



Lancashire
Gynaecologist
Eric Mutema

Urodynamic Testing

What is Urodynamic Testing?

Urodynamic testing is a diagnostic procedure used to evaluate the function and health of the urinary system. It provides valuable insights into the way the bladder, urethra, and associated muscles work together to store and release urine. During urodynamic testing, various measurements are taken to assess factors such as bladder capacity, pressure changes, urine flow rate, and the coordination of muscle contractions. This information is crucial in diagnosing and treating a wide range of urinary problems, including urinary incontinence, overactive bladder, and urinary tract obstructions. Urodynamic testing plays a vital role in guiding healthcare professionals in developing personalized treatment plans and improving patients' quality of life.

There are various types of urodynamic tests. Your clinician may recommend one or more based on your symptoms, but they are sometimes performed together as one test.

Here we will look at why they are needed, what they involve and how they can help.



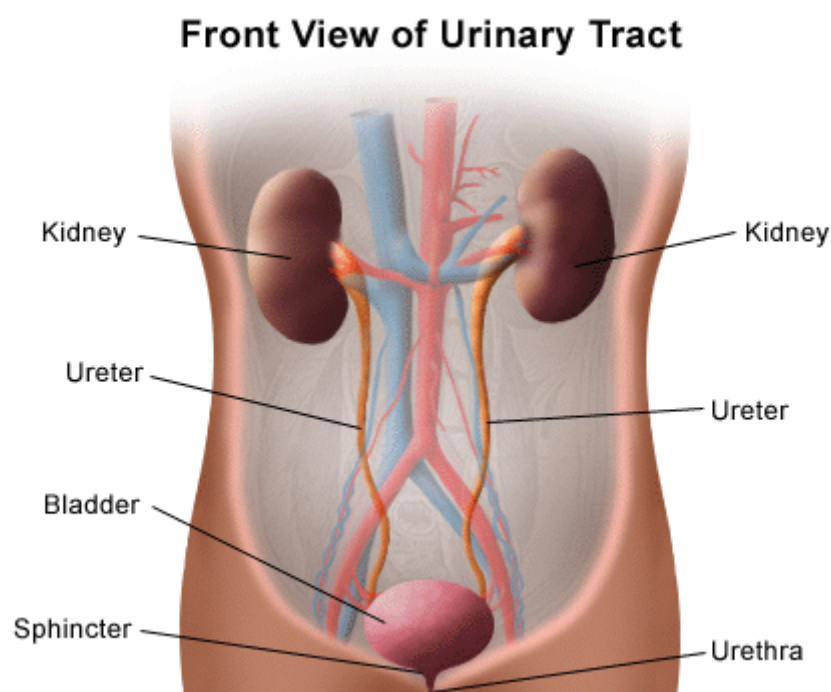
How does urinary tract work?

The lower urinary tract consists of the bladder and the urethra and is primarily responsible for storing and releasing urine from the body.

During the storage phase, the bladder acts as a reservoir for urine. The detrusor muscle, which forms the muscular wall of the bladder, remains relaxed to allow the bladder to expand and accommodate increasing volumes of urine. The bladder's ability to store urine without leakage is maintained by the coordination of the detrusor muscle and the urethral sphincter muscles. The detrusor muscle remains relaxed, while the urethral sphincter muscles contract to keep the urethra closed, preventing urine from leaking out.

When it's time to empty the bladder, the voiding phase begins. The detrusor muscle contracts to squeeze the urine out of the bladder, while the urethral sphincter muscles relax to allow the flow of urine through the urethra and out of the body. This coordination between the detrusor muscle contraction and the relaxation of the urethral sphincter muscles ensures efficient and complete emptying of the bladder during urination.

Unfortunately though, hormonal, bacterial, age and other conditions may cause problems with the functioning of the lower urinary tract leading to the need for an evaluation by a healthcare professional to find the cause. Often Urodynamics form part of this evaluation process.





What are the symptoms and reasons that might require a urodynamic test?

