

PRIMARY CHILDREN'S MEDICAL CENTER IMAGES GENTLY

RADIATION SAFETY FOR OUR PEDIATRIC PATIENTS IS OUR TOP PRIORITY

Medical Imaging is a valuable resource for physicians in guiding the diagnosis and treatment of their patients. Some types of imaging procedures use ionizing radiation. These include x-rays (radiographs), fluoroscopy, computed tomography (CT), and nuclear medicine (radionuclide) studies. Radiation can also be used to treat certain diseases such as cancer or an overactive thyroid gland.

The radiologists from Pediatric Radiology, P.C., and the radiology technologists from Primary Children's Medical Center are committed to following practices which ensure that children are exposed to the smallest amount of radiation possible during an imaging study. Our radiologists are also available to consult with physicians regarding the appropriate use of imaging procedures in order to minimize radiation exposure.

Image GentlySM

The Image GentlySM campaign serves to raise awareness about principles and techniques that can be used to reduce radiation doses during pediatric imaging procedures. Imaging staff must be trained and familiar with these principles. It is also important to understand that children are more sensitive to radiation, therefore, when ordering imaging exams, physicians should always take into consideration medical necessity, child size, and if an alternative (non-radiation) imaging procedure may be considered. The Alliance for Radiation Safety in Pediatric Imaging launched the Image Gently campaign in 2008 with the goal of providing education and resources for patients and imaging professionals about radiation safety for children. Primary Children's Imaging supports and participates in Image GentlySM principles and recommendations. Please visit www.imagegently.com for more information.



Here are answers to some commonly asked questions regarding imaging procedures and radiation exposure.

What is an X-ray?

X-rays are invisible beams of ionizing radiation that pass through the body and are altered by different tissues to create two-dimensional images of the bones and organs.

What is Fluoroscopy?

Fluoroscopic studies use x-rays to image injected or ingested contrast materials. These studies provide dynamic information about internal organs such as the stomach and the urinary bladder.

Continued on next page



**Intermountain[®]
Primary Children's
Imaging Services**

www.primarychildrens.org/imaging

PRIMARY CHILDREN'S MEDICAL CENTER IMAGES GENTLY

RADIATION SAFETY, CONTINUED

What is a CT scan?

CT scans use X-rays generated from a source that is rotated around the body to create three-dimensional pictures of the body. CT studies can provide critical information to the doctors who are making important decision about the care of your child. CT exams do require more radiation exposure than a single X-ray.

What are Nuclear Medicine studies?

Nuclear Medicine studies use small amounts of radioactive drugs that are injected into the body through an IV. These materials concentrate in different organs or tissues and emit rays called gamma rays. A special camera is used to detect these gamma rays and convert them into images. The amount of radiation exposure depends on the type of study being performed.

How much radiation is used in these exams?

We are all exposed to small amounts of radiation daily from soil, rocks, building materials, air, water, and cosmic radiation. These are all sources of naturally occurring background radiation and will vary depending on where we live. The radiation used in X-rays and CT scans has been compared to the naturally occurring radiation we are exposed to daily. The comparison of radiation doses from a single exam can difficult to quantify because the amount of radiation needed will vary depending on the patient's body size. Comparing doses from different types of exams can also be complicated.

Below are some examples comparing different radiation sources to our daily exposure to naturally occurring radiation.

Radiation Source	Days background radiation
Chest X-ray (single)	1 day
Cross-country flight	4 days
Head CT	up to 8 months
Abdominal CT	up to 20 months

What are the risks from medical radiation?

There is no conclusive evidence that radiation from diagnostic X-rays is harmful. However some studies of large populations exposed to radiation have demonstrated a slight increase in cancer risk even at low levels of radiation exposure, particularly to children. To be safe, we should always minimize doses to protect the patient.

Medical professionals must balance the risks and benefits of performing imaging procedures. Primary Children's radiologists (who are physicians) are available to consult with your child's doctor to help guide decisions about which studies will be most beneficial. In the vast majority of cases the benefit of having an imaging study far outweighs the risks of the radiation exposure. This is especially true if the exams are performed following the principles of Image Gently.

If you have further concerns regarding radiation exposure from imaging procedures please consult with the physician who has requested the procedure. You may also speak with a radiologist at the time of your child's exam.



Primary Children's Medical Center

100 N. Mario Capecchi Drive
Salt Lake City, Utah 84113

Primary Children's Outpatient Services at Riverton

3773 West 12600 South
Riverton, Utah 84065



Intermountain[®]
Primary Children's
Imaging Services

www.primarychildrens.org/imaging