

# Update of high-resolution anorectal manometry interpretation using the London classification

Andrés Delgado Villarreal<sup>1\*</sup>, Valeria Atenea Costa Barney<sup>2</sup>, Albis Hani<sup>2</sup>, Ana María Leguizamo<sup>2</sup>, Andrés Ardila<sup>2</sup>, Diana Meza Madrid<sup>1</sup>

1. Internist and Gastroenterology and Digestive endoscopy Fellow at Universidad Javeriana and Hospital Universitario San Ignacio in Bogotá, Colombia

2. Internist, Specialist in gastroenterology and digestive endoscopy and Professor at Universidad Javeriana and Hospital Universitario San Ignacio in Bogotá, Colombia

\*Correspondence: Andrés Delgado Villarreal, [afernando.delgado@javeriana.edu.co](mailto:afernando.delgado@javeriana.edu.co)

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## Abstract

High resolution anorectal manometry is a diagnostic test, used for anorectal motor and sensory disorders. It consists of measurement of basal tone, anal contraction and squeeze, the rectoanal inhibitory reflex (RAIR), and rectal sensory parameters. The conventional interpretation of anorectal manometry focuses on describing the dysfunctional anatomical region in isolation. However, the London classification seeks to standardize the report of these results, grouping them into major, minor and inconclusive findings in a manner similar to the Chicago classification for esophageal motor disorders.

## Keywords

Anorectal manometry, anorectal functional disorders, anorectal physiology, London classification.

## INTRODUCTION

Fecal incontinence and constipation are the most frequent anorectal disorders. (1) Their origins can be structural or functional alterations so symptoms and initial physical examinations are not enough to determine the cause. Complementary imaging such as magnetic resonance defecography, fluoroscopy, colonic transit, rectoanal endosonography and/or high-resolution anorectal manometry is also required. (2-4)

The American Gastroenterological Association (AGA) introduced the use of anorectal manometry, rectal sensitivity tests and balloon expulsion for diagnosis and evaluation of the anal sphincter and anorectal coordination in 1999. (5) However, throughout the years it has not been possible to standardize performance and interpretation. This has affected the external validity diagnostic results of these tests. (6-8) For this reason, the International Anorectal Physiology Working Group (IAPWG) was formed to standardize anorectal manometry. It consists of 29 gastroenterologists, coloproctologists and physiologists

from 12 countries. In August 2019, they published their proposal which is now known as London classification for disorders of anorectal function. (9)

## EPIDEMIOLOGY

The overall prevalence of constipation and incontinence in developed countries is said to be close to 20%. (10) However, this deserves careful evaluation since measuring prevalence depends on the diagnostic criteria used for these two pathologies plus patients' ages, study locations, and study factors such as whether patients were outpatients, hospitalized or in geriatric homes. This is why a 9.9% prevalence for fecal incontinence and a prevalence of up to 20% for constipation were found for an over 60 population among whom up to 50% reside in geriatric homes. (11, 12)

## INDICATIONS FOR ANORECTAL MANOMETRY

The main indications for anorectal manometry are constipation and fecal incontinence, but less common indications

include anorectal pain, megacolon and megarectum. (1, 14, 15) Table 1 describes the indications for high-resolution anorectal manometry in greater detail.

**Table 1.** Indications for performing anorectal manometry, rectal sensitivity test and balloon expulsion

Indication	Parameters to be evaluated
Constipation Megarectum/megacolon	Anorectal coordination (dyssynergia and abnormal balloon expulsion test) Rectal hyposensitivity Absence of RIR
Fecal incontinence	Anal sphincter hypofunction Rectal hyposensitivity or hypersensitivity
Functional anorectal pain	Anorectal coordination (dyssynergia and abnormal balloon expulsion test)
Prior to anorectal surgery	Anal sphincter function Anorectal coordination
History of obstetric injury	Anal sphincter function

