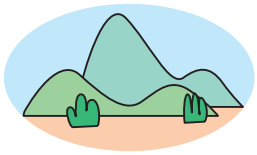
Radiation in our Daily Lives

We receive doses of radiation in our daily lives from a variety of sources.

From outer space 0.39



From the ground 0.48

From food 0.29

From radon in the air*2 1.26

Radiation Exposure (mSv)

10000

2,500 to 6,000 mGy Infertility (gonads)*1
3,000 to 5,000 mGy Temporary hair loss (skin)*1

1000

100 to 6,200 mGy
Cardiac catherization (skin)

500 to 2,000 mGy
Lens becomes cloudy (eye)*1

500 mGy
Reduced blood-forming function (bone marrow)*1

100

100 mSv or less

Amount of radiation (mSv) exposure that bears no statistical difference in terms of the risk of cancer

250 Limited to emergency workers at power plants, etc. *5

50 Limit for workers at power plants, etc. (per year)*4

Ramsar (Iran), Kerala, Chennai (India), natural radiation from the ground 0.5 to 613.2

(No adverse impact to the health of residents found.)

10

Natural radiation/person (per year) 2.4
(World Average)

2.4 to 12.9 CT (1 time)

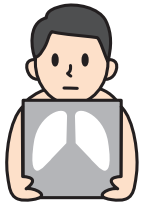
2.0 to 10 PET scan (1 time)

1

Natural radiation/person (per year) 2.1
(Average in Japan)

3.0 Stomach X-ray (1 time)

1.0 Limit for the general public (excluding for medical treatment) (per year)



Flight from Tokyo to New York (round trip) 0.08 to 0.11

0.1

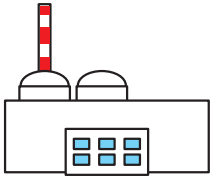
0.06 Chest X-ray in annual checkup (1 time)

0.05 Targeted dose around a nuclear plant (per year)

0.01

Clearance level*3 0.01 (year)

0.022 Estimated dose at reprocessing plant (Rokkasho) (per year)



0.01 Dental X-ray

0.001

Less than 0.001 Actual emissions from nuclear power plant

*1:When discussing radiation hazards, it is expressed as equivalent to an effective dose of 1 mSv, given that a dose of 1 mSv of gamma radiation is absorbed evenly by each part of the the entire body

*2:Radioactive substances naturally present in the air

*3:Insignificant compared to naturally-occurring radiation levels, and the level does not require handling as a radioactive substance that presents a safety risk.

*4:Dose of radiation that must not be exceeded in 1 year is 50 mSV for workers at places such as power stations, or 100 mSv over 5 years.

*5:The dose limit was raised to 250 mSv to emergency workers from April 2016 due to the revision of the Ionizing Radiation Hazard Prevention Regulations, etc.

©JAERO

Sources: United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), 2008 Report, Nuclear Safety Research Association, Radiation in the Environment, New Edition, 2011, and ICRP, Publication 103, with others