(Reference 2)

Estimation of Radiation Dose Human Body Receives Based on 2019 Survey Results

Assuming that the concentration of radioactive cesium in cedar pollen is the same as the highest concentration (12.2 kBq/kg) in male flowers of cedar measured in the FY2019 survey, the radiation dose a person receives when the pollen is scattered into the air and the person inhales it was estimated. The result was 0.0000113 μSv per hour at maximum.

Category (condition)		Cesium-137	Cesium-134
Concentration of radioactive cesium contained in cedar pollen (1)		11.3 kBq/kg	0.9 kBq/kg
The highest count of pollen scattered in the air measured to date (2)		2,207 pollen/m^3	
Weight of one cedar pollen		12 ng	
Concentration of radioactive cesium contained in cedar pollen scattered in the air (Calculated from the concentration (1), count (2), and pollen weight)		0.000301 Bq/m^3	0.000023 Bq/m^3
Radiation dose an adult person receives by inhaling the air (Calculated by the concentration above and (3) and (4))	In 1 hour	0.0000113 μSv	
	Total over pollen scattering period (February to May)	0.0000325 mSv	

Conditions:

(1) For the concentration of radioactive cesium contained in cedar pollen, the highest measurement value in male flowers of cedar surveyed in FY2019 (12,200 Bq/kg) was used. (The concentration of radioactive cesium contained in pollen is assumed to be the same as that in male flowers.)

(2) For the count of cedar pollen scattered in the air, the highest measurement result by the Pollen Information System of the Ministry of the Environment (2,207 pollen/m^3) was used.

(3) For the amount of air an adult person inhales a day, the value by the International Commission on Radiological Protection (22.2 m^3) was used, which was divided by 24 to give inhalation amount per hour.

(4) For the effective dose coefficient (inhalation), 0.039 μSv/Bq was used for Cs-137 and 0.020 μSv/Bq for Cs-134.

[Past estimation results (radiation dose per hour)]

FY2011: 0.000192 μSv FY2012: 0.0000715 μSv FY2013: 0.0000484 μSv FY2014: 0.0000215 μSv
FY2015: 0.0000077 μSv FY2016: 0.0000069 μSv FY2017: 0.0000187 μSv FY2018: 0.0000224 μSv

Radiation dose measured in Shinjuku-ku, Tokyo (On February 28, 2020)	In 1 hour	0.036 μSv