the exposure to this gas causes itching on the eyes, burning and watery. It also increases respiratory disorders like asthma. It also lowers the resistance to colds and pneumonia.
- **Nitrogen oxide** – this gas makes the children disposed to respiratory diseases in winters.
- **Carbon monoxide** – carbon monoxide combines with haemoglobin and lessen the required oxygen that enters our blood through lungs. This causes changes in the function of the affected organs like the brain and cardiovascular system. It also affects the concentration level, makes one sleepy.
- **Sulphur dioxide** – sulphur dioxide in the air are caused due to the increase in the burning of fossil fuels. It causes diseases of lungs and other lung disorders like wheezing and shortness of breath.
- **Suspended particulate matter (SPM)** – they consist of dust, mist, fumes and smoke. The main components of SPM that affects the health are lead, nickel, arsenic and those present in diesel exhaust. When we breathe these particles it affects our lungs causing lung damage and respiratory problems.

Like air pollution, **water pollution** is also harmful to human beings.

Water is very important for survival. We need clean water for drinking, irrigation of crops and many other purposes.

If the water resources like the lake, river, streams are polluted and contaminated it will affect our health.

- If we drink polluted water then diseases like amoebiasis, typhoid and hookworm will affect our health.
- Water is polluted by chemicals like heavy metals, lead, pesticides and hydrocarbon causes hormonal and reproductive problems, damages the nervous system, liver and kidney. Exposure to mercury causes diseases like Parkinson's, Alzheimer's, heart disease and death.
- If the sea beaches are polluted then diseases like rashes, hepatitis, gastroenteritis, diarrhoea, stomach aches and vomiting will happen.
- Water pollution also affects our marine life which is one of the food sources.

Soil pollution

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Soil pollution happens when the toxic chemicals, pollutants or contaminants in the soil are high causing risk to the plants, wildlife, human beings and to the soil.

The major causes of soil pollution are:

- Use of chemicals like pesticides, herbicides, insecticides and fertilizers are the main factors.
- The breaking of the underground storage tank
- Leakage of wastes from landfills
- Direct discharge of industrial wastes
- Harmful irrigation practices
- Improper maintenance
- Leakage from sanitary sewage, acid rain falling onto the soil
- Fuel leakage of automobiles that soak into the soil

Soil pollution can have harmful effects on ecosystems, human beings and plants. It can harm the water and food which are in direct contact with the polluted soil.

Noise pollution

When there is too much noise or an unpleasant sound causing a temporary disruption in the natural balance is known as noise pollution.

The main causes of noise pollution are:

- Industrialization
- Poor urban planning
- Social events
- Transportation
- Construction activities

- Household chores

Noise pollution causes health issues like

- Hearing problems
- Sleeping disorders
- Cardiovascular issues
- Trouble in communicating

Radioactive pollution

Radioactive pollution happens when there is the presence of radioactive materials in the environment caused by the emission of harmful radiations like alpha or beta particles or gamma rays.

The main causes of radioactive pollution are:

- Nuclear accidents from nuclear energy generation plants
- The use of nuclear weapons for mass destruction
- Mining
- Spillage of radioactive chemicals
- Tests on radiation
- Cosmic rays

The major effects of radioactive pollution are:

- Genetic mutations
- Diseases like cancer
- Infertility in soils
- Cell destruction

Some of the solutions of radioactive pollution are:

- We should dispose of the radioactive wastes properly like burying the wastes.
- We should properly label the content of any radioactive content so that one can take protective measures to handle it.
- Banning of nuclear tests
- We should think of alternative sources of energy like solar energy, hydro-electric and wind power.
- Proper storage or container should be there for the radioactive materials so that there is no leakage.

Light pollution

By light pollution, we understand the excessive, flashy and unwanted artificial lighting.

The cause of light pollution is mainly due to

- Industrialization

- Modernization

Following are the adverse effects of light pollution:

- Over-illumination causes headache, fatigue, stress and anxiety.
- Light trespass during night causes the sleeping disorder.
- Glaring on outdoor lights decreases our vision and the chances of accidents increases.

Human activities have polluted the environment that we live in. But, at the same time, we are also trying to repeal the damage caused by pollution. Small efforts we make towards our greener environment will show can start showing its effect. We can still keep and save what is left from our natural resources to make the world a better place to live for our future generation.