



ANORECTAL MANOMETRY (ARM) DIAGNOSTIC PROCEDURE

Quick Reference Guide

(Adult Guidelines using the Standard mcompass® Catheter)

Login

Turn on Tablet. Swipe up. Enter Password.

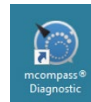
Double-click the mcompass program icon

Tap “Diagnostic Anorectal Manometry” button

Select User. Initial user is “Admin”

Open keyboard – tap keyboard icon on lower far right corner of screen

Enter case-sensitive password. **Initial password is Medspira123**



Note: The keyboard will hide automatically and you may need to click the icon in the lower right corner to pull it up again.

Enter Patient Data

Note: Steps 1 –21 may be performed before the patient is brought into the room for the test.

1. Enter patient data completely. Tap Next



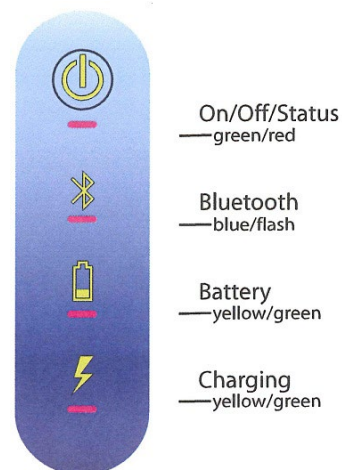
Only the patient ID is required to proceed.

Note: Complete all desired fields before tapping Next, as you cannot go back and add/change information once test has been completed.

Once an Indication, Physician, Referring Physicians, and Test Operator are entered, drop-down lists will be populated for ease of use.

Set Up – Bluetooth Connection

2. Make sure the Fob is charged and the charging plug is disconnected from the power source
3. Turn on the Fob by pressing “On/Off” button and wait until “On” light appears on Fob. All LEDs will be on for about 2 seconds.
4. You can proceed when you see steady green lights for On/Off and Battery, and one flashing blue light for Bluetooth.
5. Tap the “Connect Bluetooth” button on the screen
6. Wait for the flashing blue LED on the Fob to turn steady blue. This means you are connected to the Tablet.



7. Make sure the lever is in Position 1 “OPEN”



8. Tap Next on the screen



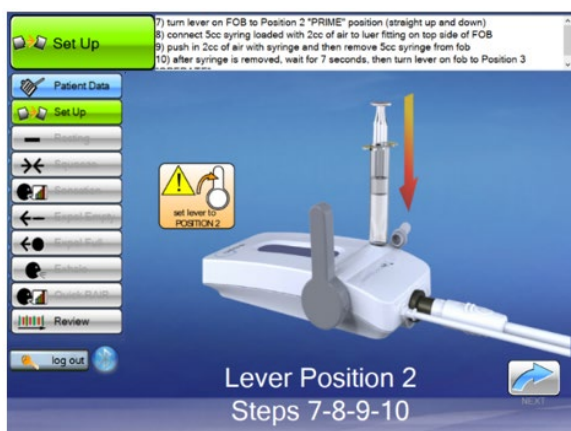
Note: If the Fob fails to connect through Bluetooth to Tablet, follow Tablet instructions.

The FOB should have 2 green lights and a blinking blue light in the middle, once the blue light becomes steady the Fob is connected via Bluetooth properly. If the Fob fails to connect through Bluetooth to the Tablet, follow the instructions outlined in our document labeled: *Troubleshooting Issues with the FOB:*

<https://medspira.com/support/anorectal-manometry-support/>

Set Up – Priming the Fob

13. Move the lever on the FOB to Position 2 “PRIME” position (Straight up and down)
 - Notch on top of Fob is to be aligned with the notch on the inside of the lever.
14. Load the 5cc syringe with **2cc to 3cc** of air
15. Connect the loaded 5cc syringe to luer fitting on top of the FOB. **DO NOT OVER TIGHTEN.**
16. Push in **2cc to 3cc** of air with syringe and keep thumb on plunger
 - ** Check that the 4 anal balloons filled with air.
17. While holding thumb on syringe plunger, untwist to remove the 5cc syringe from the FOB



18. Count to seven (7) before moving the lever to position 3 to let the air naturally bleed out of the balloons to normalize to the ambient room pressure.
19. Move lever on the FOB to position 3 “OPERATE” and replace the protective cap for the 5cc syringe to prevent contamination.
 - *Moving the lever to position 3 closes the airlock to the anal balloons*
20. Tap “NEXT”
21. Tap “PRIMED” on screen



Note: You may check the rectal balloon by filling it with 30cc to see that it fills and remains filled. Deflate the balloon before starting.



NOTE: Everything up to this point (steps 1-12) may be done prior to seeing the patient so when they arrive, you are prepared to begin the procedure.

Prepare for Testing:

Have the patient lie on their left side, knees raised toward stomach and stacked.