RIR: rectoanal inhibitory reflex

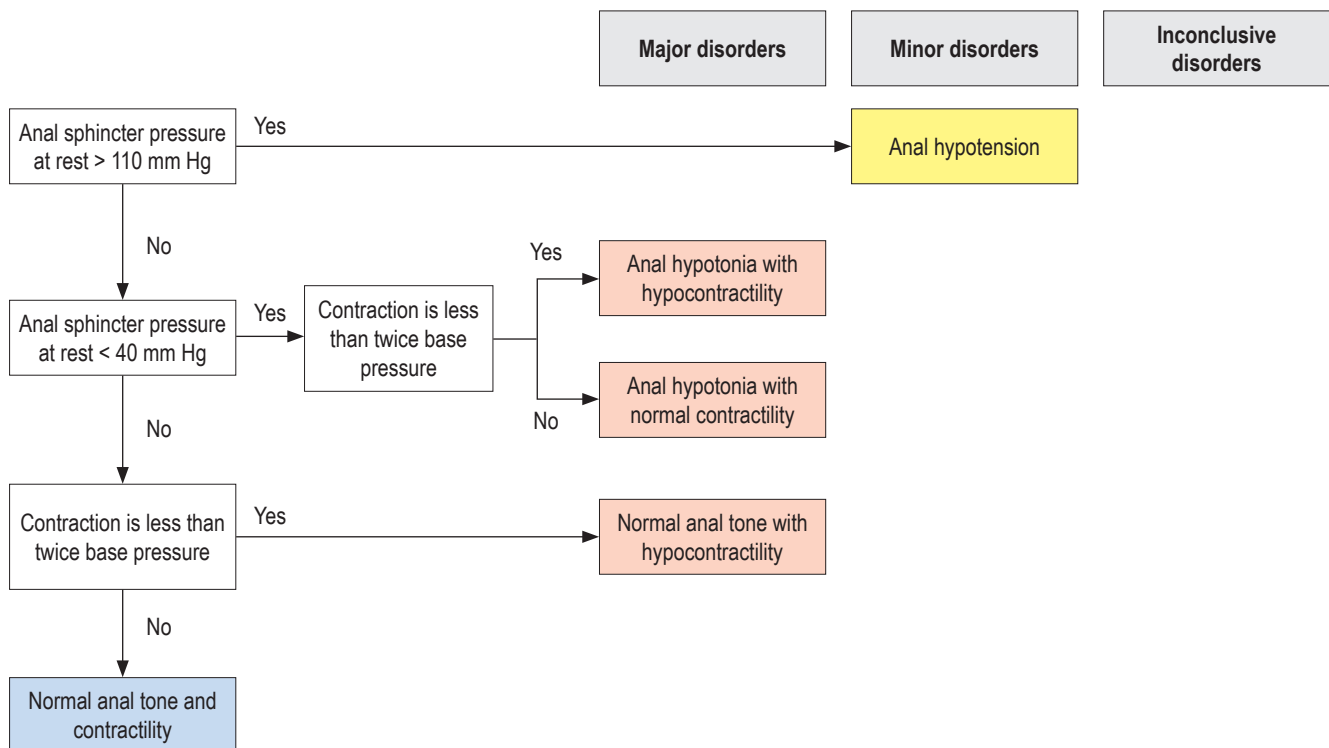
## LONDON CLASSIFICATION OF ANORECTAL DISORDERS

In August 2019, the IAPWG presented the first protocol to standardize performance of high-resolution anorectal manometry, rectal sensitivity tests and balloon expulsion. It is now known as the London classification for disorders of anorectal function. (9)

The IAPWG standards propose the following procedure: 3-minute stabilization of the sensor be followed by taking anal sphincter pressure at rest for 60 seconds, three contraction maneuvers of 5 seconds each, prolonged contraction of 30 seconds, two simple cough maneuvers, three strong contraction maneuvers of 15 seconds each, rectal sensitivity measurement by ballooning at progressive volumes, RIR and, finally, the ball expulsion test. (15)

The London classification focuses on four large groups of anorectal abnormalities that we review in the following order: anal tone and contractility (Figure 1), anorectal coordination (Figure 2), rectal sensitivity (Figure 3), and rectoanal inhibitory reflex (RIR) (Figure 4).

No large studies have been done in Colombia that would allow establishment of normal values for anal resting pressure, contraction pressure and rectal pressure for our



