UNIVERSITY OF MALAYA MEDICAL CENTRE

MEDICAL IMAGING IN UNIVERSITY MALAYA MEDICAL CENTRE

Medical PHYSICS



X-ray

What is it? Uses a small amount of radiation to take pictures inside your body

Used for? Diagnosing broken bones, pneumonia, dental problems. Mammograms are a common type of X-ray used to help diagnose breast cancer.

What happens? You may be asked to lie still on an X-ray table or sit or stand by the table. You may wear a lead apron to protect certain parts of your body.

Fact: The amount of radiation you get from an X-ray is small. For example, a chest X-ray gives out a radiation dose similar to the amount of radiation you're naturally exposed to from the environment over 10 days.

Tip: Ask a friend or relative to be your support person and advocate. They can help you ask questions, write down answers and reassure you.



Ultrasound

What is it? Uses sound waves to create an image. Does not expose you to radiation.

Used for? Diagnosing conditions of the heart, blood vessels, kidneys, liver, and other organs. During pregnancy, a health care provider uses an ultrasound to look at the baby.

What happens? You lie on a table. The person giving the test places gel and a device called a transducer on your skin. The transducer sends out sound waves that bounce off tissues inside your body.

CT or CAT scan (computed tomography)

What is it? Uses special X-ray equipment to take pictures that show a "slice" of your body

Used for? Diagnosing broken bones, cancer, blood clots, abdominal conditions, internal bleeding

What happens? You lie still on a table and may have to hold your breath for a short time. The CT machine is aimed at the part of your body the health care provider needs to see. For some CT scans you may receive a "contrast dye," which makes parts of your body show up better. The dye may be given through an intravenous (IV) tube or a syringe in your arm. Some dye is given in a drink.

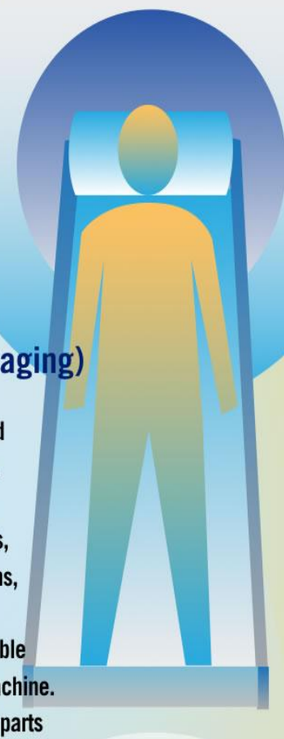
SpeakUp™:

X-rays, MRIs and other medical imaging tests

Medical imaging tests help diagnose health problems. Some tests use radiation. Radiation is useful, even life-saving, but too much can be harmful.

Ask your health care provider:

- Why do you need this test?
- Does this test use radiation?
- Is there another test that does not use radiation?
- What can you expect during the test?
- What should you do to prepare for the test?
- Does the health care provider's office keep track of your medical imaging tests? You should also keep copies for your files.
- Does the hospital or imaging center use the lowest amount of radiation needed to get information – especially for children?
- Is the hospital or imaging center accredited?



MRI (magnetic resonance imaging)

What is it? Uses a large magnet and radio waves to look inside your body. Does not expose you to radiation.

Used for? Diagnosing torn ligaments, tumors, brain or spinal cord conditions, examining organs

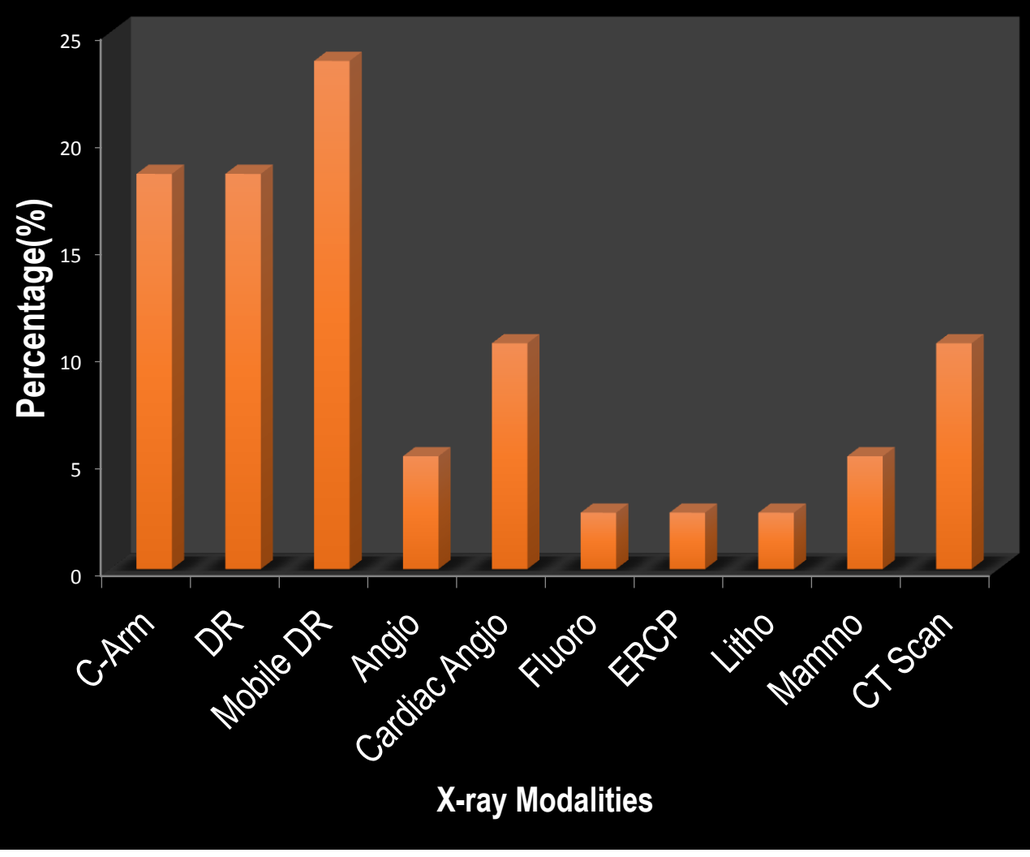
What happens? You lie still on a table that slides inside a tunnel-shaped machine. You may have to hold your breath for parts of the exam. For some MRI scans you may receive a "contrast dye," which makes parts of your body show up better. The dye can be given through an intravenous (IV) tube or a syringe in your arm. Some dye is given in a drink.

