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7th EMIRATES FAMILY MEDICINE SOCIETY CONGRESS 2024

DUBAI | UAE | 22 to 24 APRIL

DUBAI WORLD TRADE CENTRE

EFMS



MANAGEMENT
OF CONSTIPATION

ASAD DAJANI MD, DSM, FACG,
JBD, FRCP (GLASG)
24 APRIL 2024

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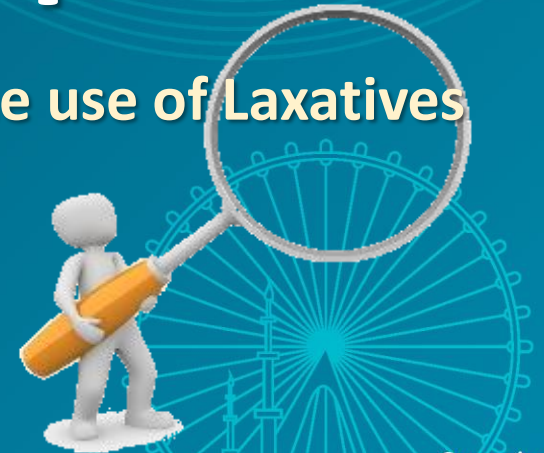
DUBAI WORLD TRADE CENTRE

EFMS



Management of constipation

A focus on the use of Laxatives



Asad Dajani MD, DSM, FACG, JBD, FRCP (Glasg)

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Disclosures and agenda

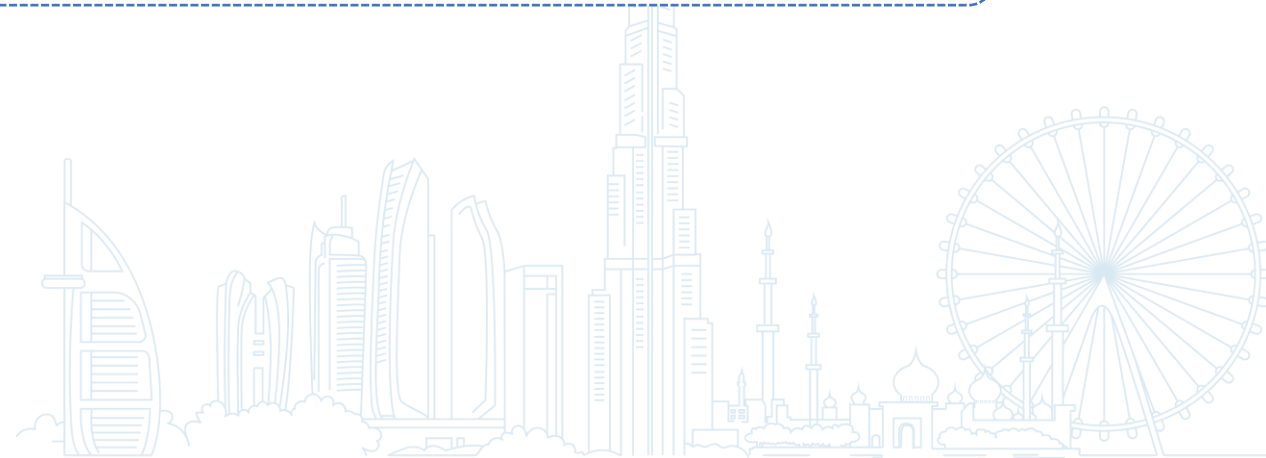


Disclosures



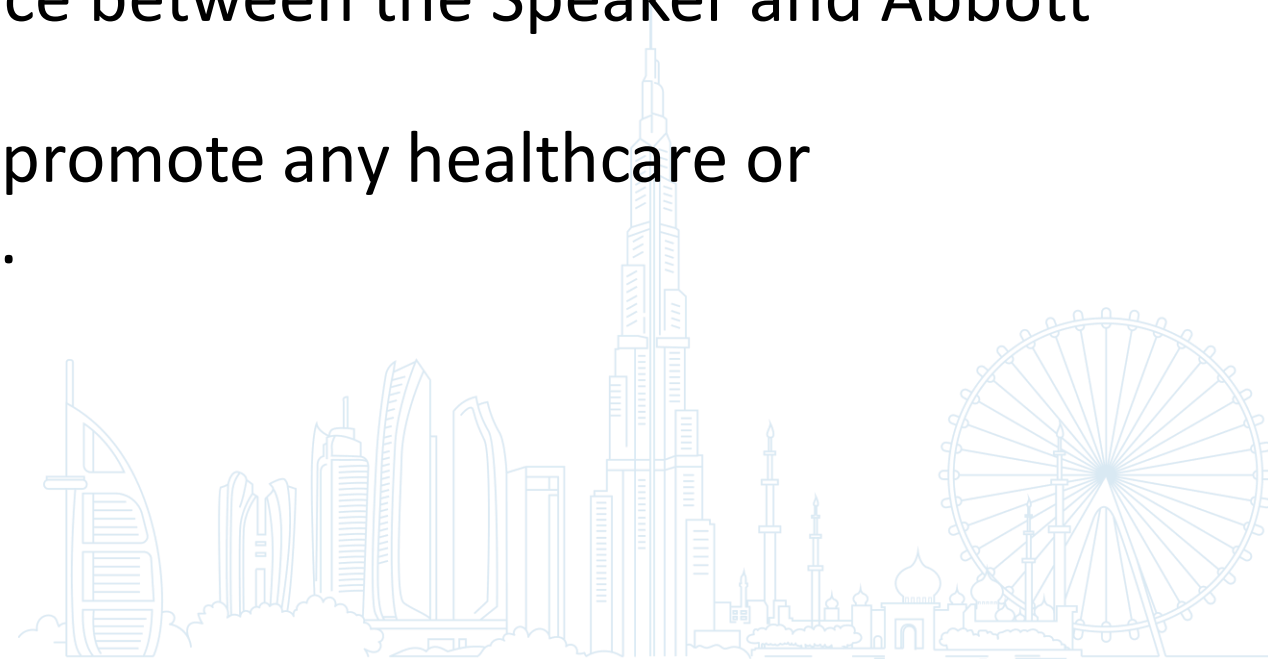
**A member of advisory boards for Sanofi (UAE, Global),
Abbott, Janssen, Lunatus, Synergy, Takeda,
Novonordisk, Julphar.**

**A lecturer for Sanofi (UAE, Global), Abbott, Janssen,
Lunatus, Synergy, Dr Falk, Takeda, Spimaco, Julphar,
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- The Speaker and Abbott Laboratories has a Professional service agreement in place as of 19/4/2024 and this presentation is made based on the said Agreement in place between the Speaker and Abbott Laboratories.
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Agenda

- Why constipation ?
- Pathophysiology of constipation
- Clinical picture and diagnosis
- Treatment concepts (Focus on Laxatives)
- Conclusion and guidelines





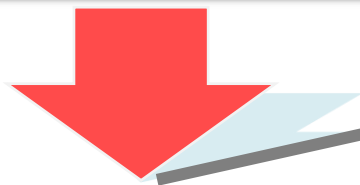
Constipation is an aggravating, but not life-threatening or debilitating, complaint

- The most common digestive complaint and a health burden with negative impact on quality of life.

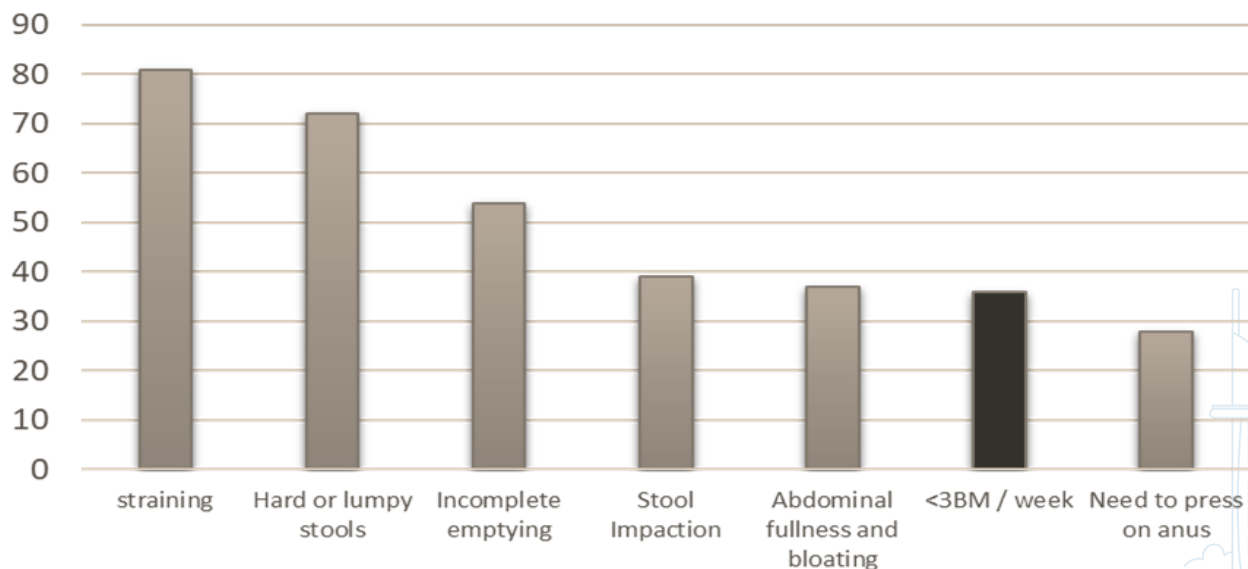


Constipation as defined in real world clinical practice.

Patient's perspective:
 Patients usually define constipation by symptoms (e.g. straining, bloating and hard stools)



Patient description of constipation



Healthcare providers often use **bowel movement (BM) frequency** (e.g. < 3 BM per week)



Herz et al. *Fam Pract* 1996;13(2): 156-9

Cash BD & Chey WD. *Pharmacol Ther* 2005;22:1047-1060.



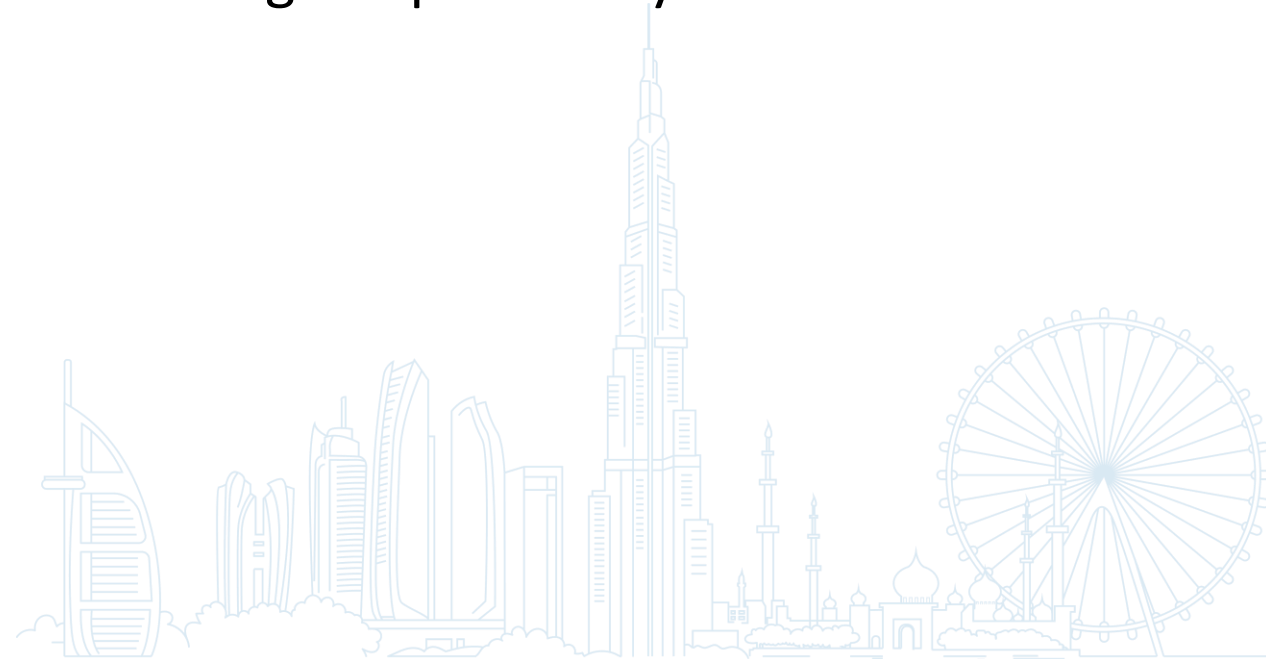
Constipation Occasional or Chronic.

Occasional

- if acute or subacute constipation occur in a middle-aged or elderly patients, for Less than 6 weeks.
- should prompt a search for an obstructing colonic lesion.

Chronic

- if it occurred for at least 12 weeks (in total, not necessarily consecutively) during the previous year.



Constipation: Primary or secondary

Medications

-Analgesics:

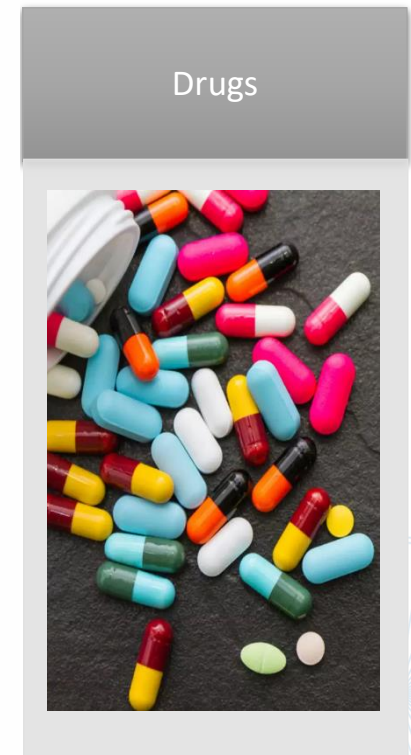
- NSAIDs
- Opioids

-Antihypertensive agents:

- Diuretics
- Calcium channel blockers



- Antidepressants
- Antihistamines
- Antiparkinson agents
- Metallic ions



Constipation : A role for dysbiosis.

