



Children's Imaging Guide: CT SCANS



The **David & Judy Hess Children's Imaging Center** at Renown Children's Hospital was designed with the needs of children and their families in mind. The Children's Imaging Center provides comprehensive imaging services to our youngest patients with a team specially trained in pediatric radiology. And we are proud to participate in Image Gently — a nationwide campaign working to reduce radiation exposure to children.

What is a CT SCAN?

A CT Scan produces incredibly detailed 3D images of your child's organs, bones, soft tissues and blood vessels. These images help doctors quickly answer urgent questions about your child's health — like whether they've suffered internal injury or bleeding, for example. The exams are quick, painless and non-invasive: No part of the CT scanner ever touches your child.

CT scans utilize the same ionizing radiation used in conventional X-rays. But given the amount of additional information a CT provides, the benefits of an accurate diagnosis outweigh the risk of exposure to radiation during the exam. In emergencies, the ability of CT scans to quickly provide vital information can prove life-saving.

Home to a Dedicated Pediatric Imaging Team

Equipped with the region's first low-dose, 128-slice computerized tomography (CT) scanner, an expert staff of radiologic technologists and a pediatric radiologist, the David & Judy Hess Children's Imaging Center opened in July 2013.

The CT scanner was specifically designed for kids and is used to evaluate multiple head, neck, chest, abdominal and bone disorders, as well as injuries and malignancies (or cancerous growths). The scanner is efficient — taking images faster than typical scanners, which decreases the time children spend in the CT and minimizes radiation exposure.

What Happens During a CT SCAN?

A technologist positions and secures your child on the movable bed that slides in and out of the CT scanner. If your child requires sedation or a contrast solution, the technologist will then insert an intravenous line (IV), which may cause brief discomfort.

The technologist then performs the exam according to the imaging protocol specified by the radiologist. A doughnut-shaped X-ray tube emits controlled, narrow-beam radiation, which passes through the body and gets picked up by an array of electronic detectors on the frame's opposite side. This process produces and records pictures in thin two-dimensional "slices" of the area under study, which are then assembled by a dedicated computer. If necessary, the images are compiled into detailed 3-dimensional images that can be studied from all angles, providing doctors a complete, comprehensive view.

Because CT scans are generally quick — often requiring less than 10 seconds — many children can hold still for the procedure. But depending on which part of the body is being scanned, the exam can take longer. In order for your child to remain still, sedation may be necessary.

Having a parent in the room during the exam can help reduce any anxiety your child might have. As a precautionary measure, pregnant women cannot be in the exam room. If you are expecting, arrange for a family member or friend to accompany your child into the exam room.

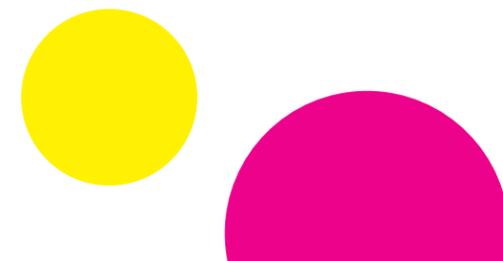
How to PREPARE for a CT Scan

Your doctor will provide specific instructions when your exam is scheduled, but the following are some general guidelines for CT scans:

- Notify the CT staff of any illness your child has such as cold, cough, fever, diarrhea or vomiting, which may require rescheduling the test.
- Inform staff of all allergies or previous adverse drug reactions that may prevent your child from receiving the contrast safely.
- Pregnancy tests are requested for females age 12 and older.
- If your child has severe kidney disease, there is a risk of a condition called contrast-induced nephropathy from the contrast solution. A test of your child's kidney function will be required before the exam to make sure the kidney function is within the safe range before contrast is administered.
- Dress your child in comfortable clothing with no metal snaps, belt buckles or zippers. In the case of CT scans of the head, metal hair clips and jewelry must be removed.
- Some CT scans may require contrast. There is an oral contrast that your child will have to drink and an intravenous contrast solution which requires an IV.

What Happens AFTER a CT Scan?

After interpreting the images, the radiologist provides a written report to your child's doctor, who can then discuss the results with you. Results are typically reported within 24 hours; in urgent cases, our radiologists communicate immediately with the referring physician.



PREPARING Your Child For a CT Scan

Have a discussion about why the CT scan is necessary ahead of time, and describe the procedure in simple terms. Explain to your child that the test won't hurt and the machinery does not touch their body. Talk about the importance of lying still so the scan can be completed quickly without repeating any part of the procedure.

Discuss what happens the day of the exam: Per your doctor's instructions, your child may need to abstain from food and liquids a few hours prior to the exam. After checking in at the hospital, your child will remove all clothing and accessories and dress in a hospital gown in preparation for the scan. Explain that buttons, zippers, clasps or jewelry may interfere with the imaging process. Reassure your child that you or a trusted friend or relative will be present throughout the entire process.

Any special guidelines on eating and drinking prior to the scan will be discussed in detail when you schedule your child's appointment.



What Should I Expect the **DAY OF** My Child's CT Scan?

The day of the appointment, arrive at the Institute for Heart & Vascular Health, which is located on the ground floor of Renown Regional Medical Center. After check-in, you will be taken back to the David & Judy Hess Children's Imaging Center to await the exam.

