

# Radiation Safety of Imaging Tests

Imaging tests create pictures of the inside of your body and can help find a problem or condition. These tests use two forms of radiation to do this:

Non-ionizing Radiation	Ionizing Radiation
<ul style="list-style-type: none"><li>• Magnetic resonance imaging (MRI)</li><li>• Ultrasound</li></ul>	<ul style="list-style-type: none"><li>• X-ray</li><li>• Computerized tomography (CT) scan</li><li>• Nuclear medicine</li><li>• Mammography</li><li>• Bone mineral densitometry</li></ul>

Like many other medical tests, these tests are safe when used with care. We routinely check all our equipment to make sure no radiation leaks occur. We also follow strict infection control practices. We sterilize our equipment, use items only once, and dispose of items properly.

Our radiologists and technologists have special training on radiation safety and will always use the least amount of radiation a test needs.

## What are the risks of radiation from non-ionizing sources?

**MRIs and ultrasounds** are sources of **non-ionizing radiation**. There is little to no risk from these sources, as this type of radiation is not strong enough to cause changes within our bodies.

Common sources like radio waves, sound waves, visible light, and microwaves also give off this type of radiation.

## What are the risks of radiation from ionizing sources?

**X-ray, CT scan, nuclear medicine, mammography, and bone mineral densitometry** are sources of **ionizing radiation**.

Normally, the small amount of radiation we use during one of these tests is not enough to be dangerous for most people. However, if we expose ourselves to high amounts of ionizing radiation too often, it has a cumulative effect. This can lead to an increased risk of cancer.

That is why we limit your exposure only to what you need. By doing so, the benefits of these tests far outweigh the risks.

### How do we measure radiation?

We measure radiation in millisievert (mSv) units.

Radiation from imaging tests affects the parts of the body in different ways. This means the dose of radiation each tissue or organ gets varies.

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## What is naturally occurring 'background' radiation?

You get radiation from natural sources, such as soil, rocks, air, water, and the atmosphere, all the time. We know this as 'background' radiation.

Tiny amounts of radiation also come from other people, from food, from building materials, and from products you buy.

### Did you know?



You may receive about 3 mSv per year from soil, rocks, air, water, and the atmosphere.

By contrast, you may receive about 0.02 mSv from a single view chest x-ray (typical dose).

## How can I reduce my radiation risk?

### Contact your doctor and technologist before your exam if:

- You have concerns about the amount of radiation you will receive.
- You are pregnant, think you may be pregnant, or are breastfeeding.
- You have had similar imaging exams recently. You may not need to repeat them.

## Where can I find more information about radiation safety?

### Canadian Nuclear Safety Commission - Introduction to Radiation

[www.cnsccsn.gc.ca/eng/resources/radiation](http://www.cnsccsn.gc.ca/eng/resources/radiation)

### Health Canada - Radiation

[www.canada.ca/en/services/health/health-risks-safety/radiation.html](http://www.canada.ca/en/services/health/health-risks-safety/radiation.html)

### RadiologyInfo - Radiology Benefits and Risks

[www.radiologyinfo.org/en/submenu.cfm?pg=safety](http://www.radiologyinfo.org/en/submenu.cfm?pg=safety)

