

# NUCLEAR WEAPONS

## EFFECTS OF NUCLEAR WEAPONS ON HUMAN HEALTH



2015 marks the 70th anniversary of the atomic bombings of Hiroshima and Nagasaki in 1945. These events, as well as medical studies conducted since that time, have shown the devastating immediate and long-term health consequences caused by even a limited use of nuclear weapons.

August 30, 1945

D GAIMUSHO TOKIO

6 SUZUKI FOR JUNOD STOP VISITED HIROSHIMA THIRTIETH CONDITIONS  
APPALLING STOP CITY WIPED OUT EIGHTY PERCENT ALL HOSPITALS  
D<sup>E</sup>STROYED OR SERIOUSLY DAMAGED INSPECTED TWO EMERGENCY HOSPITALS  
CONDITIONS BEYOND DESCRIPTION FULLSTOP EFFECT OF BOMB  
MYSTERIOUSLY SERIOUS STOP MANY VICTIMS APPARENTLY RECOVERING  
SUDDENLY SUFFER FATAL RELAPSE DUE TO DECOMPOSITION OF WHITE

### EFFECTS ON MEDICAL TREATMENT AND ASSISTANCE

The medical needs of the wounded and sick after a nuclear weapon explosion would be enormous. An overwhelming number of people would need immediate treatment for life-threatening wounds but no treatment or assistance for this would be likely in the short-term. The explosion of nuclear weapons also impacts on medical services. In the area affected by the explosion most medical personnel would be dead or wounded and most medical centres would be destroyed or unable to function. Any medical supplies that survived the explosion would quickly be used up. There would be no electricity for X-ray machines or ventilators.

First page of the telegram sent on 30 August 1945 by International Red Cross delegate Fritz Bilfinger to his colleague Dr Junod about the atomic bombing of Hiroshima.

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## IMMEDIATE AND LONG-TERM HEALTH CONSEQUENCES OF NUCLEAR WEAPONS

### Heat casualties

The earth at the centre of the blast would reach approximately 7,000°C. This would vaporise all living things in the area. Severe burns could occur up to 3 km away from the blast. Looking in the direction of the explosion could also cause temporary or permanent blindness and eye damage. The fireball and heat would raise temperatures to such levels that many objects not immediately vaporised would burn.

### Blast casualties

The fireball and heat would be immediately followed by blast pressure waves. People would be killed or severely injured by collapsing homes, falling buildings and flying debris. A significant number of people would be left deaf owing to ruptured eardrums.

The combination of the heat and blast would cause fuel storage tanks and flammable liquids to explode resulting in large numbers of fires that would potentially create huge firestorms as winds combined the individual fires. A firestorm consumes nearly all oxygen and many seeking safety in shelters above or below ground would die from lack of oxygen and be at risk of severe burn injuries.

### Radiation casualties

The immediate effects of radiation would include central nervous system dysfunction; nausea, vomiting and diarrhoea with potential fatal dehydration and nutritional problems; and destruction of the body's capacity to produce new blood cells resulting in uncontrolled bleeding and life-threatening infections.

Many who survive the heat and blast of a nuclear explosion would die in the weeks and months that follow from radiation sickness. This unique consequence of nuclear weapons would affect people outside of the immediate explosion area as those close to the explosion are likely to have already died from fatal burn and blast injuries.

Even if people survived the immediate dangers or exposure to radiation, they would face an increased risk of developing certain cancers such as leukaemia and thyroid cancer. The long-term effects are still being seen both in Japan and across the Pacific from the nuclear weapons testing that took place from 1946-1962.

## SUMMARY

The explosion of a nuclear weapon releases a combination of heat, blast waves and radiation. These forces have the potential to kill and injure massive numbers of people, to destroy homes, buildings and infrastructure and to have severe consequences for the environment.

Any nuclear explosion will have a major short- and long-term impact on the health of people directly affected as well as those providing assistance to survivors in the aftermath.



ICRC archives (ARR) / Yamahata, Yosuke

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World War II. Nagasaki. Lavishing first aid on a victim burned by the atom bomb.

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THE TARGET**

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