



# GHADIALI

## General Surgery

### P R E S E N T S

Dr. Mufa T. Ghadiali is skilled in all aspects of General Surgery.  
His General Surgery Services include:

- General Surgery
- Advanced Laparoscopic Surgery
- Surgical Oncology
- Gastrointestinal Surgery
- Hernia Surgery
- Endoscopy

## Urodynamics

Multimedia Health Education

### *Disclaimer*

This film is an educational resource only and should not be used to make a decision on **Urodynamics**. All such decisions must be made in consultation with a physician or licensed healthcare provider.

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GHADIALI

## MULTIMEDIA HEALTH EDUCATION MANUAL

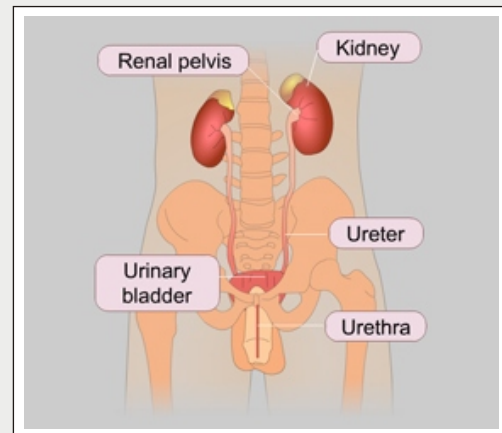
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## What is Urodynamics?

If you have a problem with urine leakage or blocked urine flow, one of the tools your doctor may use to evaluate the cause of your symptoms is urodynamic testing.

Urodynamics is a study that assesses how the bladder and urethra are performing their job of storing and releasing urine.



**(Fig.1)**

Several muscles, organs, and nerves are involved in collecting, storing, and releasing urine. The kidneys form urine by filtering wastes and extra water from the bloodstream. The ureters are tubes that carry urine from the kidneys to the bladder. The bladder stores urine until you are ready to empty it. The bladder opens into the urethra, the tube that allows urine to pass outside the body.

Problems in the urinary system can be caused by aging, illness, or injury.

*(Refer fig. 1 )*

## Unit 2:

## Purpose of Urodynamics

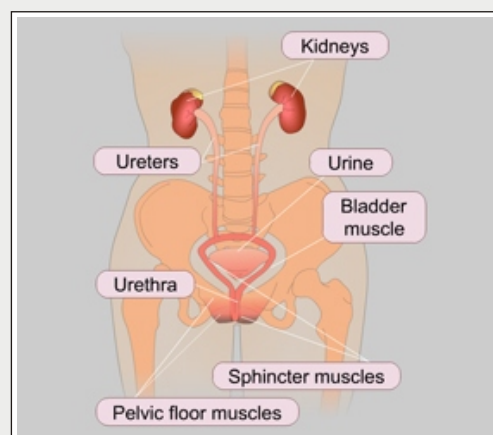
### Why is Urodynamics Test Performed?

Urodynamic tests help your doctor and nurse see how well your bladder and sphincter muscles work and can help explain symptoms such as:

- Incontinence
- Frequent urination
- Sudden, strong urges to urinate
- Problems starting a urine stream
- Painful urination
- Problems emptying your bladder completely
- Recurrent urinary tract infections

These tests may be as simple as urinating behind a curtain while a doctor or nurse listens or more complicated involving imaging equipment that films urination and pressure monitors that record the pressures of the bladder and urethra.

*(Refer fig. 2)*



**(Fig.2)**

## Unit 3:

## Procedure

**Preparing for an Urodynamics Test**

If the doctor or nurse recommends bladder testing, usually no special preparations are needed, but make sure you understand any instructions you do receive.

Depending on the test, you may be asked to come with a full bladder or an empty one. Also, ask whether you should change your diet or skip your regular medicines and for how long.

*(Refer fig. 3 )*

**How is the test performed?**

Any procedure designed to provide information about a bladder problem can be called an urodynamic test. The type of test you take depends on your problem.