If your child is having an abdominal scan you'll need to arrive two hours before the exam, as your child will most likely be required to drink a contrast solution to enhance the detail of the CT images. This will be explained during the scheduling process. Your child may also need an IV-administered contrast, for which your child will get an IV line. The contrast will be given during the scan and the IV line will be taken out afterward.

Note that occasionally emergencies or urgent cases require us to rearrange our schedule, which may cause scheduling delays. We will keep you informed should this situation arise.

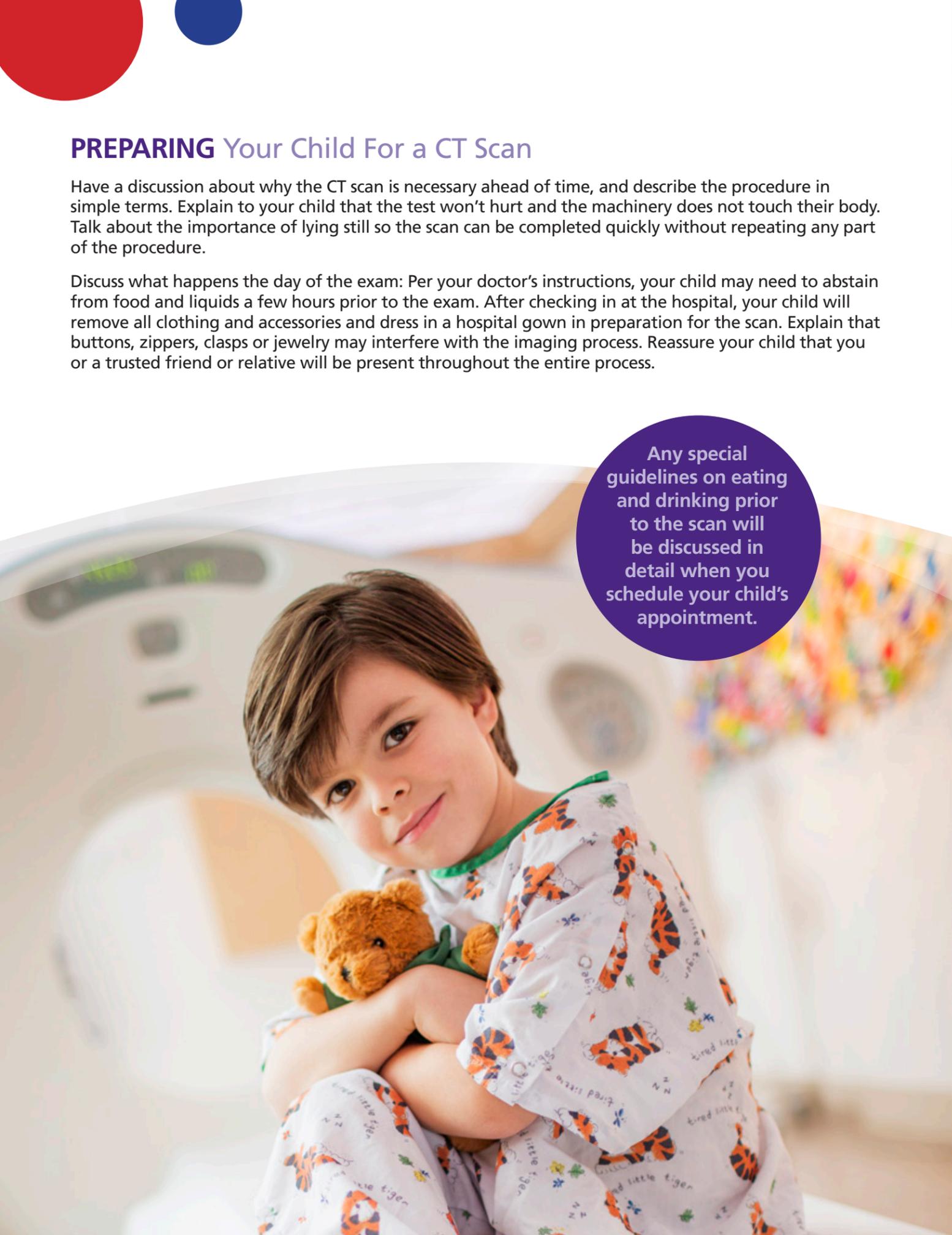
If You Have **QUESTIONS**

Speak with your doctor if you have questions regarding the procedure and why it's necessary for your child. You also can talk to the CT scan technician before the exam.

Please contact **Children's Imaging** at **775-982-8100** with any additional concerns or questions about the scan or scheduling.

ABOUT the Image Gently Campaign

The Image Gently Campaign involves a group of healthcare organizations that want to promote safe, high-quality pediatric imaging throughout the world. The educational campaign, created by the Alliance for Radiation Safety in Pediatric Imaging, comprises more than 50 different societies, including the Society for Pediatric Radiology and the Pediatric Imaging Council of the Society of Nuclear Medicine. All combined they are a group of more than 700,000 healthcare professionals in radiology, pediatrics, medical physics and radiation protection. More information can be found at imagegently.org.



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