Microbe derived	Neuroactive molecules	Neuronal signaling
SCFA	Neurotransmitter synthesis	Vagal stimulation
Tryptophan metabolites	Regulation of signaling	
MAMPs		



Central nervous system

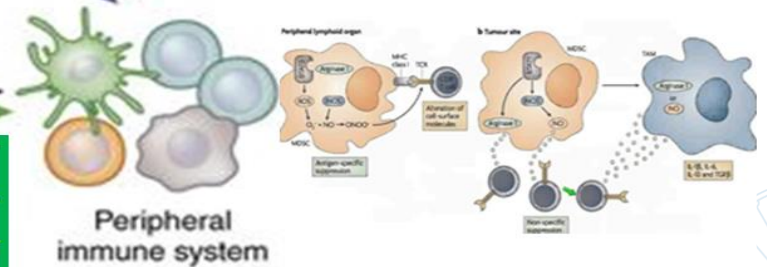
Tissue factors	Neurogenesis	Neural development
T _h 1 IL4 IL7 IL10 γIFN	Ly6c monocytes	IL17A γIFN

Neuroendocrine signaling
HPA axis

- microbe composition,
- intestinal permeability,
- intestinal motility,
- immune regulation



Microbe derived	Immune pathway
SCFAs	Treg differentiation
MAMPs	Th17
• PSA	Antibody production
• TLR	Antigen presentation
• NLR	MNPF



Peripheral immune system





Rome IV: Five distinct categories of Functional GI diseases

- ❑ A functional bowel disorders (FBD) in which recurrent abdominal pain is associated with defecation or a change in bowel habit: constipation, diarrhea, or a mix.
- ❑ Abdominal bloating/distention.
- ❑ Symptom onset should occur at least 6 months before diagnosis and symptoms should be present during the last 3 months.

Significant **overlap exists between these disorders**. These disorders should be thought of as existing on a continuum, rather than as in isolation. **A patient with IBS (right) will have symptoms of abdominal pain, in contrast to a patient with FC or FDr, who does not have abdominal pain.** Bloating and distention are common symptoms frequently reported by patients with any FBD.

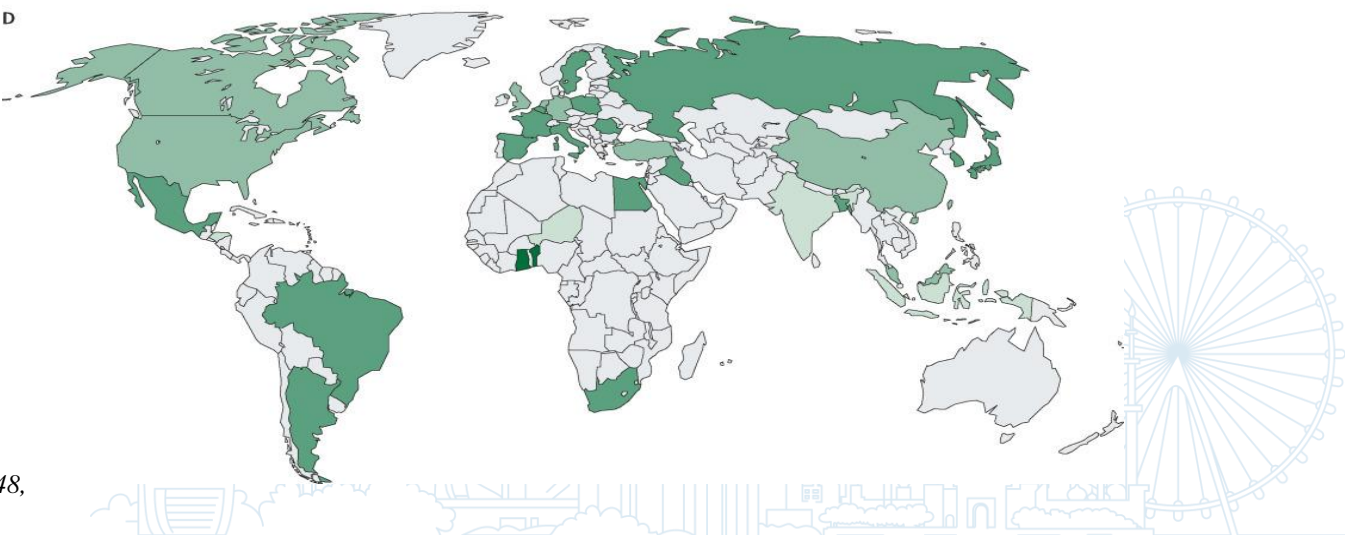
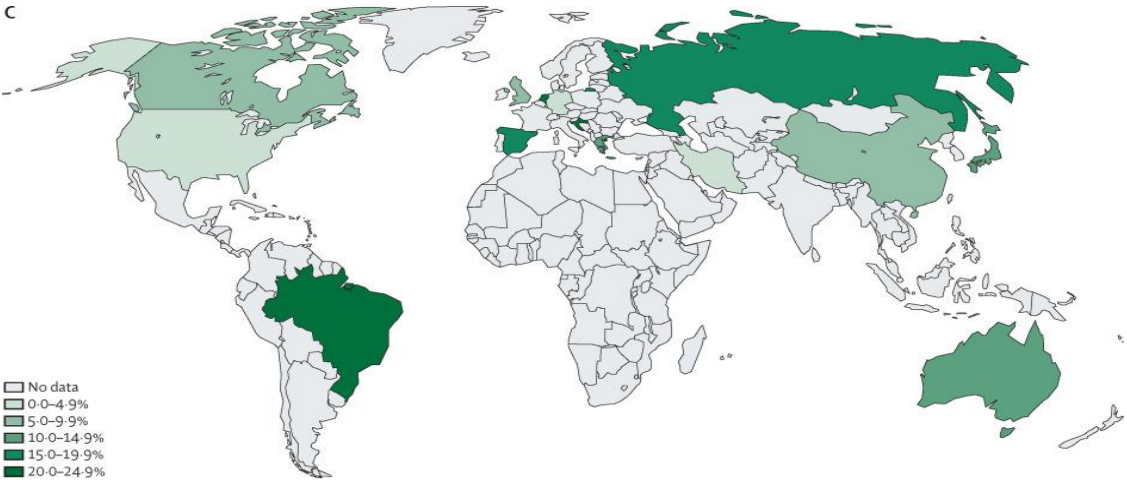


Prevalence of chronic functional Constipation

Systemic review & Network meta-analysis

8174 citations evaluated, 45 studies fulfilled the eligibility criteria, representing 80 separate populations and comprising 275 260 participants

Criteria	95% CI
Rome I	15.3% (8.1–24.4, $I^2=99.4\%$)
Rome II	11.2% (7.9–14.9; $I^2=99.6\%$)
Rome III	10.4% (6.5–14.9; $I^2=99.8\%$)
Rome IV	10.1% (8.7–11.6; $I^2=98.2\%$)



Functional constipation

- May occur at any age group
- More prevalent in females
- Prevalence is comparable with other chronic diseases

Prevalence of Chronic Constipation in pregnancy.



- The prevalence of constipation in pregnancy ranges from 11% to 44%¹.
- Up to 40% of women may suffer symptoms of constipation at some stage during their pregnancy².
- Evidence suggests that a great number of women experience constipation up to 3 to 6 months postpartum and may even persist to 12 months **post-delivery**¹.
- The prevalence of postpartum constipation was estimated to be **24%** at 3 months postpartum².

Trimester	Prevalence of constipation
First trimester	24%
Second trimester	16%
Third trimester	26%
Postpartum	24%

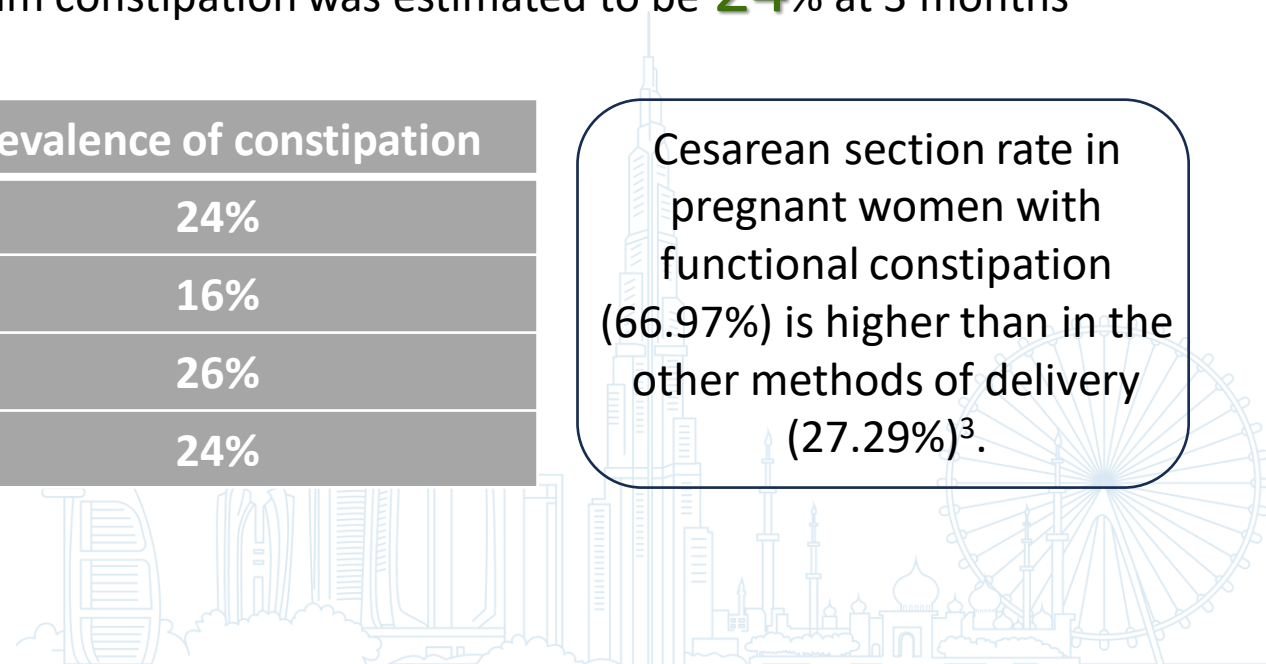
Cesarean section rate in pregnant women with functional constipation (66.97%) is higher than in the other methods of delivery (27.29%)³.

1-Rungsiprakarn et al Cochrane Database Syst Rev.2015Sep 4;(9):CD011448. 10.1002/14651858.CD011448.pub2.

2-Bradley et al. Obstet Gynecol. 2007.110(6):1351-1357.

3-Shi et al. PLoS ONE. 2015. 10(7): e0133521

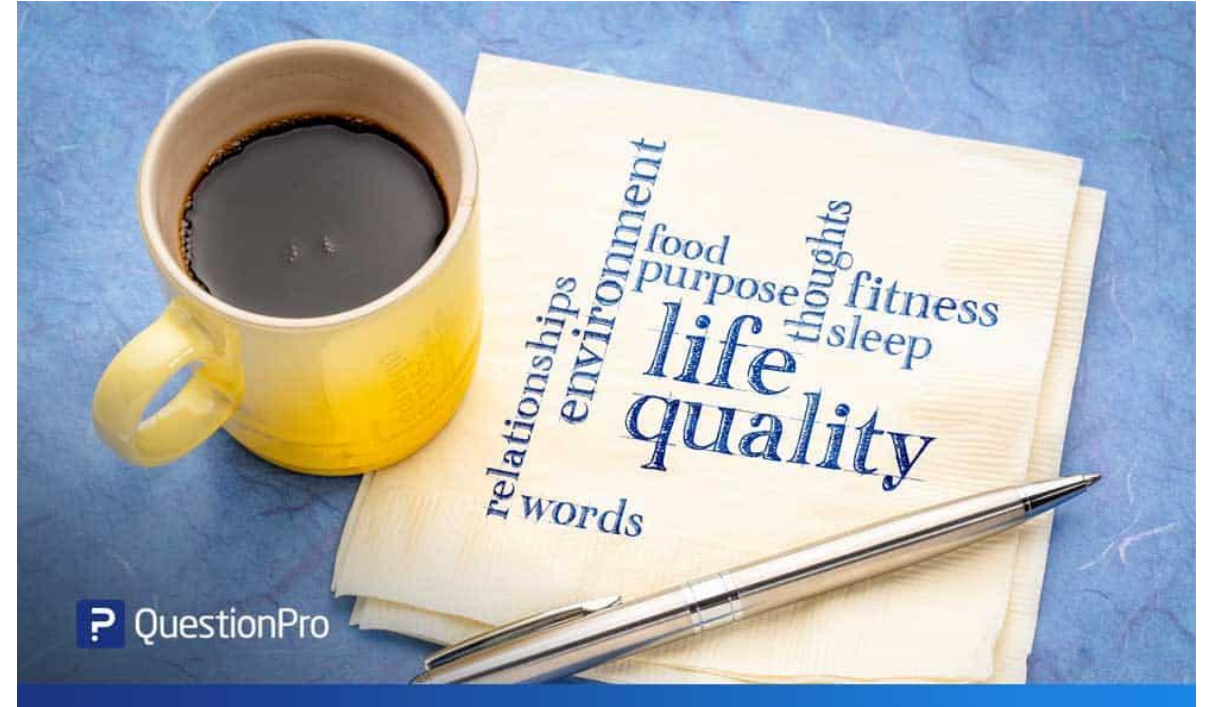
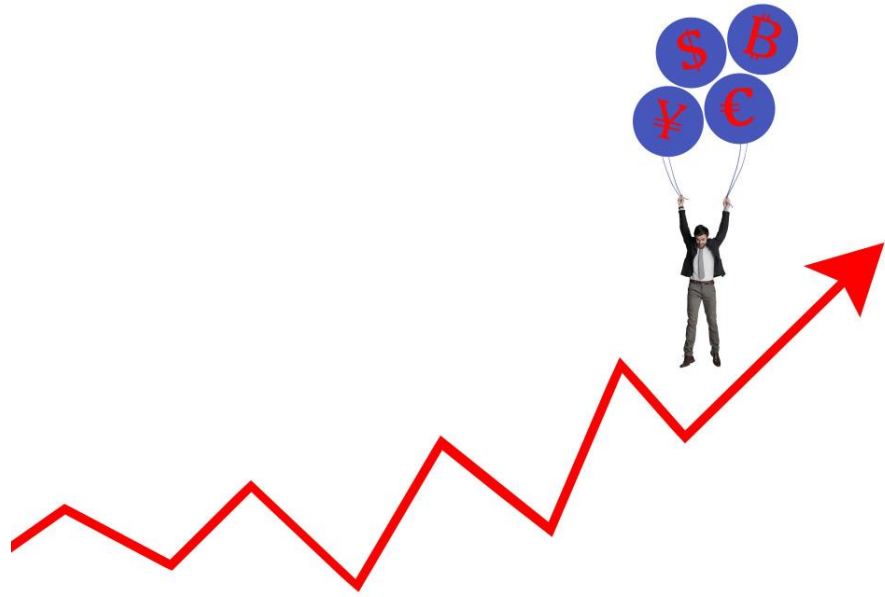
4. Turawa et al. Cochrane Database Syst Rev. 2014;(9):CD010273.