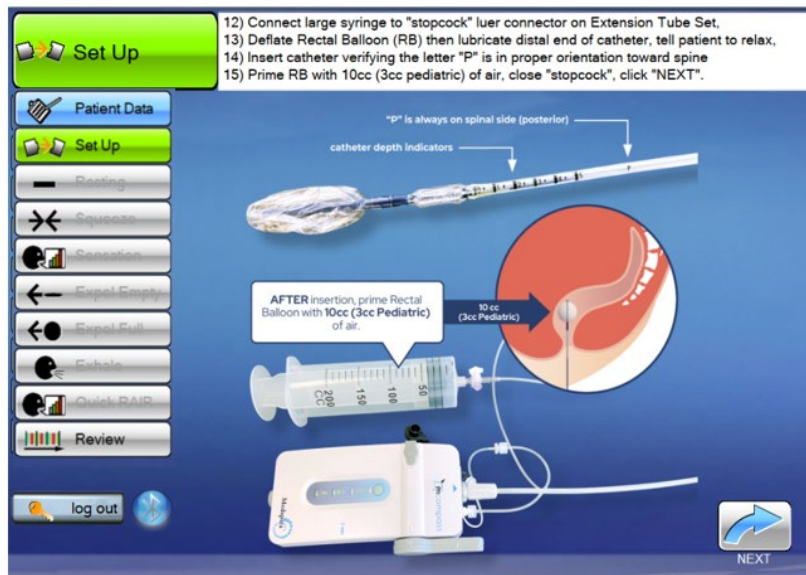
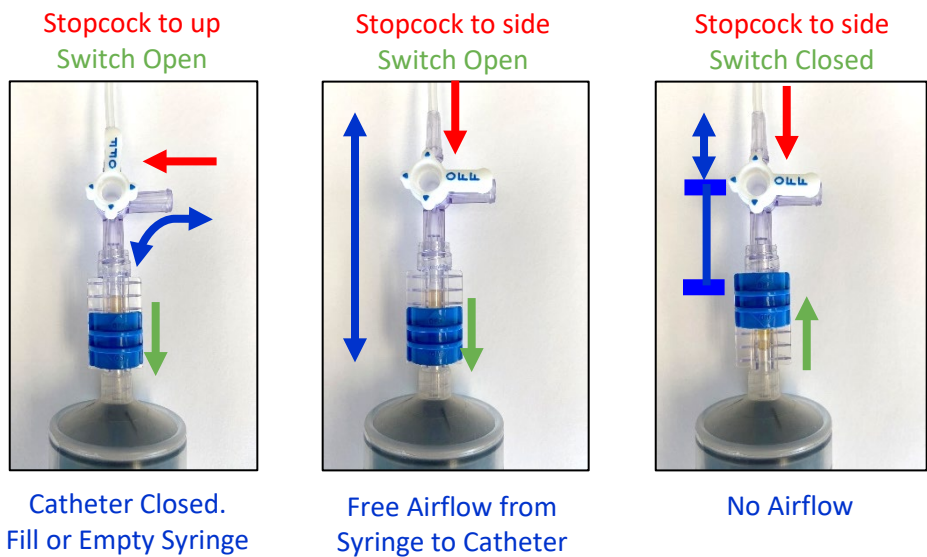
With the patient in position for the procedure,

- 1) Lubricate distal end of catheter device; instruct the patient to relax
- 2) Locate the letter "P" on the catheter and make sure it is in the proper posterior orientation (toward the patient's back)
- 3) Insert the catheter into the patient to position "0" at the anal verge
- 4) Using a large syringe, prime rectal balloon with 10cc of air [3cc for Petite] and lock the stopcock UP to the "Catheter Closed" position.

Note: this priming volume remains for every test and is not included in volumes entered




- 5) Press "Next"

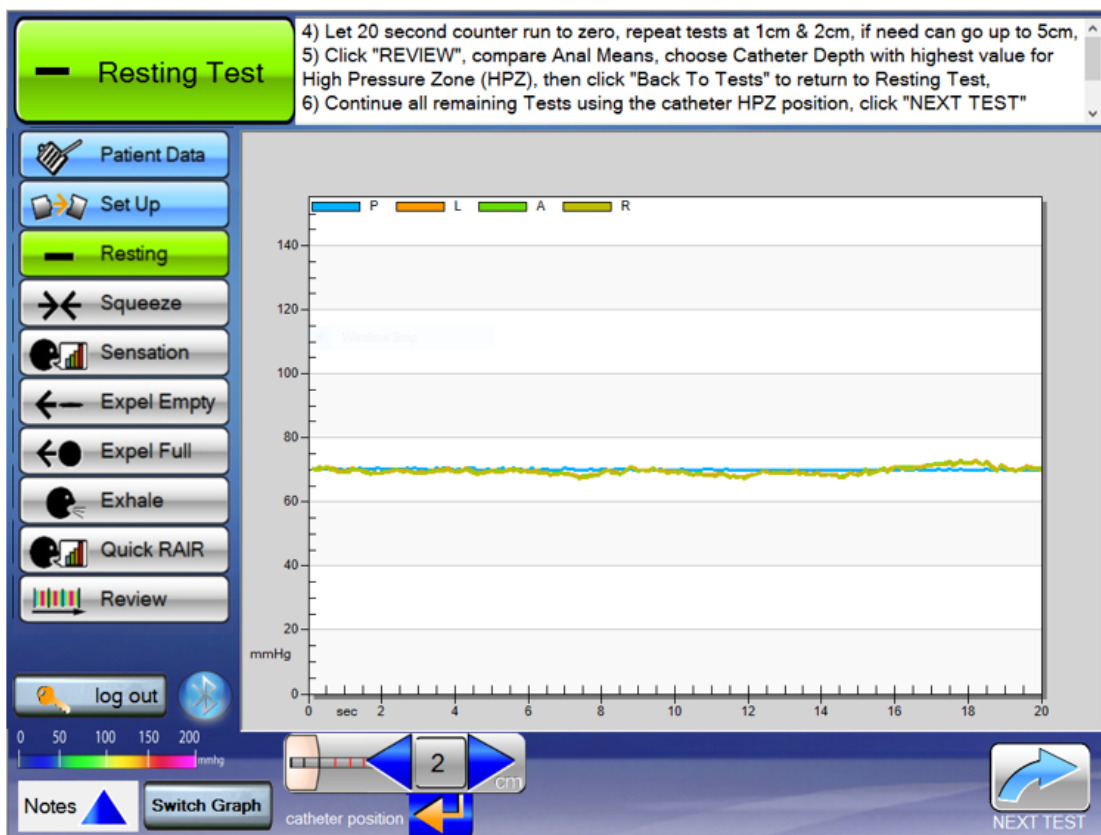
How to Use the Stopcock



At this point, the Set Up is complete.


