
THE STUDIES OF THE EFFECTS OF INTERNAL EXPOSURES BY RADIOACTIVE MICROPARTICLES

Masaharu Hoshi, Ph.D.

Hiroshima University

mhoshi@hiroshima-u.ac.jp

Starting with the first Soviet nuclear test on August 29, 1949, 456 nuclear tests were repeated in the 40 years to October 19, 1989. As a result, it is estimated that at least hundreds of thousands of people are affected by radiation exposure.

We at Hiroshima University have been studying radiation doses and the risks to radiation exposure in Hiroshima and Nagasaki, Chernobyl, Fukushima, and Semipalatinsk. In particular, the problem of Semipalatinsk has been studied since 1994 to the present.

Recently, studies of exposed people in Hiroshima have revealed that the effects of internal exposure to radioactive dust contained in radioactive clouds are greater than the normally considered internal and external exposures.

So, I started animal experiments to prove the effects using the reactor in Kazakhstan. There, we conducted animal experiments using manganese dioxide-56, which is small radioactive particles of 3 microns. As a result, it was found that the lungs of rats were 20 times more damaged than external exposure.

We are currently preparing a new study for risk assessment of people living in the Semipalatinsk region. Also, such animal experiments are planned to perform together with the international groups of Kazakhstan, Russia, Germany, France, Japan and so on. The progress and current status of these studies is presented on the pages 70-72 of the Science Impact article <http://impact.pub/Impact2020-maydigitaledition/>.