

Irritable Bowel Syndrome & Chronic Constipation

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Overview

- Disorders of Gut-Brain Interaction
- IBS vs Chronic constipation
- Obstructed defecation: examination **
- Which Tests
- Laxatives: what and how much
- Diet
- Pelvic floor physio
- Neuromodulators & Psychology

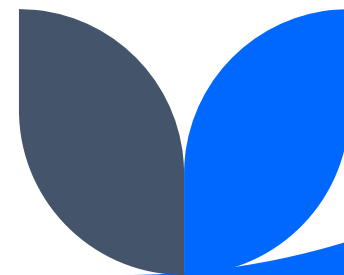
Case JT

- Ms JT – 32yo primary school teacher
- Years of intermittent pain, bloating
- Irregular hard /soft stool- tried every laxative, fibre worse
- Sometimes nauseous, can't eat
- Food intolerances – tried every diet, seen dietitians
- Mild-moderate anxiety, headaches
- “It’s just my IBS, just have to deal with it”
- Further Q: dyspareunia, urinary stress incontinence
- Blood, stool, colonoscopy, imaging normal

Case JT

- Is this Irritable Bowel Syndrome??
- Find the cause of constipation
 - Pelvic floor dysfunction until proven otherwise!
- Then treat constipation, and reassess symptoms
- Never “just IBS”, very treatable

What is IBS?



Disorders of Gut-Brain Interaction (FGID)

- Simple definition:
 - Real physiological responses to internal and external stimuli
 - Symptoms without an *identifiable* structural or biochemical cause
 - Which are bothering the patient
 - And persist for more than 6 months

Caused by:

Visceral hypersensitivity
Altered CNS processing
Motility disturbance
Altered mucosal and immune function
Altered gut microbiota

Rome IV Classification

Table 2. Functional Gastrointestinal Disorders: Disorders of Gut–Brain Interaction

A. Esophageal Disorders

- | | |
|-----------------------------|--------------------------|
| A1. Functional chest pain | A4. Globus |
| A2. Functional heartburn | A5. Functional dysphagia |
| A3. Reflux hypersensitivity | |

B. Gastroduodenal Disorders

- | | |
|---|--|
| B1. Functional dyspepsia | B3. Nausea and vomiting disorders |
| B1a. Postprandial distress syndrome (PDS) | B3a. Chronic nausea vomiting syndrome (CNVS) |
| B1b. Epigastric pain syndrome (EPS) | B3b. Cyclic vomiting syndrome (CVS) |
| B2. Belching disorders | B3c. Cannabinoid hyperemesis syndrome (CHS) |
| B2a. Excessive supragastric belching | B4. Rumination syndrome |
| B2b. Excessive gastric belching | |

C. Bowel Disorders

- | | |
|---|--|
| C1. Irritable bowel syndrome (IBS) | C2. Functional constipation |
| IBS with predominant constipation (IBS-C) | C3. Functional diarrhea |
| IBS with predominant diarrhea (IBS-D) | C4. Functional abdominal bloating/distension |
| IBS with mixed bowel habits (IBS-M) | C5. Unspecified functional bowel disorder |
| IBS unclassified (IBS-U) | C6. Opioid-induced constipation |

D. Centrally Mediated Disorders of Gastrointestinal Pain

- D1. Centrally mediated abdominal pain syndrome (CAPS)
D2. Narcotic bowel syndrome (NBS)/
 Opioid-induced GI hyperalgesia

E. Gallbladder and Sphincter of Oddi (SO) Disorders

- E1. Biliary pain
 E1a. Functional gallbladder disorder
 E1b. Functional biliary SO disorder
E2. Functional pancreatic SO disorder

F. Anorectal Disorders

- | | |
|--|---------------------------------------|
| F1. Fecal incontinence | F2c. Proctalgia fugax |
| F2. Functional anorectal pain | F3. Functional defecation disorders |
| F2a. Levator ani syndrome | F3a. Inadequate defecatory propulsion |
| F2b. Unspecified functional anorectal pain | F3b. Dyssynergic defecation |

Irritable Bowel Syndrome

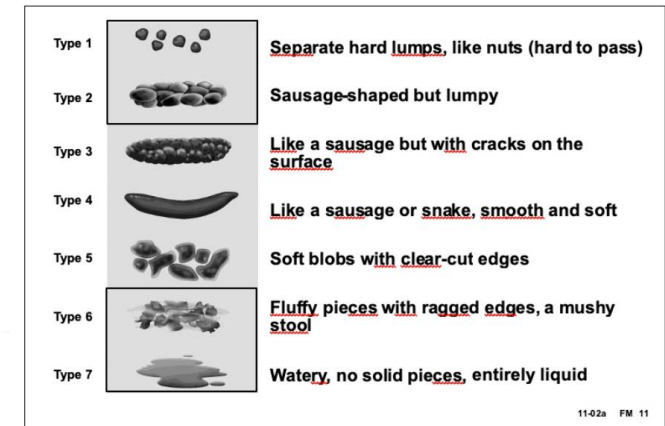
C1. IRRITABLE BOWEL SYNDROME

*Diagnostic criteria**

Recurrent abdominal pain on average at least 1 day/week in the last 3 months, associated with **two or more** of the following criteria:

1. Related to defecation
2. Associated with a change in frequency of stool
3. Associated with a change in form (appearance) of stool

* Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis



Chronic Constipation

- *Aka. functional constipation*
= Abdominal pain is not predominant feature
symptoms resolve with (months of) regular bowel clearance
- *Why are they constipated?*
 - *Obstructed defecation until proven otherwise*
 - *Toilet behaviours, avoidance*
 - *Diet, fluid*
 - *Medication, substances, systemic diseases*

