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Editorial

# Radioactive Pollution: A Global Concern for Environment

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## EDITORIAL

Radioactive pollution occurs when radioactive elements are present in the atmosphere or environment, especially when their presence is unexpected and creates an environmental threat due to radioactive decay. Radioactive materials cause devastation by emitting dangerous ionizing radiation (radioactive decay) like beta or alpha particles, gamma rays, or neurons into the environment where they exist. Since the substances are characterized by radiation because the particles found in radioactive materials are very unstable. They have the potential to disturb, modify, and even kill the plant, animal, and human life. The level of environmental harm or hazard is determined by the radioactive material concentration, the energy emitted by the radiation, the closeness of the radioactive materials to people exposed, and the kind of radiation. However, radioactive water contamination is a new problem for both water pollution and human health. Radioactive pollution and its accompanying health effects have recently been observed in various places of the world. Groundwater contamination is caused by the percolation of Naturally Occurring Radioactive Materials (NORM) from soil sediments to the aquifer. Nuclear weapon research, nuclear disasters, nuclear power plants, and radioactive waste disposal are the primary anthropogenic causes of contamination, whereas radioisotope usage in industry and scientific labs is a minor source.

### Causes of radioactive pollution

In the postmodern period, several forms of energy can be found. The deployment of nuclear missiles and atomic bombs, both forms of nuclear energy, during WWII explains not only the origin but also the harmful nature of radioactive pollution or contamination. Children born with mental retardation, as well as diseases such as autism and other abnormalities, have been affected by the impacts of the two strikes in Hiroshima and Nagasaki that triggered the conclusion of the war in 1945. Radioisotopes are employed in detectors and other industrial processes. Radiation concentrations in isotopes such as uranium are high. Common isotopes, on the other hand, such as carbon containing radioactive substances, are easily detected in streams *via* sewage pipes.

The mining component includes the mining of mineral ores, which are subsequently broken down into smaller, more manageable bits. Radium and uranium, for example, are naturally occurring radioactive elements in the environment. Spills across oceans have occurred when ships collide with glaciers or coral reefs, spilling pollutants into rivers and the atmosphere. The bulk of these substances, including petroleum products, contain considerable amounts of radiation, which can be harmful to the environment. Radiation has been discovered to have a variety of intriguing qualities, prompting many scientists to perform experiments to understand more about it. It is an important component in the prevention and treatment of cancer. Chemotherapy, a cancer curative health programme, employs radiation to limit cancer cell development while also strengthening the immune system. Despite this, scientists have been exposed to radiation, which has resulted in their deaths or other harmful impacts. Cosmic Rays from outer space arrive on our world with high levels of radiation, generating radioactive contamination. The quantity with which the rays reach the earth is determined by the earth's height and geographical location.

Terrestrial radiations from radioactive materials in the earth's crust may exist. These radioactive elements are found in rocks, soil, and water and include potassium 40, radium 224, radon 222, thorium 232, uranium 235, uranium 238, and carbon 14. Radioactive waste is classified into three types: high level, low level, and transuranic. They mostly include nuclear weapons disposal, cleaning products from nuclear reactors and military installations, plutonium processing emissions, and other radioisotopes from hospitals and laboratories.

Over time, nuclear waste management and disposal can result in low to medium quantities of radioactivity. Their consequences are not only difficult to predict, but they may also be difficult to detect since radioactivity may contaminate and spread *via* the air, water, and soil. Furthermore, locating specific nuclear waste sites is challenging.

## CONCLUSION

Radioactive elements affect the environment and can cause a risk to human health if inhaled, injected, or exposed. Human tissues absorb radiation through polluted water and foodstuff,

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which can cause serious health risks. High radiation exposures can result in acute radiation syndrome or cutaneous radiation damage. Exposure to radiation causes various disorders in human physiology, including cancer, leukemia, genetic mutations, osteonecrosis, cataracts, and chromosomal disruption. A secure water supply now necessitates proper analysis and monitoring of radioactive contaminants. Anthropogenic causes of radioactive contamination in water resources can be reduced by prevention and precautionary measures.