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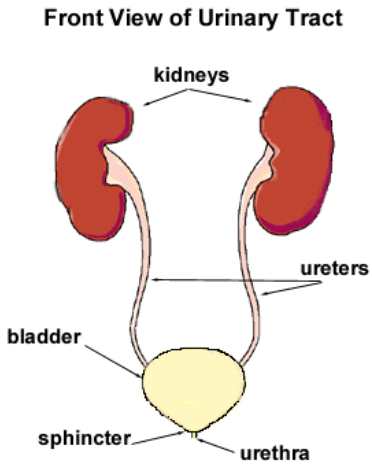
Bladder Augmentation

What is a bladder?

A bladder is an organ inside the abdomen which holds urine/wee until you need to go to the toilet to pass the urine/wee. It can stretch like a balloon to hold more urine as it fills and the muscles in it squeeze to help empty the bladder when passing urine/wee.



Who needs a bladder augmentation?

Some children have a bladder that is smaller than what is required for their age and/or stiffer. There are a lot of different medical conditions and reasons that this can happen. Having a bladder that cannot store enough urine can lead to complications or problems such as:

> Frequent urination- where the child feels the need to pass urine/wee more frequently than 'normal'. This can be very disruptive to their day and ability to learn and complete tasks.

> Urinary incontinence- where a child may leak urine or have 'accidents' where they cannot get to the toilet in time to urinate/wee.

> When the bladder becomes overfull, urine/wee can be forced up the tubes that connect the bladder to the kidneys (called Ureters). This can cause damage to the kidneys like scarring and reduce how well they work.

Conditions that may lead to the need for a bladder augmentation include:

> Spina bifida

> Bladder extrophy

> Posterior urethral valves

Tests performed before surgery

Ultrasound

An ultrasound is a test where a small probe is placed on the abdomen/tummy (and sometimes back) to look at the bladder and kidneys. This looks at the size, shape, thickness of the bladder and how well the bladder empties. Ultrasound shows if there is any kidney swelling from accumulated urine within it.

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Blood tests

A blood test can show how well the kidneys are working. It can also measure the electrolytes in the blood to see how well the body is balancing out all of its needs.

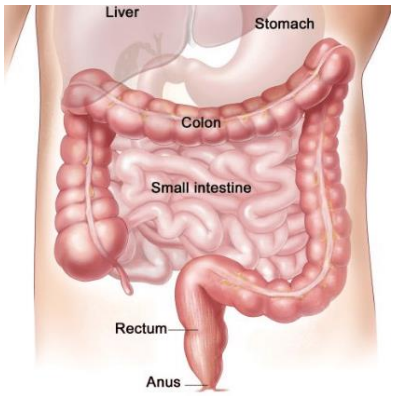
Urodynamics

Urodynamics is a test performed in our medical imaging department that involves inserting some tubes into urethra to measure the bladder pressure, bladders capacity and how well it works. Some children require some sedation to perform this test- There is a separate hand out on this procedure that can be provided.

Surgery/bladder augmentation

You will arrive to hospital on the day of the surgery. For their operation, your child will have a general anaesthetic (be put safely to sleep) so that they are not aware of what is happening and don't feel anything. They will have a cut on their abdomen to be able to reach the bladder to operate.

A section of small bowel/small intestine or the large bowel/large intestine (or ureter) is cut out and opened up to make a patch that will later be added to the bladder to make it bigger.



The bladder is opened up to form a cup shape

For more information

Contact the Paediatric Urology team or the
Stomal Therapy Nursing team
Women's and Children's Hospital
72 King William Rd, North Adelaide SA 5006
Telephone (08) 8161 7000

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The section of bowel or ureter that were cut out earlier are used to make a patch. This is added to the bladder and they are sewn together. The skin is closed again and your child will return to the ward once they are awake and comfortable.

At least two tubes called catheters are placed to help drain urine. These stay in place for at least three weeks and longer in some cases to help keep the bladder empty so that the new joins can heal well.

After surgery they will have fluids though a line in their vein (called an IV or jelco or cannula) to keep them hydrated, as well as pain relief to keep them comfortable. Your child may not be very hungry after the surgery and will have a tube coming out of their nose that helps remove any fluid from their stomach if they feel nauseated (sick/upset tummy) so that they don't need to vomit.

Your child will be in hospital for seven to ten days after the operation. When they are ready to go home, they will usually have one to two tubes/catheters still in place. You will be taught how to look after these tubes before you go home. A week after surgery the dressing on their abdomen is removed. You will be taught how to look after this wound also.

Three to six weeks following surgery, your child will be brought back into the hospital to remove the final tubes/catheters. At this point, the stomal therapy nurses will teach you how to perform intermittent catheterisation.

Intermittent catheterisation

Describes the process of passing a small tube (called a catheter) into the bladder to empty the urine/wee. Once the urine/wee is drained, the tube/catheter is removed. All children having a bladder augment will be required to complete intermittent catheterisation to drain their bladder.

Risks associated with this surgery

There are risks with any operation, but children having a bladder augmentation have some more specific long and short term risks. These will be discussed by your surgeon.

Children who have had a bladder augmentation are also at risk of the following complications:

> Bladder rupture: This means that the bladder can tear or rip if too much pressure is put on the bladder due to overstretching. However, emptying the urine from the bladder often (either on the toilet or via a catheter) lowers the pressure and reduces the risk of rupture.

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- > Higher salt levels in the blood: If bowel tissue is used for an augmentation, salts in urine are absorbed into the blood stream.
- > Vitamin B12 in the blood: If the the small bowel is used, the way vitamin B12 is absorbed changes. Low vitamin B12 can lead to anaemia.
- > Mucus in the bladder: It is normal for intestine/bowel tissue to make mucus. When it has been used in an augmentation, it will keep making mucus, which can cause problems. Passing a catheter into the bladder to wash out the mucus is sometimes needed.
- > Bladder stones: If intestine tissue is used, there is a risk of developing stones (hardened lumps of chemicals) in the bladder.
- > Bladder cancer: If intestine/bowel tissue is used, there is about a one per cent risk that bladder cancer can develop. To date, bladder cancers have only been seen 10 years or more after the operation. It is thought the intestine tissue can react with the urine, causing the bowel cells to change and become cancerous.

Yearly follow-up appointments will monitor your child for signs of these complications so they can be addressed quickly. This follow up will continue into adulthood also with a urologist.

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