Resting Test

- 1) Explain test to the patient. – They are just to relax while you determine in what catheter position their anal strength is the greatest.
- 2) Instruct the patient to relax
- 3) Catheters have position (depth) markings. Position the catheter at “0”, enter position at bottom of screen, tap enter , and tap “Run”
NOTE: The “run” icon will display five seconds after the catheter position is selected.
- 4) Let 20 second counter run to zero
- 5) Insert the catheter further into position “1”, enter position, tap enter , and tap “Run”
- 6) Insert the catheter further into position “2”, enter position, tap enter , and tap “Run”
- 7) Go to “Review”. Look for which ANAL MEAN is highest among the positions before decreasing.
 - **This position is the High Pressure Zone (HPZ).**
 - **Continue all remaining tests from this HPZ position.**
- 8) *If the pressure increases through position “2”, repeat the test at position “3” (and “4”, “5” if necessary). Tap “Back to Tests” to repeat tests.*
- 9) Enter any Notes (if appropriate), then tap “Next Test”




Continue the rest of the tests from the HPZ position.


Squeeze Test

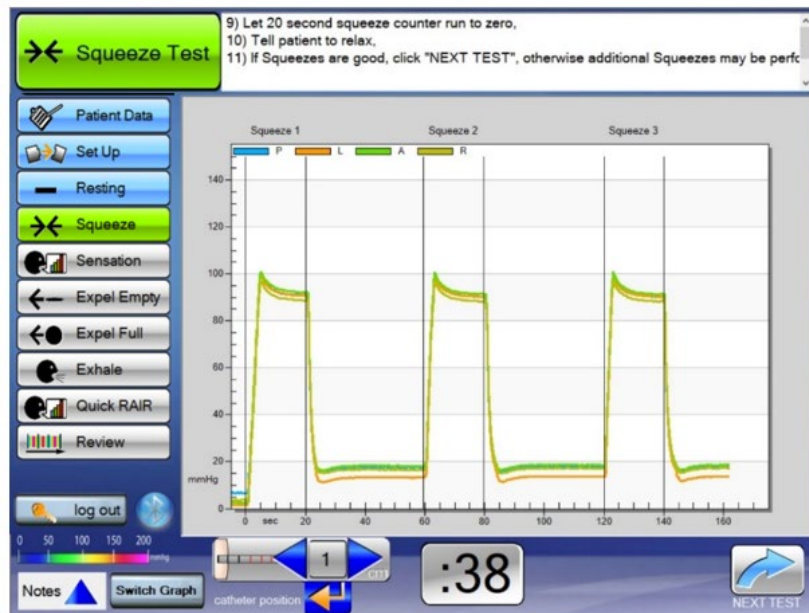
- 1) Explain the test to the patient. – They are to squeeze tight for as long and hard as they can, 3 times, simulating they are holding back a bowel movement.
- 2) Check catheter position in the patient is in the High Pressure Zone (HPZ), verify position on the bottom of the screen, tap enter 
- 3) Give the patient a countdown (3,2,1) and instruct the patient to squeeze as you tap “Run”
- 4) Let the counter run to zero. Ask the patient to relax; wait at least 30 seconds for patient to recover

Repeat -

- 5) Check catheter position in the patient is in the High Pressure Zone (HPZ), verify position on screen, tap enter 
- 6) Give the patient a countdown (3,2,1) and instruct the patient to squeeze as you tap “Run”
- 7) Let the counter run to zero. Ask the patient to relax; wait at least 30 seconds for patient to recover

Repeat -

- 8) Check catheter position in the patient is in the High Pressure Zone (HPZ), verify position on screen, tap enter 
- 9) Give the patient a countdown (3,2,1) and instruct the patient to squeeze as you tap “Run”
- 10) Let the counter run to zero. Instruct the patient to relax; wait at least 30 seconds for patient to recover



- 11) If more data required, check catheter position and tap “Run/Pause” again to repeat test (counter resets) or if test is good, enter Notes (if appropriate), then tap “Next Test”.

Perform 3 squeezes where the patient squeezes as hard as they can for 20 seconds. You will need to keep telling the patient to squeeze throughout the entire 20 seconds. You want them to not only squeeze hard but to hold it as long as possible. Tell the patient to squeeze like they're trying to hold in a bowel movement.

Sensation Test

Note: Quickly closing the Airflow Switch to maintain rectal pressure at each sensation mark is necessary to provide a meaningful Rectal Compliance Curve!

- 1) Explain the test to the patient. – You will be performing a series of 3 tests that are a continuation of each other, looking for the patient’s 1) first sensation, 2) desire to defecate, and 3) urgency to defecate. You will be adding volume (making it bigger) to simulate a stool.
- 2) Ask the patient to relax for 7 seconds – this provides the resting pressure needed for the report
- 3) Draw the large syringe back to 180cc (the balloon’s max volume) filling it with air
- 4) Check catheter position in the patient is in the High Pressure Zone (HPZ), verify position on screen
- 5) Tap the “Run” button

6) Determine First Sensation Marker:

- Instruct the patient to stay relaxed and to state when they feel anything different (sensation), than they do with just the catheter in there right now.
- Turn the stopcock to allow air to flow to the rectal balloon.
- Start by pushing in 20ccs of air (10cc for Petite). If the patient says nothing - continue to add 10cc (5cc for Petite) at a time. Once the patient has stated they feel the sensation, quickly close the Airflow Switch and tap the sensation box on the bottom of the screen as fast as possible.
 - Change the volume amount on the right-hand side to match the new current air volume in the rectal balloon.
 - Tap the yellow arrow next to adjusted volume amount to auto-populate the information in the **sensation** box.

