

BACKGROUND RADIATION – NATURAL AND ARTIFICIAL

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Life on Earth are always exposed to background ionizing radiations from both natural and artificial radioactive sources. The natural sources like cosmic radiation and radioactive terrestrial materials cause direct external background radiation exposure to humans, whereas, inhalation of radon from air and dwellings, ingestion of radiotracers through food and drinks and the biologically essential functional elements, potassium (K – 40) and carbon (C – 14) in the body itself, result natural background exposure through internal radiation. Background radiation exposure (> 80%) due to natural radioactive materials is unavoidable as the sources are of natural origin. In addition to natural background radiation, human activities involving creation and utilization of artificial radioactivity for general benefits, particularly in medical imaging, radiotherapy, generation of nuclear electricity, etc., also produce a significant amount of artificial background radiation (<20%). The natural average background radiation dose for population has been estimated to be about 2.4 mSv/yr. In some parts of the world, however, much higher natural background radiation doses even up to ~ 260 mSv/yr have been recorded.