Comorbidities associated with Chronic Constipation

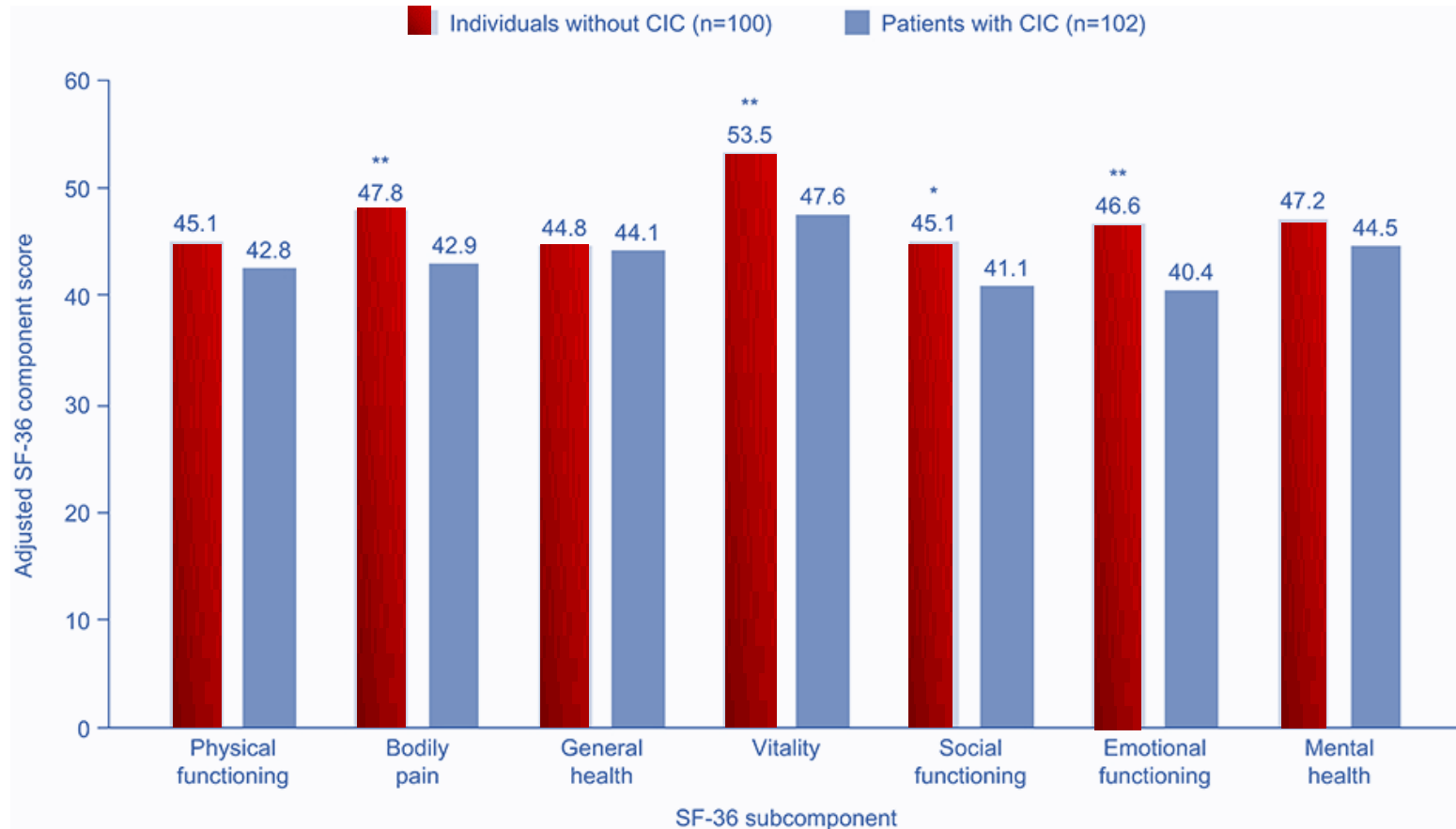
GI Comorbidities

Gastrointestinal comorbid conditions	Chronic constipation <i>n</i> = 262 (%)	Matched controls <i>n</i> = 262 (%)	<i>p</i> -value ^a
Hemorrhoids	59 (23%)	49 (19%)	0.34
Anal fissures	7 (3%)	8 (3%)	1.00
Rectocele	10 (4%)	13 (5%)	0.66
Anal or rectal cancer	3 (1%)	2 (1%)	1.00
Fecal incontinence	2 (1%)	7 (3%)	0.18
Colon cancer	3 (1%)	5 (2%)	0.73
Enterocele/sigmoidocele	3 (1%)	8 (3%)	0.23
Diverticulosis	91(35%)	85 (32%)	0.61
Diverticulitis	13 (5%)	15 (6%)	0.85
Small bowel/colonic stricture/stenosis	2 (1%)	8 (3%)	0.11
IBS ^b	13 (5%)	21(8%)	0.23
Ischemic colitis	4 (2%)	3 (1%)	1.00
Microscopic colitis	0	3 (1%)	0.04
Crohn's disease	1 (0.4%)	1(0.4%)	1.00
Ulcerative colitis	1 (0.4%)	3 (1%)	0.63
Prior cancer	88 (34%)	89 (34%)	1.00
Peptic ulcer disease	4 (1.5%)	3 (1%)	1.00
Anal surgery	6 (2%)	3 (1%)	0.51
Colonic surgery	8 (3%)	11 (4%)	0.65
Cholecystectomy	14 (5%)	15 (6%)	1.00
Abdominal hernia	7 (3%)	4 (2%)	0.55



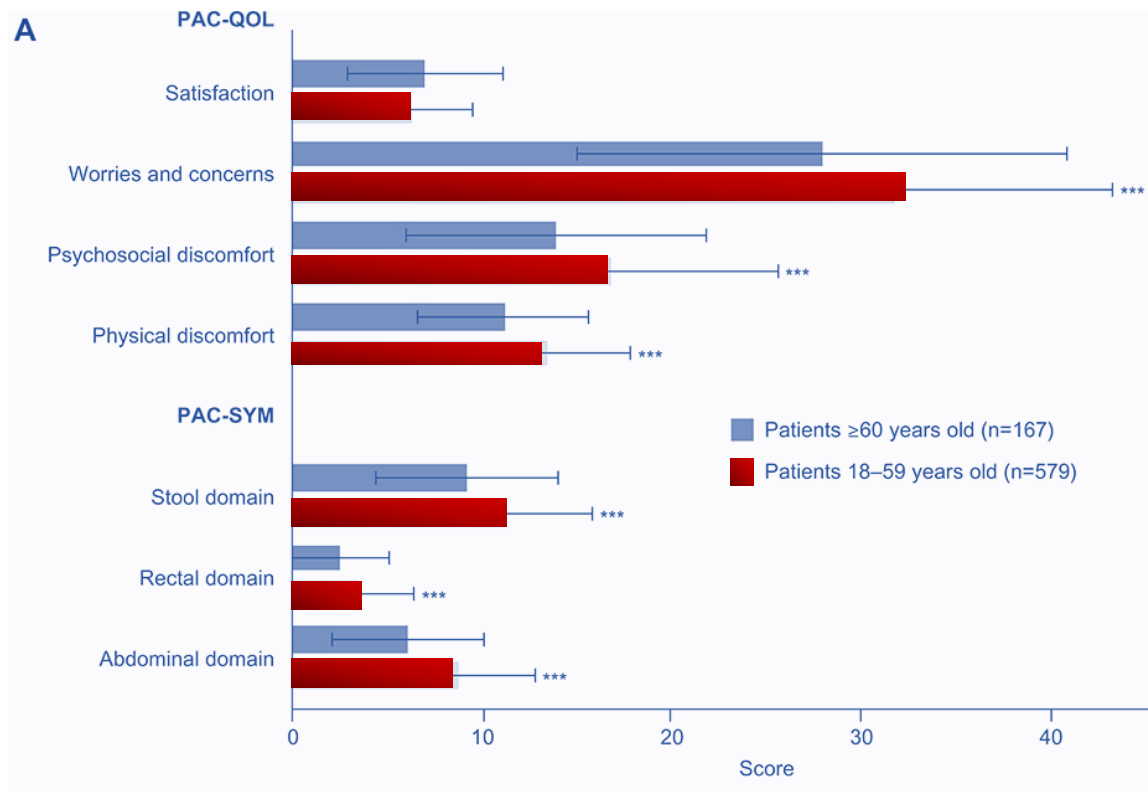
Quality of life and economic burden.

Chronic Constipation has a detrimental effect on HRQoL.

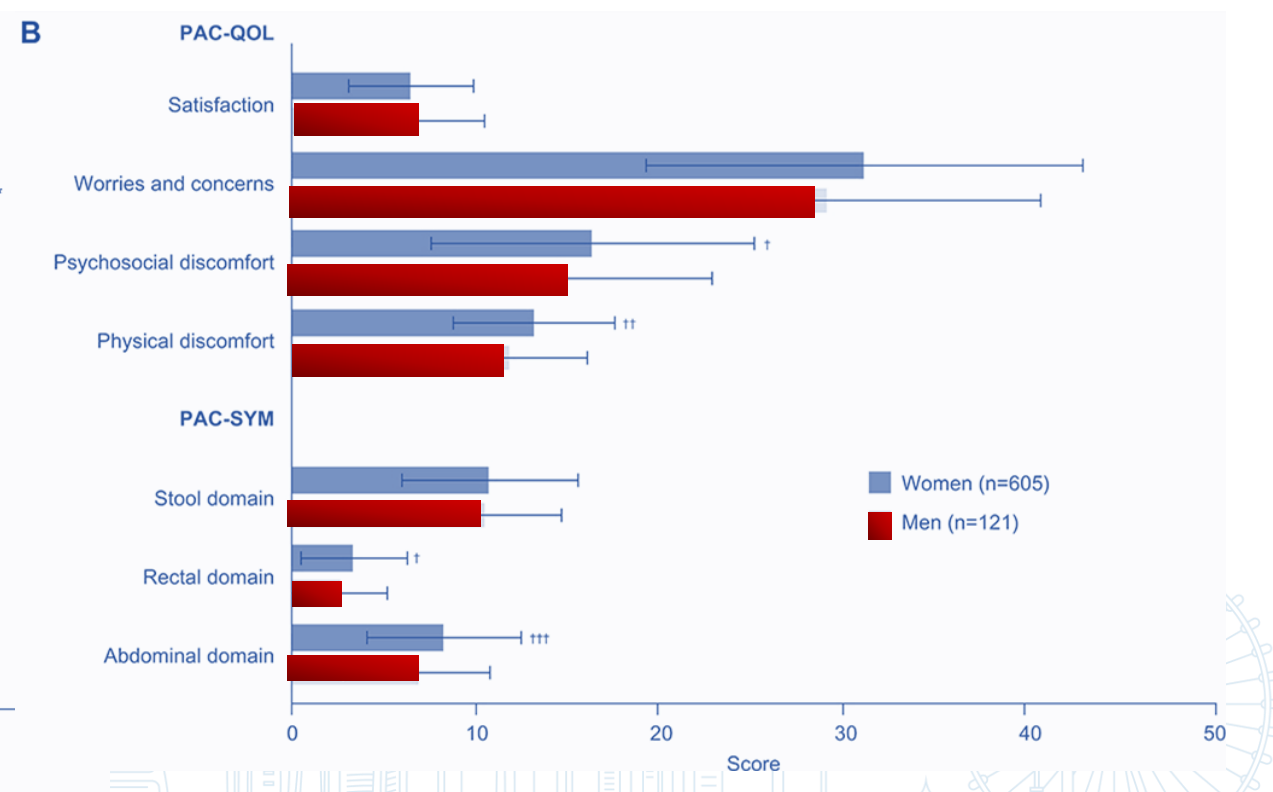


Chronic Constipation has a detrimental effect on HRQoL.

HRQoL for patients 18-59 years was more affected than patients >60 years of age



HRQoL was more affected in Women than in men at all age groups





Chronic Constipation poses a significant health burden.

Direct costs		Indirect costs
Physicians visits	(2.7 mio ... 2001)	OTC treatment
Hospitalization	(235 mio ... 2001)	Restricted activities
Medications	(800 mio ... 2001)	Lost income
Procedures	(3000 mio ... 2001)	Cost of care givers

Dennison C, et al. Pharmacoeconomics 2005;23(5):461–476



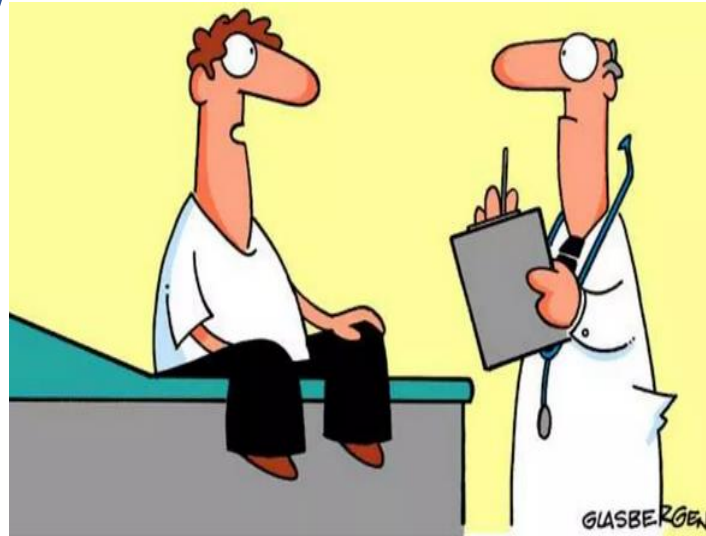


Clinical evaluation and diagnosis.



Chronic Constipation : Clinical evaluation.

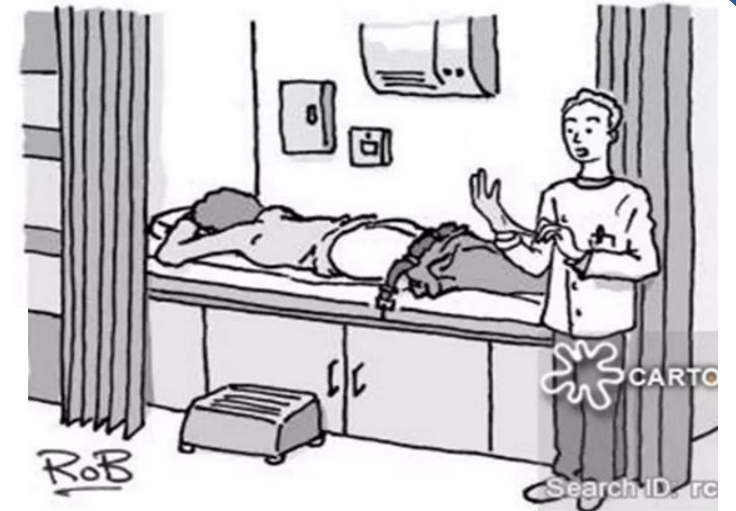
Step 1 ... Get detailed medical history



**"I already diagnosed myself on the Internet.
I'm only here for a second opinion."**

1. Ask key questions and consider ways of improving patient-physician communication.
2. Define patient complaints and consider if they meet the criteria of CC
3. Consider the red flags
 - Frequency
 - Straining or not?
 - Time spent in the toilet ?
 - Stools shape & consistency ?
 - Postural or digital manoeuvres to assist defecation ?
 - complete or incomplete evacuation ?
 - Use of laxatives ? Response?
 - Exclude secondary causes

Step 2 ... rectal examination



**"Believe me, this is worse for me
than it is for you."**



Chronic Constipation: The red flags.