7) Determine Desire Marker:

- Instruct the patient to state when they feel like they need to have a bowel movement soon, but there is nothing urgent about it. (*For example, you are watching TV, but could easily wait until the next commercial break.*)
- Open the Airflow Switch and continue to push air into the rectal balloon again. Slowly increasing the air volume, in the rectal balloon, by increments of 10ccs (5cc for Petite) at a time. Once the patient has stated they feel the desire, quickly close the Airflow Switch and tap the desire box on the bottom of the screen as fast as possible.
 - Change the volume amount on the right-hand side to match the new current air volume in the rectal balloon.
 - Tap the yellow arrow next to adjusted volume amount to auto-populate the information in the **desire** box.

8) Determine Urgency Marker:

- Instruct the patient to state when they feel as if they can no longer hold in their bowel movement. (*For example, you have been holding it but just cannot hold it any longer.*)
- Open the Airflow Switch and continue to push air into the rectal balloon again. Slowly increasing the air volume, in the rectal balloon, by increments of 10ccs (5cc for Petite) at a time. Once the patient has stated they feel the urgency, quickly close the Airflow Switch, and tap the urgency box on the bottom of the screen as fast as possible.
 - Change the volume amount on the right-hand side to match the new current air volume in the rectal balloon.
 - Tap the yellow arrow next to adjusted volume amount to auto-populate the information in the **urgency** box.



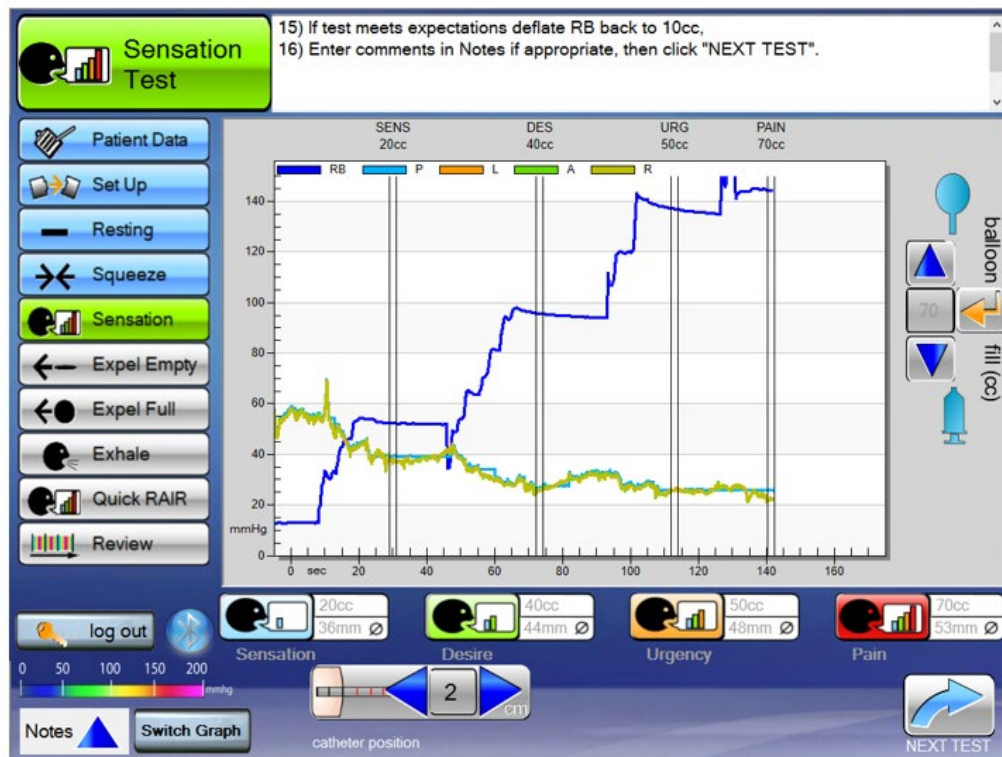
Continue adding air until an ‘Urgency to go’ is found, or you reach 180ccs of air, whichever comes first. **The balloon capacity is 180ccs of air, so be sure not to over-inflate.**

- 9) **Determine Pain Marker – OPTIONAL** Can jump to Step 10
 - Measuring to the ‘Pain’ level of this test is OPTIONAL. If the physician wants the additional data, this may be explained as testing for ‘Total Capacity’ rather than pain. For an example, express to the patient: ‘Let me know when you have a feeling that you can’t hold anymore.’
 - Otherwise, you are done with the test.
- 10) Remove all air from the rectal balloon and add back the baseline of 10ccs of air (3cc for Petite). Lock stopcock.
- 11) Enter any Notes (if appropriate), then tap “Next Test”
 - If any of the sensations are not felt before the balloon is at 180cc capacity, type a note stating the patient did not feel that sensation before maxing out the balloon at 180cc

RAIR (Recto-Anal Inhibitory Reflex) Determination

Determining the % drop in internal sphincter pressure from a resting state during Sensation Testing and defining the presence or absence of RAIR for the patient, is best left to the judgment of a physician.

The graphs available in the Review pages of the mcompass® system provide clear representations to confidently determine the presence of and pressure change from RAIR.





