A BRIEF UPDATE

From the Long-Term Follow-Up Study

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http://ltfu.stjude.org

Topic: RADIATION EXPOSURE FROM MEDICAL SCANS

Why is this topic important for survivors?

Medical scans can play an important role in the diagnosis and follow-up of individuals with cancer and other serious childhood illnesses. Early on, scans may be used to monitor response to therapy or check for treatment side effects. Many years after completion of therapy, medical scans may still be advised to check for late treatment effects. Scans can also be important in the diagnosis and management of other health problems, including adult-onset cancers like breast and lung cancer. However, survivors may feel they should avoid having recommended screenings done to reduce their exposure to additional radiation.

How safe are medical scans?

We're exposed to radiation every day from environmental sources (including watching television!) The amount of radiation from medical scans is often compared to this daily radiation exposure.

The radiation exposure from one chest x-ray is about the same as the amount we receive from our natural surroundings in 10 days. Exposure from a mammogram is about the same as 3 months of daily radiation. The small additional exposure received from necessary x-rays and scans is far outweighed by the benefits they provide.

What are healthcare professionals doing to minimize your exposure risk?

Medical imaging has become more powerful and advanced in recent decades. At the same time, doctors are becoming more aware of the need to limit the amount of radiation exposure from imaging tests. They try to avoid unnecessary scans or use methods that don't involve radiation. In addition, improvements in imaging equipment have helped to reduce exposure when imaging tests *are* needed. The aim is to keep patients' radiation exposure to a minimum.

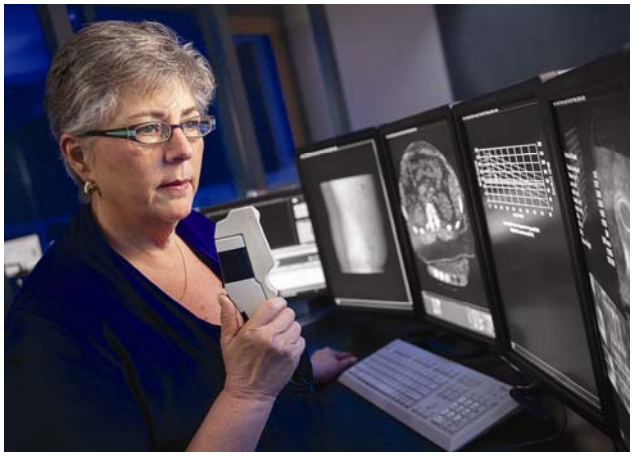
What can you do to minimize your exposure risk?*

- If your doctor orders an x-ray or scan, ask if there are other procedures involving less radiation exposure that would work just as well to assess your condition. Make sure you understand why a scan is being recommended or done. Don't refuse a scan if your doctor says it's needed.
- Having a scan done can be reassuring. It can make people feel they are monitoring and taking care of their health. Don't insist on a scan, though, if your doctor says it isn't necessary.
- Keep a list of your imaging records and show it to your healthcare providers. Doing this may help you avoid unnecessary duplication of x-rays. It can also increase your providers' awareness of your exposure history. A sample scanning log is available online at:

http://www.imagewisely.org/Patients

Click one of the links in the upper right part of the web page to access the printable Patient Medical Imaging Record.

Adapted from the US Food and Drug Administration website:
http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm095505.htm



Medical imaging gives doctors the information needed to prevent health problems and save lives

Medical Imaging: Finding the Balance

Cancer survivors may understandably feel anxious about having needed scans and screening procedures. People sometimes call this "scanxiety". Survivors may fear that screening might detect a new cancer or some other serious problem; or they may fear having to undergo the procedures themselves. Fears about radiation exposure from x-rays and medical scans should not have to add to survivors' concerns.

Medical scans play an important role in the management of both acute and chronic illnesses. They are also used to help in the early detection of adult-onset cancers such as breast and lung cancer.

When deciding to have a medical scan, survivors should consider the risk of radiation exposure together with the benefits of the information provided by the scan. For example, an x-ray to diagnose a broken bone is well worth the small additional exposure since the information will help determine the best treatment to speed healing.

Radiation exposure from common screening tests

Test	Purpose	Type of Exposure
CT scan	X-rays plus specialized cameras create detailed 3-D images of parts of the body to help diagnose medical problems	X-ray; very low to moderate radiation exposure
DEXA scan	Measures bone strength (density); detects osteoporosis	X-ray; extremely low radiation exposure
Nuclear imaging	Uses a special camera and small amounts of a radioactive material that goes directly to the body part being pictured; nuclear images show both the function and structure of organs or other body parts, while x-rays show just their structure	Small injection of low-level radioactive "tracer" substance; sometimes the tracer is given by mouth. The radiation exposure is similar to that from an x-ray
MRI	Uses powerful magnets linked to a computer to produce diagnostic images of organs and other body parts	No radiation exposure; sometimes a non-radioactive "contrast" substance is injected, which can be harmful to people with kidney disease
Ultrasound	Uses sound waves which echo off body tissues to create diagnostic images. Ultrasound is also used to treat some medical conditions	No radiation exposure
Echocardiogram (ECHO)	A type of ultrasound test that measures heart function and blood flow through the heart	No radiation exposure – uses ultrasound technology

In some cases, scans may be advised for survivors because they have a greater risk of developing certain health problems as adults. For example, women treated with radiation to the chest area have a higher risk of developing breast cancer at a younger age than women who did not receive chest radiation. To help detect breast cancers at earlier, more treatable stages, these women should have breast imaging, including mammography and MRI, starting at a younger age than what is recommended for other women. There may be some worry about the additional radiation exposure from the mammography, but the extra dose (on top of what was used to treat childhood cancer) is minimal and the risks are balanced by the benefits of detecting earlier stage breast cancer.

COG Survivorship Guidelines

COG – The Children's Oncology Group – is the world's largest pediatric research organization. COG provides risk-based screening recommendations for survivors of pediatric cancer online at:

http://www.survivorshipguidelines.org

Be Informed!

Please tell your doctor about your treatment history and make sure he or she is aware of the COG Survivorship Guidelines and the associated Health Links, especially the ones on screening for adult-onset cancers.

By knowing your treatment history and understanding the risks and the benefits of medical scans, you can partner with your healthcare team to ensure you receive the medical scans you need to protect your health while minimizing exposure to additional radiation.

Online Resource: The Radiological Society of North America and the American College of Radiology host a website for patients that offers in-depth information about medical radiation and scanning exposures. Find it at:

http://www.radiologyinfo.org/en/safety