
Radiation in a Nuclear Medicine Scan (Child)

A nuclear medicine scan is a type of imaging test. It's different from an ordinary X-ray that sends X-rays through the body to create an image. In a nuclear medicine scan, a small amount of radioactive material enters the body and is used to create pictures of specific parts of the body. It's done to help diagnose and treat a number of diseases.

How a nuclear medicine scan works

The scan uses radioactive material called a radiotracer. It may be added into the blood. Or it may be inhaled or swallowed. The radiotracer then builds up in the part of the body that is to be looked at. It gives off a small amount of radiation. A special camera can see this radiation. The camera makes a picture that shows the inside of the body.

Why a nuclear medicine scan may be needed

A child may need a nuclear medicine scan for a number of health problems. The test can often help show health problems in early stages, when they are easiest to treat. Health problems that nuclear medicine may help diagnose and treat include:

- Urinary blockage in the kidney
- Backflow of urine from the bladder into the kidney
- Bone cancer, infections, or injury
- Digestive problems
- Cancer
- Jaundice in babies and older children
- Seizures (epilepsy)
- Thyroid problems
- Blood flow problems in the lungs (lung perfusion)

Cancer risk from radiation

Any amount of radiation that your child is around may raise your child's risk for cancer later in life. Some of this radiation comes from natural sources. Radiation is around you all the time. You take in small amounts of radiation from the sun and other sources every day. People who live at high altitudes or who fly in a plane are around more radiation.

And some of the radiation comes from medical tests. Tests that use radiation include:

- Nuclear medicine scans
- CT scans
- X-rays

Nuclear medicine scans and CT scans use more radiation than single X-rays. Each added test adds to your child's total risk for future cancer.

How much radiation is used in a nuclear medicine scan?

Each scan may use a different amount of radiation, but the amount used is very low. A scan on more of the body exposes your child to more radiation than a scan on part of the body. CT scans use more radiation than X-rays. Most types of nuclear medicine scans use about the same amount of radiation as a CT scan. Some scans use a little more. It's about the same amount of radiation your child would get from 2 or 3 years in the environment.

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

How much is my child at risk?

Researchers aren't sure exactly how much radiation raises 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 a nuclear scan will likely only raise your child's risk of cancer a small amount. A child who's had more than one scan may have a slightly higher risk than a child who's had only one.

Helping to lessen radiation exposure

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

- Only agreeing to tests that use radiation when there is a clear health benefit that outweighs the risks
- Asking your child's healthcare provider to only use the smallest amount of radiation on the smallest area possible
- Use a lead shield for X-rays to cover the parts of the body not being imaged
- Making sure repeat tests can be avoided
- Asking if another test that doesn't use radiation could be used instead, such as an ultrasound

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

Giving yourself peace of mind

Nuclear medicine scans are used when they will help diagnose or treat a health problem. In many cases, the risks of not having the scan are greater than the risks from radiation. Talk with your child's healthcare provider about any concerns you have, and how to lessen your child's risk.