

## Does radiation risk depend on age?

When given equal radiation doses, the risks for children and adolescents are greater than for adults. Children grow quickly, and their cells are more sensitive to radiation. Since effects of radiation take years to develop, their youth extends the time for any potential effects from ionizing radiation to occur. However, the radiation doses required to obtain pictures of children are much lower than adult levels. Because lower radiation dose levels are used for children and adolescents, the risk associated with their examinations does not need to be greater than that of an adult and is often much less.

As adults age, radiation exposure becomes less of a concern. The body tissues of older patients are less sensitive to the effects of radiation. Diagnostic exams like Computed Tomography (CT) can be important in the diagnosis and treatment of older patients.



Medical imaging can be extremely useful at any age to help with the diagnosis and treatment of many diseases or conditions. If a person of any age is involved in a serious car accident, a CT scan can be a quick and painless way to detect significant and perhaps critical internal injuries that are not apparent.



Even if the CT results are normal, showing no critical internal injury, that information is valuable. The results may lead to a more

appropriate diagnosis which could prevent unnecessary surgery and speed recovery. Other medical conditions that imaging might reveal:

- Cysts
- Enlarged lymph nodes
- An aneurysm
- Inflammatory bowel disease
- Bleeding in the abdomen
- The presence of foreign objects

The unborn child of a pregnant woman is perhaps most sensitive to radiation. Diagnostic imaging exams that expose pregnant women to ionizing radiation should be conducted only after establishing the need for the exam and with careful consideration of the fetus. A limited number of properly performed imaging exams do not represent any concern for developmental defects. However, the risk for long-term health effects, although small, is uncertain. If you are pregnant, tell the medical staff before any imaging exam using ionizing radiation is conducted.

Medical imaging can be an essential medical tool to speed treatment and recovery. If your healthcare provider thinks that you, a family member or friend may have a significant medical condition, a diagnostic examination should not be refused because of the fear of radiation exposure. The risk associated with these tests is very small compared to the help provided by the imaging test.

## Disclaimer

This information is copied from the RadiologyInfo Web site (<http://www.radiologyinfo.org>) which is dedicated to providing the highest quality information. To ensure that, each section is reviewed by a physician with expertise in the area presented. All information contained in the Web site is further reviewed by an ACR (American College of Radiology) - RSNA (Radiological Society of North America) committee, comprising physicians with expertise in several radiologic areas.

However, it is not possible to assure that this Web site contains complete, up-to-date information on any particular subject. Therefore, ACR and RSNA make no representations or warranties about the suitability of this information for use for any particular purpose. All information is provided "as is" without express or implied warranty.

Please visit the RadiologyInfo Web site at <http://www.radiologyinfo.org> to view or download the latest information.

**Note:** Images may be shown for illustrative purposes. Do not attempt to draw conclusions or make diagnoses by comparing these images to other medical images, particularly your own. Only qualified physicians should interpret images; the radiologist is the physician expert trained in medical imaging.

## Copyright

This material is copyrighted by either the Radiological Society of North America (RSNA), 820 Jorie Boulevard, Oak Brook, IL 60523-2251 or the American College of Radiology (ACR), 1891 Preston White Drive, Reston, VA 20191-4397. Commercial reproduction or multiple distribution by any traditional or electronically based reproduction/publication method is prohibited.

Copyright © 2025 Radiological Society of North America, Inc.