

Radiation Sickness Symptoms

By Mayo Clinic staff

The severity of signs and symptoms of radiation sickness depends on how much radiation you've absorbed. How much you absorb depends on the strength of the radiated energy and the distance between you and the source of radiation.

Absorbed dose and duration of exposure

The absorbed dose of radiation is measured in a unit called a gray (Gy). Diagnostic tests that use radiation, such as an X-ray, result in a small dose of radiation — typically well below 0.1 Gy, focused on a few organs or small amount of tissue.

Signs and symptoms of radiation sickness usually appear when the entire body receives an absorbed dose of at least 1 Gy. Doses greater than 6 Gy to the whole body are generally not treatable and usually lead to death within two days to two weeks, depending on the dose and duration of the exposure.

Initial signs and symptoms

The initial signs and symptoms of treatable radiation sickness are usually nausea and vomiting. The amount of time between exposure and when these symptoms develop is an indicator of how much radiation a person has absorbed.

After the first round of signs and symptoms, a person with radiation sickness may have a brief period with no apparent illness, followed by the onset of new, more serious symptoms.

In general, the greater your radiation exposure, the more rapid and more severe your symptoms will be.

Early symptoms of radiation sickness				
	Mild exposure (1-2 Gy) (100-200 rads)	Moderate exposure (2-6 Gy) (200 - 600 rads)	Severe exposure (6-8 Gy) (600 - 800 rads)	Very severe exposure (8-10 Gy or higher) (800 - 1000 rads)
Nausea and vomiting	Within 6 hours	Within 2 hours	Within 1 hour	Within 10 minutes
Diarrhea	--	Within 8 hours	Within 3 hours	Within 1 hour
Headache	--	Within 24 hours	Within 4 hours	Within 2 hours
Fever	--	Within 3 hours	Within 1 hour	Within 1 hour
Later symptoms of radiation sickness				
Dizziness and disorientation	--	--	Within 1 week	Immediate
Weakness, fatigue	Within 4 weeks	Within 1-4 weeks	Within 1 week	Immediate
Hair loss, bloody vomit and stools, infections, poor wound healing, low blood pressure	--	Within 1-4 weeks	Within 1 week	Immediate

Source: Adapted from "Bushberg JT. Radiation exposure and contamination. The Merck Manuals: The Merck Manual for Healthcare Professionals" and "Upton AC. Radiation injury. In: Goldman L, et al., eds. Cecil Medicine. 23rd ed. Philadelphia, Pa.: Saunders Elsevier; 2007."

When to see a doctor

An accident or attack that causes radiation sickness would no doubt cause a lot of attention and public concern. If an event occurs, monitor radio, television or online reports to learn about emergency instructions for your area.

If you know you've been exposed to radiation, seek emergency medical care.