Chronic Constipation

1. **Obstructed defecation**
>50% have secondary slow transit
2. **Normal Transit constipation**
Functional constipation
IBS-C (pain predominant)
3. **Primary Slow transit constipation (<1%)**
Neurological, connective tissue disorder

TABLE 2. Frequent Causes of Secondary Constipation^{8,11,27}

Medication	Anticholinergics	Diphenhydramine, oxybutynin
	Antidepressants	Tricyclic antidepressants
	Antihistamines	Cetirizine, fexofenadine, loratadine
	Calcium channel blockers	Amlodipine, diltiazem, verapamil
	Diuretic	Furosemide
	Iron supplementation	Ferrous fumarate, ferrous sulfate

Box 1 | Chronic constipation

Primary constipation

- Chronic idiopathic constipation: normal-transit constipation and constipation-predominant irritable bowel syndrome
- Rectal evacuation disorders: dyssynergic defecation, rectal intussusception, descending perineum syndrome, rectal prolapse and rectocele (weakness usually affecting the anterior wall of rectum)
- Slow-transit constipation: megacolon associated with Hirschsprung disease, Chagas diseases, chronic idiopathic megacolon and megacolon associated with multiple endocrine neoplasia type 2B

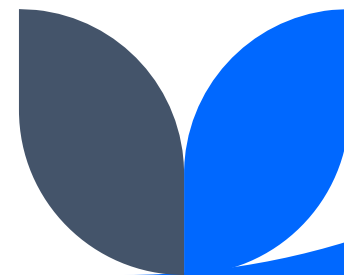
Secondary constipation

Constipation associated with the following:

- Medications: opioids, Ca²⁺ blockers, α₂-adrenergic agonists, tricyclic antidepressants, 5-hydroxytryptamine receptor 3 antagonists, dopaminergic drugs, anticholinergic drugs, neuroleptics and chemotherapeutic agents
- Disorders of electrolyte balance: hypercalcaemia and hypokalaemia
- Hormonal changes: hypothyroidism and pregnancy
- Psychiatric disorders: depression and eating disorders
- Neurological disorders: Parkinson disease, multiple sclerosis and spinal cord injury
- Ageing: immobility and comorbid conditions
- Generalized muscle disease: progressive systemic sclerosis and amyloidosis
- Organic disease of the gastrointestinal tract: colorectal cancer or polyps

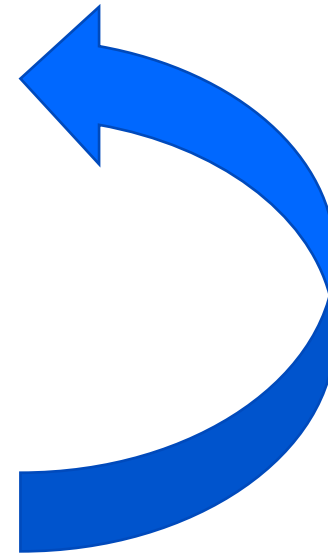
5-HT indicates 5-HT₂ receptor antagonist.
Adapted from Tonino et al.
Rao SS, Rattankov

Obstructed defecation



Obstructed Defecation

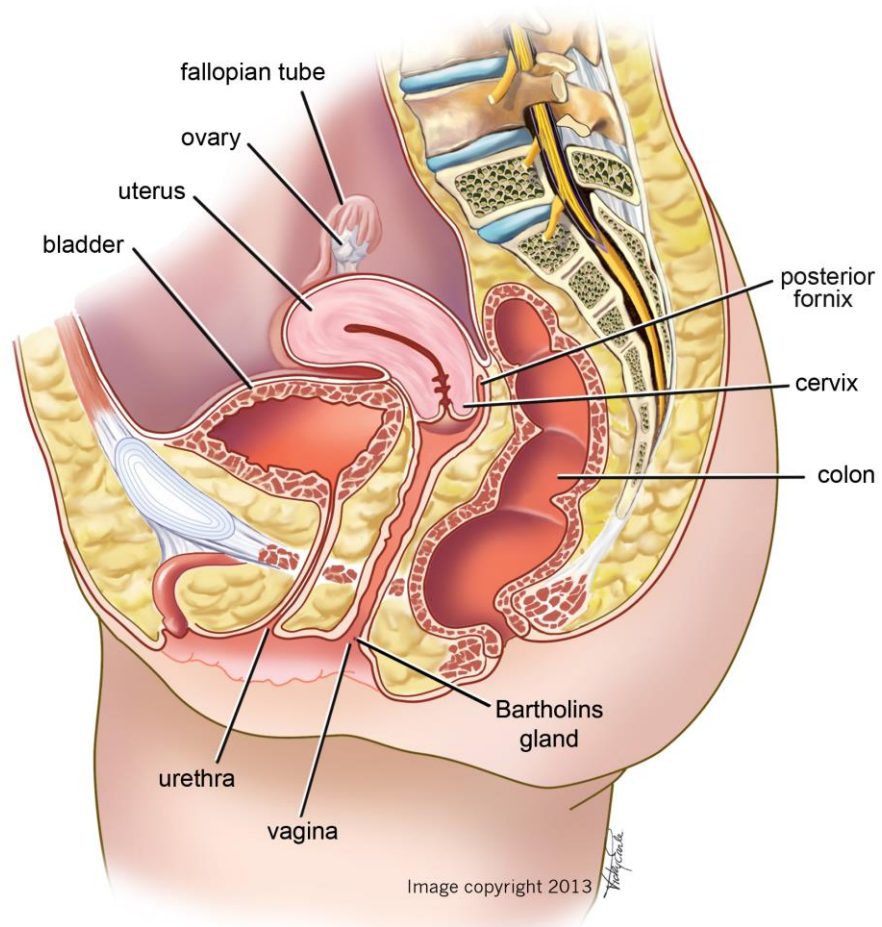
- Mechanical: Excessive perineal descent
Large rectocele
Internal rectal prolapse (intussusception)
Anal fissure
- Functional: Dyssynergic defecation
Anal hypertonia, anal spasm, (fissure)
Ineffective propulsion



