

Incidence of diabetes in the atomic bomb survivors: 1969-2015

The Adult Health Study (AHS)¹, one of RERF's major research programs, tracks A-bomb survivors in Hiroshima and Nagasaki based on biennial health examinations. In this study, RERF scientists investigated the effects of radiation exposure on the occurrence of diabetes among 9,131 AHS participants during the period 1969–2015, including whether the effects were altered by city, gender, and age at the time of the atomic bombing.

The study suggested an association between radiation exposure and occurrence of diabetes in Hiroshima survivors within a certain dose range. In Nagasaki, however, no such association was observed, resulting in inconsistency between the two cities. That difference hinted at the potential existence of confounding factors² affecting the relationship between radiation exposure and occurrence of diabetes among A-bomb survivors, and yet no causal relationship was confirmed.

Notes

¹Adult Health Study (AHS):

A clinical research program with the objective of investigating long term health effects such as disease incidence from A-bomb radiation. This study of about 21,000 participants has been conducted since 1958.

²Confounding factors:

Factors other than those under investigation that indirectly affect the cause (in this study's case, radiation exposure) and effect (here, diabetes occurrence) being looked at in the study. For example, confounding factors include differences in lifestyle between Hiroshima and Nagasaki (Nagasaki hypocenter was far from the city's downtown area), differences in socio-economic factors between A-bomb survivors exposed close to the hypocenter and those exposed at a distance, and differences in family history, as well as other possible factors that might not be obvious at present.

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RERF's objective with this brief outline is to succinctly explain our research for the lay public. Much of the technical content of the original paper has been omitted. For further details about the study, please refer to the full paper published by the journal.