**Figure 1.** Disorders of anal tone and contractility (9)

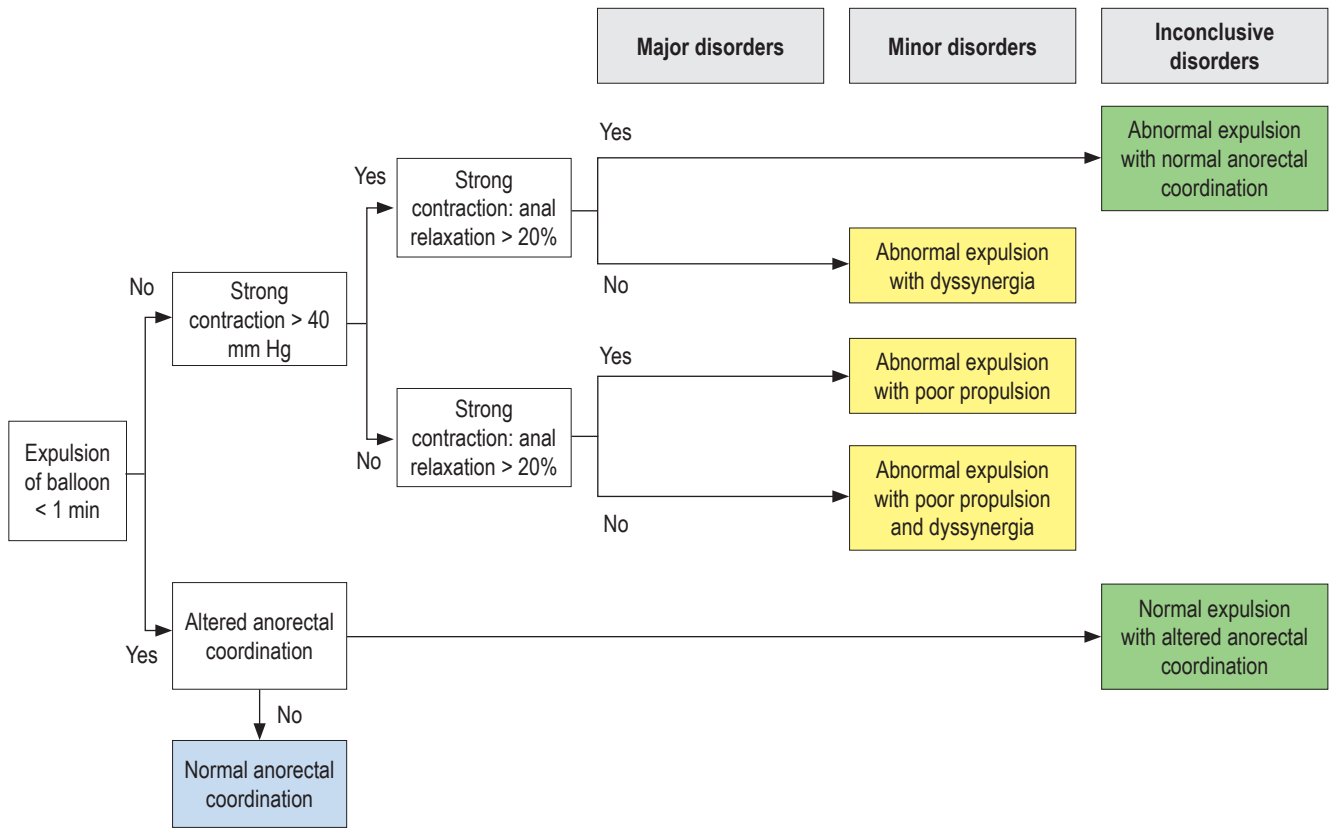


Figure 2. Anorectal coordination disorders (9)