Tip: The MRI makes a lot of noise. You may be offered earplugs.

Tell your health care provider if you fear small or enclosed spaces, or if you have:

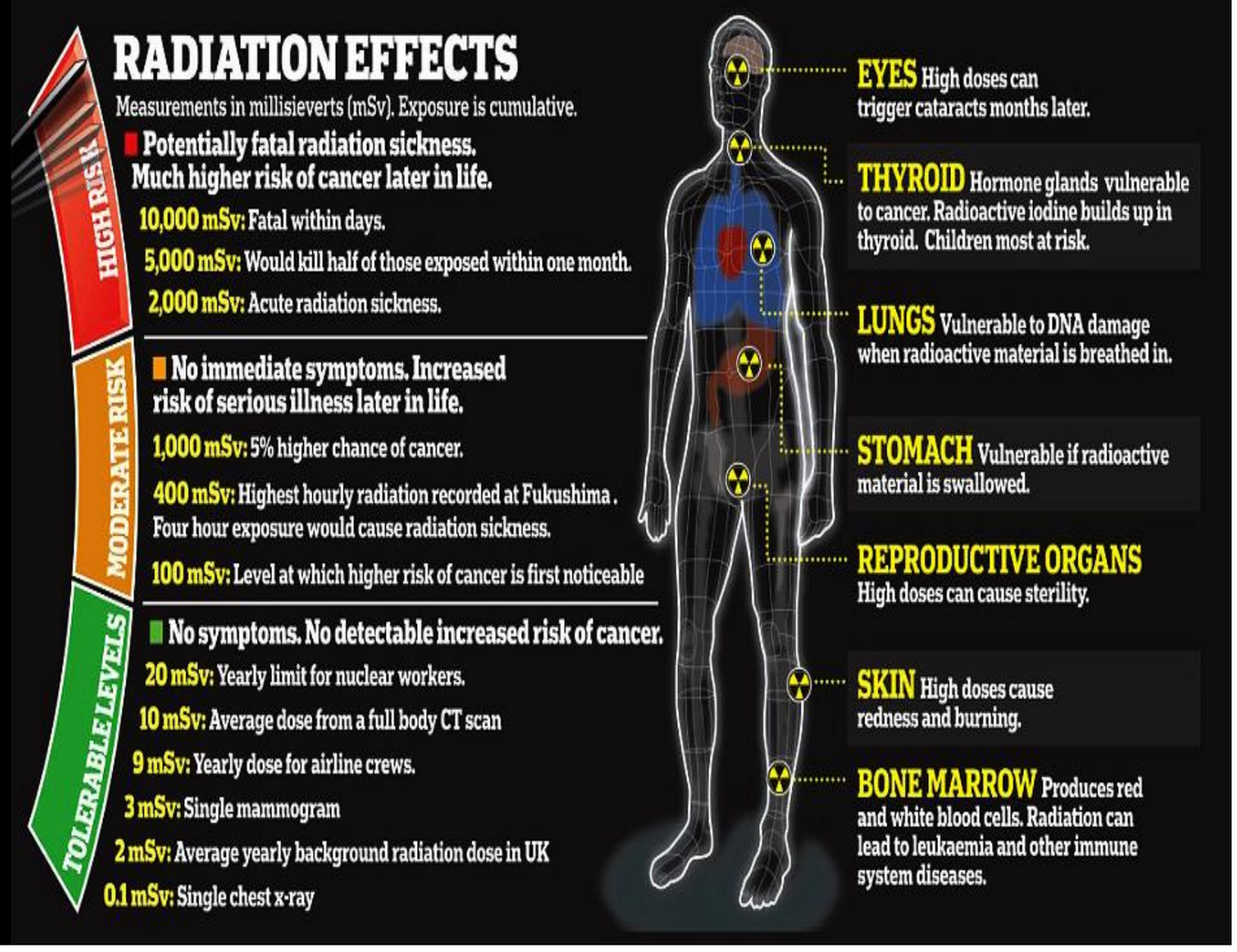
- Metal in your body, such as shrapnel, a bullet, artificial joints or stents
- Electronic devices in your body, such as a cardiac pacemaker or implanted pump
- Body piercings with metal that cannot be removed
- Ever been a welder

PERCENTAGE OF X-RAY MODALITIES IN UMMC



RADIATION EFFECTS

Measurements in millisieverts (mSv). Exposure is cumulative.



Diagnostic & Interventional Radiology Physicist

Reference: The Joint Commission