Radiation Exposure from X-rays (Child)

X-ray is a type of imaging test. X-rays are taken to help diagnose and treat a number of diseases. This type of test uses small amounts of radioactive material.

How X-rays work

X-rays are forms of energy. The rays are similar to visible light waves or radio waves. But X-rays have more energy than rays of visible light or radio waves. Because of this, the rays can go through the body. This lets a healthcare provider get pictures of bones and organs in the body. The pictures can be seen on film or on a computer.

Why X-rays may be needed

A child may need X-rays for a number of reasons, from a broken bone to stomach pain. X-rays are very good at showing the hard tissues in the body, such as bones. In some cases, X-rays can help with a medical procedure. They may be used to guide the placement of a tube in the body. X-rays may be used during surgery to help guide the surgeon.

Cancer risk from radiation

Any radiation exposure may increase your child's risk of cancer later in life. Some of this radiation comes from natural sources. Radiation is around us all the time. Every day we take in small amounts of radiation from the sun and other sources. People who live at high altitudes or fly in a plane often are exposed to more radiation. And some of the radiation comes from medical tests. Tests that use radiation include:

- **X-rays.** A single X-ray gives a quick dose of radiation.
- **CT scans.** A CT scan is done with a series of many X-rays. It uses much more radiation than a single X-ray.
- **Fluoroscopy.** This type of test uses continuous X-rays. It also uses much more radiation than a single X-ray.

Each medical test your child has adds to their total risk for future cancer.

How much radiation is used in an X-ray?

Different types of X-ray tests use different amounts of radiation. For example, a standard X-ray of the chest uses about the same amount of radiation your child would be in contact with from 2 or 3 days in the environment. This is not very much radiation. It's less than what you get on an airplane flight. Most healthcare providers don't worry about radiation from a single X-ray.

In contrast, a chest CT scan may give several hundred times that amount of radiation. A fluoroscopy test can also give at least several hundred times that amount of radiation. This is roughly the same as the amount of radiation your child would be in contact with from 2 to 3 years in the environment.

Each test gives a certain amount of radiation. The amount adds up with each additional test. You can ask your child's healthcare provider for an estimate of the amount of radiation your child has been exposed to from all tests.

How much radiation puts my child at risk?

Researchers aren't sure exactly how much radiation increases a child's risk for future cancer. This is because people get cancer for many reasons. People can get cancer later in life without having tests that use radiation.

The radiation from X-rays will likely raise your child's risk of cancer only a small amount. A child who's had several CT scans may have a slightly higher risk than a child who has had only standard X-rays.

Helping to lessen radiation exposure

You can take steps to help lessen the amount of radiation your child gets by:

- Asking if another test that doesn't use radiation could be used instead, such as an ultrasound
- Asking your child's healthcare provider to use only the smallest amount of radiation on the smallest area possible
- Avoiding repeat tests unless absolutely necessary
- Only agreeing to tests that use radiation when there is a clear medical benefit

Don't be afraid to work with your child's healthcare provider to meet these goals.

Giving yourself peace of mind

X-rays are used when they will help diagnose or treat a health problem. In most cases, the risks of not having the test are greater than the risk of radiation. Talk with your child's healthcare provider about any concerns you have and how to lessen your child's risk.