Most urodynamic testing focuses on the bladder's ability to empty steadily and completely. Urodynamic tests can range from simple observation to precise measurement using sophisticated instruments.

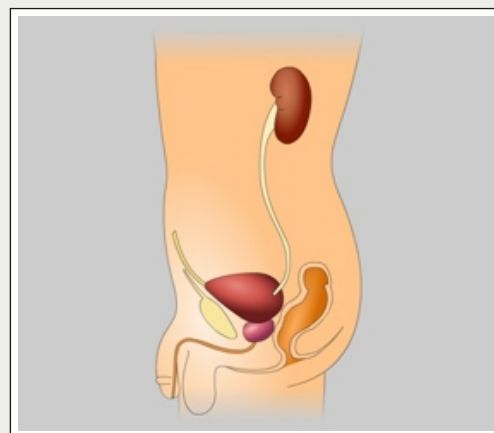
*(Refer fig. 4 )*

**Uroflowmetry:**

An uroflowmeter automatically measures the amount of urine and the flow rate. You may be asked to urinate privately into a toilet that contains a collection device and scale.

This equipment creates a graph that shows changes in flow rate from second to second so your doctor can see the peak flow rate and how many seconds it took to get there. Results of this test will be abnormal if the bladder muscle is weak or urine flow is obstructed.

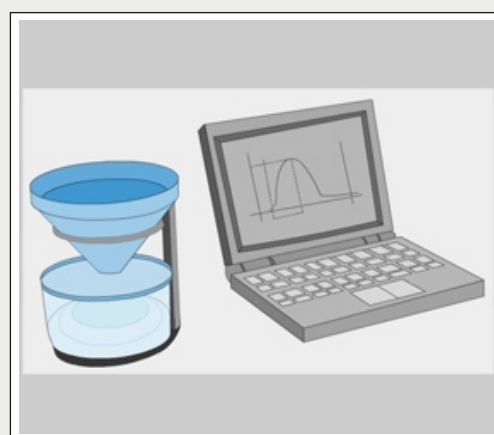
*(Refer fig. 5 )*



**(Fig.3)**



**(Fig.4)**



**(Fig.5)**

## Measurement of Postvoid Residual:

After you have finished, you may still have some urine, usually only an ounce or two, remaining in your bladder. To measure this postvoid residual, the doctor may use a catheter, a thin tube that can be gently glided into the urethra.

He or she can also measure the postvoid residual with ultrasound equipment that uses harmless sound waves to create a picture of the bladder. A postvoid residual of more than 200 mL, about half a pint, is a clear sign of a problem.

Even 100 mL, about half a cup, requires further evaluation. However, the amount of postvoid residual can be different each time you urinate.

(Refer fig. 6 )

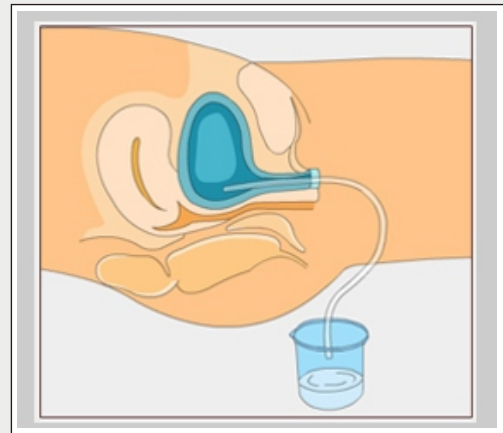
## Cystometry:

A cystometrogram (CMG) measures how much your bladder can hold, how much pressure builds up inside your bladder as it stores urine, and how full it is when you feel the urge to urinate. The doctor will use a catheter to empty your bladder completely.