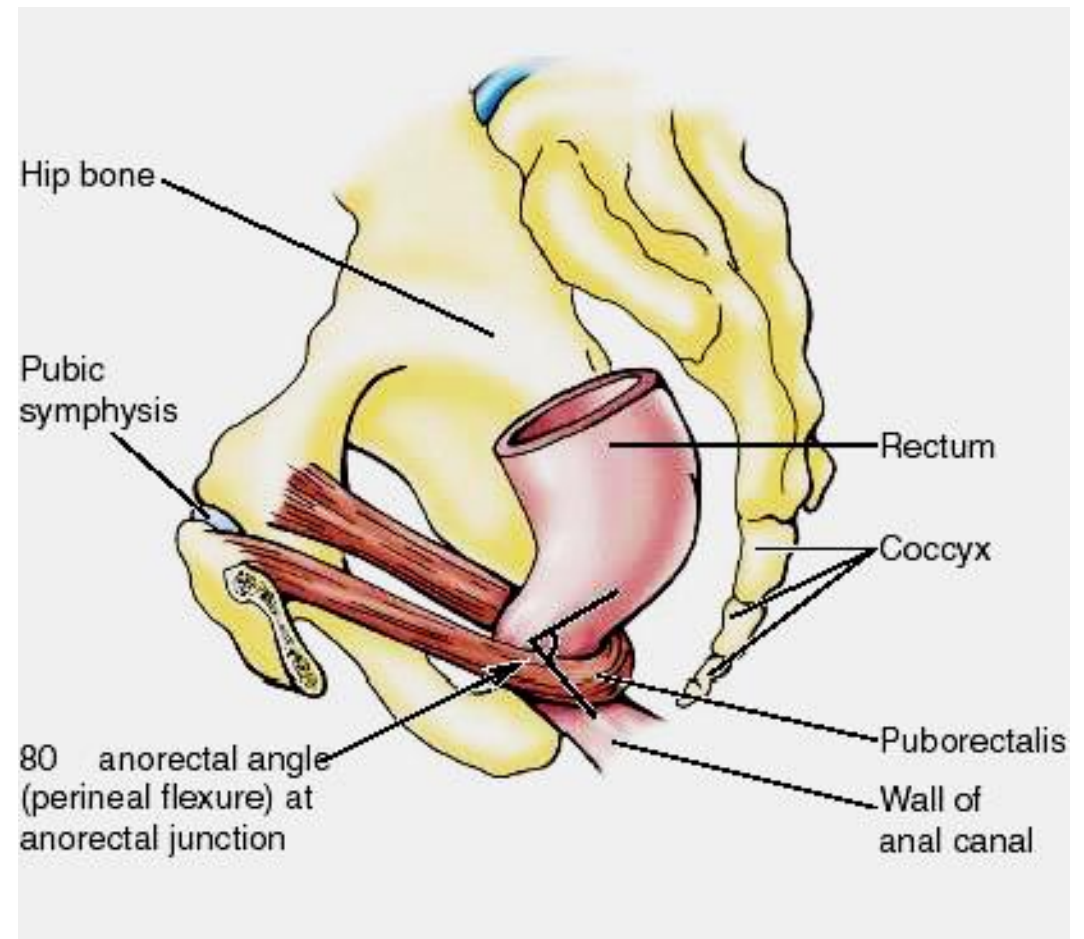
Normal Defecation

- Gastrocolic reflex, colocolic reflex → colonic motility
- Stool enters rectum → activates stretch receptors
- Enteric NS + PNS reflexes
- Contraction of rectum, and colon = urge
- Reflex sphincter relaxation → voluntary EAS activation if want to delay
- If delayed, rectum relaxes, urge dissipates

- Contenance = puborectalis (sling) angulates rectum + IAS/EAS contract shut
- Defecation = puborectalis relaxes, rectum straightens + IAS/EAS relax open

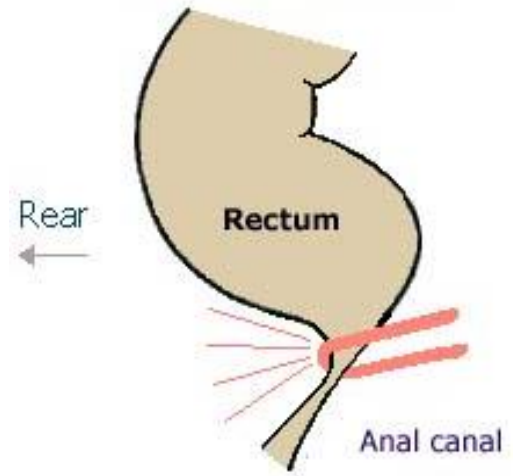
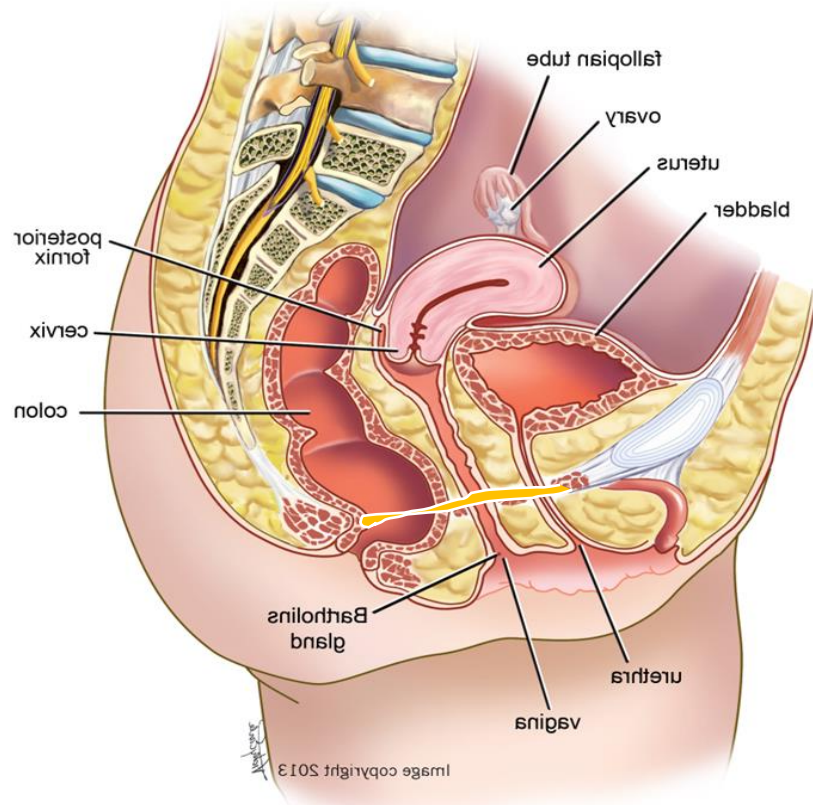