Unexplained weight loss
Rectal bleeding
Family history of CRC

Constipation may be one of the earliest symptoms when CRC had developed

Rectal masses
Increased cancer markers





Chronic Constipation: Step 3, diagnostic tests.

- *Anorectal manometry*
- *Colonic transit assessment*
- *Balloon expulsion test*
- *Defecography and MR defecography*
- *Wireless motility capsule test*
- *Colonic manometry*



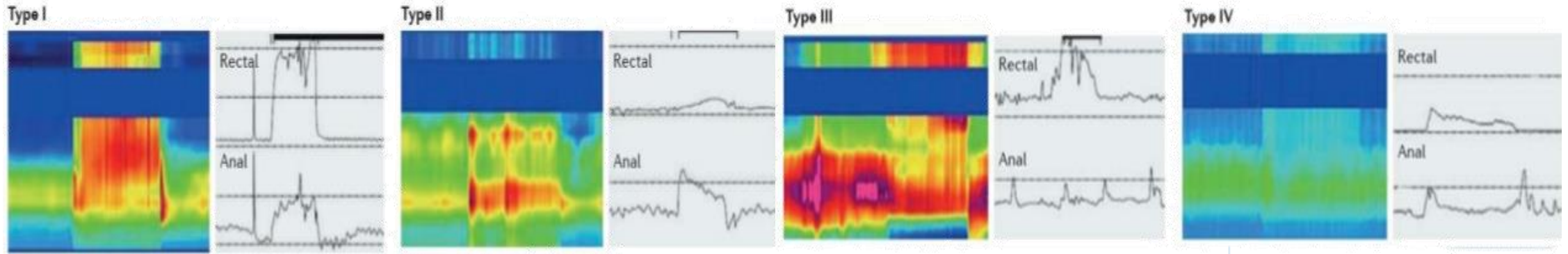
Chronic Constipation: Balloon expulsion test.

Expulsion time of >2 min
is considered abnormal

High specificity (80-90%)
& low sensitivity (50%)
for Dyssynergia



Chronic Constipation: Manometric patterns.

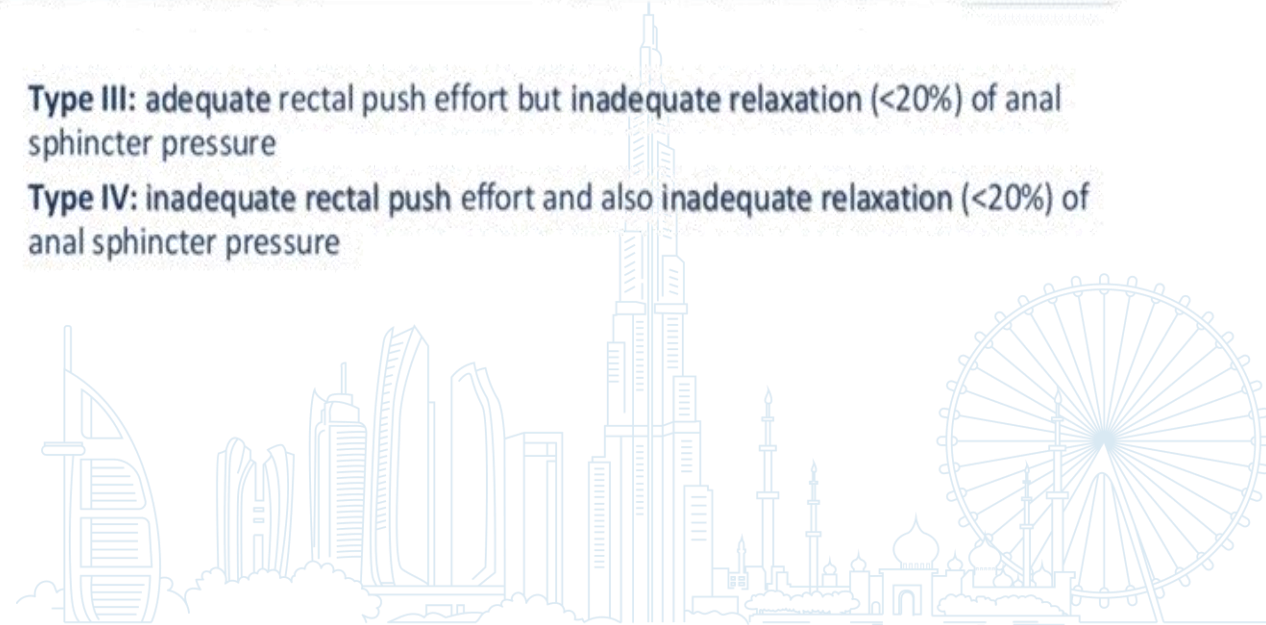


Type I: adequate rectal push effort with paradoxical anal sphincter contraction

Type II: inadequate rectal push effort with paradoxical anal sphincter contraction

Type III: adequate rectal push effort but inadequate relaxation (<20%) of anal sphincter pressure

Type IV: inadequate rectal push effort and also inadequate relaxation (<20%) of anal sphincter pressure

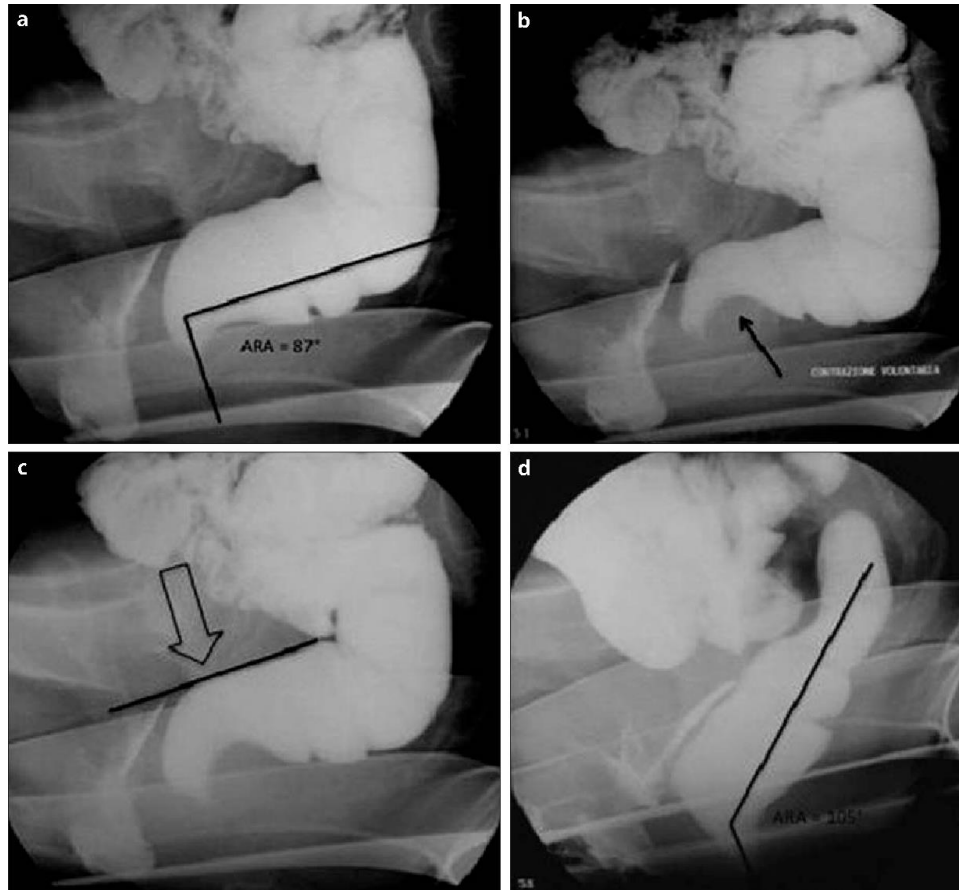


Chronic Constipation: Colonic transit time.



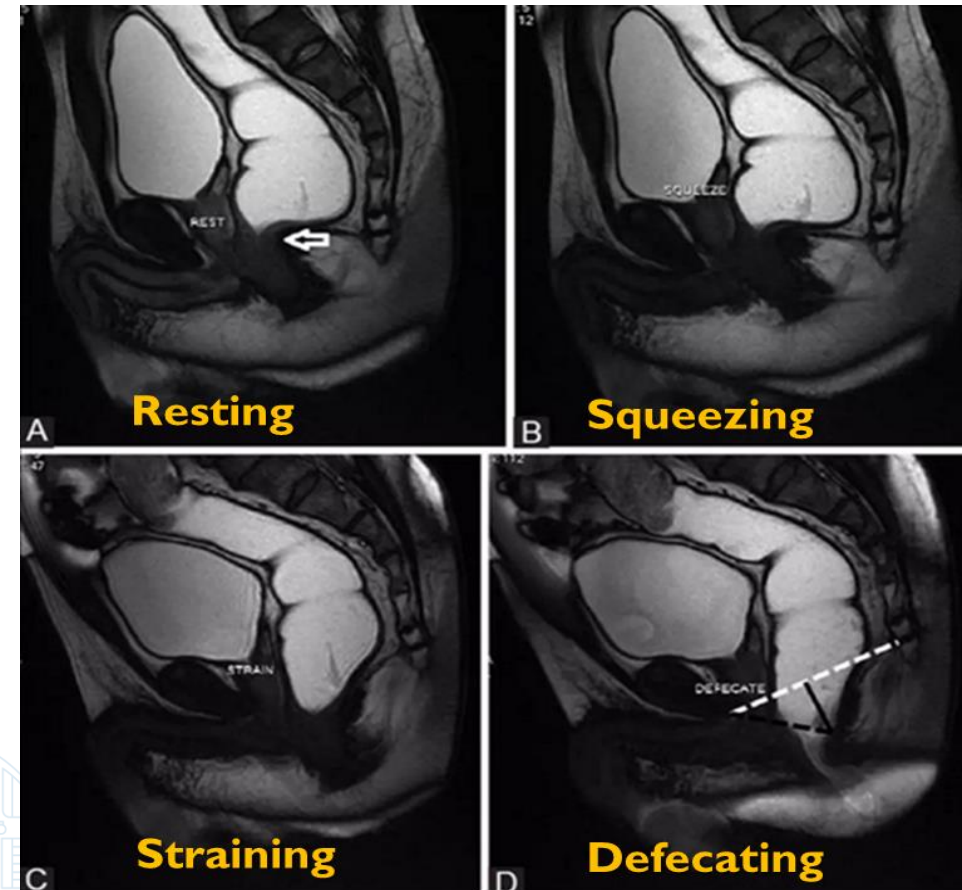
Chronic Constipation: Radio-imaging.

Defecography



150 ml of barium paste is placed in the rectum & patient is asked to expel the barium in a sitting position on a special commode

MR defecography

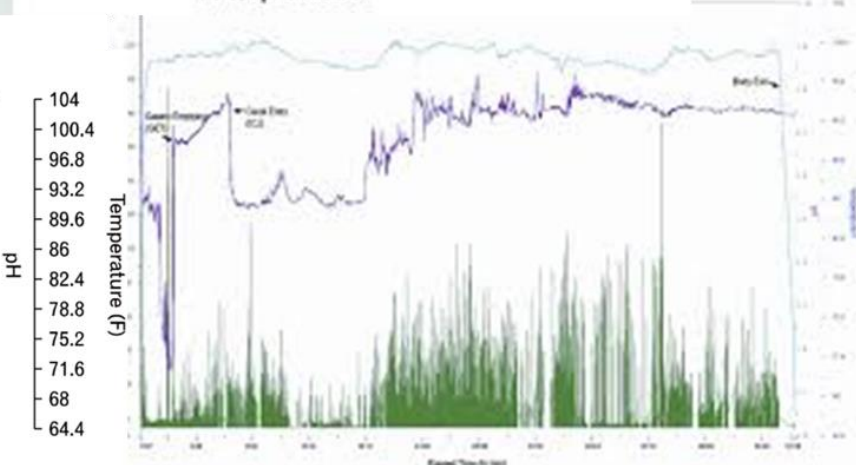
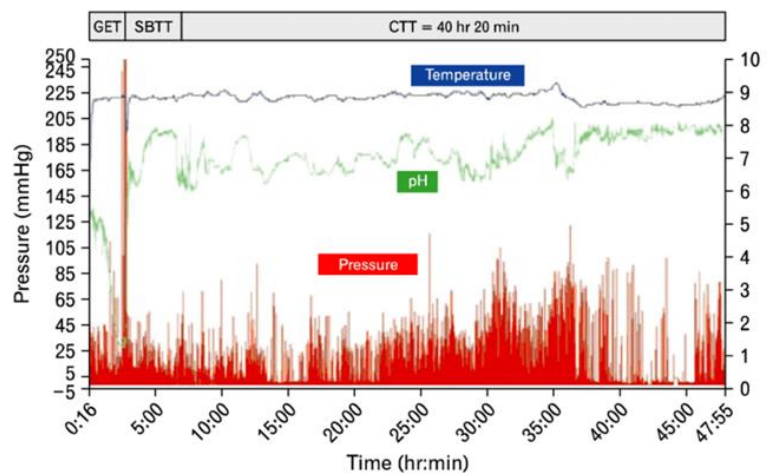
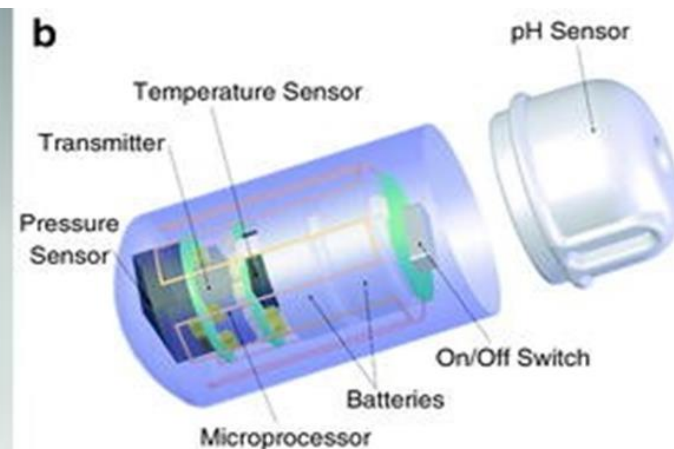


More precise with excellent details of all pelvic organs but more expensive



Chronic Constipation: Wireless Motility Capsule (WMC).