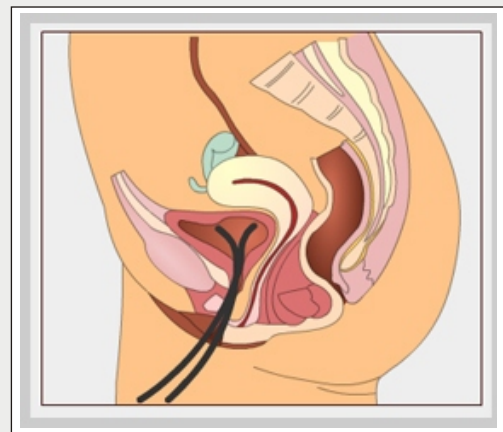
Then a special, smaller catheter will be placed in the bladder. This catheter has a pressure-measuring device called a manometer. Another catheter may be placed in the rectum to record pressure there as well. Your bladder will be filled slowly with warm water.

During this time you will be asked how your bladder feels and when you feel the need to urinate. The volume of water and the bladder pressure will be recorded. You may be asked to cough or strain during this procedure. Involuntary bladder contractions can be identified.

(Refer fig. 7 )



(Fig.6)



(Fig.7)

**Measurement of Leak Point Pressure:**

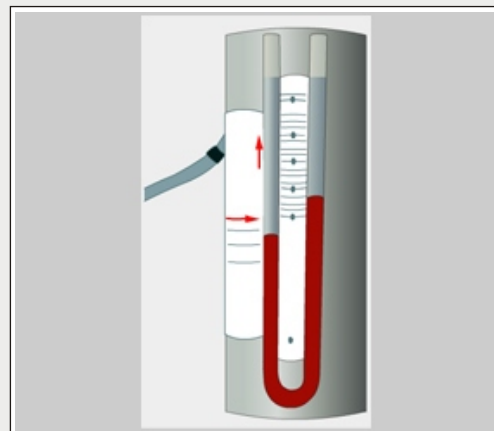
While your bladder is being filled for the CMG, it may suddenly contract and squeeze some water out without warning. The manometer will record the pressure at the point when the leakage occurred. This reading may provide information about the kind of bladder problem you have. You may also be asked to apply abdominal pressure to the bladder by coughing, shifting position, or trying to exhale while holding your nose and mouth. These actions help the doctor evaluate your sphincter muscles.

*(Refer fig. 8)*

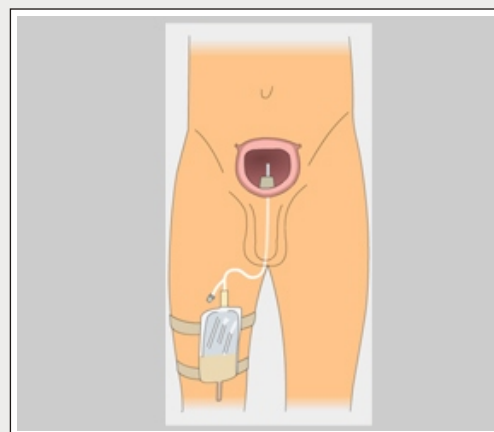
**Pressure Flow Study:**

After the CMG, you will be asked to empty your bladder. The catheter can measure the bladder pressures required to urinate and the flow rate a given pressure generates. This pressure flow study helps to identify bladder outlet obstruction that men may experience with prostate enlargement. Bladder outlet obstruction is less common in women but can occur with a fallen bladder or rarely after a surgical procedure for urinary incontinence. Most catheters can be used for both CMG and pressure flow studies.

*(Refer fig. 9)*



**(Fig.8)**

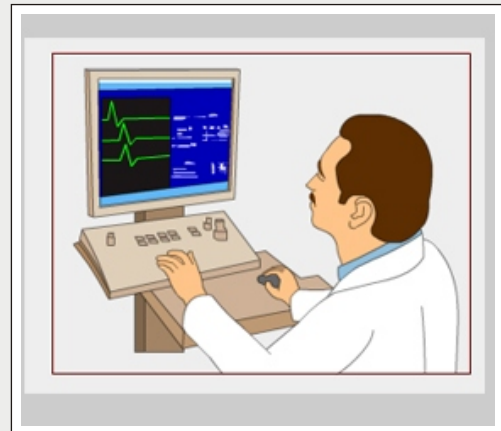


**(Fig.9)**

## Electromyography:

If your doctor feels that your urinary problem is related to nerve or muscle damage, you may be given an electromyography. This test measures the muscle activity in and around the urethral sphincter by using special sensors. The sensors are placed on the skin near the urethra and rectum or they are located on the urethral or rectal catheter. Muscle activity is recorded on a machine. The patterns of the impulses will show whether the messages sent to the bladder and urethra are coordinated correctly.

