

0. RADIATION SICKNESS - Story Preface

1. THE BOMB

2. RADIATION SICKNESS

3. DUCK and COVER

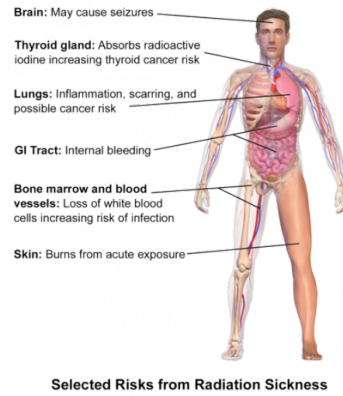
4. AVOIDING the FLASH

5. ROSWELL and AREA 51

6. CRYSTAL SKULLS

7. NAZCA LINES and SKULLS

8. IGUAZU FALLS



Bruce Blaus created this image—a still shot from an animation depicting the risks of radiation sickness (and how it affects the human body). Online via Wikimedia Commons. License: [CC BY-SA 4.0](#)

Nuclear bombs produce “radioactive fallout.” Early pioneers in x-ray technology—many of whom were injured or died—experienced what happens when a person is exposed to harmful levels of radiation. So did the people of Chernobyl, and their neighbors, who still live with the fallout effects of a failed nuclear reactor.

What causes radiation sickness? Radiation is emitted when the unstable nuclei of atoms decay and release particles. When those particles touch organic material (like human tissue), damage can occur. Whether there actually *is* damage depends on how much radiation has reached living tissue.

When human beings are exposed to radiation (this 1970s-era BBC video warns how to avoid it), the dosage measurement is called “rem” which stands for “roentgen equivalent in man.” It represents the amount of radiation needed to damage living tissue.

Total body exposure above 100 rems causes radiation sickness, although smaller doses may produce detectable levels in human blood. As the rems increase, so do the symptoms and the extent of the illness. An exposure of 450 roentgens has caused radiation sickness and death in half the individuals measured. A person exposed to 100,000 rems could be dead in an hour.

What are the symptoms of radiation sickness? Smaller doses first produce nausea and vomiting, then headaches and some loss of white blood cells. (White blood cells, or leukocytes, help the body’s immune system fight infection.)

Three hundred rems, or more, cause temporary hair loss and internal injuries to nerve cells and digestive-lining cells. Besides the leukocyte problem, radiation exposure can also reduce the body’s ability to produce platelets, which help the blood to clot. Victims of radiation sickness are therefore prone to hemorrhaging.

Doses of 800 rems, or more, are always fatal.

When nuclear weapons were first produced, scientists did not fully appreciate the extent of the danger people could face from atomic power. Even when the evidence became clear, the government continued to test atomic weapons, including at sea.

In the 1950s and 60s, American adults were not alone in worrying about a Soviet nuclear attack. Their children were increasingly exposed to the threat from government-created “civil defense” films. Let’s take a look at some of the more famous “duck and cover” clips.

See [Alignments to State and Common Core standards for this story online at:](#)

<http://www.awesomestories.com/asset/AcademicAlignment/RADIATION-SICKNESS-Indiana-Jones-4-Crystal-Skull>

See [Learning Tasks for this story online at:](#)

<http://www.awesomestories.com/asset/AcademicActivities/RADIATION-SICKNESS-Indiana-Jones-4-Crystal-Skull>



X-Ray Experimentation - Injured Hands

For more information on injuries sustained by pioneering radiologists, see *A Century of X-rays and Radioactivity in Medicine - With Emphasis on Photographic Records of the Early Years*, by Richard F. Mould.

View this asset at:

<http://www.awesomestories.com/asset/view/X-Ray-Experimentation-Injured-Hands>



Nuclear Attacks - Warnings from the 1970s

BBC Information film on nuclear attacks.

View this asset at:

<http://www.awesomestories.com/asset/view/Nuclear-Attacks-Warnings-from-the-1970s>



Nuclear Tests - Trinity Through Buster Jangle

Image online, courtesy the U.S. Department of Energy.

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Chernobyl Nuclear Accident - People of Chernobyl

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Chernobyl - What Went Wrong

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Chernobyl - Death from Radiation Sickness

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