



UNSCEAR: Radiation Exposure Associated Risk Levels Vary for Adults and Children



The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) has presented its report entitled "Effects of radiation exposure of children" to the UN General Assembly in New York. The core message is that adults and children receive doses of ionizing radiation in varying degrees, which in turn impact them differently. Consequently, when predicting risk following exposure children should be considered separately.

Dr. Fred Mettler is Chair of the Expert Group on the UNSCEAR Report, which took two years to complete and reviews 23 types of cancer. Among these are some that are extremely pertinent for assessing certain medical procedures and radiological consequences of nuclear accidents. Explaining the report Dr. Mettler points out that physiological and anatomical variances cause radiation exposure to have a different effect on children and adults. He goes on to say that by offering a comprehensive review highlighting these effects exclusively on children, the report represents an important resource for the international scientific and medical community.

One specific example described in the report is that, when exposed to radiation, infants and children are at a higher risk than adults of growing a range of tumours, usually not in the short term but rather later in life. It was found that children were more susceptible to develop about 25 % of tumour types such as leukaemia, thyroid, brain and breast cancer, and depending on circumstances the risk could potentially be even higher.

For about 15% of cancer types including colon, there was no perceivable difference in children's sensitivity to radiation, and with 10% of types, such as lung affecting cancer, there was even less effect on children than on adults.

For roughly 20% of cancers, such as those affecting the oesophagus, the data was inconclusive, whereas for 30% of cancers, including uterus, rectum and prostate, there was only a weak link or no link at all between exposure and risk at any age.

Dr. Mettler concluded that the assessment of the radiation exposure's risks and effects on children should not be based on the same parameters used for adults, rather taking into consideration the exposure's specifics.

According to the report, radiation exposure had no heritable effects, including for offspring born to parents who survived the atomic bombings as children. It also states that several physical factors have an impact on the radiation's adverse health effects in children versus adults, mentioning infants' smaller body diameters and the subsequent lower organ protection from overlying tissues. Furthermore, metabolism and physiology vary with age, affecting the concentrations of radionuclides in different organs and thus the dose to those organs for a given intake.

The full report can be viewed on the [UNSCEAR website](#).

Source: [United Nations Information Service](#)

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