

Association of weight fluctuation with mortality in Japanese adults

Repeated large fluctuations in body weight are believed to increase the risk of death later in life.

RERF conducted this weight-fluctuation study by examining height and weight in 1,544 males and 3,252 females among A-bomb survivors who participated in RERF's health examinations during the 20-year period 1958–1978. The participants were between 20 and 49 years of age at the first examination and were without ischemic heart disease^{*1} or cancer throughout the 1958–1978 period. Weight fluctuations were defined as large changes in weight (relative to one's height) that exceeded more common weight gain or loss.^{*2} Vital status (in other words, survival) was then ascertained from 1979 until 2005.

The total rate of death (overall rate from various diseases) and the rate of death specifically from ischemic heart disease were related to weight fluctuation. No relationship was observed between weight fluctuation and rate of death from either cerebrovascular disease^{*3} or cancer. Atomic bomb radiation dose was not associated with magnitude of change in bodyweight and did not modify the associations between weight fluctuation and the abovementioned death outcomes.

The conclusion is that repeated, extreme gain and loss in weight might be harmful. It should be recognized, however, that careful interpretation of the results is required: the relationship between weight loss due to such factors as dieting and decreased risk of death remains unclear. The possibility also exists that the study results might not be applicable to populations other than the Japanese.

^{*1}Ischemic heart disease:

A group of diseases in which blood cannot properly feed heart muscle due to narrowed or blocked coronary vessels, sometimes leading to angina and heart attack.

^{*2}Large weight fluctuation:

'Large' fluctuations in bodyweight over the 20-year study period were defined as, for example, several cycles of weight loss and gain each measuring about 6-9 kilograms, although there were other patterns evident of changes in bodyweight.

³Cerebrovascular disease:

A group of diseases in which blood vessels of the brain become blocked, such as in stroke, or rupture, such as in the case of cerebral hemorrhage.

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.