



NEWS RELEASE

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Self-Referral of Medical Imaging Exams a Primary Factor in Sixfold Increase to Americans' Radiation Exposure from Scans Since 1980

March 3, 2009, Reston, Va. — A recent [National Council on Radiation Protection and Measurements \(NCRP\) Report](#) (NCRP Report No. 160, *Ionizing Radiation Exposure of the Population of the United States*) stated that the U.S. population is now exposed to seven times more radiation each year from medical imaging exams than in 1980. The American College of Radiology (ACR), Society for Pediatric Radiology (SPR), Society of Breast Imaging (SBI), and the Society of Computed Body Tomography and Magnetic Resonance (SCBT-MR) urge Americans, including elected officials and medical providers, to understand why this increase occurred, consider the Report's information in its proper context, and support appropriate actions to help lower the radiation dose experienced each year from these exams.

"It is essential that this Report not be interpreted solely as an increase in risk to the U.S. population without also carefully considering the tremendous and undeniable benefits of medical imaging. Patients must make these risk/benefit decisions regarding their imaging care based on all the facts available and in consultation with their doctors," said [James H. Thrall, MD, FACR](#), chair of the ACR Board of Chancellors.

"Medical imaging has revolutionized medicine and is undoubtedly saving and extending lives everyday. It is vitally important that patients do not put off needed imaging care based on this Report which neither quantifies the associated health risks nor specifies the radiation protection actions that should be taken," said SCBT-MR President Sanjay Saini, MD, MBA.

Why This Increase in Radiation Exposure Occurred

Although the major reason for this increase in radiation exposure is the improved health care resulting from these noninvasive, accurate imaging tools, there are concerns about the overutilization of these exams.

At a recent international conference, the Executive Director of NCRP, cited self-referral, the process by which nonradiologist providers buy imaging equipment and refer patients to these in-office scanners, as a primary driver of this dramatic increase in radiation exposure. Nonradiologist providers often lack even basic radiation safety training and may not be aware of potential repercussions to patients of ordering and often administering high volumes of scans.

Government Accountability Office reports as well as peer-reviewed studies published in the *Journal of the American Medical Association* and elsewhere have shown that when physicians refer patients to facilities in which they have a financial interest, imaging utilization is significantly increased. From 1998 to 2005, in the Medicare system, the number of self-referred, in-office computed tomography (CT), magnetic resonance imaging (MRI), and nuclear medicine scans performed grew at triple the rate of the same exams performed in all settings. Private insurance studies indicate that as much as half of this self-referred imaging is unnecessary; in many instances needlessly exposing patients to radiation. Provider fear of litigation, advancing technology, and patient demand may have also contributed to this increase in exposure.

What Has Been Done to Counteract This Trend

ACR, in an effort to stem the unnecessary growth in radiation dose that Americans receive from imaging, has worked with other radiology organizations to educate all stakeholders in the principles of radiation safety and appropriate utilization of imaging.

For years, ACR has promoted radiation safety among radiologist, nonradiologists, and the public through ACR guidelines and technical standards, facility accreditation programs, government relations efforts, and ACR Appropriateness Criteria[®] to educate referring physicians on the most appropriate imaging exams for given indications, continuing medical education offerings, and the ACR patient education website, www.radiologyinfo.org, a cooperative effort with the Radiological Society of North America.

[ACR Appropriateness Criteria[®]](http://www.acr.org/ac) (www.acr.org/ac) help physicians prescribe the most appropriate imaging exam for more than 200 clinical conditions. ACR Accreditation mandates that the providers reading scans meet basic education and training standards, that the imaging equipment is surveyed regularly by a medical physicist to ensure that it is functioning properly and radiation dose is not excessive, and that the technologists administering the test are appropriately certified.

The College also recently published the [ACR White Paper on Radiation Dose in Medicine](#): a far-reaching and extensive set of 33 recommendations designed to counteract medical and societal trends which have contributed to any increased radiation dose that Americans may experience as this beneficial technology advances. To date, 27 of the 33 recommendations have been completed or are in progress.