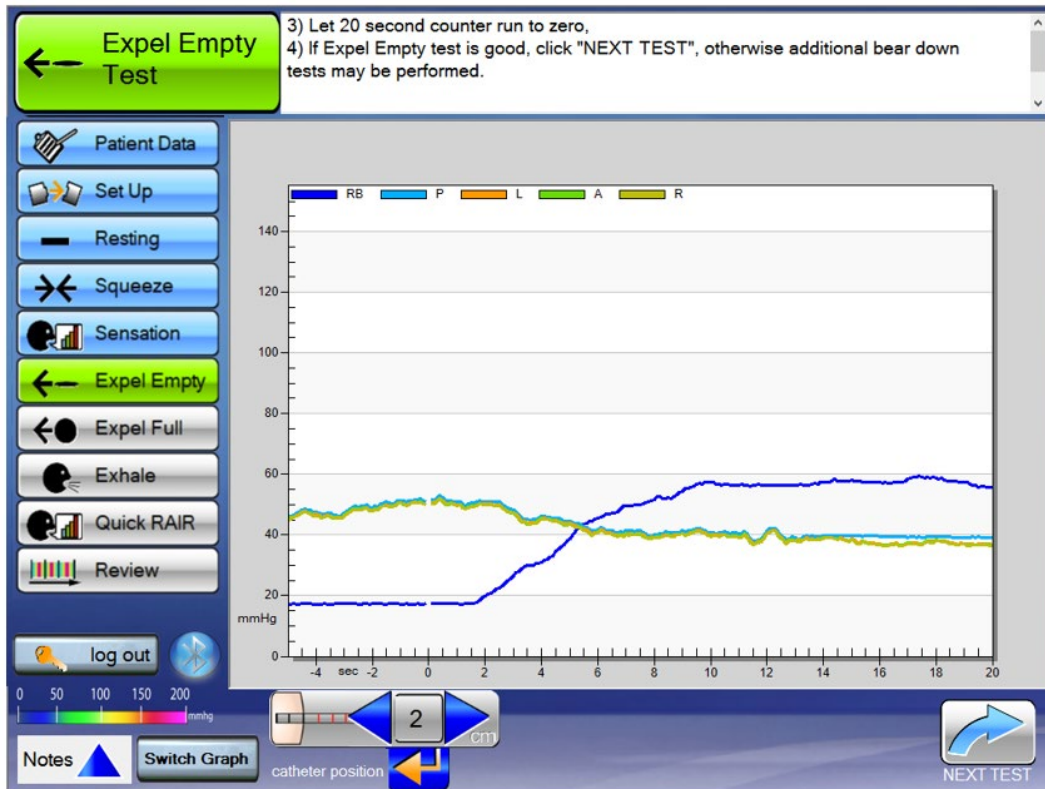
Note: Catheter position icon is located at the bottom center of the display and is fixed during this test. The Balloon Fill icon is on the right side of the display.

Note: When complete, return the rectal balloon to the original primed volume of 10cc's (3cc for Petite).


Note: Tap on the “Sensation” icon at left to repeat the test at any time.

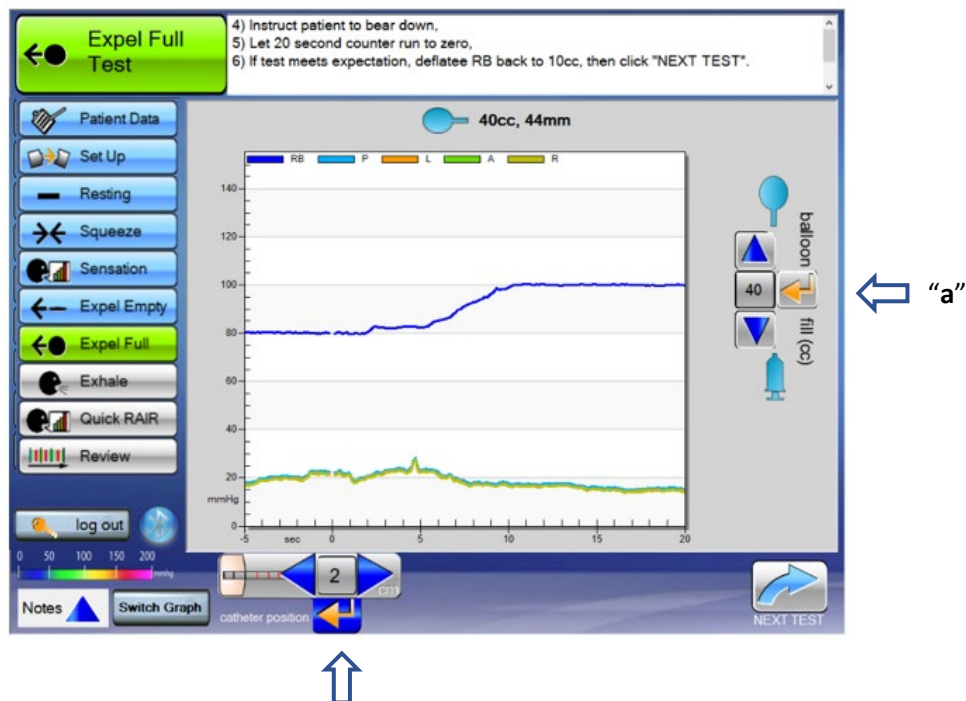
Expel Empty Test

1. Explain the test to the patient. – They are to “bear down” like they are trying to push out a stool.
2. Check catheter position in the patient is in the High Pressure Zone (HPZ), verify position on bottom of the screen, tap enter , and tap “Run”
3. Give the patient a countdown (3,2,1) and instruct the patient to bear down / push and keep pushing for 20 seconds as you tap “Run”
4. Let 20 second counter run to zero. Tell the patient to relax
5. If more data required, return to the Expel Empty Test  and repeat the test.
6. Enter Notes (if appropriate).



Expel Full Test


- 1) Explain the test to the patient. – Same exact test as the Expel Empty. This time a small amount of air will be added to simulate stool in the rectum.
- 2) Fill the distal balloon to the volume of air where the patient indicated they felt **Sensation** from the previous test. Add 10cc (5cc for Petite) to this volume for this test and lock the stopcock.
 - OPTION: **Standard Catheter - Ages ~ >6:** Inflate rectal balloon with 50-60cc. Lock the stopcock.
 - OPTION: **Petite Catheter - Ages ~ <6:** Inflate rectal balloon with 10-40cc (infant-child). Lock the stopcock.
- 3) Enter the volume (cc's) on the right (see “a” in diagram).
- 4) Check catheter position in the patient is in the High Pressure Zone (HPZ), verify position on bottom of the screen, and tap enter 
- 5) Give the patient a countdown (3,2,1) and instruct the patient to “bear down” as if defecating – “push, keep pushing...” – for 20 seconds as you push “Run”
NOTE: Many patients will be reluctant to actually relax their anal sphincter and push from their rectum as if defecating for fear of an embarrassing passing of gas or stool expulsion. You must encourage an honest effort from your patient to obtain useful results.
- 6) Let counter run to zero
- 7) Open the stopcock, remove all air from the rectal balloon and add back the baseline of 10ccs of air (3cc for Petite). Lock stopcock.
- 8) Enter notes if appropriate and tap “Next Test”.
- 9) If more data required, return to the “Expel Full” test and repeat the test.