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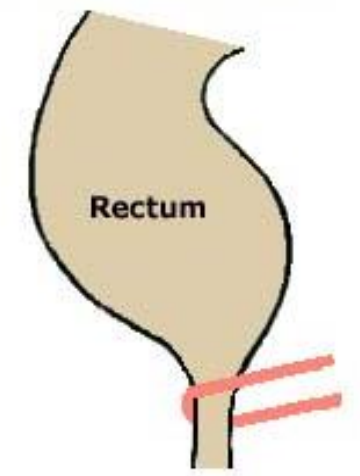


<http://www.rahulgladwin.com/medimages/index.php?level=picture&id=211>

Defecation: Puborectalis



Puborectalis muscle "chokes" rectum to maintain continence



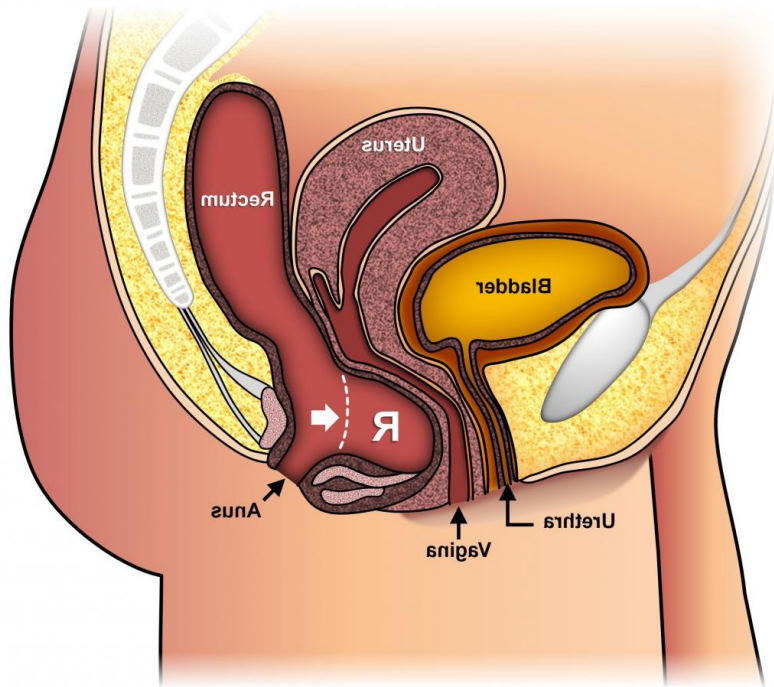
Puborectalis muscle relaxes and straightens pathway to anus

Obstructed defecation: History

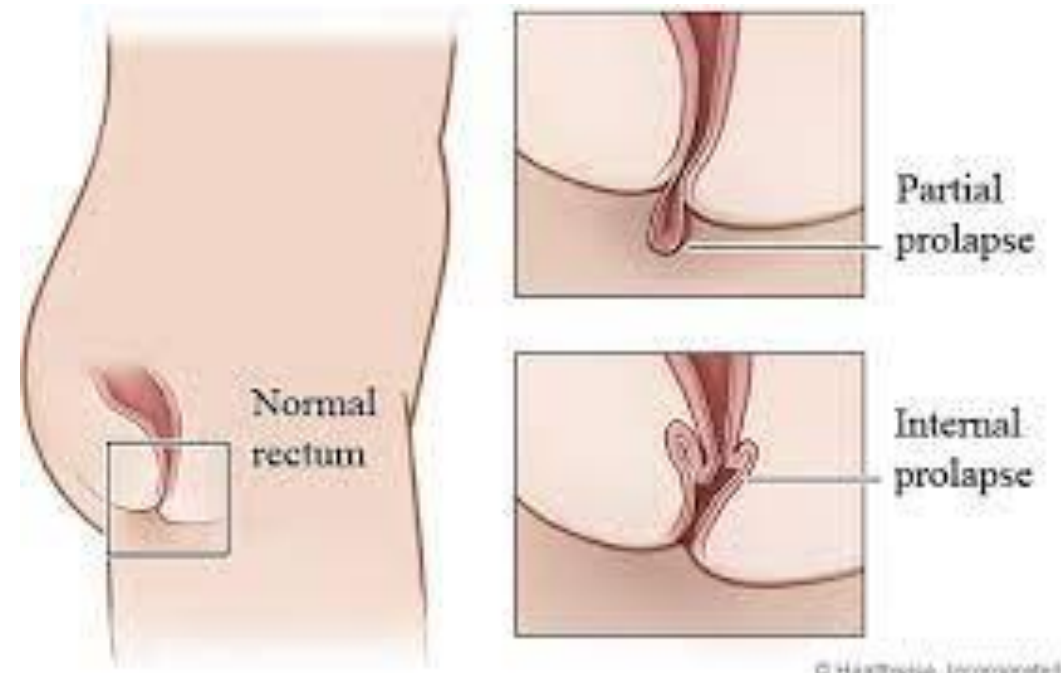
- History of straining ++
- Feeling of incomplete emptying
- Difficult to pass liquid stool or flatus
- May report 'diarrhoea' due to frequency of small incomplete / unsuccessful motions
- Other PF dysfunction – vag prolapse, urinary retention / frequency, dyspareunia

