RERF future genome[1] studies on atomic bomb survivors and their children

RERF scientists have provided important information on the effects of atomic bomb radiation on human health through studies tracking A-bomb survivors over a long period of time. The current understanding is that the risk of developing disease after radiation exposure depends on the amount of radiation to which an individual A-bomb survivor was exposed. Further development of those studies will bring about a new era in which studies can be conducted from a new perspective of investigating radiation's effects on the genomes of A-bomb survivors.

However, when it comes to effects in the children of A-bomb survivors (genetic effects), further studies are needed to determine the association between parental exposure dose and genomic changes, as well as potential future health effects, in the children.

With the recent development of the science of human genomics, it has become apparent that biosamples (mainly cell samples obtained from blood) of A-bomb survivors and their children stored over many years at RERF can be effectively used in future genome analyses. However, since human genome analysis reveals the genetic information of individuals, such work involves specific ethical issues, including the possibility of discrimination, and thus special consideration is required. With that in mind, RERF is now carefully deliberating the path forward for research into the genomes of A-bomb survivors.

Notes

[1]Genome:
Indicates the entirety of DNA that determines the structure of an organism. It is also sometimes referred to as "genomic DNA." Each of the cells that make up our bodies contains genomic DNA.

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.