

B Late effects

I Study participants and programs

Summary

Late effects of the atomic bombings are defined as health effects occurring in 1946 or later that are thought to have been caused by radiation. Elucidation of late effects is made possible through epidemiological studies that observe over time cohorts of participants exposed to different levels of radiation. Most such epidemiological studies have been carried out by the following organizations: the Atomic Bomb Casualty Commission (ABCC) and its successor organization the Radiation Effects Research Foundation (RERF); Hiroshima University's Research Institute for Radiation Biology and Medicine (RIRBM); the Hiroshima Atomic Bomb Casualty Council; the Atomic Bomb Disease Institute, Nagasaki University Graduate School of Biomedical Sciences; and the Nagasaki Atomic Bomb Casualty Council. The study participants were selected from the supplemental survey of the National Japanese Census and various other surveys such as those conducted by local governments. Information involving radiation doses was obtained from interviews with survivors and self-reported survey forms describing survivor location and details about circumstances at the time of bombing. Related analyses, have been conducted using distance from the hypocenter alone or individual doses that have been estimated on the basis of combining distance and data on shielding conditions. Dosimetry systems used for such estimation comprise T65D, DS86, and DS02, which were developed by RERF, and ABS93D, formulated by RIRBM. As outcome markers, epidemiological studies generally focus on mortality and cause of death, as well as cancer incidence based on local cancer registries. Some epidemiologic studies aim to elucidate the health status and incidence of various diseases among persons undergoing health examinations. In other studies, biomarkers including chromosomal aberrations and mutations are measured in blood. Furthermore, questionnaire surveys are conducted to obtain information about survivor health status, psychological wellness, and lifestyle.