- FDA approved
- Recommended by the American and European NGMS
- No radiation exposure
- Asses regional and whole gut transit time
- Normal colonic transit time <59 hrs
- Whole gut transit <73 hrs



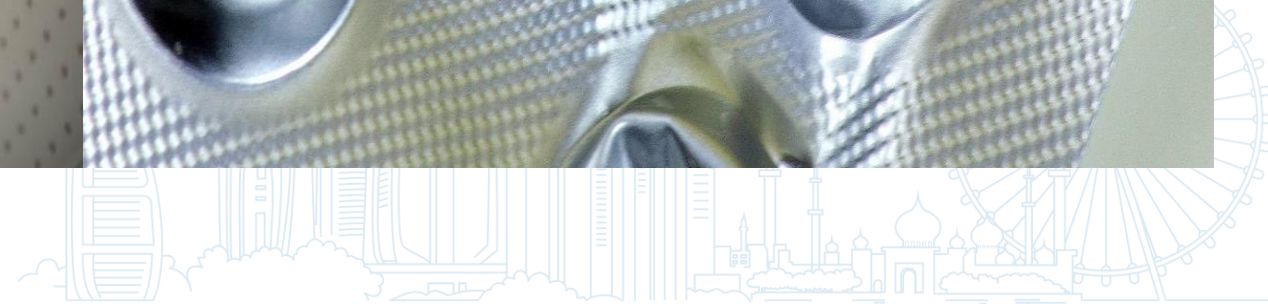
Chronic Constipation: Treatment

Life style modification.

	European GL	French GL	Spanish GL	Korean GL
Lifestyle	<p>Overall lifestyle modifications have a positive effect</p> <ul style="list-style-type: none"> • Evidence: Moderate • Recommendation: Strong • Agreement: 100% 	<p>Behavioural rules (daily presentation to the toilet, optimal position on the toilet, environmental conditions)</p> <ul style="list-style-type: none"> • Positive effect • Expert Recommendation 	NA	NA
Diet	<p>Increase of fiber intake has positive effect, especially if combined with fluid increase</p> <ul style="list-style-type: none"> • Evidence: Low • Recommendation: Weak • Agreement 92% 	<p>Increase of fiber intake has positive effect. Dried plums have a better efficacy than psyllium in mild to moderate constipation</p> <ul style="list-style-type: none"> • Evidence II, Grade B • Consumption of foods other than fiber: not positive not negative effect • Expert Recommendation • Overeating has positive effect only in undernourished patients • Expert Recommendation 	<p>Consuming high fiber foods has a positive effect</p> <ul style="list-style-type: none"> • Evidence: Moderate • Recommendation: Strong 	<p>Dietary fiber has a positive effect.</p> <p>Evidence: C</p> <ul style="list-style-type: none"> • Recommendation: 2 • Experts' agreement: completely agree: 27.6%; mostly agree: 72.4% • It can be an initial strategy • Evidence: C. • Recommendation: 2. • Experts' agreement: completely agree: 35.7%, mostly agree: 60.7%; partially agree: 3.6%
Increase of fluid intake	<p>Positive effects only in dehydrated patients</p> <ul style="list-style-type: none"> • Evidence: Low • Recommendation: Strong • Agreement: 100% 	<p>Positive effect in dehydrated patients or in those assuming fiber</p> <ul style="list-style-type: none"> • Expert Recommendation • Positive effect of water rich in magnesium • Level II, Grade B 	<p>Positive effect only if associated with fiber supplement</p> <ul style="list-style-type: none"> • Evidence: Low • Recommendation: Weak 	<p>Positive effect in dehydrated patients or when bulking agents are added</p> <ul style="list-style-type: none"> • Evidence: C • Recommendation: 1 • Experts' agreement completely agree: 37.0%; mostly agree: 55.6%; partially agree: 7.4%
Exercise	<p>Not positive not negative effect on constipation</p> <ul style="list-style-type: none"> • Evidence: Moderate • Recommendation: Strong • Agreement: 92% 	<p>Not positive not negative effect on constipation</p> <ul style="list-style-type: none"> • Expert Recommendation 	<p>Positive effect</p> <ul style="list-style-type: none"> • Evidence: Low • Recommendation weak 	<p>Positive effect.</p> <ul style="list-style-type: none"> • Evidence: C • Recommendation: 2 • Experts' agreement: completely agree: 7.1%, mostly agree: 67.9%, partially agree: 14.3%, mostly disagree: 10.7%

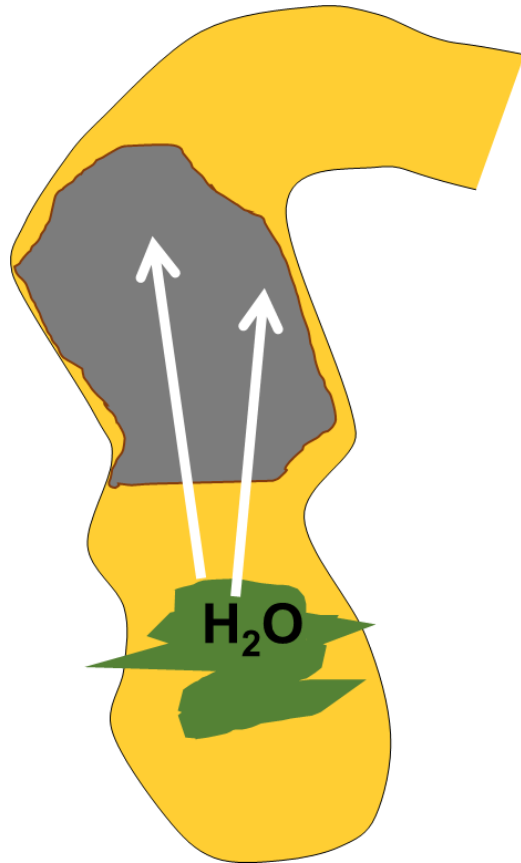


Medicinal Treatment.



Chronic Constipation: Bulking laxatives.

Absorbs 40 times its own weight in water



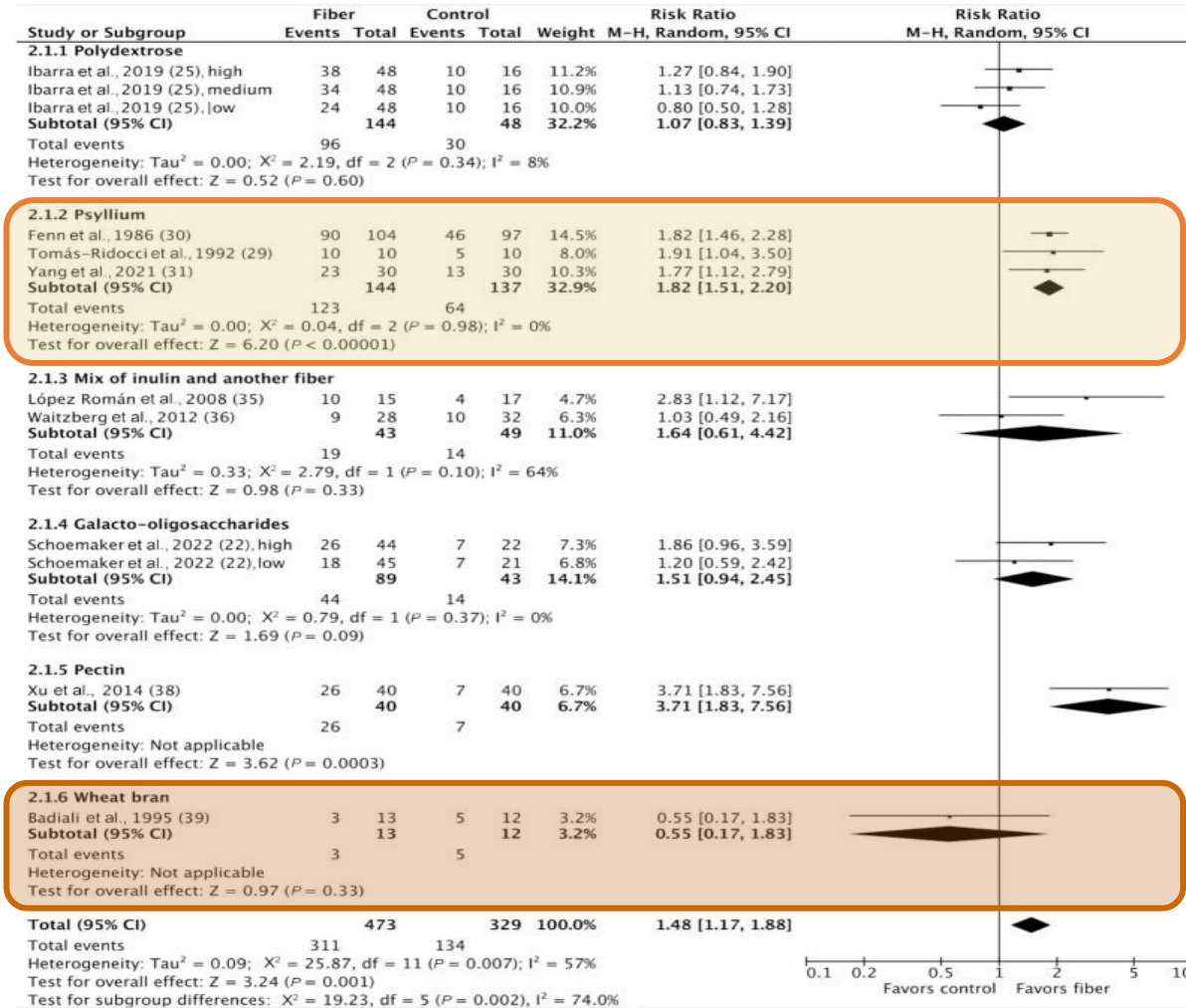
- Should be mixed in a glass of water or juice, stirred and drunk immediately followed by a half to a full glass of water.
- Insufficient fluid intake cause the drug to solidify in GI tract and result in intestinal obstruction
- may not be appropriate for patients who must restrict oral fluid intake (patients with **kidney** or **heart failure**).
- Patients with narrowing of the digestive tract (including esophageal stricture, intestinal stricture, or severe adhesions) may be exposed to the risk of blockage of the intestine or the esophagus.
- May cause abdominal distention



Chronic Constipation: Bulking laxatives, NW meta-analysis.



Plantago Ovata










Chronic Constipation: Osmotic laxatives.



Chronic Constipation: Osmotic laxatives, Meta-analysis of high quality studies.

Study or Subgroup	Laxatives			Placebo			Weight	Mean Difference IV, Random, 95% CI	Year	Mean Difference IV, Random, 95% CI
	Mean	SD	Total	Mean	SD	Total				
1.2.1 Osmotic laxatives										
Baldonado 1991	13.56	6.74	16	5.53	3.58	15	5.4%	8.03 [4.26, 11.80]	1991	
Corazziari 1996	4.8	2.3	25	2.8	1.6	23	17.0%	2.00 [0.89, 3.11]	1996	
DiPalma 2000	4.5	3	80	2.7	1.8	71	18.9%	1.80 [1.02, 2.58]	2000	
DiPalma 2007	7.9	4.5	204	5.6	5.5	100	16.2%	2.30 [1.06, 3.54]	2007	
Subtotal (95% CI)			325			209	57.5%	2.51 [1.30, 3.71]		

Heterogeneity: $\tau^2 = 0.95$; $\text{Chi}^2 = 10.22$, $\text{df} = 3$ ($P = 0.02$); $I^2 = 71\%$
 Test for overall effect: $Z = 4.08$ ($P < 0.0001$)

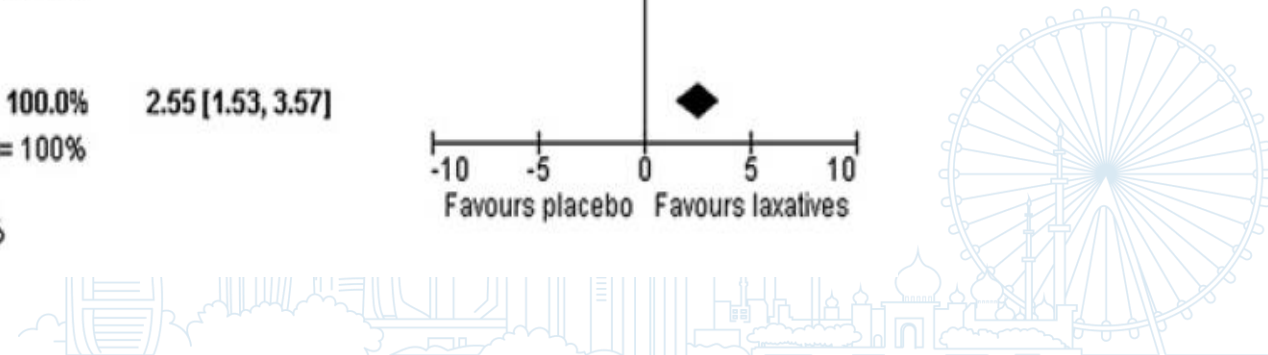
Test for overall effect: $Z = 3.12$ ($P = 0.002$)

	325	209		
Total (95% CI)			805	464 100.0%
				2.55 [1.53, 3.57]

Heterogeneity: $\tau^2 = 1.26$; $\text{Chi}^2 = 1642.45$, $\text{df} = 5$ ($P < 0.00001$); $I^2 = 100\%$

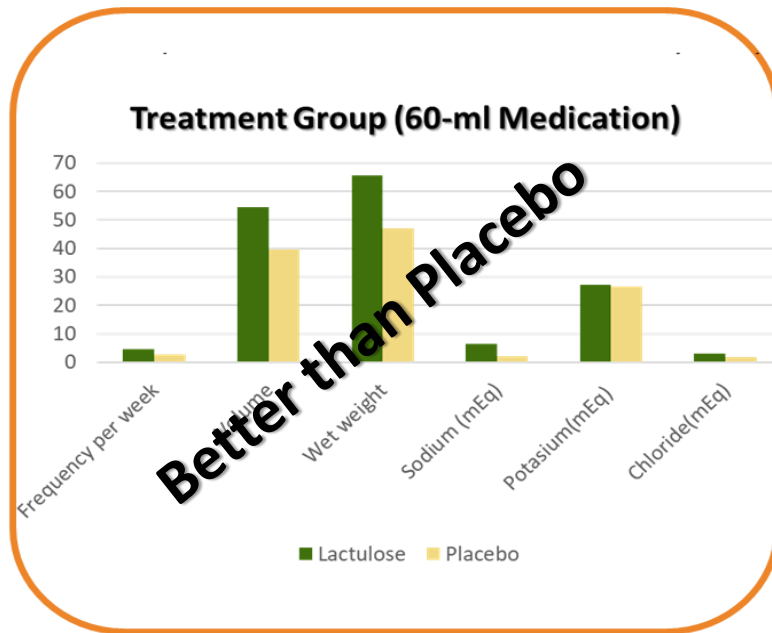
Test for overall effect: $Z = 4.92$ ($P < 0.00001$)

Test for subgroup differences: $\text{Chi}^2 = 0.05$, $\text{df} = 1$ ($P = 0.81$), $I^2 = 0\%$



Chronic Constipation: Osmotic laxatives, Lactulose.

