

# Let's Talk About...

## Cystometrogram (CMG)

A cystometrogram (sis-toe-MEH-trow-gram) (or CMG) is a test of the bladder and how well it is working. It records pressure in the bladder, the amount of urine in the bladder, and bladder neck function (part of the bladder that leads to the opening outside the body). Then it makes a graph of these values. A specially trained doctor or nurse practitioner will interpret these graphs to understand how your child's bladder works. A video CMG or VCMG is a CMG test that includes X-rays of the bladder. CMGs and VCMGs are also called urodynamic tests.

### Why does my child need a CMG or VCMG?

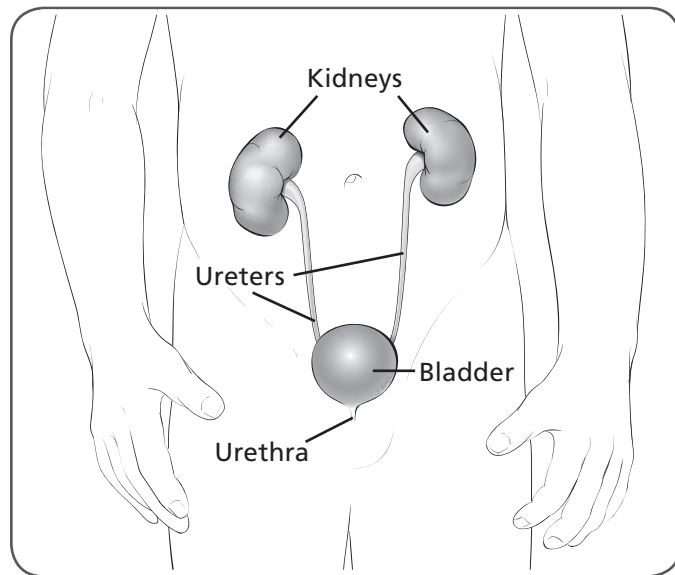
A doctor orders these tests when there is urine leaking, bladder infections, or difficulty emptying the bladder. A doctor may order these tests before and after spinal surgery. Children with spina bifida have these tests routinely.

### How are CMG and VCMG tests done?

The nurse directs a small, thin tube called a catheter through the urethra into the bladder. The urethra is the tube that connects the bladder to the outside of the body. The nurse will insert another catheter just inside the rectum, and will place two small patches on each side of the rectum and a third patch on the thigh. The nurse will place a small marker on the left side of the child's abdomen if the test is a VCMG. The nurse connects the wires to the computer and the tubes to a bag of fluid. She then fills the bladder with water for a CMG, or contrast fluid for a VCMG. Contrast fluid can be seen with x-rays. If your child is toilet trained, at the end of the study, she will urinate into a special toilet.

### What happens during the test?

The nurse will give your child as much privacy as possible during the procedure. To prepare for the test,



your child will remove her clothing from the waist down and lie on her back on the urodynamics bed. Girls place their legs in a frog-leg position, knees bent up and out at the sides, so the bottoms of the feet are touching each other. Boys keep their legs straight.

The nurse will wash the genital area or penis with a brown antibacterial soap. Some children say the soap is "cold" or "tickles." The nurse will guide a small catheter into the urethra and then to the bladder. She will use a lubrication jelly to help the catheter slide in easily. Some children say the catheter feels like a pinch some say it is uncomfortable, and others say it makes them feel as if they need to urinate.

Once the catheter is in, the feeling the child needs to urinate may continue. Counting out loud, pretending to blow out candles, or blowing bubbles may help relieve these feelings. The nurse will tape the catheter to the inside of the child's leg to hold the catheter in place. It will drain urine out of the bladder. Often the nurse will use a syringe to gently draw the urine out of the tube. The nurse attaches one end of the catheter to a bottle of contrast fluid or water, and she attaches the other end of the catheter to a transducer, which measures bladder pressure.

At this point a boy is placed in the frog-leg position. The nurse gently guides a small rectal catheter into the rectum. A lubricating jelly is used to help the catheter slide in easily. Some children say, “the catheter tickles” or “feels weird.” The nurse tapes this catheter to the side of the leg and connects the free end of the catheter to a transducer, which measures pressure in the abdomen (belly). The nurse cleans both sides of the rectum with a small alcohol pad and wipes a small area on one thigh, and she places small skin patches on these areas. Children say this brief cleaning “feels cold” or “tickles.”

The urology doctor or nurse practitioner will enter the room to direct the study. Your child’s bladder will be slowly filled with contrast fluid or water. The doctor or nurse practitioner may have her cough or sit up during the test. The nurse watches for any leaking from the bladder. If the test is a VCMG, the doctor or nurse practitioner will take X-rays.

If your child is toilet trained, the nurse will ask her to urinate into a special toilet when her bladder is full. If she is not toilet trained, the test ends when she urinates on her own.

## **What happens after the test?**

After the test, your child’s nurse removes the pieces of tape and the skin patches. This may pull the skin like a Band-Aid. The catheters slide out. Most children say that they do not feel the catheter come out. The doctor or nurse practitioner will talk to you about the test results and give you their recommendation.

## **Are there complications or side effects from the test?**

Your child may feel mild discomfort during urination for a few hours after the test. This should last only one day, and it is normal after the procedure. Encourage your child to drink plenty of fluids. If she has discomfort in urinating, it may be helpful to allow her to urinate while sitting in a tub of warm water. Placing a clean, warm, wet washcloth over the urethral opening could also help. If the stinging lasts more than a few days or gets worse, call your child’s doctor. There are no side effects from the contrast fluid.

## **When can my child go home?**

You may take your child home when the test is complete. It takes about an hour.

## **What if I have more questions?**

You may call your child’s urologist or the doctor who requested the test.