

Radiation exposure from a CT scan A guide for parents



Welcome to McMaster Children's Hospital. This handout will help to answer your questions about CT scans for your child.

If you have other questions, please ask one of our staff and they would be glad to explain things to you.

What is a CT?

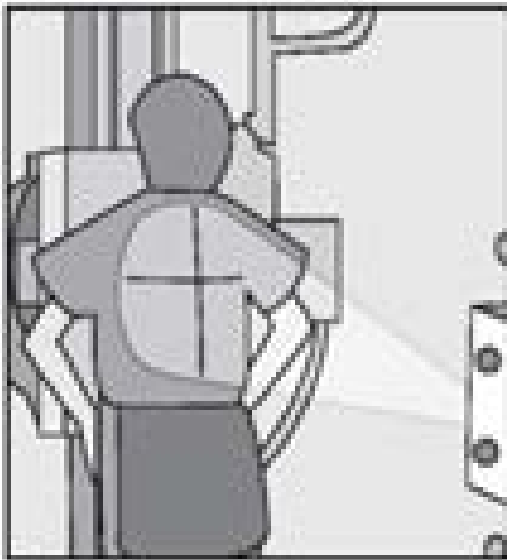
CT, also known as a CAT scan, sends X-Rays through the patient's body to form a picture of the body.

What is an X-Ray?

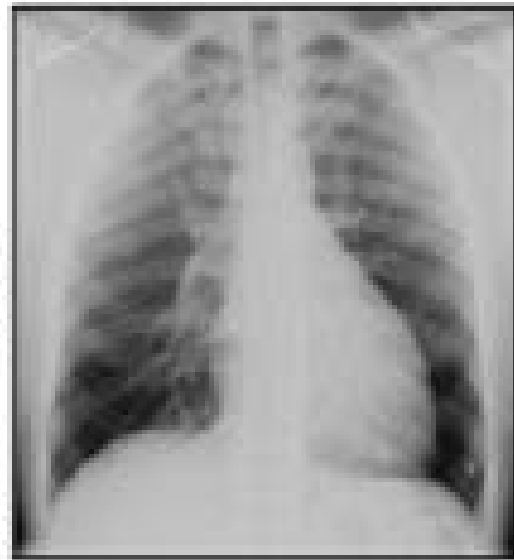
An X-Ray is a beam of radiation, similar to light, that can go through the body.

How is CT different than an X-Ray film?

To make an X-Ray film, an X-Ray machine sends X-Rays through a patient toward a film. Some of the X-Rays are stopped by the patient's bones and organs, creating a "shadow" on the film.

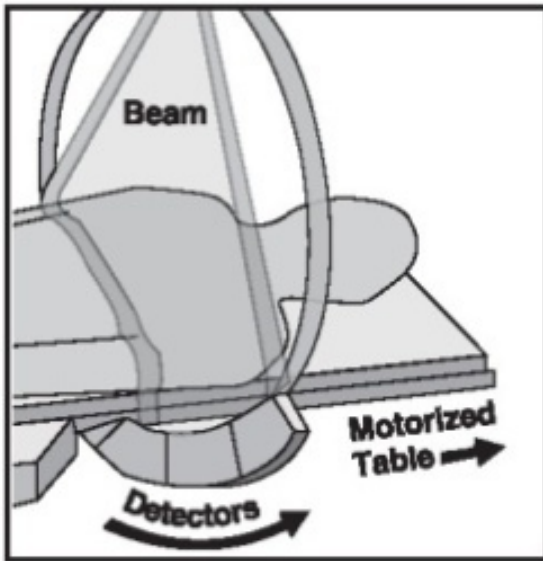


X-Ray machine



X-Ray **

With CT, an X-Ray machine circles around the patient, sending X-Rays as it goes around. Using a computer, pictures are created that look like many “slices” of the body. These pictures tell more about the inside of the body than an X-Ray film.



CT machine



CT scan**

Is this radiation harmful to my child?

Generally speaking, all medical procedures and tests have both benefits and risks.

The information from a CT is much more beneficial than the harm or risk from the radiation.

How much radiation is used?

All of us receive small amounts of radiation all the time – mainly from the sun and the soil. Scientists call this background radiation.

The amount of radiation used in CT and X-Ray films can be compared to the amount of background radiation we receive every day.

Source of Radiation	Days of Background Radiation
3-hour Airline Flight	1½ Days
Chest X-Ray	2 Days
Head CT	4 Months
Abdomen CT	1½ Years

Does a CT increase the risk for cancer?

Yes, but the risk of getting cancer from a CT is very low and varies between: 1 in 10,000 to 1 in 1,000.

How can the risk be reduced?

At McMaster Children's Hospital we use the lowest amount of radiation needed for each CT. The easiest way to reduce the risk is to do the CT scan only when it is appropriate.



If the CT is normal, does that mean it should not have been done?

A normal CT provides valuable information. If there is enough concern, then CT should be done whether it turns out positive or negative.

Are there alternatives to CT?

First of all, if your child ever faces a serious emergency condition that requires a CT, **do not hesitate to do it**. In these situations, the benefits clearly outweigh the risks.

Sometimes, after examining your child, your child's doctor may find that he or she may be safely observed without having to have a CT. It may be difficult for you to wait during this time. However, it may avoid having to give your child radiation.

Other radiology tests such as MRI or ultrasound do not use radiation and can sometimes provide similar information as CT. But there are times when CT is the best test, such as in emergency situations. Also, MRI is usually less available than CT and your child may need anesthesia.



What should I do if I still have concerns?

Discuss any concerns with the doctor ordering the examination. If your doctor cannot answer your specific question, he or she may contact one of the radiologists on staff.

If you wish to speak with a doctor before you have a CT today, one of our staff members can page a radiologist. The radiologist will speak with you as soon as they become available.

Location

Diagnostic Imaging is located on the 2nd floor, Yellow Section, 2S area of the McMaster Children's Hospital.

Phone: 905-521-2100, ext. 41484
(Press #3)



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