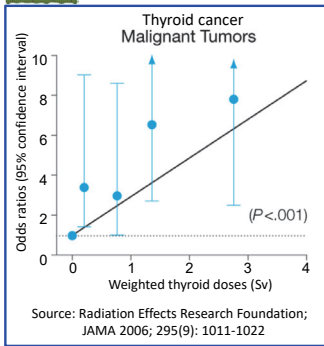


Data on Atomic Bomb Survivors



Analysis of micro papillary cancer

Weighted thyroid doses	Average doses (mGy)	Targets (people)	Cancer detected in (people)	Odds ratios (95% confidence interval)
<5mGy	—	755	33	1
5~100mGy	32	936	36	0.85 (0.52~1.39)
100~500mGy	241	445	22	1.12 (0.64~1.95)
500mGy<	1237	236	15	1.44 (0.75~2.67)

Source: Hayashi et al., Cancer, 116, 1646, 2010

\* Odds ratio: A statistical scale for comparing the probability of a certain incident between two groups. Odds ratios larger than 1 suggest that the probability is larger. When the probability that a certain incident occurs is p (Group 1) and q (Group 2), respectively, the odds ratio is obtained by the following formula.  

$$\text{Odds of p} / \text{Odds of q} = p / (1-p) \div q / (1-q)$$
 When the 95% confidence interval does not include 1, the difference in the probability is statistically significant.

Odds ratios (statistical scales for comparing the probability of a certain incident between two groups) regarding incidence of thyroid cancer among atomic bomb survivors show that risks of thyroid cancer increase as doses increase.

No significant difference was found by a survey only targeting micro papillary thyroid cancer.\* The odds ratio remains low until the weighted thyroid dose exceeds 100 mGy, but the ratio slightly exceeds 1 when the weighted thyroid dose becomes 100 mGy or larger. (When the odds ratio is larger than 1, the relevant incident is more highly likely to occur. However, in this data, as the 95% confidence interval includes 1, there is no statistically significant difference in the probability.)

\* Source:

M. Imaizumi, et al., "Radiation Dose-Response Relationships for Thyroid Nodules and Autoimmune Thyroid Diseases in Hiroshima and Nagasaki Atomic Bomb Survivors 55-58 Years After Radiation Exposure" JAMA 2006;295(9):1011-1022

Y. Hayashi, et al., "Papillary Microcarcinoma of the Thyroid Among Atomic Bomb Survivors Tumor Characteristics and Radiation Risk" Cancer April 1, 2010, 1646-1655

Included in this reference material on March 31, 2013

Updated on March 31, 2017