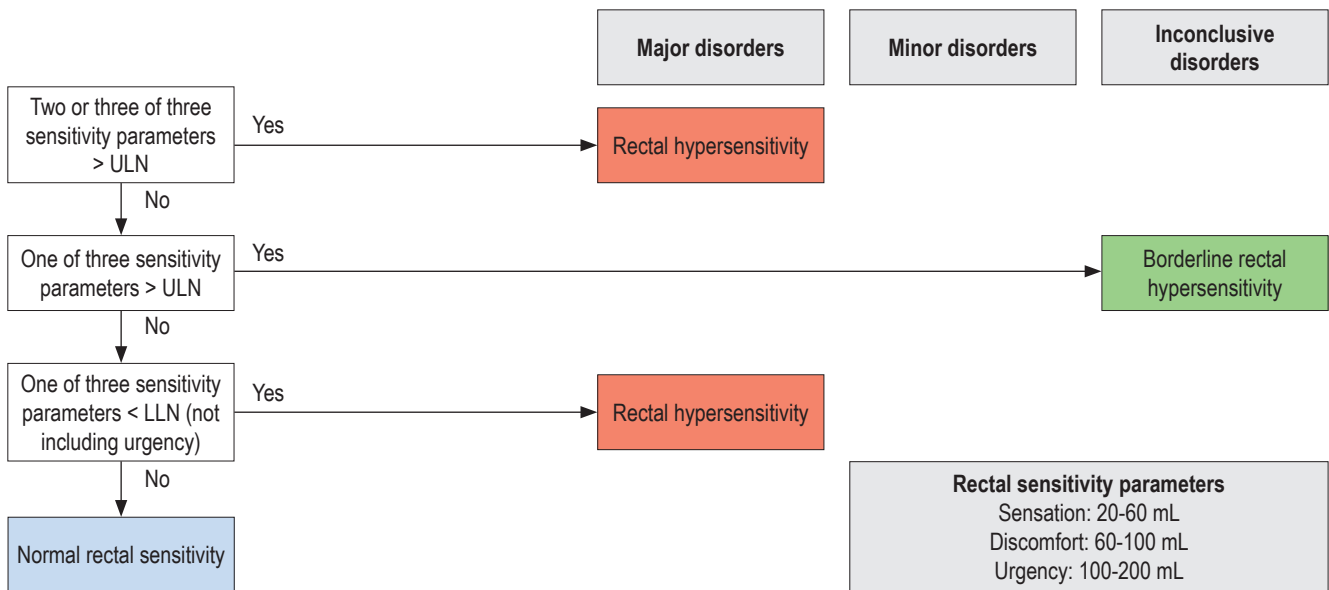
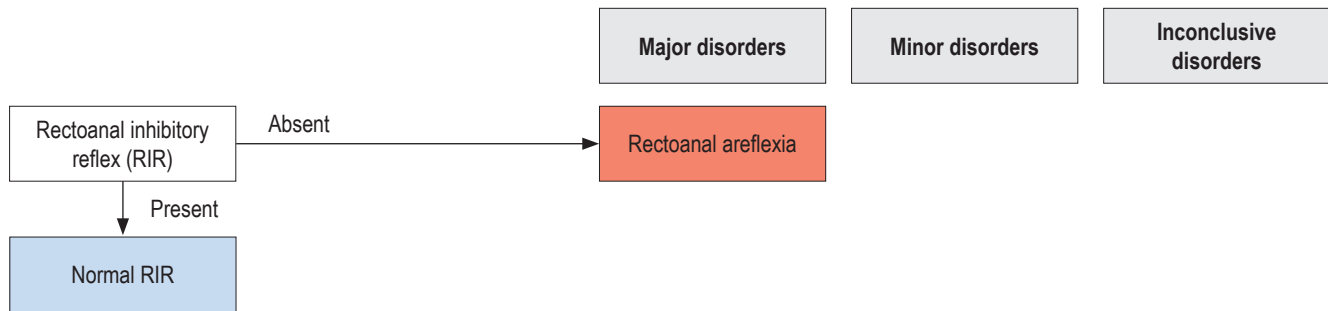


Figure 3. Rectal sensitivity disorders (9)



**Figure 4.** Rectoanal inhibitory reflex disorders (9)

**Table 2.** Comparison between the London classification and conventional nomenclature for high-resolution anorectal manometry

London Classification	Conventional Nomenclature
<b>Major disorders</b>	
Anal hypotension with hypocontractility	Alteration (hypotonia) of the internal anal sphincter. Alteration of the external anal sphincter
Anal hypotension with normal contractility	Alteration (hypotonia) of the internal anal sphincter
Normal anal tone with hypocontractility	Alteration or dysfunction of the external anal sphincter
Rectal hyposensitivity	Rectal hyposensitivity disorders
Rectal hypersensitivity	Rectal hypersensitivity disorders
Rectoanal Areflexia	Absent inhibitory rectoanal reflex
<b>Minor disorders</b>	
Anal hypertension	Hypertonic anal sphincter
Abnormal expulsion with dyssynergia	Type I or type III defecation dyssynergia
Abnormal expulsion with poor propulsion	Not applicable
Abnormal expulsion with poor propulsion and dyssynergia	Type II or type IV defecation dyssynergia
<b>Inconclusive disorders</b>	
Abnormal expulsion with normal anorectal coordination	Abnormal balloon expulsion
Normal expulsion with abnormal anorectal coordination	Type I - IV defecation dyssynergia
Borderline rectal hyposensitivity	Not applicable

diverse population. Also, there are no values for anal relaxation and rectal sensitivity parameters, so we have taken them from international studies and we adapted them for the London classification. (9, 16-19)

Like the Chicago classification for esophageal motility disorders, the London system classifies anorectal disorders as major, minor and non-significant according to pathological relevance. (20) Table 2 compares the terminology of this new proposal with that of conventional manometry.

## CONCLUSION

Anorectal manometry is a useful diagnostic tool for anorectal sensory-motor disorders. Proper performance and interpretation are essential for providing patients with ade-

quate treatment. The London classification is the first proposal that seeks to standardize reporting of high-resolution anorectal manometry results.

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