

POSITRON EMISSION TOMOGRAPHY (PET) SCANS

AT CHILDREN'S HOSPITAL OF PITTSBURGH OF UPMC, we believe parents and guardians can contribute to the success of this test and invite you to participate. Please read the following information to learn about the scan and how you can help.

Fast Facts About PET Scans

- The PET scan gives doctors detailed pictures of certain activities going on in the body.
- Your child will be given an injection (shot) of a special liquid before the test.
- The special liquid has a very small amount of radioactive molecules in it. The liquid is safe and will not hurt your child.
- Your child must wait 30 minutes to 1 hour for the liquid to travel through the body before the PET scan starts.
- The PET scan itself takes only 30 minutes to 1 hour, but the whole test may take up to 2 hours.
- The PET scanner will not touch your child and the scan will not hurt.
- On the day of the test, there are some special rules for eating and drinking.
- After the test, your child can usually resume normal activities and diet.

What Is A Positron Emission Tomography (PET) Scan?

Positron (*POZ-it-tron*) emission (*e-MISS-shun*) tomography (*toe-MOG-ruff-ee*)—also called a PET scan—is a safe test that gives doctors special pictures of the human body. Other similar tests, such as MRI and CT scans, take detailed pictures of the body as well, including the brain. A PET scan takes pictures of chemical and other changes in the brain that MRI and CT scans cannot show. These detailed pictures of the brain's activity that PET scans provide help doctors diagnose a problem, choose the best treatment and see how well the treatment is working.

This test involves a computer-based PET scanner and a special liquid known as a radiopharmaceutical (*RAY-dee-oh-far-ma-SOO-tick-ool*). The liquid has very small amounts of radioactive molecules in it but is completely safe and will not hurt your child. The liquid is given through a shot. Once it reaches the part of the body that is being tested, it sends signals that can be read by the PET scanner and made into the pictures that the doctors will look at.



Home Preparation

- Have your child wear comfortable, loose-fitting clothes on the day of the test.
- For 12 hours before the test, your child should not eat or drink anything that has caffeine in it, including soda pop and chocolate.
- For 4 hours before the test, your child should not eat solid food.
- Your child is allowed to drink water or juice.
- If your child has diabetes, you should ask if there are any special diet guidelines to follow during the day of the test.
- Your doctor will tell you if it is OK for your child to take any medicine before the test.

The Test

A PET scan is done in three stages. First, your child will be given a shot of the special liquid (radiopharmaceutical). Next, there is a waiting period. Then, there is the PET scan itself.

- The whole test will take about 1½ to 2 hours to complete.
- The third stage—the PET scan itself—will take up to 1 hour.
- Your child will be watched closely to see if seizures occur during the test by having an EEG recording done during the entire PET scan.

Before the PET Scan

- Your child's sugar level will be checked.
- Your child will then get a shot containing the radiopharmaceutical, which is an important part of the PET scan.
 - The needle used to inject the liquid is very small. It will feel like a pinprick. After the shot, an assistant or nurse will put a small bandage on the spot.

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- Your child won't feel the special liquid and it won't harm your child.
- Small button-shaped stickers called electrodes will be placed on your child's scalp in the EEG lab before he or she is sent for the PET scan. These electrodes will measure your child's brain activity during the scan.
- Next, you and your child must wait for up to 1 hour to let the special liquid travel within the body to the place where doctors want to test.
- Your child should stay very quiet and as still as possible during this waiting period. The lights in the room will be dim to help your child relax.
- When the waiting period is over, your child may be asked to urinate to empty his or her bladder.

Now, your child is ready for the last stage – the PET scan itself. The PET scanner looks like a big donut with a hole in the middle and a table that slides into it. The PET scanner will not touch your child's body and the scan will not hurt at all. You may stay with your child during the entire test.

- An assistant will help your child lie on the table inside the big hole in the scanner.
- Your child will be asked to stay very still and quiet during the scan.
- While your child lies on the table, the table will slide into the scanner but the scanner will not touch your child.
- The PET scanner will take the pictures your doctor needs.
- The technologist will watch the scan through a window and on a television monitor.



A Parent's/Guardian's Role During the Scan

We welcome your help and support during this test. One parent or guardian is invited to join your child in the exam room and scan room. Other adults and children must stay in the waiting area.

- The most important role of a parent and guardian during the test is to help your child stay calm and relaxed. It is important that your child stays still when the scan is being done.
- The best way to help your child stay calm is for you to stay calm.
- We encourage you to talk to your child and hold his or her hand.
- You may bring along a "comfort" item—such as a favorite stuffed animal or "blankie"—for your child to hold during the scan.
- Please do not distract the technologist or interrupt the scan in any way.
- We welcome your questions, but please ask them either before or after the scan.

After the Test

After the PET scan, the quality of the pictures will be checked. If they are of good quality, the test is complete.

- If you have any questions after the test, the assistant or nurse will be happy to answer them.
- Your child may resume his or her normal activities and diet.
- The pictures from your child's PET scan and a report will be sent to the doctor who ordered it.
- Please contact the doctor who ordered the scan for the results.

Special Needs

If your child has any special needs or health issues you feel the doctor or assistant performing the scan needs to know about, please call the Division of Neurology at Children's Hospital of Pittsburgh **before** the scan and ask to speak with a nurse. It is important to notify us **in advance** about any special needs.

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To see the list of all available patient procedures descriptions, please visit www.chp.edu/procedures.