

Urodynamic/Videourodynamic Study

What is a urodynamic/videourodynamic study?

A urodynamic study is a test used to evaluate the bladder (the organ that stores urine) and the sphincter (the “hold on” muscle between the bladder and the urethra). The urethra is the tube through which the urine flows from the bladder to outside the body. The study also measures the voiding pattern. The study usually takes 1-1 ½ hours.

Who needs a urodynamic/videourodynamic study?

Children with any of these conditions may need the test:

- urinary incontinence (uncontrolled wetting)
- imperforate anus
- myelomeningocele (spina bifida)
- complex urinary tract problems
- spinal cord trauma
- problems with voiding such as frequent urinary tract infections, wetting, or problems emptying the bladder
- posterior urethral valves
- bladder extrsophy

Important things to note:

- If your child voids on his own (does not use a catheter to empty his bladder) he should have a full bladder when he arrives for the study.
- You should be with your child at all times. During the study, you are an active participant.
- We will explain each step of the study set-up as it is being done.
- Your child will be awake during the study.
- Your child may eat and drink as usual until the time of the study.
- It is important to reassure your child there are no “needles” involved in the test.
- A videourodynamic study will include X-rays. Pregnant women cannot be in the room during testing.
- Siblings under 18 years old may not be in the room with the patient during the study.
- If your child has a urinary tract infection on the day of the study, the study may need to be rescheduled
- The test results are more accurate if your child has recently emptied his bowels. If your child is on a routine bowel program, please perform the program the night before the test.

How is the study done?

- We will insert a small catheter (tube) into the urethra.
- We will also insert a small, soft catheter into the anus to measure abdominal pressure and straining, if present.
- We will place two skin patches (electrode stickers) near the anus and another one on the lower part of the abdomen to measure muscle activity.



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- We will use the urethral catheter to slowly fill the bladder with sterile saline (salt water) or contrast solution if X-ray studies are ordered. Please tell your urology provider know if your child has an allergy to X-ray contrast (dye). We stop when the bladder is totally full or when your child has the urge to void (urinate). If your child has a neurogenic bladder, we will stop when it starts to leak. We will ask your child to tell us when he has the urge to void or the bladder feels full.
- We may ask your child to void into a special toilet that measures the flow pattern, voiding time, and the amount voided. This part of the study determines whether or not your child has a normal voiding pattern. It may or may not be done with the catheter in the bladder.

After we review the test results, we may find that your child has:

- Normal function
- Uncontrolled bladder contractions
- Discoordination of bladder contraction and external sphincter
- Abnormal sphincter activity
- High bladder pressure
- Incomplete bladder emptying

How do I prepare my child for this study?

What you tell your child will depend on his age and level of understanding, but it is helpful for him to know ahead of time that the study will be to learn about his bladder. Due to the personal nature of this study, your child may feel uncomfortable and/or embarrassed. Please assure him that you will be present the entire time. A child life specialist can also be available to help your child cope with the test by providing distraction and explaining what will happen, and why, in terms your child will understand. If you are interested in Child Life involvement, let the Urology team know ahead of time. Also, please feel free to bring your child's favorite comfort item like a blanket or stuffed animal, toy, or electronic device to the study. We also have some toys and an iPad available to play games or watch videos.

What can I expect after the study?

When the study is finished, we will remove the catheters and electrodes. If your child voids on his own, he may have burning during urination for the first void after the study. Your child may need to take an antibiotic for 24-48 hours to prevent a urinary tract infection.

Your pediatric urologist will review the results of the study and meet with you to discuss a plan of care for your child.