Mechanical Obstructed Defecation

Rectocele



Rectal prolapse

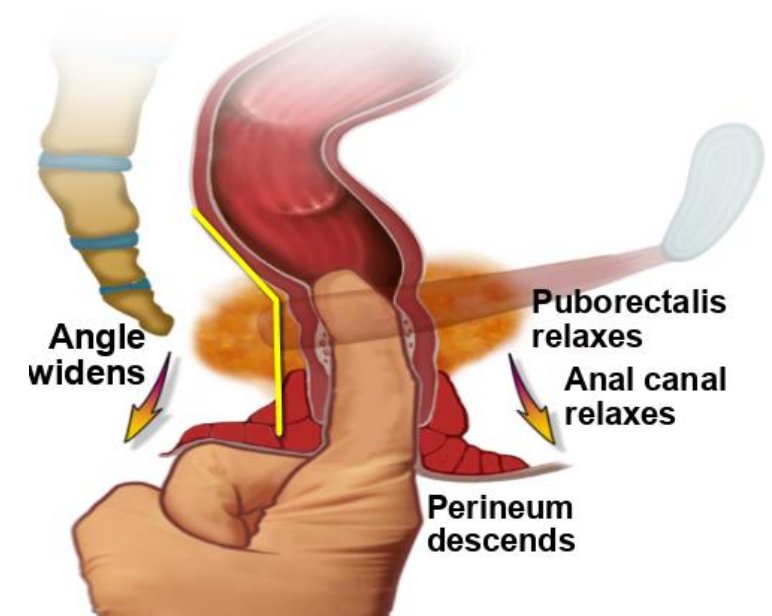


<https://fascrs.org/ascrs/media/files/rectocele.jpg>

<https://www.google.com.au/imgres?imgurl=https%3A%2F%2Fcontent.healthwise.net>

Anorectal examination for OD

1. Explain, reassure, consent
2. Left lateral, inspect – ext haemorrhoids, fissure, gape, soiling
3. ‘Push down like you’re trying to pass a bowel motion’
 - Mucosal / FT rectal prolapse, prol haemorrhoids, perineal descent ↑↓
5. Sensation: anal wink 4 quadrants
6. Lubricant (cold), ‘okay if I put a finger just inside the bottom muscles?’
7. Wait, ‘That’s all I’m going to do now, let everything relax’ - rest tone
8. Palpate rectal walls: pain, rectocele (anterior), large masses
9. Squeeze my finger: squeeze strength, able to relax
 - Should lift, contract, puborectalis activates (angle)
9. ‘Push down like you’re sitting on the toilet trying to push my finger out, I’ll hold it, don’t worry nothing will come out’:
 - Strain to push finger out → should relax, straighten, and descend 1-3cm
 - Dyssynergia = puborectalis contracts instead
10. Inspect, persistent gape



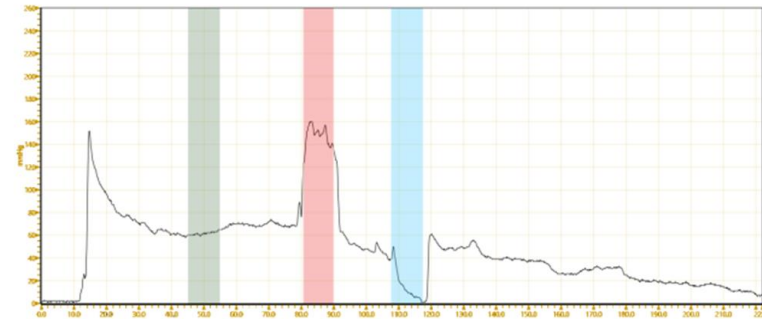
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Constipation: Which Tests?

- History and anorectal examination
 - ?Pelvic floor symptoms → (anorectal) pelvic floor physio assessment
- AXR or CT: New pain, red flags, ?megacolon
Often over-diagnose; can be a helpful visual
- Anorectal physiology studies ('manometry')
- Colonoscopy: red flags, new, abrupt change, chronic untreated
- Avoid motility studies (CTS, GES) → refer to NeuroGastroenterology

What are Anorectal Physiology Studies?

- Anorectal manometry (London classification)
- Balloon sensory testing
- EMG
- Pudendal nerve testing
- Endoanal ultrasound



<u>Manometry Results</u>	Average	Max	Max/Rest.	%Avg./Max	% Avg./Res.Avg.
Resting Pressure (10.0s)	: 61.6 mmHg				
Squeeze Pressure (9.4s)	: 147.4 mmHg	160.0 mmHg	2.6	92.1 %	
Strain Pressure (10.0s)	: 17.1 mmHg				-72.2 %
Endurance	: 6.3 sec.				

