

# HIROSHIMA'S RADIATION

Graphic by Michael Greshko for Inside Science

Long-term study of atomic bomb survivors has given scientists crucial insight into how humans respond to radiation. This graphic illustrates how much radiation was unleashed by Little Boy, the atomic bomb dropped on Hiroshima on August 6, 1945. Each 2-by-2 block of pixels represents 1 milliSievert (mSv), a unit of radiation dose about 10 times larger than the average chest X-ray.

Note: the "hypocenter" is the spot directly below Little Boy's mid-air detonation.

Average annual US radiation dose (6.2 mSv)

Half comes from natural sources, and half is mostly medical scans.

1 average full-body CT scan (15 mSv)

Maximum annual dose for US radiation workers (50 mSv)

Lowest annual radiation dose clearly linked to increased cancer risk (100 mSv)

Maximum allowed radiation dose for emergency workers (250 mSv)

1600 m (~1 mile) from Hiroshima hypocenter (360 mSv)

Average thyroid radiation dose observed in Chernobyl evacuees (490 mSv)

The evacuees' food and drink had been contaminated by radioactive iodine fallout, which built up in their thyroids.

Radiation poisoning LD-50 (5 Sv, 5000 mSv)

At this dose, about half of victims will die, regardless of treatment.

Highest radiation dose observed among Chernobyl firefighters (13.4 Sv)

500 m from Hiroshima hypocenter (42 Sv)

Hiroshima  
hypocenter  
(155 Sv)

In an instant, the ground directly underneath Little Boy was hit with the equivalent of 1,550,000 chest X-rays.