- **Urinary Incontinence:** If you experience involuntary urine leakage, a urodynamic test can help determine the underlying cause, such as stress incontinence or overactive bladder.
- **Urinary Retention:** Difficulty emptying the bladder completely or experiencing a weak urine stream may warrant urodynamic testing to evaluate bladder function and identify any obstructions.
- **Overactive Bladder:** Frequent, urgent, and uncontrollable urges to urinate can be evaluated using urodynamic testing to assess bladder muscle function and coordination.
- **Neurological Conditions:** Urodynamic testing is often utilized in patients with neurological conditions such as spinal cord injury, multiple sclerosis, or Parkinson's disease to evaluate bladder function and identify any neurogenic bladder dysfunction.
- **Recurrent Urinary Tract Infections:** In cases of recurrent urinary tract infections, urodynamic testing may be necessary to investigate if there are any underlying bladder or urinary tract abnormalities contributing to the infections.
- **Preoperative Evaluation:** Prior to certain surgical procedures involving the urinary system, urodynamic testing may be performed to assess bladder function and guide treatment decisions.
- **Evaluation of Treatment Effectiveness:** Urodynamic testing can also be used to assess the effectiveness of previous treatments or interventions for urinary conditions, helping healthcare professionals adjust the treatment plan accordingly.

It's important to note that the decision to undergo urodynamic testing is made on an individual basis by a healthcare professional, taking into consideration the patient's specific symptoms, medical history, and overall clinical presentation.

Does everyone with bladder or urinary symptoms require urodynamic testing?

No, but they may be useful in the following situations:

- If you have a mixture of symptoms rather than one specific problem, which makes diagnosis less certain.
- To exclude abnormal bladder behaviour before surgery.
- To investigate symptoms further if previous treatment has not improved your condition or your symptoms have changed.

What are the types of urodynamic tests?

Several different tests are used to examine how well the bladder and urethra are functioning. We'll describe these briefly, but for more information please look here about what they involve.

- **Uroflowmetry** measures the volume of urine released from the body, the speed at which it is released, and how long the release takes. It can indicate problems with bladder emptying or an underactive bladder muscle.
- **Post Void Residual Testing (PVR)** can tell if you've completely emptied your bladder. A small amount of residual urine is generally normal, but large amounts can be concerning for urinary retention. This is non-invasive and performed through an ultrasound scan.
- **Cystometric testing** measures how much urine the bladder can hold. It also measures pressure inside the bladder, and how full it is when you have the urge to go. These tests can help to determine how well the sphincter muscles are functioning.
- **A pressure flow study** measures how much pressure a bladder needs to urinate and how quickly the urine flows at that pressure. It helps clinicians identify conditions such as anterior vaginal wall prolapse.
- **Electromyography (EMG)** is used if the urinary problem is related to nerve or muscle damage. EMG uses special sensors to measure the electrical activity of the muscles and nerves in and around the bladder and sphincters. They should be able to show the clinician if the bladder and pelvic floor muscles are coordinating correctly.

How to prepare and what to expect

Depending on the symptoms, a clinician will decide which tests to perform, and generally, no special preparation is needed. You will need to inform them about any medication you take as it might need to be paused temporarily. Results from cystometry and uroflowmetry will be given there and then, but other test results may take a few days. You will then be offered treatment options.

Mr Eric Mutema
Consultant Obstetrician and Gynaecologist
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The Lancashire Gynaecologist

If your symptoms concern you, please contact Mr Eric Mutema, The Lancashire Gynaecologist. His practice offers general obstetrics and gynaecology patient care, but also treats specific conditions. Urogynaecology is a specific area of his expertise. He offers urodynamic testing and treats conditions like urinary incontinence, vaginal prolapse, and obstetric anal sphincter injuries.

He will investigate every possible problem that may have been missed by previous investigations.

Mr Mutema offers individual attention, an empathetic, compassionate approach and patient-centred care. This includes a full consultation taking overall health into account and subsequent treatments will be tailored to meet the needs of the individual woman.

Please don't put off seeking treatment if you have any concerns or the symptoms described above. Get in touch, we are here to help you.



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