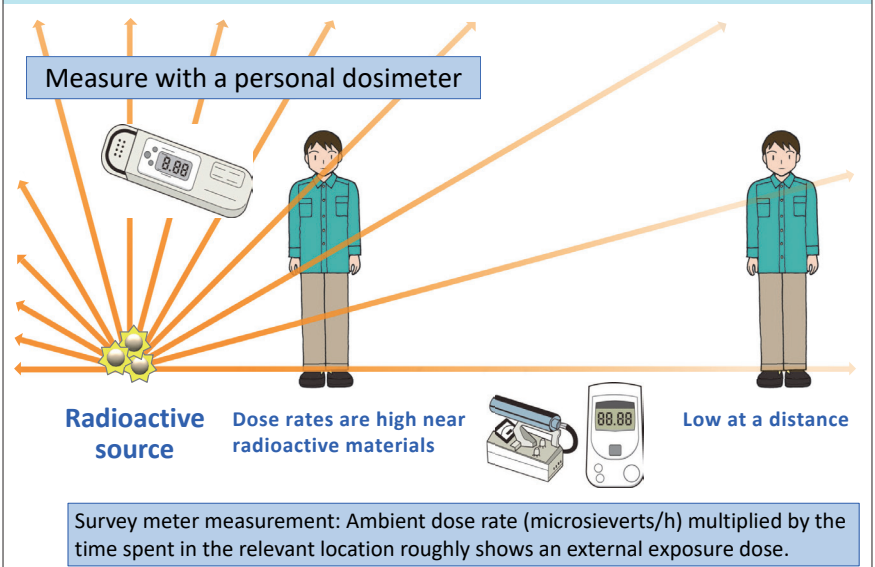
Dose Measurement and Calculation

External Exposure (Measurement)



Survey meter measurement: Ambient dose rate (microsieverts/h) multiplied by the time spent in the relevant location roughly shows an external exposure dose.

Wearing a personal dosimeter on the body is one of the means to measure doses due to external exposure. Personal dosimeters can measure cumulative amounts of radiation exposure for an extended period of time, and provide hourly readings.

Another means is to measure radiation dose rates in a workplace with a survey meter to estimate the level of exposure supposing that a person stays in that place. Since α-particles and β-particles from outside the body do not reach into the body (p.22 of Vol. 1, "Penetrating Power and Range of Effects on the Human Body"), γ-rays are measured to obtain doses due to external exposure. Many recent instruments provide readings in microsieverts per hour, so such readings are multiplied by the time a person spent in a certain location to roughly calculate his/her external exposure dose. However, these measurements must be made with an instrument, such as a NaI (Tl) scintillation survey meter, that has proper performance and is well calibrated.

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