

Nuclear Medicine Mag 3 Scan with Nitrous Oxide

We know children.

What is a Nuclear Medicine Mag 3 Study?

A Nuclear Medicine Mag 3 study uses small amounts of radioactive tracers to determine how well the kidneys are functioning. For this scan, your child will need a urinary catheter and IV.

What is Nitrous Oxide?

Nitrous Oxide is a quick-acting form of sedation, also known as “laughing gas,” that helps decrease discomfort and anxiety.

What happens during this scan?

- A child life specialist will meet with you and your child to help explain the procedure at your child’s developmental level, show you pictures of the camera/room the procedure will occur in, and help your child develop a positive coping plan.
- Two adults are allowed to accompany your child to the exam room. If pregnant, you will be unable to accompany your child due to the risks associated with nitrous oxide and radiation. If you’re planning on bringing other children with you, one adult will need to stay in the waiting area with them.
- You and your child will be taken to the nuclear medicine room where your child may be asked to change into a hospital gown and then lie down on the bed.
- The nuclear medicine technologist will explain the details of the exam.
- The anesthesia nurse will place a blood pressure cuff, pulse oximeter, and EKG leads on your child.
- The anesthesiologist will have your child begin inhaling the nitrous through a mask by breathing normally for a few minutes until they are feeling relaxed and sleepy but not sleeping.
- The radiology nurse (RN) will begin placing your child’s IV. This process includes placing a tourniquet (blue rubber band) on their arm which will give your child’s arm a tight squeeze or hug and cleaning the skin with wet soap. Then there will be an initial poke to get the straw in the right spot, once the straw is in the right spot the needle is removed and only the straw is left in your child’s vein. With nitrous and other pain management options your child should hardly notice this poke. The area will be covered with tape in order to keep the IV straw in the right spot during your child’s pictures.
- For the catheter placement, boys will lay flat on their back with straight legs. Girls will lie on their back making butterfly wings with their legs.
- The RN will clean your child’s opening where urine comes out (penis for boys and near the vagina for girls) with a cold, wet, brown soap on a cotton ball once, then will place lidocaine jelly on/into the area. The lidocaine will sit for 3 minutes to take effect, and then your child will be cleaned with two additional cold, wet, brown soaps followed by a dry cotton ball.
- When the catheter is being inserted your child may still feel an uncomfortable pinch-like feeling. Deep breathing can help lessen this sensation. Once the catheter is in the correct position your child may feel like they need to go to the bathroom. This is a normal sensation that decreases with relaxation and distraction.
- The RN will place small pieces of tape to keep the catheter in the correct spot for pictures.
- At this point, the anesthesiologist will have the patient breath oxygen for about 5 minutes while the nitrous quickly wears off.
- The nuclear medicine technologist will explain the remainder of the exam.
- During the scan, your child will need to hold their body still in order to get clear pictures. Seatbelts are available if your child needs assistance holding their body still. During imaging your child can watch TV or pick a movie to watch.

How can you prepare and support your child with their Nuclear Medicine Scan?

- Use developmentally appropriate words to explain to your child what will happen.
- You are welcome to bring a comforting item (ex. blanket or stuffed animal) for the child to have with them during their scan.
- Ask your doctor or nurse what pain management options are available for your child.
- During the procedure provide support by holding their hands, validating their feelings, and engaging your child in distraction such as looking at a book, playing a game, or watching a movie.
- Participate in One Voice, an initiative to promote a calming environment by limiting the amount of voices in the room so your child knows who to focus on (parent or procedural staff professional).
- Practice deep breathing at home by pretending to blow out birthday candles or blowing bubbles.
- Display a calm demeanor, your child picks up on your anxiety and often mirrors it.

Glossary:

Anesthesiologist – the doctor who will administer the nitrous oxide to your child

Anesthesia Nurse – the nurse monitoring your child’s health while under nitrous oxide

Butterfly Wings – making your legs look like butterfly wings by bending your knees and putting the bottoms of your feet together (only for girls during catheter placement)

Catheter – a small, flexible tube that is inserted through the urethra in order to fill the bladder with contrast

Child Life Specialist – a health care professional who can help your child better understand the routine of their scan and help them cope positively during the procedure

Intravenous Line (IV) – a small straw used to give the body liquids

Kidneys - a part of the body that filters your blood and removes wastes via urine

Lidocaine - a numbing medicine for children 2 years or older to decrease sensation during catheter placement

Nuclear Medicine Tech – a health care professional who will take your child’s pictures

Radioactive Tracer – used to assess function in a particular part of the body

Radiology Nurse – the nurse who will place the IV and catheter, as well as, assist when pictures are being taken

If you have more questions related to preparing your child for this test you can contact the Radiology Child Life Specialist at 402-955-4042.