Double-blind drug treatment period comparing lactulose with placebo.

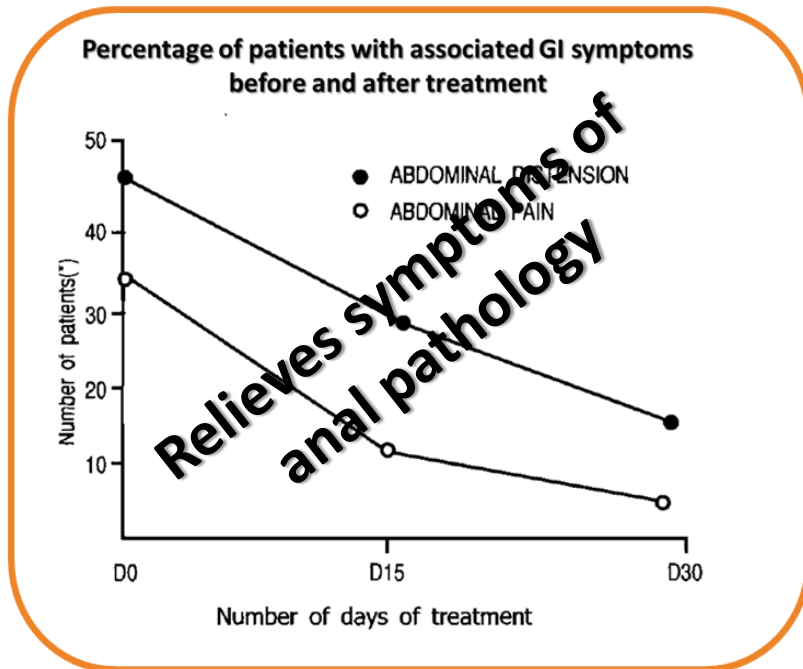


Similar to PEG



Chronic Constipation: Osmotic laxatives, Lactulose.

Open study conducted on outpatients with constipation associated with an anal pathology

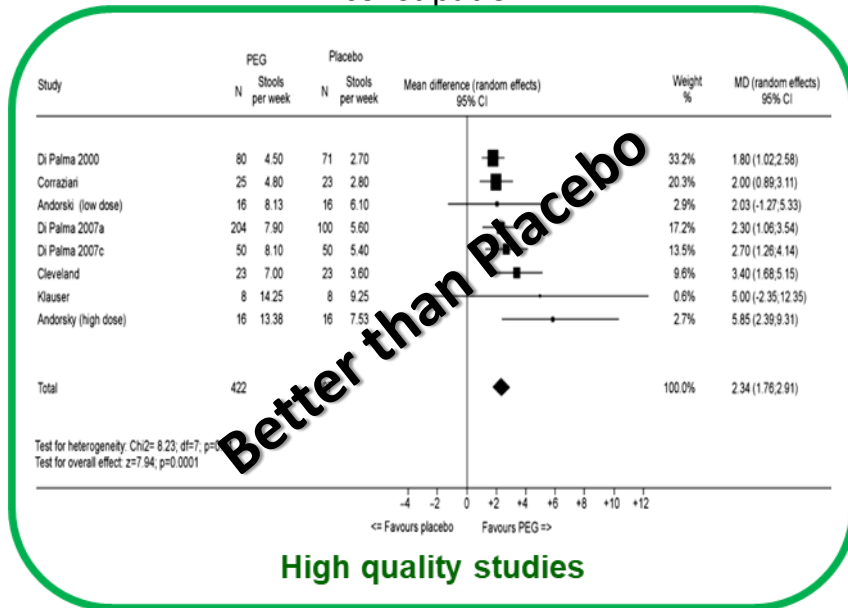


Lactulose is good after repair of anal sphincter

Better than Placebo for postpartum constipation

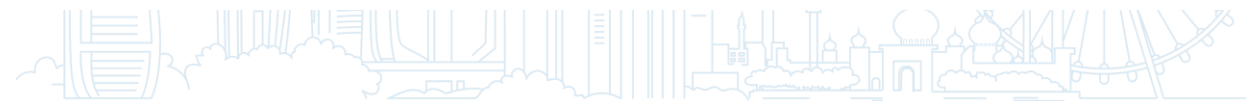
Chronic Constipation: Osmotic laxatives, Macrogol.

PEG vs Placebo Systematic review and network meta-analysis in adults with non-organic constipation.



Adding electrolytes has no added effect

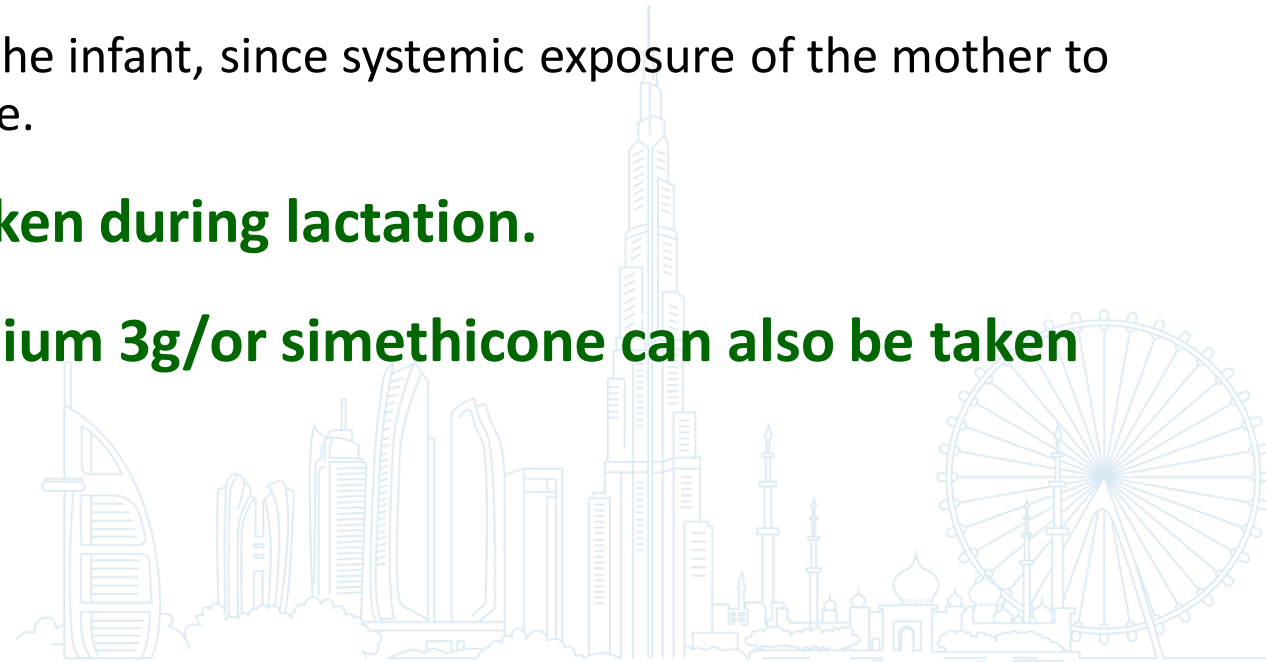
Good for fecal impaction in children



Macrogol in Pregnancy and lactation.

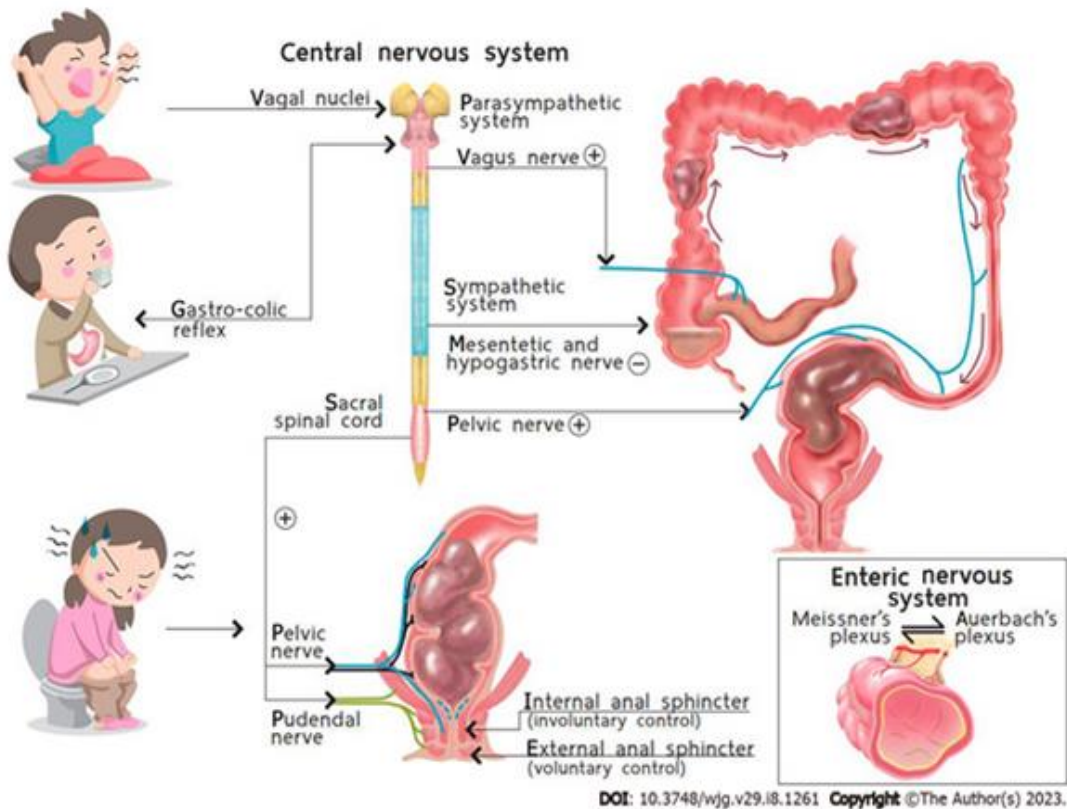


- No effect anticipated during pregnancy, since systemic exposure is negligible with PEG
- **PEG 3350/4000 can be taken during pregnancy.**
 - No effect anticipated on the infant, since systemic exposure of the mother to macrogol 4000 is negligible.
- **PEG 3350/4000 can be taken during lactation.**
- **PEG 3350/4000 with Psyllium 3g/or simethicone can also be taken during lactation.**



Macrogol in Pediatric and adolescence.

- PEG and lactulose are effective laxatives in children. There is limited evidence of its utilization and safety in infants.



Macrogol and lactulose: Combined in colonoscopy prep.

PEG combined with lactulose could improve bowel cleansing effect with fewer adverse reactions, thus serving as a simple, convenient, safe and effective method for bowel preparation.

Clinics 78 (2023) 100172



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Review articles

Polyethylene glycol combined with lactulose has better efficacy than polyethylene glycol alone in bowel preparation before colonoscopy: A meta-analysis

Xiaofen Zhang^a, Yishu Chen^a, Ye Chen^b, Wei Zhu^a, Chenxi Tang^a, Shelby Lamm^b, Lan Li^{a,*}

^a Department of Gastroenterology, The First Affiliated Hospital, Zhejiang University School of Medicine, Zhejiang Province, China
^b Department of Mathematics and Statistics, Northern Arizona University, Flagstaff, USA

HIGHLIGHTS

- High quality of bowel cleansing is important to the accuracy of diagnosis and the safety of treatment in colonoscopy.
- PEG combined with lactulose has a better efficacy in bowel preparation than PEG alone.
- PEG combined with lactulose has fewer adverse reactions than PEG alone in bowel preparation.

ARTICLE INFO

Keywords:
 Bowel preparation
 Colonoscopy
 Polyethylene glycol
 Lactulose
 Meta-analysis

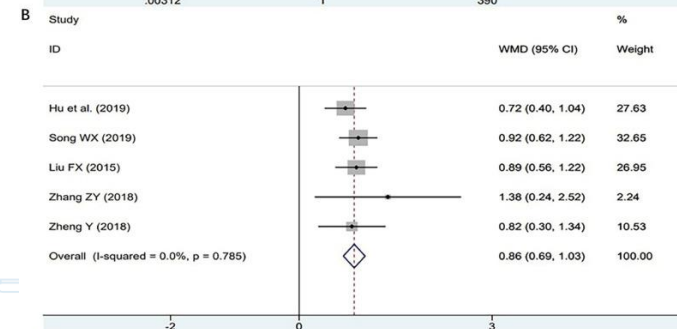
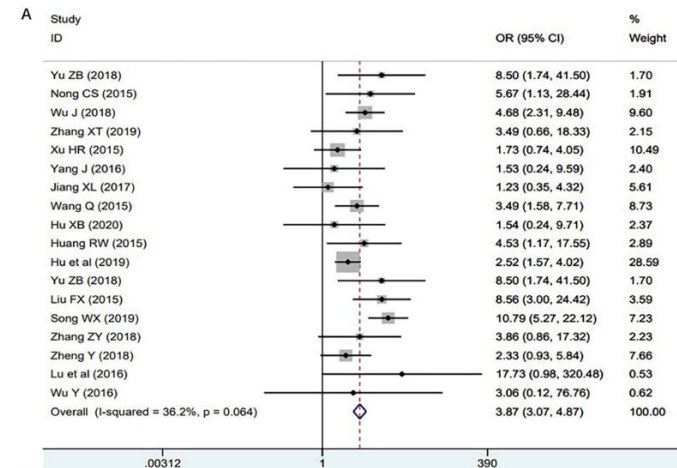
ABSTRACT

Background: The accuracy of diagnosis and the safety of treatment in colonoscopy depends largely on the quality of bowel cleansing. This study aimed to compare the efficacy and adverse reactions of Polyethylene Glycol (PEG) combined with lactulose with that of PEG alone in bowel preparation before colonoscopy.

