

Estimation of Ionizing Radiation Risk and their Effects as a Method of Approach to Data Products

Introduction: Releases of radionuclides produce events and their characteristics can be estimated based on the data products collected (characterization of the source and signals), but this is a proceeding that shows huge risks and is not always possible. Objective: To ensure compliance with the Treaty, describe the scientific basis of risk estimation (RE). Methodology: The most important source of data to RE of ionizing radiation is the group of atomic bomb survivors. Considering the characteristics of this group and the epidemiological data of low LET radiation (medical exposures of thyroid and breast, patients undergoing radiotherapy in the UK to relieve pain associated with ankylosing spondylitis and data on secondary cancers in women treated for cervical cancer) quantitative RE is performed. Results: Relevance of the origin of data on the effects of radiation, transport of risks between populations, dose-response function and risk projection models are showed. Conclusion: Occasionally interpretation errors occur due to sample size, lack of controls, strange effects different from those produced by radiation, inadequate dosimetry and lack of a sufficiently large dose range. Since radiation risks may be diverse for another population, it's necessary to establish a procedure that allows results extrapolation to other human populations.

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