Clinical Value of Anorectal Manometry

***mcompass*® Anorectal Manometry (ARM) provides simple and highly valuable tests to effectively evaluate a patient's overall anorectal health.**

Resting Test

This test has three objectives:

1. Determine a patient's baseline pressure and compare that to the Normal Values for their population.
2. Determine if all four quadrants of the anal sphincter are displaying similar pressure values.
3. Locate the position in the anal canal where the combination of IAS and EAS pressure is naturally the greatest. This position is called the High Pressure Zone (HPZ).

mcompass® is positioned in increments within the anal canal to find the pressures at each position.

Note: Other catheters may be positioned deep in the anal canal and pulled through outward to the anal verge. The data is studied to find where the pressure was the lowest. This method is referred to as a "pull-through" test.

The Anal Pressure at this point is the patient's baseline natural anal pressure.
All remaining ARM Tests must have the catheter positioned at this HPZ.

Indications –

- Low resting Anal Pressure (as compared to the Normal Values) may lead to incontinence if the sphincter lacks adequate strength to hold back stool.
- High resting Anal Pressure (as compared to the Normal Values) may lead to constipation if the sphincter is unable to adequately relax allowing stool to pass.
- One quadrant showing significantly different pressure may indicate damage or weakness in that quadrant.

Squeeze Test

External Anal Sphincter (EAS) strength is measured by having the patient squeeze as if trying to hold back stool both as much as they and as hard as they can.

Indications –

- Low Squeeze Pressure (as compared to the Normal Values) or short durations of squeeze may lead to incontinence if the sphincter lacks adequate strength or stamina to hold back stool.
- High Squeeze Pressure (as compared to the Normal Values) may lead to constipation if the sphincter is unable to adequately relax allowing stool to pass.
- One quadrant showing significantly lower pressure may indicate damage or weakness in that quadrant.

Expel Empty Test

This test is to help determine if the patient can generate adequate rectal pressure to expel feces as compared to the provided Normal Values.
The Rectal pressure value should be greater than their Resting Anal pressures. The Anal pressures should decrease somewhat as the patient voluntarily relaxes their EAS. However, because there is no RAIR (the rectum is empty), the IAS pressure may be greater than the Rectal pressures.

Indications -
Low rectal pressure can be indicative of:

- Poor Rectal Compliance (elasticity) – either too rigid or too flaccid
- Weak rectal muscles

Clinical Value of Anorectal Manometry

Expel Full Test

This test is to help determine if the patient can generate more Rectal pressure than Anal pressure to allow expulsion of feces with RAIR initiating IAS relaxation.
There should be a positive **Pressure Gradient** (Rectal over Anal) and be compared to Normal Values.

Indications –
Light or no decreases in Anal pressure with increased Rectal pressure may indicate:

- Weak rectal muscles
- Nerve damage or related impairment
- Dyssynergia – dysfunctional coordination between anal and rectal muscles

In both Expel Tests, it is important to coach the patient to truly try to push (expel) from their rectum to get a good study. Many patients will be fearful of the embarrassment of passing gas or feces.

Sensation Test

This test provides critical diagnostic data sets including Rectal Sensation points and Anal RAIR response.
As Rectal balloon volume is increased, patients state they sense an initial urge to defecate - "Sensation". At or near this point, there should be a notable RAIR response as a decrease in Anal pressure.
Rectal balloon fill is increased to mark volumes where the patient declares sensations of "Desire" and then "Urgency" to defecate. The various sensation volume values may be compared to the Normal Values.
RAIR may be visualized and measured to determine the % drop in Anal pressure to facilitate defecation.

Indications –
Sensations at low volume (as compared to Normal Values) may indicate:

- Rectal hypersensitivity possibly leading to incontinence
- Low rectal compliance (elasticity) possibly leading to incontinence

Sensations at high volume (as compared to Normal Values) may indicate:

- Rectal hyposensitivity possibly leading to constipation or incontinence
- High rectal compliance (elasticity) possibly leading to constipation or incontinence
- Delayed rectal sensation and subsequent RAIR response

Sensation without an appropriate corresponding RAIR response may indicate:

- Nerve damage or related impairment
- Dyssynergia
- Hirschsprung's Disease

Exhale (Cough) Test

Patients are instructed to exhale quickly and deeply as if blowing up a balloon, or to produce a single cough.
The ability of the Anal sphincters (IAS and EAS) to increase pressure in response to abrupt intra-abdominal pressure is measured by this test.
Anal pressure should be observed to rise at each event (seen as an abrupt increase in Rectal pressure) and then return to normal.

Indications:
Inadequate Anal response may indicate:

- Weak anal sphincter (EAS and/or IAS)
- Nerve damage or related impairment