Sensitivity test results	sensation [ml]	desire [ml]	urgency [ml]
	50	150	180

Constipation Treatment Algorithm

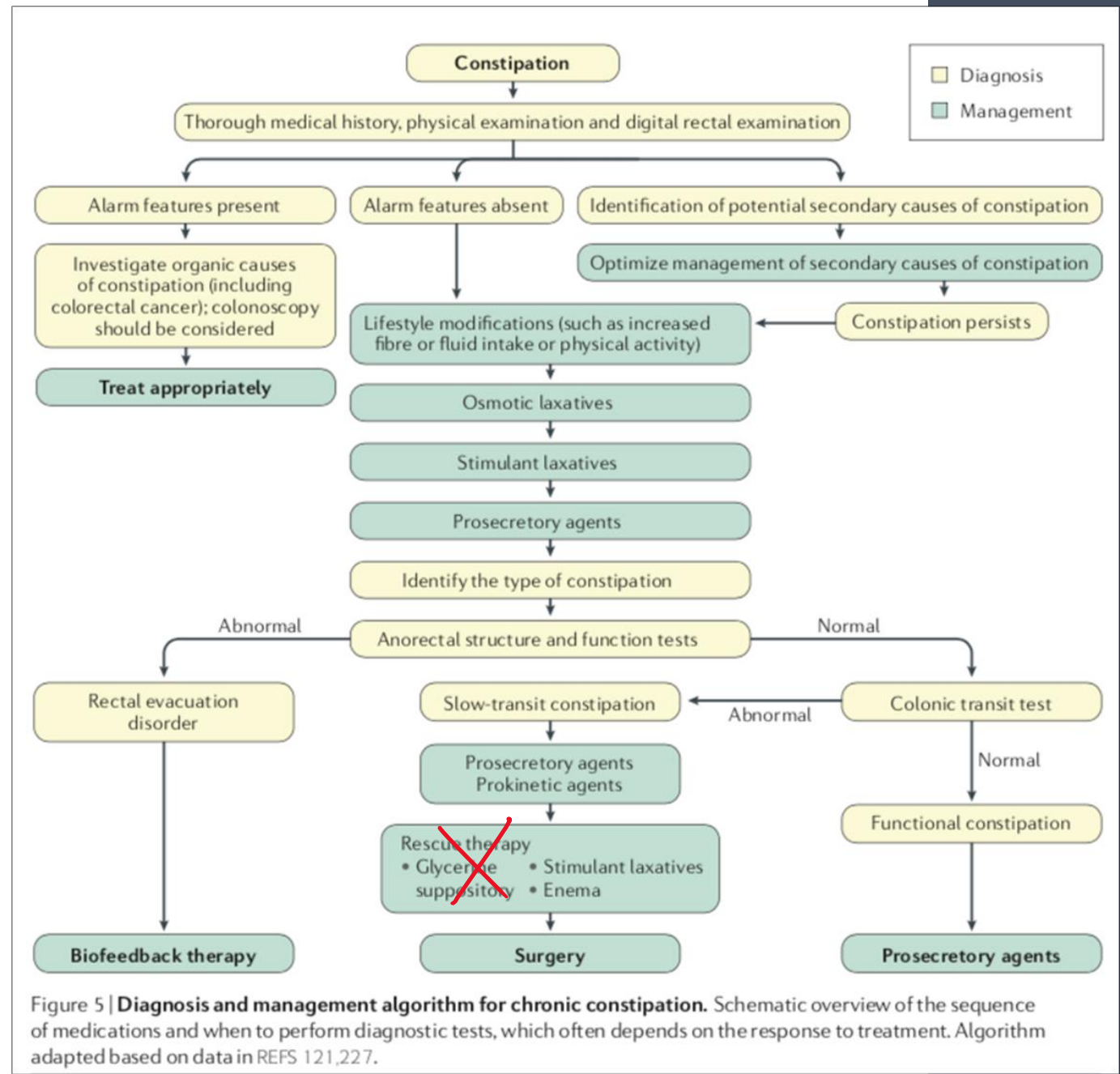


Figure 5 | **Diagnosis and management algorithm for chronic constipation.** Schematic overview of the sequence of medications and when to perform diagnostic tests, which often depends on the response to treatment. Algorithm adapted based on data in REFS 121,227.

nature REVIEWS DISEASE PRIMERS

Primer | Published: 14 December 2017

Chronic constipation

Michael Camilleri, Alexander C. Ford, Gary M. Mawe, Phil G. Dinning, Satish S. Rao, William D. Chey, Magnus Simrén, Anthony Lembo, Tonia M. Young-Fadok & Lin Chang

Nature Reviews Disease Primers 3, Article number: 17095 (2017) | [Download Citation](#)

Treatment Principles

- Optimise stool consistency
- (Anorectal) pelvic floor physiotherapy
- Topical therapy
 - Obstructed → regular suppository, trans-anal irrigation
 - Fissure/spasm → diltiazem 2%/xylocaine 2%
 - Haemorrhoid pain → proctosedyl supp
- Dietetics
- On-referral:
 - Obvious structural problem → PF Colorectal Surgeon
 - Most Pts → Gastroenterology

Optimise Stool: Osmotic laxative 1st line

- Create an intra-luminal osmotic gradient
Water +/- electrolytes into lumen
Looser stool, increase stool volume
- Macrogol 3350 (PEG) *Osmolax*, (*Movicol*)
 - RCTs to 6 months, good effect
 - Head-to-head lactulose, superior
 - Head-to-head prucalopride, non-inferior
- Lactulose
 - Non-absorbed, fermented to SCFAs
 - Effective mild-mod constipation, cause bloating
- Poorly absorbed salts:
 - Magnesium (Epsom), phosphate
 - Little evidence, no longer recc
 - Caution in elderly, HF, RF

Add: stimulant laxative 2nd line

- Accelerate colonic transit via: water / electrolyte / prostaglandin secretion; stimulate motility
- **Bisacodyl** (Dulcolax tablets) 5-10mg daily
 - Good evidence, SRMA RR 2.46 cf. placebo
 - Appears **superior** to SP, prucalo, lubipros, linaclotide
- Sodium picosulfate (Dulcolax drops)
 - SRMA RR 2.83 cf. placebo
 - More GI SE than bisacodyl
- Anthraquinones (eg. senna)
 - Well tolerated
 - Effective, but no high quality RCTs in CC

**Chronic use of stimulants does not seem to cause tolerance, rebound constipation, or damage to colon.*

Muller-Lissner, S. A., Kamm, M. A., Scarpignato, C. & Wald, A. Myths and misconceptions about chronic constipation. *Am. J. Gastroenterol.* **100**, 232–242 (2005)



Queensland
Government

Metro North Health

Constipation Regime

OSMOLAX

Simply softens the stool by holding in water.

