



LABORIE URODYNAMICS SYSTEM CYSTOMETROGRAM PROCEDURE

1. Turn on computer.
2. Point mouse arrow at "CMG" and click. This opens up CMG test.
3. Point mouse arrow at "Info" and click.
Then point at "Patient info" in drop-down menu and click. This opens patient information box. Use mouse and keyboard to fill in data. You can use tab key to move around in this box. Click on OK when finished.
4. Catheterise patient. Cut tip off rectal balloon for easier set up.
Insert filling catheter and thin pressure catheter into bladder. These catheters can be inserted inside each other (thin catheter inside end of fat catheter) but must be pulled apart once inside bladder by holding on to thin catheter firmly and pushing large filling catheter forward. **IMPORTANT** when joining catheters together outside bladder insert thin pressure catheter into filling catheter lumen just a short distance so that the 2 catheters pull apart easily when inside the bladder. After catheters have been separated inside bladder, push both catheters forwards to ensure they are well inside the bladder. The thin pressure catheter can then be pushed a little further to ensure it does not come out of the bladder during the voiding part of the test.
Insert rectal balloon until it is past the anal sphincter. (1cm cut off end of balloon)
5. Connect extension tubing and 3-way stopcocks to top of transducer dome. (See drawing)
6. Connect a 20ml syringe of saline to bottom of transducer dome.
7. Ensure stopcocks on top of dome are in the "run" position and slowly flush syringe to fill transducer dome and extension tubing.
8. Connect extension tubing to catheters and continue to flush syringes through to the patient until all tubing and catheters are completely filled with saline with no bubbles in tubing or transducer domes. This "column" of saline allows for the pressure in the bladder and abdomen to be "transmitted" back to the pressure transducers.
- 8a. Hang a 1000ml bag of normal saline on the infusion transducer and connect the infusion set to the filling catheter. Do not turn on infusion yet. Tape down the infusion line to the drip strand above the infusion controller. This avoids pulling down on the saline bag when working the controller. (Pulling down on the saline bag and infusion transducer will cause an artifact on the VH₂O infusion channel on screen).



9. Now set zeros.

Open transducer domes to air and close to patient by using 3-way stopcock tap on top of the 2 transducers (see drawing). Ensure beaker on top of uroflow transducer is empty. Point computer mouse at "set zeros" and click. This opens up the set zero box on left hand side of screen. Point mouse at "All" and click. This sets all transducer values to zero.

10. Now turn the 2 stopcock taps so that the transducer is closed to air and open to the patient. (turn position – see drawing). Never rotate transducer taps through 360 as this can let air into the catheters.

11. Look at the values for Pves and Pabd on right hand wide of screen. They should be positive. A negative value is incorrect. Height of transducers should be level with patient's bladder. If too high the on-screen pressures will be less than zero. Quite often the value for Pabd will be greater than Pves until some fluid runs into the bladder.

Run the test but do not start infusion yet and ask the patient to cough. The pressure spike generated by the cough on screen should be equal in Pves and Pabd channels. There should be no indication of pressure in the Pdet channel because mathematically Pves minus Pabd equals Pdet. A very small flick of pressure in the Pdet channel is acceptable, as subtraction is not always perfect.

If there is a large "flick" of pressure in Pdet (negative or positive) then there is a problem with the Pabd or Pves catheters. The channel with the lower flick of pressure on screen indicates the problem catheter. Check to see that both pressure catheters are inside the bladder and rectum (past the anal sphincter) check the lines are full of fluid with no bubbles.

Check the transducers are at the level of the patient's bladder. (not above, giving a negative reading). Zero the system to air again and try the cough test.

12. If the cough test produces a flick of pressure in Pves and Pabd channels which is equal (i.e. nil or very little flick of pressure in Pdet channel) then proceed with the test. The infusion set or pump can be adjusted to fill the bladder in the range 50-100ml/minute.

13. Gradually fill the bladder. Ask the patient to cough approximately every 30-60 seconds throughout the test to check the catheters are still measuring accurately. A patient cough should always produce equal pressures in Pves and Pabd channels and nil pressure in Pdet channel. If the catheters are faulty at any stage the test can be "paused" by turning off infusion and mouse clicking on "STOP" to stop the test running on screen. The catheter can then be re-adjusted and the test resumed by clicking on "RUN" and resuming infusion. Use the mouse to point at "1st sen" to mark on the graph when the patient advises you that he/she feels the 1st sensation of water going into the bladder. "1st urge" is when the patient tells you they want to void (1st urge to void). Capacity volume is when the patient is urgently wanting to void.