Methods: The authors searched a number of databases including EMBASE, MEDLINE, Cochrane Library, and China Academic Journals Full-text Database. The authors screened according to literature inclusion and exclusion criteria, assessed the quality of the included literature, and extracted the data. The meta-analysis of included literature used RevMan 5.3 and Stata 14.0 software.

Results: A total of 18 studies, including 2274 patients, were enrolled. The meta-analysis showed that PEG combined with lactulose had a better efficacy (OR = 3.87, 95% CI 3.07–4.87, $p = 0.000$, and $I^2 = 36.2\%$ in the efficacy group; WMD = 0.86, 95% CI 0.69–1.03, $p = 0.032$ and $I^2 = 0\%$ in the BBPS score group) in bowel preparation for patients with or without constipation. Moreover, PEG combined with lactulose had fewer adverse reactions, including abdominal pain (OR = 1.42, 95% CI 0.94–2.14, $p = 0.094$), nausea (OR = 1.60, 95% CI 1.13–2.28, $p = 0.009$) and vomiting (OR = 1.77, 95% CI 1.14–2.74, $p = 0.011$), than PEG alone. No significant reduction in the incidence of abdominal distention was observed.

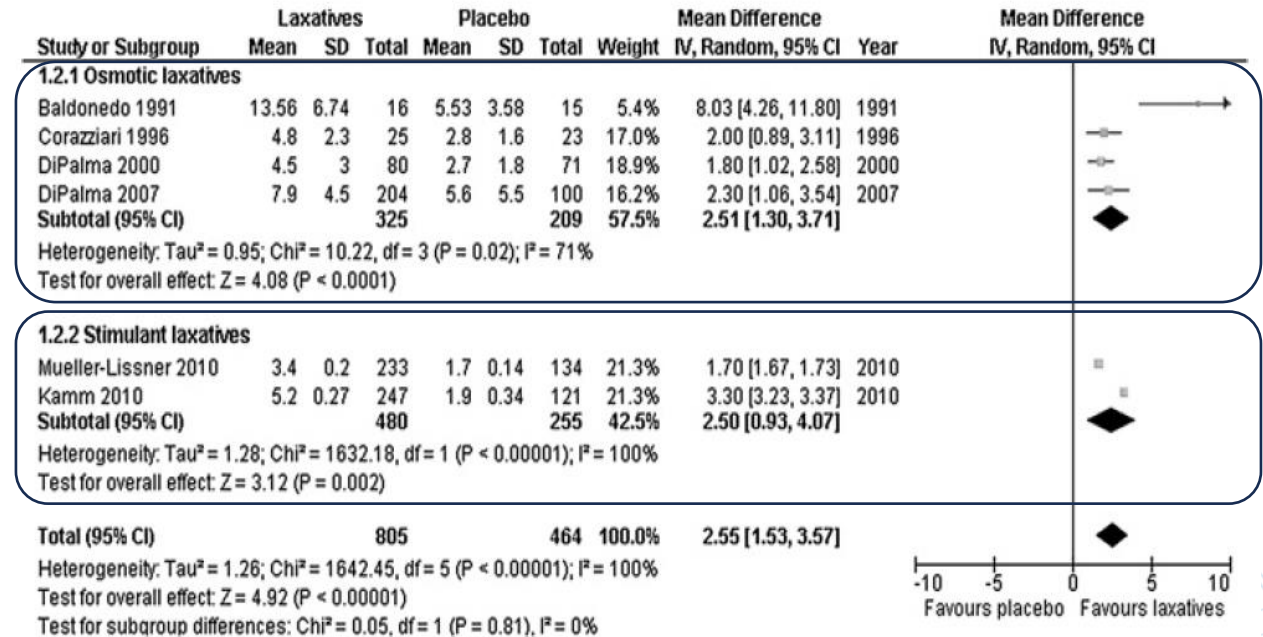
Conclusion: PEG combined with lactulose may be a better choice for bowel preparation before colonoscopy compared with PEG alone.



Chronic Constipation: Stimulant laxatives.

- Types of stimulants
 1. Small bowel irritants : castor oil
 2. Large bowel irritants : Bisacodyl, Na picosulfate, Senna, Cascara
- Prolonged use can create habituation and drug dependence by damaging the colon's haustral folds.
- Medicine should not be used if:
 - previous allergic reaction to any stimulant laxatives,
 - intestinal obstruction,
 - rectal bleeding,
 - signs of appendicitis.
- To be prescribed with caution for diabetics, hypertensives, and patients with heart disease.

Effect of Osmotic & stimulant Laxatives on Chronic Constipation: Meta-analysis of high quality studies





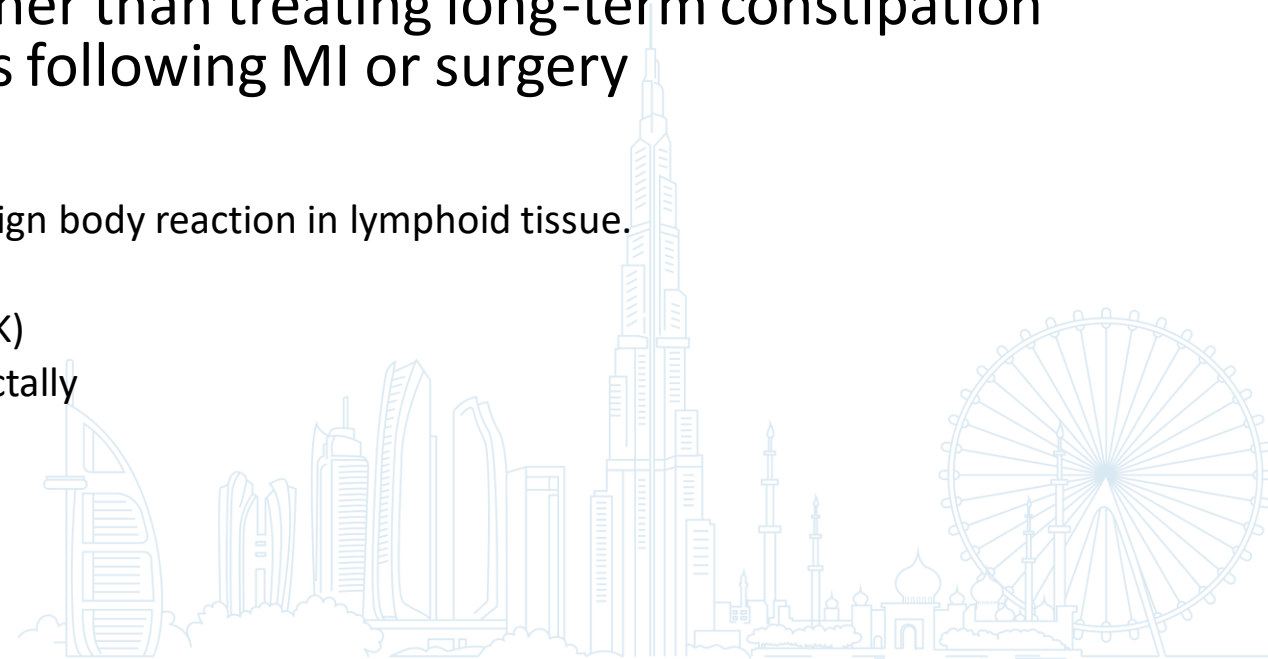
Chronic Constipation: Emolients.

Mechanism of Action

- Indigestible, minimally absorbed. Coat and allow easier passage
- Inhibit colonic absorption of water increasing weight and decreasing transit time.
- Emollient agents prevent constipation rather than treating long-term constipation they are best used in hospitalized patients following MI or surgery

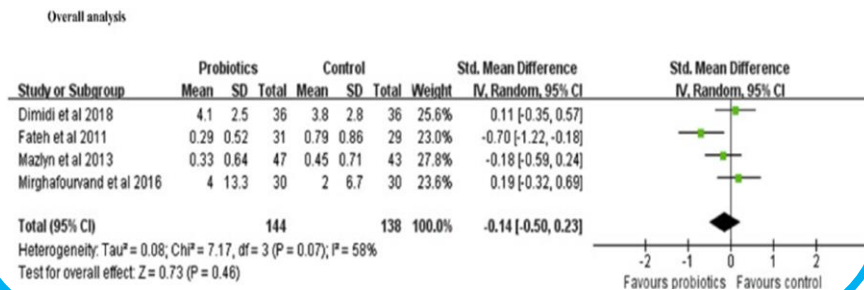
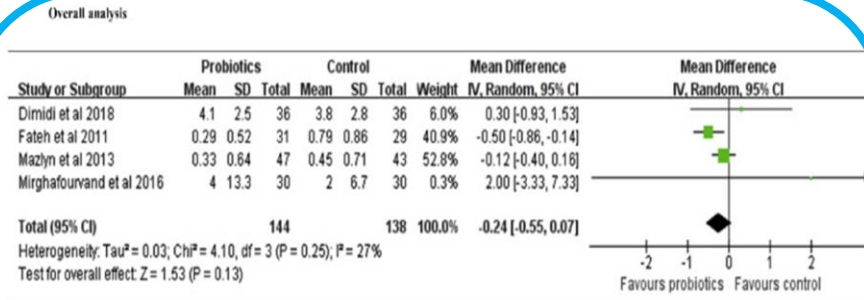
Adverse effects

- May be absorbed systemically and may lead to foreign body reaction in lymphoid tissue.
- Aspiration may lead to lipoid pneumonia
- Decrease absorption of fat-soluble vitamins (A,D,E,K)
- Mineral oil may leak from anal sphincter if given rectally



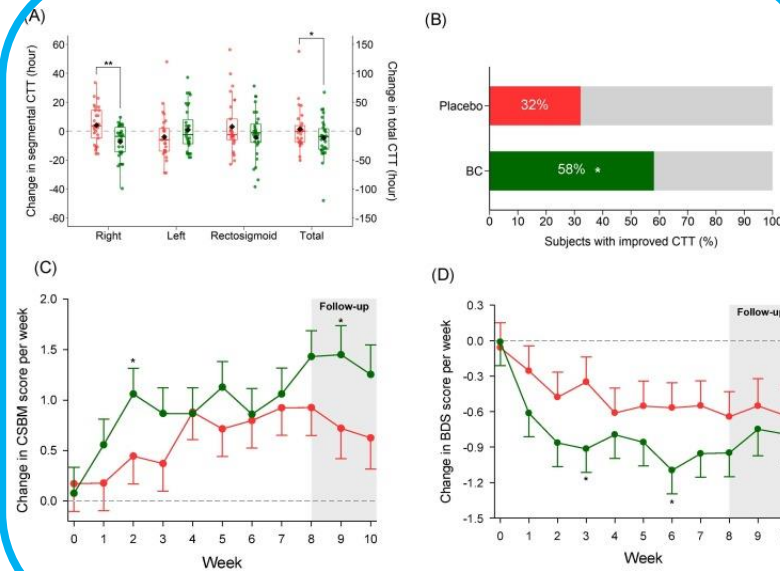
Chronic Constipation: Probiotics.

Probiotics for IBS-Constipation Meta-analysis and system review



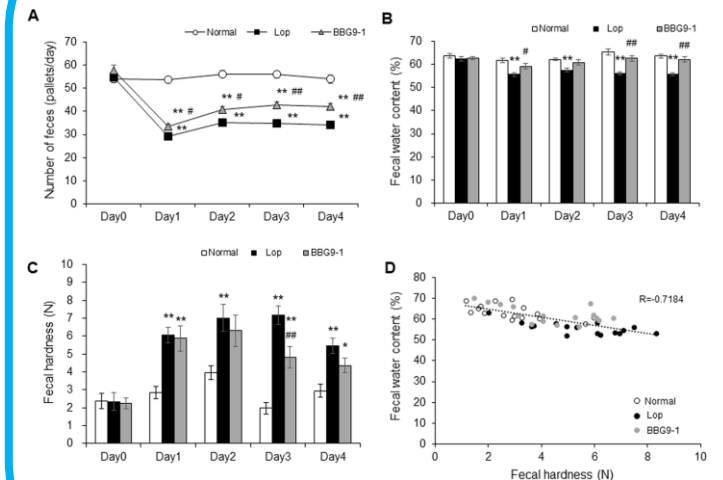
Chengcheng Ziang et al. Clinical nutrition 2020. volume 39, Issue 10, 2960-2969

Bacillus coagulans SNZ 1969 improved intestinal motility and constipation perception mediated by microbial alterations in healthy adults



Seunghee Kang et al. Food Research International. Volume 146, August 2021, 110428

Improvement of loperamide-induced slow transit constipation by *Bifidobacterium bifidum* G9-1 is mediated by the correction of butyrate production



Makizaki Y, et al. PLOS ONE 17(4): e0267927.

Chronic Constipation: Laxatives, in pregnancy and postpartum.



Safe	To be used with caution	Unsafe
Lactulose ¹ Macrogol ²	Saline osmotic Laxative ¹	Anthraquinone ¹
Polyethylene glycol ³ Glycerine ⁵	Castor oil ³ Senna ¹	Bisacodyl ⁴ Mineral oil ³
Bulking agents ¹	Docusate sodium ¹	

1. Cullen et al. Best Practice & Research Clinical Gastroenterology 2007;21(5):807–818
 2. Summary of Product Characteristics. 2015.
 3. ACG 2007.
 4. Sanofi. Dulcolax 5 mg Gastro-resistant Tablets. 2017.
 5. Verghese et al. The Obstetrician & Gynaecologist 2015;17:111–5



Chronic Constipation: Beyond front line.

Medicine	Class	Effect
Procalupride	5HT4 agonist	Accelerate colonic transit, concerns about QT interval
Veletrag	5HT4 agonist	Clinical trial
Naronapride	highly selective, high-affinity 5-HT(4) receptor agonist	Clinical trial



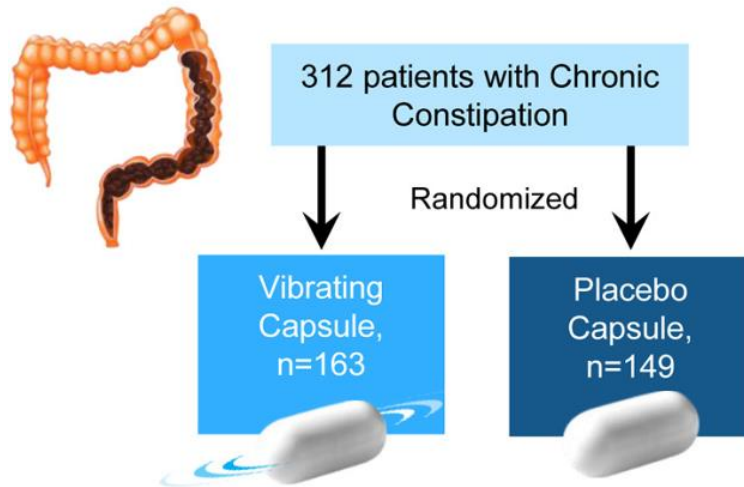
Non-medicinal treatment.



