Voiding Cystourethrogram: A Guide for Patients

What is a Voiding Cystourethrogram (aka VCUG)?

A VCUG is an x-ray image of the bladder and urethra during urination. It evaluates specific bladder and urethra abnormalities. It will also show reflux of urine from the bladder back toward the kidneys. Usually, the urinary bladder does not show up well on conventional x-rays. In this examination, a contrast medium (x-ray dye) is put into the bladder to improve visualization. X-ray images are taken in various positions with the bladder full of contrast and while the bladder is being emptied.

Why should I have a VCUG?

This test is commonly ordered to look for reflux (“backing up”) of urine into the kidneys. The test may also detect abnormal bladder emptying or any congenital abnormality. In males, it may detect strictures and/or narrowing in the urethra.

What will happen during the procedure?

The test will be performed in the radiology department. A specially trained radiology technologist and a registered nurse will explain the procedure. The registered nurse will gently insert a thin sterile catheter or flexible tube into the urethra, and up into the bladder. The bladder is then filled through the catheter with x-ray dye. The radiologist will come into the examination room once the catheter is in place and take a number of x-ray pictures in various positions; x-rays will then be taken of the bladder and urethra while urinating. For children, we will place towels/padding under them so they can urinate on the table. For adults, we have x-ray tables that tilt into an upright position and you can use a urinal or special type of urinary collection container. After urinating, the catheter will be removed.
Will it hurt?

Putting the catheter in is uncomfortable. For boys, the registered nurse can apply a little numbing gel on the tip of the penis. Unfortunately, this gel is not helpful for girls. For girls, it will help a lot if they are able to relax their muscles as much as possible. It is common for a child to cry at the time of catheter insertion because they are afraid and it feels uncomfortable to them, not because they are in pain.

Is it okay if I stay in the room with my child if anesthesia is not used?

If your child is not anesthetized, one parent is allowed to stay in the x-ray room during the test. We will provide you with a lead apron to wear. This will protect you from unnecessary radiation. If there is a chance you might be pregnant, we will advise you to leave the room during the procedure. If this is the case, you may bring another adult to keep your child company.

Is it safe?

The radiologist who is performing the test limits the x-ray exposure to the minimum amount necessary to make the appropriate diagnosis for the patient’s medical situation.

What will happen after the procedure?

Once you (or your child) have urinated, the exam is over and then you will be discharged home (unless anesthesia was given). Children can be assisted by the technologist, registered nurse, or parent(s) to clean themselves prior to being discharged home. This test may take approximately 15-30 minutes. Pediatric patients will sometimes urinate immediately, while others take longer. It is normal if your child lies on the table for several minutes (anywhere from 5-45 minutes) before they finally urinate.

If anesthesia was given, you will be kept in the hospital until discharge criteria has been met prior to being discharged home.
Is anesthesia needed for my child?

Anesthesia is not needed for a radiology VCUG. Children do not have to be perfectly still for this test and it usually only takes a few minutes for the child to urinate after the bladder is filled. Once the child urinates, the catheter is removed and they can be discharged immediately (unless anesthesia is given). Sometimes a child may have to be held with a special pediatric belt. If this is necessary, it will be discussed with you and a verbal okay is all that is needed from the parent/guardian. Although being held with this special belt may seem unfriendly to the child, it decreases the x-ray exposure and gives the child the benefit of a high quality examination.

Anesthesia is usually reserved for children with a history of developmental delays, sexual abuse, a previous unsuccessful VCUG without anesthesia, or a nuclear med VCUG where a child must be completely still.

An Imaging Department registered nurse is available to discuss the benefits and risks of performing this exam with anesthesia (see phone number and hours listed at the end of this guide).

What is the difference between a Nuclear Med VCUG and a Radiology VCUG?

The test is performed the same way as described above but different cameras are used. With nuclear medicine VCUGs, a radioisotope is used. In radiology, VCUGs are done using x-ray dye. The initial VCUG in most cases is done with x-ray dye because the pictures provide information that is more detailed to the physician. Pediatric patients usually require anesthesia for nuclear medicine VCUGs because the patient must be perfectly still for the test.

What happens after the procedure?

You (or your child) may experience some discomfort when urinating after this test due to slight irritation from the catheter tube. It usually lasts less than 24 hours. The first time you urinate, it is normal if the urine is pink/red-colored. If you (or your child) have discomfort with urination or pink/red-colored urine lasting over 24 hours, call your doctor.
For children: if your child is uncomfortable or is afraid to urinate, placing him or her in a warm bathtub can be helpful.

What should I do when I get home?

Unless anesthesia was given, you (or your child) can immediately resume normal activity and diet. Remember to schedule an appointment with your doctor to discuss the results of the test.

How will I learn the results?

Your doctor that ordered the test will get the results in approximately 2-3 days and can relay them to you.

What if I have other questions or need to reschedule my appointment?

If you have any questions, concerns, or need to reschedule your appointment you may call (310) 784-6320 M-F from 8:00 - 4:30pm and speak to an Imaging RN.