14. When patient is ready to void turn off infusion and stop the test (point mouse at stop and click).



15. Remove large filling catheter.

Patient gets off examination table and moves to commode chair.

Run test again and ask patient to void with rectal and bladder catheters still in situ.

Catheters should be taped to the patients' leg or penis to stop them coming out during voiding. Ask the patient to cough before voiding to check that the catheters are still in situ. When patient has finished voiding stop the test. The patient should cough before and after the void to confirm the catheters are still accurately measuring the pressure.

16. When the test has been stopped it is important to look at the Uroflow summary. Select "Info" and "Uroflow summary" in drop down menu. Click on "options" and "change" in the Uroflow options box. This brings the pressure/flow graph on screen. Move the mouse pointer to the beginning of the patient's uroflow curve on the flow part of the graph and click and drag the mouse from the beginning of the patients flow curve to the end of this curve. This puts 2 red lines at the beginning and end of uroflow and tells the computer we are only interested in this part of the curve for our calculations. Click on "CONFIRM" and "OK" in the next box and then the normalized Uroflow summary box will appear. You can type in the correct PVR (Post Void Residual) or type in zero.

Click on OK and you will return to the patient's test now showing with dotted lines the beginning and end of Uroflow and the peak flow.

17. Click on "OPTIONS" and "XY plot" and "URA" in drop down menu. This brings up a plot of Flow and Pressure. (Abrams-Griffiths nomogram) Click on "OPTIONS" and check that the times selected for START and END correspond with the times of the patients Uroflow start and end. If not you can type in the correct time for start and end so that this graph is correct. Remember to type in the time in for format M:SS (M=minutes, SS=seconds). You can read the minutes and seconds along the top of the patients test. Each small division is 5 seconds.

HINT: You can find these times by selecting cursor (press F9 on keyboard) and running the cursor along the screen.

18. Now save the test by "clicking" on "File" in top left hand corner of screen and "save as" in the drop down menu.

IMPORTANT: If you have saved an earlier test for this patient immediate to this test (e.g. a Uroflow test) you must give this test a new file number or it may save this test over the top of the previous test (the computer will prompt you to do this) It is easy to do: just use the mouse and keyboard to add a suffix (eg "a") to the file number.



19. Now you can print the test.

Click on print button in the top right hand corner of screen.

This brings up “print options” starting in the top left hand corner and working down the 3 columns use the mouse to select the print options you want. e.g. For a Uroflow test only just click on “Uroflow report” nothing else is needed except for “Number of copies” required.

For a CMG study, click on “UDS Report” and select the following:

- Graph pages
- Report pages
- Addressograph or Standard report
- History (only if you have already typed in patient history under the “info” button – see point 3)
- Uroflow summary
- Event summary
- URA (pressure / flow graph)
- WF (bladder power graph – Watts Factor)
- Diagnosis (only if you have already typed in diagnosis under “info” button)
- Print border
- Number of copies – select 1 or any number of copies you want printed)
- Grids – coarse
- Print range – default (the whole test)
- Select one page graph
- Click on OK and the printer will print the test

20. If you lose a patient file, the computer has a “back up” file system. Every time a test is stopped the computer automatically files that test in the back-up file. To access the back up file, click on file in top left hand corner of Urodynamics screen and select “open” in the drop down menu. This opens the patient files. In the top right hand corner of this screen is a small box labeled “View”. Click on the down arrow and select “Back up”. This brings the back up file on screen. Back up file numbers correspond to the date (American system) and time a test was stopped. Open the test you want to bring up on screen. If it is the test you want to save to the normal patient file then click on “file” and “save as”. The “save test file” box appears with the back up file number highlighted in blue.

You must now give this file a new data file name ending in the suffix “.DTA” to tell the computer where to save this file. This can simply be done by pointing the mouse at the back up file suffix.”TA and changing this to .DTA using the computer back space key and key board or typing in a whole new file name in the format: C:\DATA\12345.DTA

Where 12345 is your new file name. You can use patient’s medical record number as the file name if you wish (maximum of 8 digits).

Now click on “Save” and the back up file is now saved in the normal Patient Test File records.



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