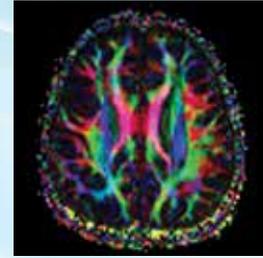


IMAGINE THAT IMAGE



A PATIENT-CENTERED RADIOLOGY NEWSLETTER

FALL 2012

LIFESAVING IMAGING FOR SICK OR INJURED CHILDREN



Medical images can be lifesaving for children who are sick or injured.

However, safe imaging is fundamental, as no procedure is completely without risk. The radiologists and technologists at Children's Hospital of Pittsburgh of UPMC understand risk yet strive to obtain the best test results possible. As a parent, you have the right to ask questions regarding tests ordered for your child.

Are there risks involved with an imaging test?

Those exams that use ionizing radiation (example: x-rays) may theoretically increase the risk of cancer, especially with higher doses, multiple exposures, and the younger the age of the patient. Tests that involve contrast or sedation may also involve minimal risk. Fortunately, Children's Hospital radiology staff are trained in "child-sized" imaging techniques to minimize these risks.

What can parents do when their child needs an imaging study?

It is important to ask questions and work with your child's doctor to ensure the best, safest care for your child. Parents also can keep a medical imaging record or diary. An example is available at www.imagegently.com.

Remember, concerns about risks are important. However, imaging tests often provide critical, lifesaving information. Staff at Children's Hospital do their best to minimize risk and provide the maximum diagnostic information possible.

For more information, visit:

www.chp.edu/CHP/Innovations+Pediatric+Imaging

www.chp.edu/CHP/Imaging+Gently

FACULTY SPOTLIGHT



SAMEH S. TADROS, MD, MSc

Clinical Assistant Professor
Children's Hospital of Pittsburgh of UPMC
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Sameh Tadros studied Pediatric Imaging at the University of Toronto Hospital for Sick Children and received nuclear cardiology training at Baylor College of Medicine in Houston, Texas. He is known for his expertise in cardiac and body imaging, particularly cardiovascular MRI. Tadros' research interests include the reduction of radiation doses and he has been published in the journal *Pediatric Radiology*. Additionally, he presents regularly for the Radiological Society of North America and the Society for Pediatric Radiology. Tadros recently coauthored a chapter, "Fundamentals of Pediatric Radiology," in *Atlas of Pediatric Physical Diagnosis* and currently is presenting a series of lectures titled "Image Gently" to the physicians and professional caregivers in the Children's Hospital community.

At UPMC, he is YOUR child's radiologist.

► Suggested questions that may be important to ask your child's doctor:

- What is the name of the test my child needs?
- How will this test improve my child's care?
- Does the test involve ionizing radiation?
Are there alternatives that do not use radiation?
- Will my child receive an appropriate "child-size" radiation dose?
- Does your facility follow the Society of Pediatric Radiology Image Gently guidelines?
- Is your facility accredited by the American College of Radiology?

AVOIDING THE RISK: ADVANCED MRI

Recent advances in magnetic resonance imaging (MRI) provide alternatives to technologies that may use ionizing radiation. Here are some examples of cutting-edge imaging techniques provided at Children's Hospital:

CARDIAC MRI

Cardiac MRI (CMR) has become an important tool in the management of children with heart disease. CMR provides anatomical as well as functional information that many other tests, such as echocardiography or catheter angiography, may not provide. CMR can provide three-dimensional images and a physiological evaluation of how well the heart is pumping.

In many cases, cardiac computed tomography (CT) provides superior images for critical clinical decision making, especially for small structures such as the coronary arteries.

For more information, visit:

www.chp.edu/CHP/Advanced+Cardiac+Imaging
www.chp.edu/CHP/CT+Scan+PP



MR ENTEROGRAPHY

Children's Hospital was the first UPMC hospital to adopt an MRI technique called magnetic resonance enterography (MRE). Enterography may be used in the evaluation of inflammatory bowel disease such as Crohn's disease. MRE evaluates the health and function of intestines, allowing for the detection of inflammation and complications without the use of ionizing radiation. MRE is especially valuable in children and adolescents who may undergo multiple studies during the course of a lifelong disease.

CT should still be considered if a patient is presenting with acute pain, if serious complications are suspected by your doctor, or if an MRI cannot be performed.

SAFE IMAGING WITHOUT SEDATION

Your child's health and safety are paramount. In order to obtain the best possible images, a patient's cooperation is critical, and sedation through various medications often is suggested. However, the Department of Pediatric Radiology at Children's Hospital has developed sets of distraction techniques by which to calm patients before various procedures, reducing the need for sedation. Age-appropriate distraction facilitates coping, helps manage pain, decreases the use of various medications, and builds trust between the staff and patient.

Many techniques are available. Nine child-friendly multisensory rooms have been designed for various imaging tests. Staff members also offer distraction through light-up toys, games, movies, books, and stress balls. In the MRI lab, high-tech goggles enable children to watch a movie during their scan.

The goal of implementing these measures is to help patients cope with anxiety and fear. Children's staff is dedicated to providing a positive experience for pediatric patients and their families during their medical experiences.

For more information, visit:

www.chp.edu/CHP/Adventure+Rooms
www.chp.edu/CHP/Distracton+Techniques
www.chp.edu/CHP/mri+scan+pp



CUTTING EDGE RESEARCH:

The Pediatric Imaging Research Center

For children, MRI has become extremely important in clinical practice as well as in research, providing information previously obtainable only by surgery. Different MRI techniques are available, each offering unique chemical, biological, functional, and structural information. Radiologists are able to use this information to investigate areas such as brain development, tumor growth, auditory processing, and seizure disorders. For example, a particular research study by Ashok Panigrahy, MD, chief of pediatric radiology at Children's, uses a specific neuroimaging protocol that determines sodium levels within brain tumors. This particular research allows our radiologists to look at tumors in new ways and offers clinicians a new tool in fighting cancer.

For more information, visit:

www.chp.edu/CHP/Radiology+Research
www.chp.edu/CHP/tractography

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