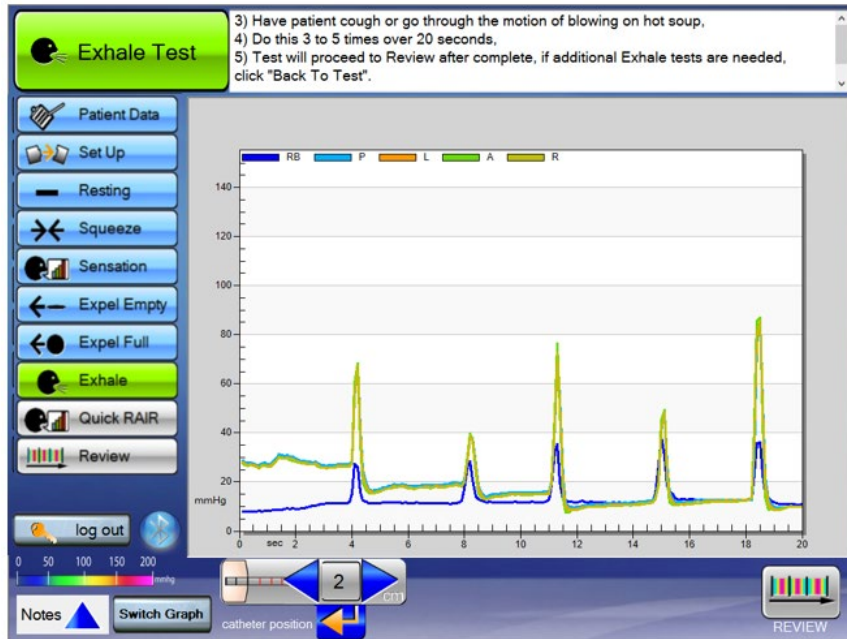


Before the test will run, you must make sure to enter the Catheter Position and enter the Amount of Air (“a”) you injected into the balloon. Then the Run button will appear.

Note: When complete, return the rectal balloon to the original primed volume of 10cc (3cc for Petite).

Exhale Test

- 1) Explain the test to the patient. – They are to do a series (3 to 5) of good deep coughs or hard concentrated blows (like blowing up a balloon) over 20 seconds.
- 2) Check catheter position in the patient is in the High Pressure Zone (HPZ), verify position on screen, tap enter , and tap “Run”
- 3) Have the patient cough, or blow hard, or orally inflate a standard balloon
- 4) Let 20 second counter run to zero

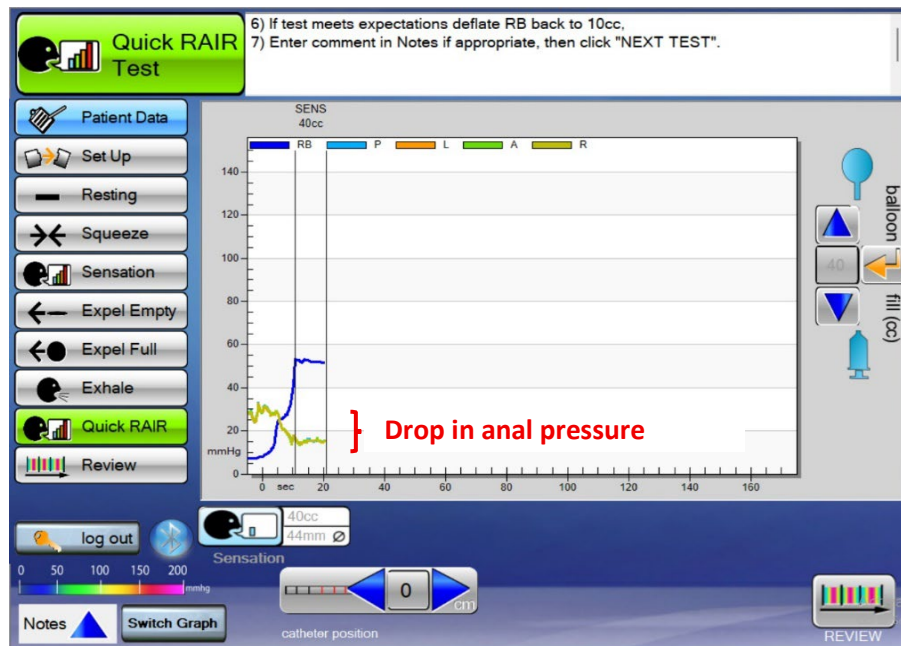


It is important to coach the patient to cough one at a time. They could begin a coughing fit and that will not provide the results needed, so coach them to cough just once every several seconds.

Quick RAIR Test - Optional

Note: Closing the Airflow Switch to maintain rectal pressure when sensation/RAIR is marked is necessary to provide a meaningful RAIR value!

