

## **Radioactive Pollution**

### **What is Radioactive Pollution?**

The presence of radioactive materials in our surroundings is quite normal as we come across several gadgets, items used on a daily basis do radiate but when these substances radiate more than the safe limit of radiation or whenever there is incidents which spark excess amount of hazardous level of radioactivity leading to massive damage to our immediate surroundings including live and matter we categorise them as radioactive pollution.

The radioactive substances radiate off particles which penetrate soft skin and tissues and cause irreparable damages to living biota and hence whenever such incidents or accidents like the sinking of nuclear submarine occur we put them as hazardous radiation pollution.

### **Causes of Radioactive Pollution:-**

- Dumping of solid and liquid radioactive wastes.
- Pollution due to underwater nuclear weapon testing and explosions.
- Radioactive pollution caused due to water streams and other water run offs from nuclear testing sites.
- The atmospheric radioactive fallout mainly due to cosmic particle shower or due to entry of extra-terrestrial materials from deep space.
- Radioactive pollution that are caused due to the accidents in deep sea weapon testing, nuclear tipped weapon loss, radioactive emission from thermos-electrical generators, falling satellites with radioactive materials on board, and finally aircrafts and ships carrying nuclear materials.

### **Effects of Radioactive Pollution:-**

- Multifactorial diseases:- Various disease initiations and their progression depend upon multiple factors such as birth defects, and adult onset diseases which are both chronic as well as acute in nature. The birth defects could range from neural tube defects, cleft lip or genital heart defects while the adult onset diseases could range from diabetes, hypertension, and coronary problems. These multifactorial diseases are usually influenced by genetic mutations (DNA changes) and any of the mutated genes might be the reason a person might go through these kinds of symptoms.
- Reproductive effects:- When a person gets exposed to high level of radioactive material dose, it becomes a reproductive hazard. Effects like disfigured birth, physical impairment at birth and other such things lead to reproductive defects. Exposure to nuclear radiation by any of the parents could lead to defects at birth as these causes' mutations at genetic level and lead to variations which usually result in abnormality. Problems like low birth weight, physical impairment or variation and damages in chromosome numbers could result in birth defects.
- Somatic effects:- Individuals who get exposed to radiation pollution could face cells and tissue damages leading to hair loss, mouth ulceration, haemorrhage, skin discoloration and lower blood count or platelets. Some of them might face problems of cardiovascular disorders, leukaemia, sterility and premature aging.

- Genetic effects:- These could lead to chromosomal aberrations and mutations where radiations could cause damage to DNA strands, adverse effects to genetic break up which are either immediate or delayed over a period of time. The future generations could also get affected due to such changes that take place in genetic set up of the individual. The degree of damage and extent both vary due to the level of radiation exposure and the kind of exposure.

**Radioactive pollution prevention, monitoring and solution:-**

- Safe storage:-radioactive pollution needs to be stored in specialized containers, which do not break easily and which do not allow radiation to seep out.
- Clear warnings:-radioactive material can contaminate a person's clothing or their skin. Then, as that person moves through the environment, they can contaminate other living organisms in their turn. Clear warnings about the presence of radioactive material will prevent this from happening.
- Alternative sources of energy:-seeking alternatives to nuclear energy will reduce the number of nuclear power plants in the world and thus reduce the risks that are associated with radioactive material.
- Nuclear disarmament: disarming and getting rid of nuclear weapons is a very significant way of eliminating the hazards associated with radioactive material.

**Reference**

1. <https://www.conserve-energy-future.com/radioactive-pollution-causes-effects-solutions.php>
2. <https://www.riverkeeper.org/campaigns/stop-polluters/indian-point/radioactive-waste/>
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