

## P8. Occupational Radiation Exposure

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Radiation has two sources as natural and artificial. Basically environment contains a quantity of radiation. We are exposed to radiation even from air, food and other natural environments. For the measurement of the exposure, the millisievert (mSv) term is used.

The ionizing radiation form is the more dangerous type and causes nuclear damage in the cells. As a result of this damage, mutations may occur. Sensitivity to radiation is different according to the types of tissues. Cells with more reproductive activity are more sensitive to X-rays. For example, radiation in pregnancy may cause serious anomalies such as fetal birth defects, adult or childhood cancers, and mental retardation.

Medical imaging laboratories and other medical workers, security officers in baggage imaging, workers at nuclear facilities, pilots and flight crew including radon exposure in miners are part of occupational exposure.

Protection: The International Commission on Radiological Protection recommends limiting occupational radiation exposure to 50 mSv (5 rem) per year and 100 mSv (10 rem) over 5 years. Occupational exposures in our country have been officially restricted in accordance with this requirement. For this reason, it is very important to use a dosimeter suitable for the position of the person.

ALARA "As Low As Reasonably Achievable" principle used to reduce occupational exposures, also used to reduce radiation exposure;

Time: Decreasing the exposure time will directly reduce the dose.

Distance: Increasing the distance with the radiation source will reduce the radiation to the square of the distance.

Shielding: According to the type of radiation, it is an effective way of reducing exposure.

In addition, with good hygiene practices, we can reduce exposure to radioactive environment by minimizing contamination by food, beverages and labeling methods.

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