- 1) Explain the test to the patient. You will add volume to the rectal balloon fairly quickly to simulate a stool which should cause the patient to feel the sensation of fullness and trigger a RAIR response.
- 2) Fill the large syringe with 180cc of air.
- 3) Ask the patient to relax for 7 seconds – this provides the resting pressure needed for the report.
- 4) Tap the Green Arrow (run) button.
- 5) **Determine a RAIR % value:**
 - Instruct the patient to state when they feel like stool is present in their rectum (sensation).
 - Turn the stopcock to allow air to flow to the rectal balloon.
 - Quickly inflate the balloon by adding 20ccs of air per second (5cc for Petite) until the patient states they feel the sensation of stool in the rectum. Once the patient has stated they feel the sensation, close the stopcock or Airflow Switch as fast as possible and quickly tap the **Sensation box** at screen's bottom.
 - Enter the rectal balloon fill volume amount on the right-hand side (tap blue arrows).
 - Tap the yellow arrow next to "balloon fill" amount to set the RAIR value & complete test.
 - **For Infants / Toddlers –**
Because very young children cannot state their feeling of sensation, the clinician must watch the graph to observe when RAIR occurs.
 - Quickly inflate the balloon by pushing in **5cc of air per second** until you observe the anal pressures drop noticeably.
 - Close the stopcock or Airflow Switch as fast as possible and quickly tap the **Sensation box** at screen's bottom.
 - Enter the rectal balloon fill volume amount on the right-hand side (tap blue arrows).
 - Tap the yellow arrow next to "balloon fill" amount to set the **RAIR** volume & complete test.

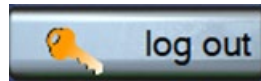


Note: To repeat the test, click on a different test at left, then click on the "Quick RAIR" icon.

Note: At any time during any test notes may be added to the test report by tapping the Note tab located on the lower left corner of the screen.

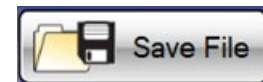
Once you have completed this test, the patient is all done.

ALWAYS LOG OUT AFTER EACH PROCEDURE!



The mcompass® software is continuously saving the data into the mcompass database as the tests are being performed. There is no save button at the end of the test.

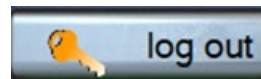
The Save File button at the end of the test is to save the test as an encrypted XML file, not to save the test into the mcompass database.



When performing mcompass tests back-to-back, with multiple patients, logging out is critical.

By only clicking the Save File button, then going back to the Patient Data and re-priming, does not start a new test on a new patient! This will continue the existing test and the patients' data will get mixed up.

You must first end the completed test by clicking the Log Out button.



Then log back into Diagnostics Anorectal Manometry to start a new test with a new patient.

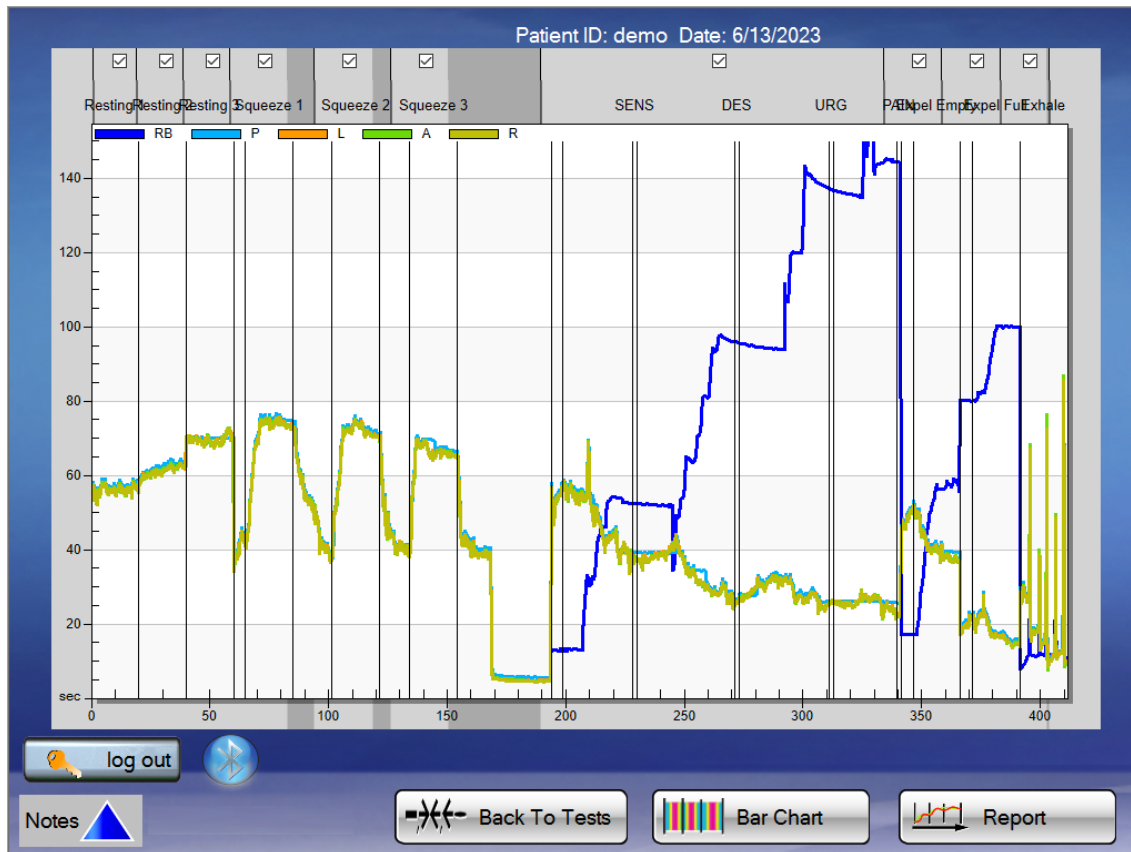


Catheter Removal Process

- 1) Remove all air from the catheter
- 2) Disconnect reusable extension tube from the catheter - *or* - Disconnect catheter assembly from Fob
- 3) Remove the catheter from the patient – You may place a glove over the top of the contaminated balloon to prevent further contamination
- 4) Safely dispose of the catheter

Clean Up Process

- 1) Return Fob handle to Position 1
- 2) Replace all three protective caps
- 3) Clean all reusable components of the system with alcohol wipes
- 4) Plug both Fob and Tablet into battery chargers for their next use



Review Report

The graph screen (bar and line graph) are primarily for you to organize which tests you would like to view on the report. If you had a mishap or don't want to see certain information on the report, uncheck the box on top of the respective test.

