

Relative Radiation Sensitivities Of Human Organ Systems Part II

Radiation is a form of energy that can be harmful to human health. The effects of radiation on the body depend on a number of factors, including the type of radiation, the amount of radiation exposure, and the length of time that the person is exposed to radiation.



Advances in Radiation Biology V14: Relative Radiation Sensitivities of Human Organ Systems. Part II by Adolph Barr

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The human body is made up of a number of different organ systems, each of which has a different sensitivity to radiation. The most sensitive organ systems to radiation are the skin, the blood-forming organs, the gastrointestinal tract, and the central nervous system.

Skin

The skin is the most sensitive organ system to radiation. Radiation can damage the skin cells, leading to skin damage, such as redness, swelling, and blistering. In severe cases, radiation can cause skin cancer.

The skin's sensitivity to radiation is due to the fact that the skin cells are rapidly dividing. Rapidly dividing cells are more susceptible to damage from radiation than slowly dividing cells.

Blood-Forming Organs

The blood-forming organs, which include the bone marrow, spleen, and lymph nodes, are also very sensitive to radiation. Radiation can damage the blood-forming cells, leading to a decrease in the number of red blood cells, white blood cells, and platelets. This can lead to anemia, infection, and bleeding.

The blood-forming organs are sensitive to radiation because they are constantly producing new blood cells. New blood cells are more susceptible to damage from radiation than mature blood cells.

Gastrointestinal Tract

The gastrointestinal tract, which includes the stomach, small intestine, and large intestine, is also sensitive to radiation. Radiation can damage the cells lining the gastrointestinal tract, leading to nausea, vomiting, diarrhea, and abdominal pain. In severe cases, radiation can cause gastrointestinal bleeding and perforation.

The gastrointestinal tract is sensitive to radiation because the cells lining the gastrointestinal tract are rapidly dividing. Rapidly dividing cells are more susceptible to damage from radiation than slowly dividing cells.

Central Nervous System

The central nervous system, which includes the brain and spinal cord, is also sensitive to radiation. Radiation can damage the cells in the central

nervous system, leading to neurological problems, such as seizures, paralysis, and cognitive impairment. In severe cases, radiation can cause death.

The central nervous system is sensitive to radiation because the cells in the central nervous system are not able to regenerate. Once a cell in the central nervous system is damaged, it cannot be replaced.

The relative radiation sensitivities of different human organ systems vary depending on a number of factors, including the type of radiation, the amount of radiation exposure, and the length of time that the person is exposed to radiation. The most sensitive organ systems to radiation are the skin, the blood-forming organs, the gastrointestinal tract, and the central nervous system.



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