

**INFORMATION ABOUT IONIZING
RADIATION
FROM DIAGNOSTIC IMAGING
PROCEDURES**



**University of Pennsylvania
Office of Environmental Health and
Radiation Safety**

**215-898-7187
www.ehrs.upenn.edu**

WHAT IS IONIZING RADIATION?



Ionizing radiation is a form of energy. When used in diagnostic imaging, radiation comes either from liquids injected into the body during nuclear medicine scans or from machines used to take x-rays.

WHY IS IONIZING RADIATION USED?

In diagnostic imaging, ionizing radiation allows doctors to take pictures of the inside of your body. These pictures allow them to better understand what is happening inside your body.

WILL IT HURT?

Some exams involving ionizing radiation require an injection of a radioactive liquid. This will be similar to having blood taken. You will not feel anything from the radiation.

IS IT SAFE FOR ME?

Yes. Our facility works to keep the amount of radiation used at the lowest possible level necessary to obtain the information needed.

IS IT SAFE FOR MY FAMILY?

Yes. If you receive an x-ray, once the exam is done, there is no more radiation. You will not become radioactive or give off radiation.

If you receive a nuclear medicine scan, you will still have a small amount of radioactivity in your body when you leave. Typically, it is such a small amount that you don't need to do anything special. If you do require special instructions, the nuclear medicine physician will explain them to you.

ARE THERE OTHER SOURCES OF IONIZING RADIATION?

Everyone is exposed to ionizing radiation every day. Some of this radiation occurs naturally in our environment. A comparison of radiation doses is shown on the next page.

ADDITIONAL QUESTIONS



If you have any questions about ionizing radiation, you should discuss them with your physician.

RADIATION DOSES

| Source | mrem (mSv)* |
|--|-------------|
| DEXA scan | < 2 (0.02) |
| Chest x-ray (2 views) | < 25 (.25) |
| Head CT scan | < 200 (2) |
| Most x-ray studies | < 300 (3) |
| Annual radiation dose from nature | ~300 (3) |
| Most nuclear medicine studies | < 1000 (10) |
| Most chest CT scans | < 1000 (10) |
| Annual dose allowed for an employee working with radiation | 5000 (50) |

*100 mrem = 1 mSv