After that is completed, run the report by tapping "Report".

- This will populate a 6-8 page report for interpretation.

Save & Export File

Once that is completed, save the report as an xml file .

Note: Unless changed, the file will save as the "Patient ID" entered at the beginning.

Note: The reports automatically save themselves within the software once you enter in the patient ID. You may also print the report from there.

Log out

ARM Provider Patient Coaching Tips

Notes and sample phrases for use during Anorectal Manometry Diagnostic procedures

[Before Procedure]

1. "Today, we will be conducting an anorectal manometry test to assess the strength and coordination of your rectum and sphincters."
2. "We will also check your ability to feel the urge to have a bowel movement."
3. "The entire process consists of six tests and takes about 15 minutes."
4. "You will need to perform these tests with your honest attempts to get the best results, at any time if you don't understand don't worry, just let me know."

[Resting – Catheter Depth 0]

1. "For this test you just need to relax and breathe normally. Please try not to talk, laugh, or cough."

[Resting – Catheter Depth 1 / 2] (and 3 / 4 / 5 if needed)

1. "I am going to adjust the catheter a little bit."

[Squeeze]

1. "I need you to imagine that you're holding poop/feces in, like you really need to go to the bathroom, but there's no restroom nearby. You'll squeeze as if you're preventing an accident for 20 seconds, squeeze for as long as you can, followed by a short rest before the next squeeze. Try not to squeeze with your glutes, just anal muscle. We'll repeat this process three times. When you are ready, I'll count you down 3...2...1... Squeeze! and then 3...2...1... Relax! at the end of the 20 seconds."

Encourage the patient with phrases like: "Keep squeezing.", "You're doing fantastic!", "Great job!"

[Sensation]

1. "During this part, it's important to try and stay relaxed. Take deep breaths to help keep your muscles relaxed."
2. "Do you feel the catheter now? Let me know when you feel a different sensation other than just the catheter, like you have stool in your rectum."

Notes: *Add 10cc at a time until the Sensation is felt, immediately LOCK the Control Switch to prevent air from escaping and select the Sensation on the screen.*

[Sensation - Desire]

3. "Let me know when you feel like you want to have a bowel movement but could hold it. Like if you are watching television and you feel it but could wait for the commercial."

[Sensation - Urgency]

4. "Let me know when it feels like you cannot hold it or are about to have an accident where you would run to the restroom."

[Sensation - Pain] (Provider Optional)

5. "Let me know as soon as you feel pain, it will be uncomfortable for just a moment then I'll let all the air out."

Notes: Do not fill the Rectal Balloon past 180cc of air. End the Sensation test if 180cc of air is reached, even if the patient does not verbalize all Sensations.

[Expel Empty]

1. "I need you to imagine that you're trying to have a bowel movement, as if you're pushing out poop/feces. Focus on using your abdominal muscles to push and avoid squeezing your sphincter. We want you to push with your abdominal muscles only. You'll push for 20 seconds. I'll count you down when you are ready. 3...2...1... Push!"

Encourage the patient with phrases like: "Keep pushing.", "Push, push, push.", "You're doing fantastic!", "Great job!"

[Expel Full]

1. "Now, I'm going to inflate the device to simulate stool in your rectum, and then we'll repeat the previous test. Please let me know when you start feeling the sensation of stool in your rectum, and then I'll count you down to begin pushing. You'll push for 20 seconds. 3...2...1... Push!"

Encourage the patient with phrases like: "Keep pushing.", "Push, push, push.", "You're doing fantastic!", "Great job!"

Notes: Remember to set the Balloon Fill cc on the right side of the screen! Start with 20cc of air and continue to add 10cc at a time until the Sensation of stool is felt then ADD 10cc more.

[Exhale - Cough]

1. "I'll queue you to give me 3-5 big deep single coughs over 20 seconds when you are ready, and we will be done."

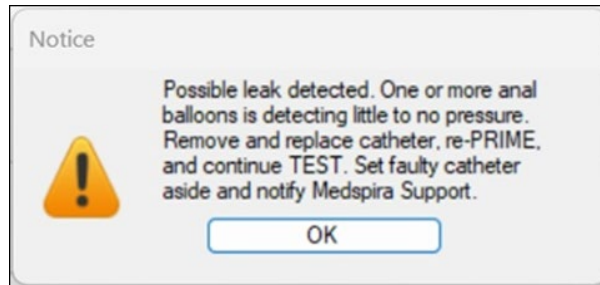
[Quick RAIR]

1. "During this part, it's important to try and stay relaxed. Take deep breaths to help keep your muscles relaxed."
2. "Do you feel the catheter now? Let me know when you feel a different sensation other than just the catheter, like you have stool in your rectum."

Notes: Add 20cc per second until the sensation is felt, immediately LOCK the Control Switch to prevent air from escaping and enter the balloon fill on the screen.

Common Questions

What if I get this message?



This may result if:

a) The small anal balloons were squeezed / handled after the 5cc syringe was removed and before the lever was moved to position 3. This could remove most of the air from the handled balloon(s).

Possible solution: Repeat the Priming Step if this is suspected.

b) There is a leak in one of the small anal balloons.

Possible solution: Replace the Catheter and try again.

How much Battery Life is there?

The battery life of both the Tablet PC and the manometer FOB is roughly 1.5 hours of active use (performing the procedures) because they are communicating via Bluetooth and/or Wi-Fi which consumes a good amount of energy. The battery life when at standby and not Bluetooth-connected is easily 4+hours.

The FOB's rechargeable battery has enough capacity to provide continuous operation for a period of 4 hours (minimum) at full charge, which may take about 2 hours.

To preserve battery life, disconnect from Bluetooth / Wi-Fi between procedures.

The Yellow Battery Light indicates there is about 30 minutes of charge remaining.