Start with scoop/s each morning, mixed with or followed by a glass of water.

Every days, increase this daily amount by scoop/s, until you have had a good bowel clean out. This may take 1-2 weeks, or more.

Then do NOT stop taking it each morning, simply reduce it back to the starting amount and *adjust amount every 3rd day* until you find the perfect maintenance amount to keep your bowel motions soft but not loose.

FIBRE SUPPLEMENT

After 2 weeks of a soft regular bowel motion with Osmolax, add a fibre supplement. This adds form, for more regular and complete motions, and better control (less leakage).

Metamucil granular powder Psyllium husk Benefiber

Start with each morning, mix in water and drink straight away.

Every days, increase by , until a soft, formed, regular bowel motion is achieved.

If you experience bloating due to this positive change in fibre intake, simply reduce the amount and increase more slowly – increase by half a teaspoon every 5 days instead.

Good to know:

- Incontinence (accidentally losing control of stool) should not occur with this gentle regime, and can be managed. It is important. Please contact me to discuss if this occurs.
- There is no risk of 'lazy bowel' or bowel dependence with the above. These can safely be used indefinitely if needed, and are most effective combined with dietary advice.
- You may feel some immediate improvement in your bowel symptoms with regular bowel clearance, but more often you will see a gradual improvement over 2-3 months. As a rule, the longer you have struggled with constipation, the more gradual the changes will often be, but you will see significant improvement over time.

Dr Trina Kellar

Gastroenterologist – Functional & Motility GI disorders

Dietetics

- **Gastro** dietitian – STARS Hospital Dietitian First clinic
- Low FODMAPS: Treat constipation first
 Dietitian guidance
 No if eating disorder
- Water to thirst, or with each meal
- Standard dietary advice

Recommended number of serves for adults

The dietary patterns in the table below provide the nutrients and energy needed by all men and women of average height with sedentary to moderate activity levels. Additional serves of the five food groups or unsaturated spreads and oils or discretionary choices are needed only by adults who are taller, more active or in the higher end of a particular age band, to meet additional energy requirements.

	Recommended average daily number of serves from each of the five food groups*					Additional serves for taller or more active men and women
	Vegetables & legumes/beans	Fruit	Grain (cereal) foods, mostly wholegrain	Lean meat and poultry, fish, eggs, nuts and seeds, and legumes/beans	Milk, yoghurt, cheese and/or alternatives (mostly reduced fat)	Approx. number of additional serves from the five food groups or discretionary choices
Men						
19-50	6	2	6	3	2 ½	0-3
51-70	5 ½	2	6	2 ½	2 ½	0-2 ½
70+	5	2	4 ½	2 ½	3 ½	0-2 ½
Women						
19-50	5	2	6	2 ½	2 ½	0-2 ½
51-70	5	2	4	2	4	0-2 ½
70+	5	2	3	2	4	0-2
Pregnant	5	2	8 ½	3 ½	2 ½	0-2 ½
Lactating	7 ½	2	9	2 ½	2 ½	0-2 ½

* Includes an allowance for unsaturated spreads or oils, nuts or seeds (4 serves [28-40g] per day for men less than 70 years of age; 2 serves [14-20g] per day for women and older men.)

Optimise Stool – Fibre supplement

- Clear faecal loading first (e.g. uptitrating Osmolax)
- Start low, uptitrate slow (by 1tsp every 3 or 7 days)
- Benefiber – low bloating, no texture, but need large amounts
- Metamucil granular powder – good all rounder
- Psyllium husk (in water) – coeliac, diarrhoea / FI, intolerances
- Guargum (PHGG) – advanced diabetes
- Normafibe – low bloating, but gravel texture

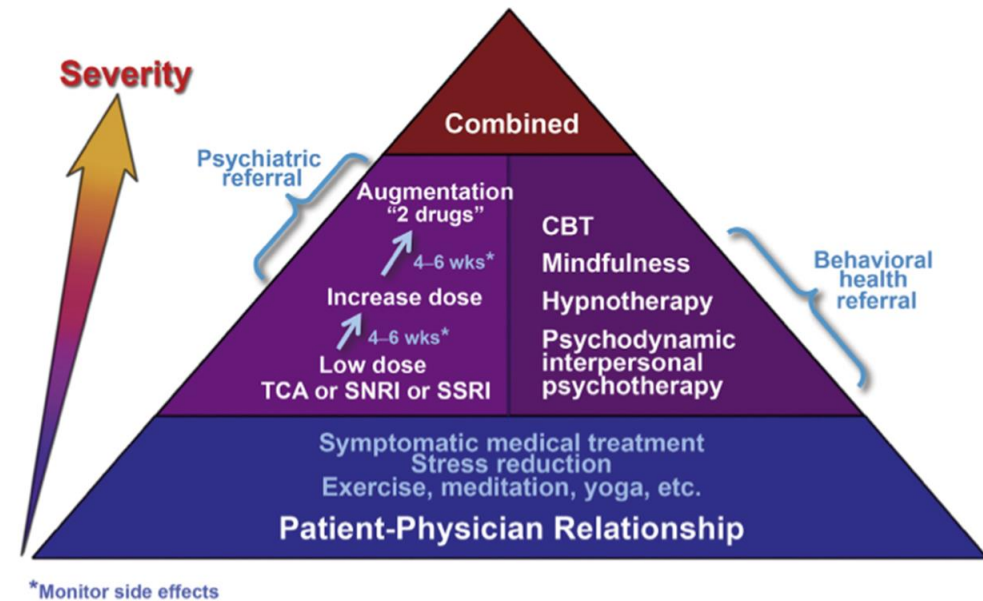
What does PF physio do?

