

Measures for
Radioactive
Materials in Foods

Outline of the Results of the Food-related Health Risk Assessment

(Food Safety Commission of Japan (FSCJ), on October 27, 2011)

- **Potential effects of radiation are found when the lifetime additional effective cumulative dose exceeds around 100 mSv.** However, radiation dose accumulated in ordinary daily life such as from natural radiation and X-ray exams, etc. is excluded.
- **In one's lifetime, the susceptibility to radiation may be higher in childhood than in adulthood.(thyroid gland cancer and leukemia)**

- Risks of leukemia increased in children under the age of five at the time of the accident. (Noshchenko et al. 2010; Data relating to the nuclear accident at Chornobyl)
 - Risks of thyroid gland cancer are higher for children younger at the time of radiation exposure. (Zablotska et al. 2011; Data relating to the nuclear accident at Chornobyl)

<< However, both data contain uncertain points in the estimation of radiation doses, etc. >>
- **It is difficult to identify health effects concerning radiation exposure below 100 mSv.**

- Inaccuracy in estimation of the amount of exposure
 - Effects of radiation and effects caused by other factors are unlikely to be distinguished.
 - Study population for epidemiological data serving as grounds is not large enough.

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Based on currently available scientific knowledge, the FSCJ discussed additional radiation exposure through contaminated food consumption, and concluded that health effects could be found when the lifetime additional effective dose exceeds around 100 mSv, excluding radiation exposure from everyday life.

Although there are some unclear points in the estimation of radiation doses, etc., on the basis of findings of health effects after the Chornobyl NPS Accident concerning risks of thyroid gland cancer and leukemia, it is likely that the susceptibility to radiation is higher in childhood than in adulthood (p.115 of Vol. 1, “Difference in Radiosensitivity by Age”).

On the other hand, if any health effects may occur by exposure to radiation below 100 mSv, it would be very small. As effects of radiation and effects caused by other factors are unlikely to be clearly distinguished and the epidemiological data, due to the small study population, is insufficient to prove the health effects of additional exposure, such as a causal association with cancer, the FSCJ has concluded that it is difficult to identify health effects from the extra cumulative exposure to radiation doses below 100 mSv.

The lifetime additional effective cumulative dose of “around 100 mSv” is not a threshold meaning that radiation exposure below this level causes no health effects nor that radiation exposure above this level surely causes health effects. This is the dose value which risk management organizations should consider for appropriate management of foods. (Related to p.100 of Vol. 1, “Risks of Cancer Death from Low-Dose Exposure”)

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