

Conversion Method for Internal Exposure to Radiation (Committed Dose)

$$\text{Committed Dose (mSv)} = \text{Food Intake (kg/day)} \times \text{Intake Days (days)} \times \text{Effective Dose Coefficient (mSV/Bq)} \times \text{Concentration of Radionuclides (Bq/kg)}$$

Radionuclide	Half-life	Effective dose coefficient when 1Bq is taken orally or inhaled by an adult (mSv/Bq)	
		Taken orally	Inhaled
Plutonium-239	24,000 years	2.5×10^{-4}	1.2×10^{-1}
Cesium-137	30 years	1.3×10^{-5}	3.9×10^{-5}
Iodine-131	8 days	2.2×10^{-5}	7.4×10^{-6}
Strontium-90	29.1 years	2.8×10^{-5}	1.6×10^{-4}
Tritium*	12.3 years	4.2×10^{-8}	2.6×10^{-7}

* The effective dose coefficient of tritium shows OBT (organically bound tritium), which is important for dosimetric evaluation, because it is easily absorbed by living bodies and has a long biological half-life. (Note) 1 is used for the market dilution factor (percentage of contaminated food intake relative to food intake of the evaluated subject) or for correction downwards, such as due to cooking. When more than one value is indicated for the nuclide of a chemical form, the largest effective dose coefficient is shown.