*(Refer fig. 10)*

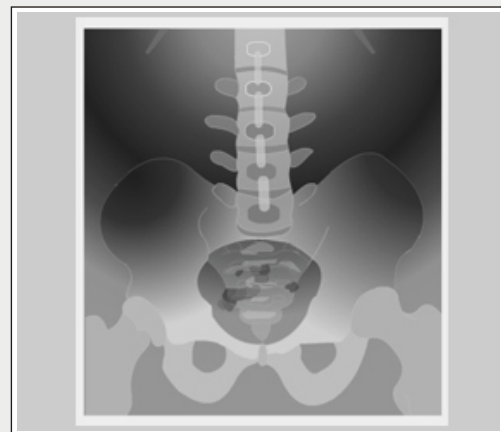


**(Fig.10)**

## Video Urodynamics:

Urodynamic tests may be performed with or without equipment to take pictures of the bladder during filling and emptying. The imaging equipment may use x rays or sound waves. If X-ray equipment is used, the bladder will be filled with a contrast medium that will show up on the X-ray instead of the warm water. The pictures and videos show the size and shape of the urinary tract and help your doctor understand your problem.

*(Refer fig. 11)*



**(Fig.11)**



## What are the Risks of an Urodynamics Test?

Following urodynamics a small number of patients may experience minor problems.

The most common are:

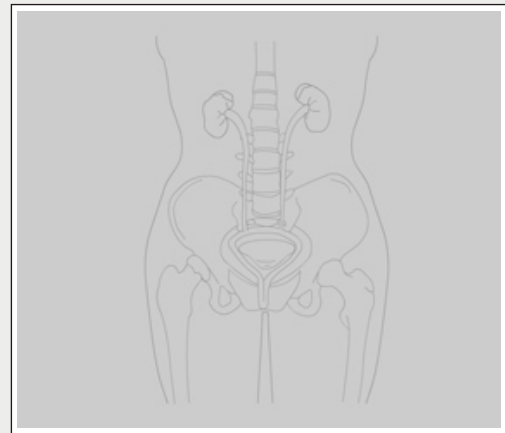
- Passing urine more often
- Traces of blood in the urine
- Mild discomfort when you urinate

All these symptoms are temporary and should go away quickly.

Your doctor may prescribe an antibiotic to take for a few days to prevent an infection depending on the type of urodynamic testing you had performed.

If you experience pain with urination, chills, or fever, call you doctor right away.

*(Refer fig. 12)*



**(Fig.12)**

Although every effort is made to educate you on **URODYNAMICS** and take control, there will be specific information that will not be discussed. Talk to your doctor or health care provider about any concerns you have about **URODYNAMICS**.

**YOUR SURGERY DATE**

**READ YOUR BOOK AND MATERIAL**

**VIEW YOUR VIDEO /CD / DVD / WEBSITE**

**PRE - HABILITATION**

**ARRANGE FOR BLOOD**

**MEDICAL CHECK UP**

**ADVANCE MEDICAL DIRECTIVE**

**PRE - ADMISSION TESTING**

**FAMILY SUPPORT REVIEW**

**Physician's Name :** \_\_\_\_\_

**Patient's Name :** \_\_\_\_\_

**Physician's Signature:** \_\_\_\_\_

**Patient's Signature:** \_\_\_\_\_

**Date :** \_\_\_\_\_

**Date :** \_\_\_\_\_