In 2007, SPR initiated the Alliance for Radiation Safety in Pediatric Imaging, which ACR joined as a founding member. The Alliance is conducting the Image Gently[®] campaign (www.imagegently.org) to make providers aware of opportunities to lower the radiation dose used in the imaging of children and now encompasses 34 medical organizations from the United States and around the world. The Alliance, among other things:

- Is collaborating with imaging manufacturers to standardize dose assessment and display for children and to improve technologist education, ensuring that CT scanning radiation levels are appropriate for children.
- Produced “[My Child’s Medical Imaging Record](#)” card which can be downloaded from the Image Gently[®] site and allows parents to record where and when a study was performed as well as the type of radiologic exam. This can help their future medical providers make more informed decisions regarding optimal timing of additional radiologic examinations.

“The SPR, the ACR, and other members of the Alliance routinely reach out to other medical specialties to make them aware of the Image Gently[®] campaign and other guidance to help lower radiation dose from imaging exams. We encourage all providers to utilize these important tools and to regard radiologists and medical physicists themselves as expert resources concerning radiologic protection,” said SPR Board Chair, Marta Hernanz-Schulman, MD, FAAP, FACR.

What Patients Can Do

The organizations listed above urge patients and providers to visit the “Radiology Safety” section of the ACR website (www.acr.org/safety) as well as the “Radiation Safety” section of www.radiologyinfo.org, and the Image Gently[®] site (www.imagegently.org) for more information regarding radiation exposure from medical imaging exams.

Patients should also keep a record of their x-ray history and before undergoing a scan, should ask their physician:

- Why do I need this exam?
- How will having this exam improve my health care?
- Are there alternatives that do not use radiation which are equally as good?
- [Is this facility ACR accredited?](http://www.acr.org/facility-search) (www.acr.org/facility-search)
- Does the physician ordering the scan have a financial interest in the facility providing the exam (*i.e.*, do they directly profit from ordering the scan)?
- Is my child receiving a “kid-size” radiation dose (for pediatric exams)?

“Mandatory accreditation for mammography facilities has undoubtedly helped to raise the quality of care provided nationwide and screening mammography has been proven to save lives. Mammograms utilize relatively low levels of radiation. Women should speak to their radiologist and their referring physician regarding any concerns they may have and should not put off getting scheduled mammograms or other imaging procedures which they may need,” said SBI President Carol H. Lee, MD.

What Government Can Do

Medical imaging has transformed the practice of medicine as imaging studies increasingly replace more invasive, and often more costly, techniques for any number of indications. However, government regulation regarding which providers can perform these scans and the quality of equipment used must keep pace with this advancing technology.

There are currently no federal standards for in-office, high-tech medical imaging providers or for imaging facilities not registered as independent diagnostic testing facilities. Congress did recently pass the [Medicare Improvements for Patients and Providers Act of 2008 \(H.R. 6331\)](#), which requires that nonhospital imaging facilities be accredited and would establish a pilot program to measure the beneficial quality and cost effects of incorporating appropriateness criteria into the imaging ordering process. However, the appropriateness criteria pilot will not begin until 2010 while the accreditation provisions do not take effect until 2012.

Most nonradiologist providers receive little, if any, radiation physics or imaging training. Knowledge of the correct use of these technologies is not universal by any means. MRI, CT, and positron emission tomography (PET) are not ancillary services. The Centers for Medicare and Medicaid Services (CMS) should remove them from the list of procedures protected under the “in-office ancillary exception” to federal law, which allows providers to directly profit financially from referring patients to MRI, CT, and PET scanners which they own.

CMS should also clamp down on leasing arrangements. Currently, nonradiologists can lease time in an imaging center and claim that the imaging center is now part of their practice. They then refer patients to be scanned in that imaging center during the time that they have leased. This creates a direct financial incentive to do more imaging, which studies have shown significantly increases the number of scans performed and often (in regard to CT and PET) the number of patients exposed to radiation.

“The radiology community has embraced the ‘ALARA’ or ‘as low as reasonably achievable’ concept espousing that providers use only the amount of radiation necessary to obtain optimal images. Radiologists are working to lower dose and to educate elected officials, government agency staff, and referring physicians of the need for further steps toward this goal,” said ACR Chair Thrall.

To arrange an interview with a spokesperson, please contact ACR Director of Public Affairs Shawn Farley at 703-648-8936.

Please visit www.acr.org/radiationefforts to read the peer-reviewed studies and government reports from which the facts and figures above were drawn.

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