Chronic Constipation: drug free treatment (vibrant cap).

Vibrating Capsule Treatment for Chronic Constipation

Phase 3, Double Blind, Multicenter, Placebo controlled trial



- Patients ingested one capsule at bedtime daily for 5 days a week
- Duration of study= 8 weeks

Primary Outcome Measures:

Increase in one or more or two or more complete spontaneous bowel movements (CSBM) per week over baseline in 6 out of 8 weeks



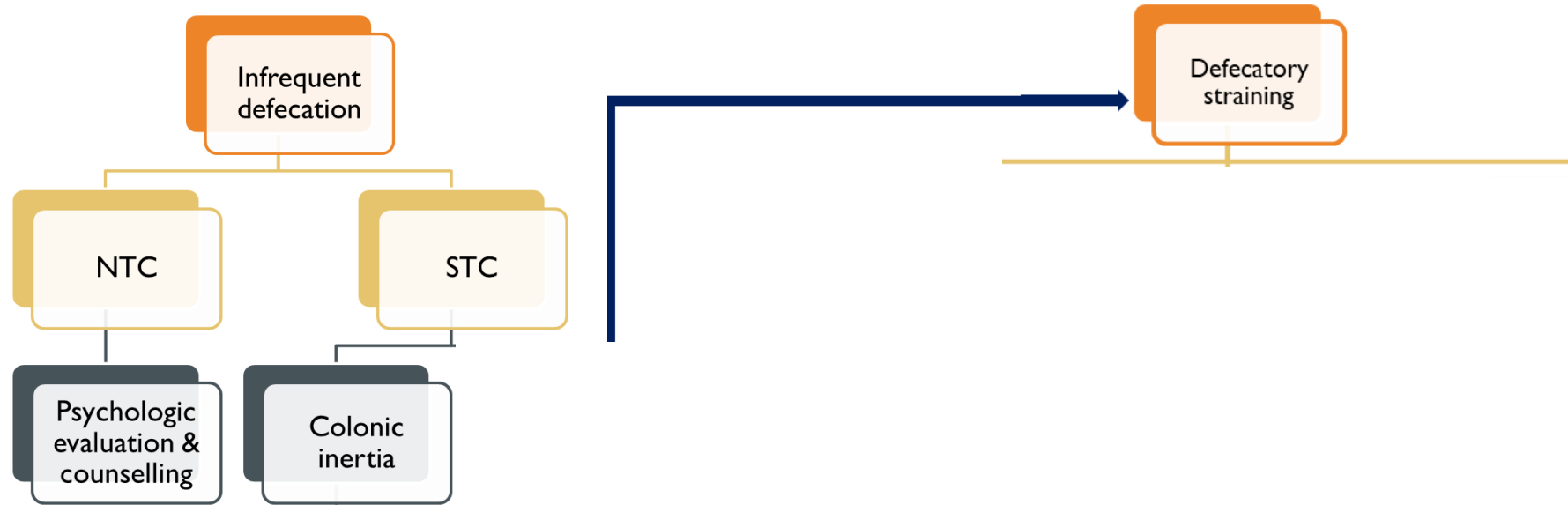
Chronic Constipation: drug free treatment (Biofeed back).

- An instrument-based learning process;
- Using equipment to record or amplify a patient's anorectal activity and then provides feedback to the patient and therapist.
- The goal of anorectal BFT is to:
 - strengthen the pelvic floor muscles,
 - retrain rectal sensation,
 - coordinate the activity of abdominal, pelvic floor and sphincter muscles during evacuation

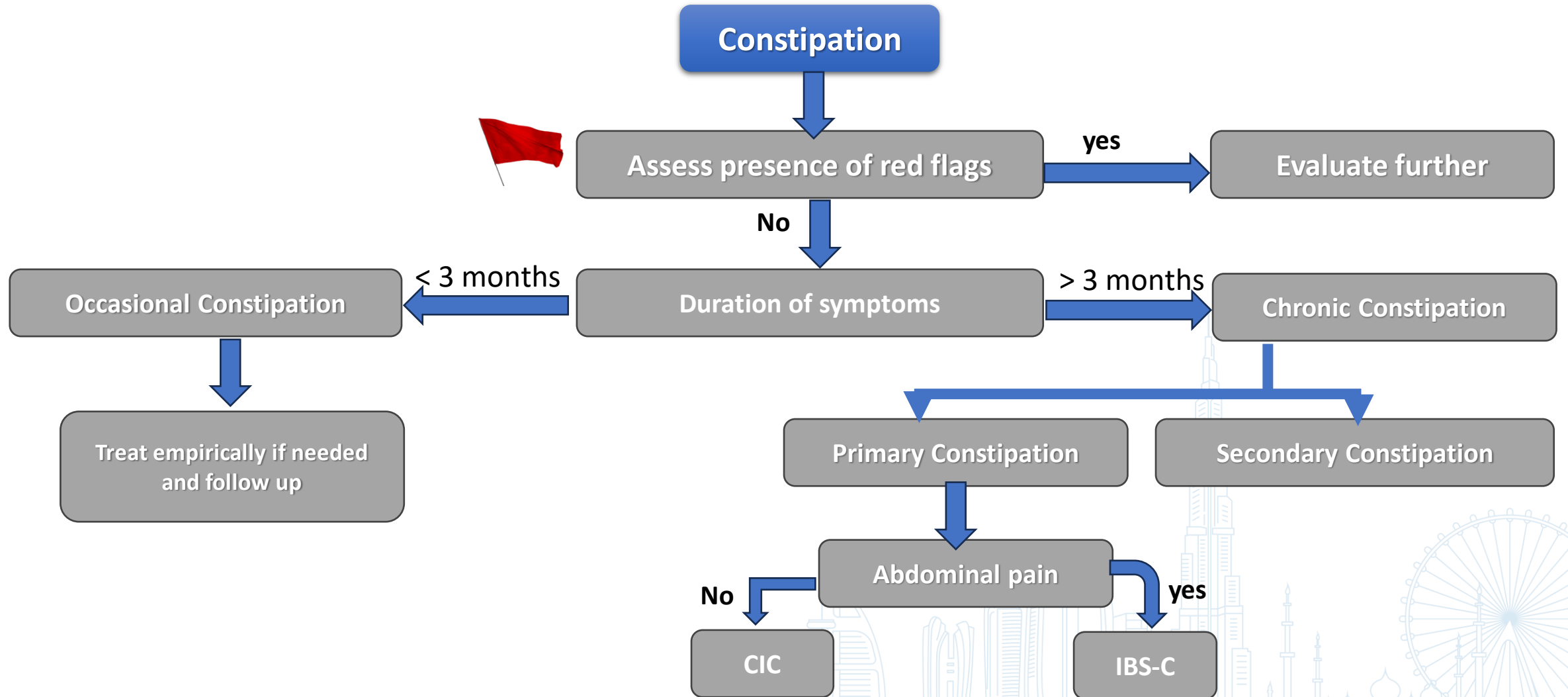




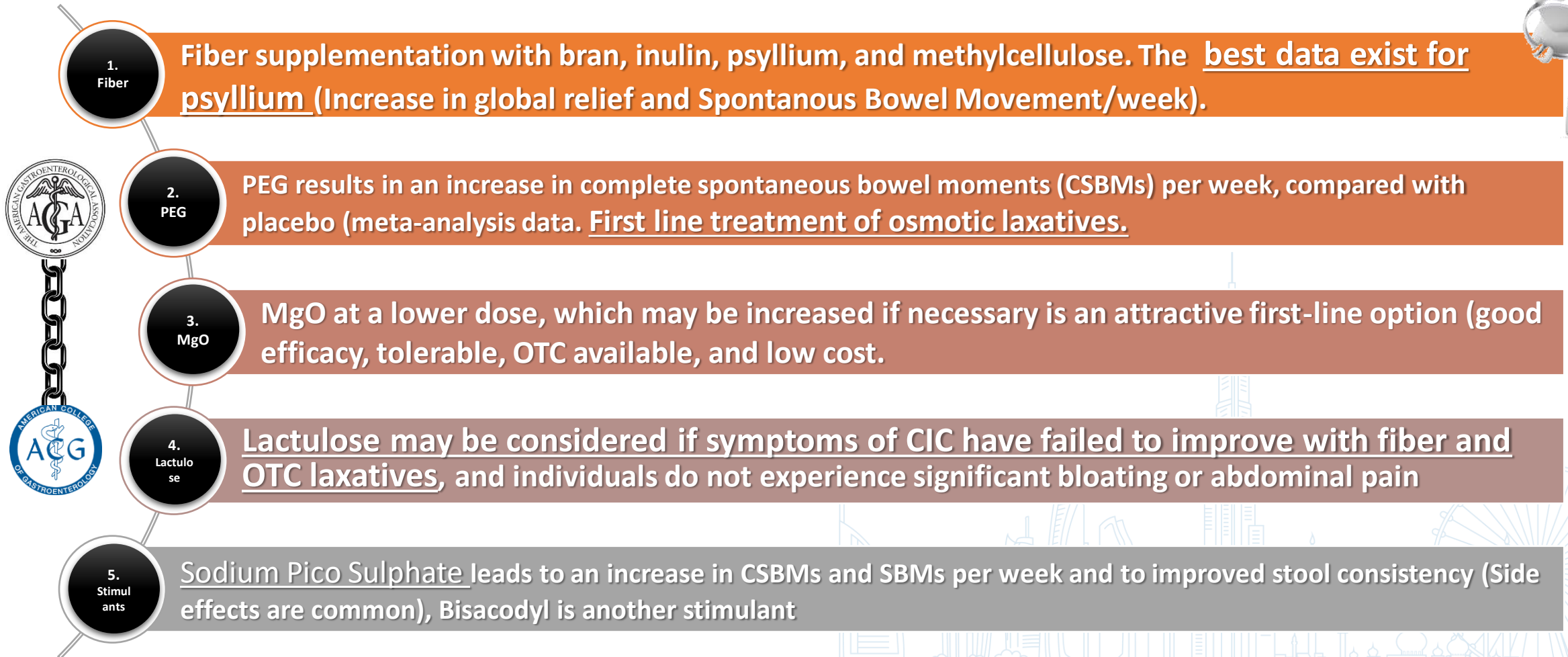
Chronic Constipation: drug free treatment (Surgery).



Chronic Constipation: diagnostic algorithm.



Chronic Constipation: ACG-AGA guidelines.



Chronic Constipation: ACG-AGA guidelines.



6.
Senna

the combination of efficacy, impact on quality of life, OTC availability, and low cost makes senna a viable first-line option for patients with CIC.

7.
Lubiprostone

lubiprostone improved stool frequency and consistency as well as abdominal discomfort and bloating. The panel advised that patients with moderate or severe hepatic insufficiency should receive a lower dose, such as 8 mcg twice daily.

8.
Linaclotide

linaclotide leads to increases in the number of CSBMs per week and SBMs per week, improves stool consistency, and increases the rates of global relief. (If diarrhea evolves reduce the dose)

9.
Plecanatide

plecanatide in adults with CIC is associated with an increase in the number of CSBMs per week and SBMs per week and improves the quality-of-life scores, although it may be associated with diarrhea.

10.
Prucalopride

prucalopride was associated with an increased number of CSBMs per week. The most common side effects were headache, abdominal pain, nausea, and diarrhea.





Chronic Constipation: Rome IV & WGO guidelines.

Pediatrics

- **Non-pharmacological treatment** for FC consists of education, demystification, regular dietary advice and in older children toilet training, a reward system and a stool diary.
- Reduce fear and, make the child and parents understand the underlying pathophysiological mechanisms and the need to learn how to recognize these in daily life.
- Disimpaction should be attempted, followed by **maintenance treatment with laxatives.**
- PEG is the primary preferred medication for disimpaction

Adolescents or children

- Two or fewer defecation/W.
- At least one episode of fecal incontinence/W.
- H/O retentive posturing or excessive volitional stool retention
- H/O painful or hard bowel movements
- Presence of a large fecal mass in the rectum
- H/O large diameter stools that can obstruct the toilet No other medical condition.

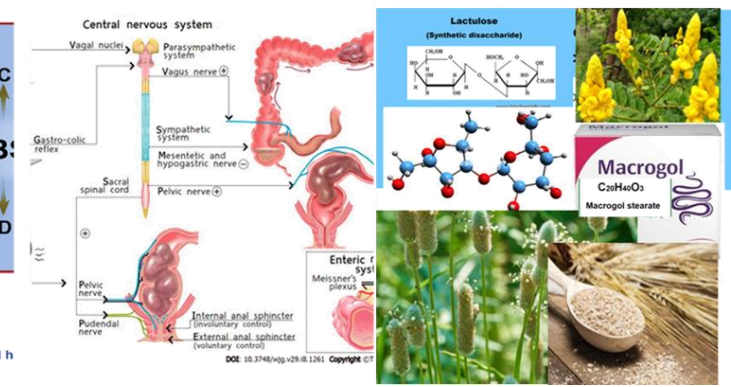
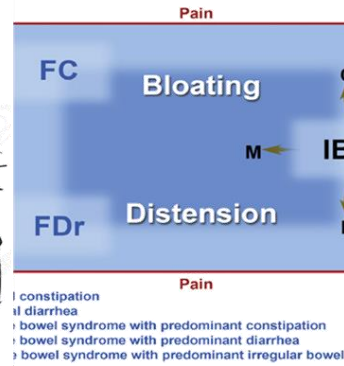
Adults (according to WGO)

- Patient history + physical examination
- Classify the patient's type of constipation
- Medical approach in uncomplicated normal-transit constipation without alarm symptoms
- In treatment-resistant constipation, specialized investigations can often identify a cause and guide treatment
- If treatment fails, continue with specialized testing (this may only apply to the "extensive resources" level)
- Treatment of STC* with aggressive laxative programs





SUMMARY



- CC is recognized by the Rome IV criteria as a subtype of functional GI disorders, a commonly encountered disease.
- The diagnosis is based on clinical, laboratory, radiologic and manometric judgement
- The first line of drug treatment are laxatives
- Osmotic laxatives (Lactulose & PEG) when used alone, with electrolytes, other bulking fibers, or anti-flatulents, are safe and can be used for children, the pregnant and lactating mothers, the elderly and in some chronic disorders



**THANK
YOU
FOR
YOUR
ATTENTION**