- Biofeedback therapy steps:
 - Educate on normal defecation
 - Train to strain / improve abdominal pushing effort
 - Train to relax PF muscles while straining (with EMG, U/S, apps)
 - Practice with balloon expulsion
 - THEN SO MUCH MORE (laxative/fibre/enemas, urogynae, education, TENS, TA irrigation)
- > 70% successful, grade A recommendation
 - Superior to placebo (sham therapy), laxatives, diazepam
 - Need experienced PFP, and willing Pt
- If unsure and GE/CRS nearby → refer to an anorectal PF physio early

Neuromodulators

For pain, nausea, hypersensitivity:

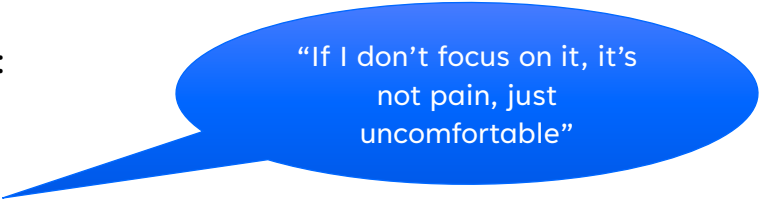
- Nortriptyline 10- - - 50mg nocte
- Amitriptyline (if side effects beneficial)
- Mirtazapine (prokinetic, appetite)
 - Lower dose = more sedating
- Duloxetine (pain)
- Olanzapine 2.5mg (ARFID, OCD)



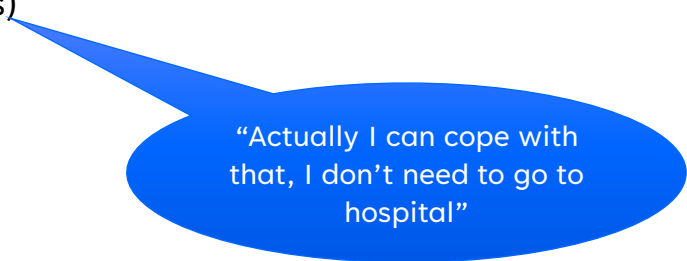
Keefer L, Drossman DA, Guthrie E, Simrén M, Tillisch K, Olden K, Whorwell PJ. Centrally Mediated Disorders of Gastrointestinal Pain. *Gastroenterology*. 2016 Feb 19:S0016-5085(16)00225-0. doi: 10.1053/j.gastro.2016.02.034. PMID: 27144628.

Why does Psychology work?

- Psychotherapy targets:
 - The Cause: psychological and environmental factors that create and aggravate symptoms
 - The Effect: distress, mood, dysfunction caused by symptoms
- And influences the individual's:
 - Experience of the symptoms
 - Response to the symptoms
 - Neurogastroenterology (production of symptoms)



“If I don’t focus on it, it’s not pain, just uncomfortable”



“Actually I can cope with that, I don’t need to go to hospital”

Case JT

- Ms JT – 32yo primary school teacher
- Years of frequent pain, bloating
- Irregular hard /soft stool- tried every laxative, fibre worse
- Sometimes nausea, can't eat
- Food intolerances – tried every diet, seen dietitian
- Mild-moderate anxiety, headaches
- “It's just my IBS, just have to deal with it”
- Further Q: dyspareunia, urinary stress incontinence
- Blood, stool, colonoscopy, imaging normal

Case JT

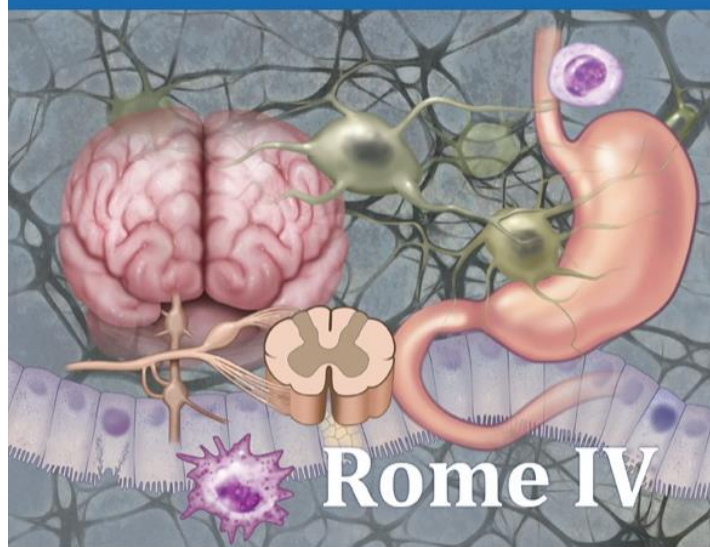
- DRE: Internal haemorrhoids. Minimal descent on push. Tight anal canal. Does relax on push but not completely = anal hypertonia
- Anorectal manometry (ARPS): anal hypertonia
- Treatment: Optimise stool consistency – uptitrating osmolax
 Treat OD – anorectal PFP, bowel routine, glycerol suppository
 Aim daily soft bowel motion 2 months
- Outcome: bloating, pain, majority of food intolerances resolved
→ not IBS

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Disorders of Gut-Brain Interaction



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Thank you

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