Children’s Services

Micturating Cystourethrogram (MCUG) – in children

Introduction
This leaflet provides information on Micturating Cystourethrogram (MCUG) and what to expect when your child attends for this test.

What is a Micturating cystourethrogram (MCUG)?
A micturating cystourethrogram is an x-ray test which is used to identify any abnormalities in your child’s urinary system and so help to identify why your child may have urinary tract infections.

The urinary tract includes the parts of the body that are involved in making and passing urine i.e. the kidneys (which make urine), ureters (that take urine from the kidneys to the bladder), the bladder (which stores urine) and urethra (the tube which carries urine from the bladder to outside of the body). These are shown in the diagram below:

You will be able to be with your child throughout the test unless you are or maybe pregnant (see section ‘day of the test’). You will be given a protective gown to wear to protect you from the x-rays. Your child will need to lie still on an x-ray table. Your child’s genital area will be cleaned and then a catheter is passed into the bladder via the urethra by the radiologist or a nurse. (If your child already has a catheter in place we will use this for the test). Once the catheter is in place, some ‘contrast medium’ is injected in through the catheter to fill the bladder. The contrast medium is a clear fluid which shows up on x-ray.
X-ray images are taken as your child empties their bladder. Babies and young children will naturally pass urine when their bladder is full but older children will be asked to pass urine into a container while lying on the x-ray table.

Your child will need to be still while the x-ray pictures are being taken. When we have enough pictures, the catheter will be removed from your child’s bladder. The test usually takes about 30 to 45 minutes.

Before the test

When you receive the appointment letter
If you are unable to attend the appointment it is very important that you telephone the radiology department immediately so that an alternative appointment can be arranged for your child and to permit us to offer the appointment to another child on the waiting list.

If you do not inform us that you are unable to attend and then fail to do so another appointment will not be automatically generated and therefore your referrer will need to order the test again which will delay your child’s test and decisions about their management.

If your child is unwell
If your child is unwell, with a urinary tract infection or any other illness, it is in your child’s best interests for the test to be deferred. Please contact the radiology department to discuss without delay (contact number is available at end of this leaflet).

Antibiotics
Inserting the catheter increases the risk of urinary tract infection. All children therefore need to receive a short course of antibiotics which starts the day before the test and continues for two days after the test. If your child already receives ‘prophylactic antibiotics’ (antibiotics given at a dose to try and prevent infection) their antibiotic can be the same type but the dose will need increasing (see table below). If your child does not usually receive a regular low dose antibiotic to prevent infection they will still need a short course at treatment dose.

It is important that you liaise with your GP at least one week prior to the test to arrange the treatment course of antibiotics for your child.

<table>
<thead>
<tr>
<th>Antibiotic:</th>
<th>Dose required for child having MCUG</th>
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<tbody>
<tr>
<td>Trimethoprim</td>
<td>Double your child’s usual dose and give in the morning and at bedtime on the day prior to the MCUG, the day of the test and for two days after the test</td>
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| Nitrofurantoin   | Full treatment dose for  
|                  | • 24 hours before the test  
|                  | • The day of the test  
|                  | • Two days after the test  
| Cefalexin        | GP to prescribe dose based on your child’s current weight |
| Other            |                                      |
Preparing your child
Our experienced staff will help to ensure that the MCUG goes smoothly for your child but it can help your child if you explain beforehand what will happen on the day of the test. Our play therapists are available to help prepare children for this procedure; please contact the clinical nurse specialist team if you feel this would be of benefit to your child.

Children who are anxious with regards to the catheter insertion can benefit from the use of medical gas and air (Entonox) whilst the catheter is inserted. Your doctor will discuss this with you when ordering the test. Children for whom Entonox is to be used will need to attend one of our children’s wards earlier on the day of the test (usually 2 hours before the test) to meet one of our play therapists and learn how to use the ‘gas and air’ equipment.

The day of the test
Please arrive at the radiology department at the time stated in your child’s appointment letter. If you arrive late it is unlikely that your child will be able to have their test and so it would need to be rescheduled for another day.

MCUG involves the use of x-rays. To protect babies in the womb from exposure to radiation we are obliged to ask any girls over the age of 12 whether there is any chance they might be pregnant and we will also ask mothers or other female carers if they could be pregnant. If you are pregnant, we suggest you bring another member of the family with you, to be with your child during the test instead.

Your child will be able to wear their own clothes during the test but trousers and underwear will have to be removed.

Remember to give your child the treatment dose of antibiotic on the day of the test.

After the test
As soon as sufficient images have been taken and your child’s catheter has been removed you will be able to go home.

Remember to give your child the treatment dose of antibiotic for two days after the test. If your child usually takes a prophylactic (preventative) dose of antibiotic, they should resume this dose when the treatment course has completed.

Pain on passing urine
Irritation from the catheter may result in your child experiencing some discomfort or pain (like a burning sensation) when passing urine for a few days after the test and some children pass urine more frequently. Paracetamol (Calpol) may be given to relieve discomfort; always follow the dose instructions on the bottle. If the discomfort continues, contact your GP.
Risks

Urinary tract infection:
Inserting a catheter into the bladder can increase the risk of urinary tract infection. To reduce this risk, follow the advice in the section regarding "antibiotics" above. If your child develops a high temperature or shows any other signs of a urinary tract infection contact your GP immediately.

Use of x-ray
X-rays are one type of ionising radiation. We are all exposed to very low levels of ionising radiation in our day to day lives; for example, from some construction materials in buildings, in some foods we eat and when we take a flight. MCUG uses a small amount of radiation, and so is considered safe. However, your doctor will carefully consider the risks and benefits for your child, before recommending this test.

Use of contrast medium
The contrast medium will not interfere with any medicines your child is taking and no extra precautions need to be taken with dealing with their bodily fluids.

Alternatives
Other types of test (such as ultrasound and CT) can provide information about the size and shape of your child’s bladder but not how it is emptying. MCUG is therefore usually done when other tests have not identified a cause for your child’s problem.

MCUG may be undertaken to identify vesicoureteric reflux (VUR); a condition in which the urine passes (refluxes) back up toward the kidney(s). An alternative test which also helps to identify VUR is a nuclear medicine test called a ‘MAG 3 test with indirect cystogram’. A MAG 3 test does not require the child to have a catheter placed. However, to have a MAG 3 test children need to be old enough to pass urine when requested. MAG 3 tests also involve an injection into the vein.

Follow-up
The results will be made available, electronically, to the doctor who referred your child for the MCUG test. He or she will then contact you to discuss the results and to make further management plans.

If you do not receive contact within two weeks please call your child’s clinical nurse specialist or your doctor’s secretary.
Who shall I contact if I have any queries, concerns or questions?

For further information/queries please contact:

Your nurse specialist (Monday to Friday 08:00 to 18:00)...01223 586973

Radiology department...01223 216320

We are now a smoke-free site: smoking will not be allowed anywhere on the hospital site.
For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Other formats:

If you would like this information in another language, large print or audio, please ask the department where you are being treated, to contact the patient information team: patient.information@addenbrookes.nhs.uk.

Please note: We do not currently hold many leaflets in other languages; written translation requests are funded and agreed by the department who has authored the leaflet.

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