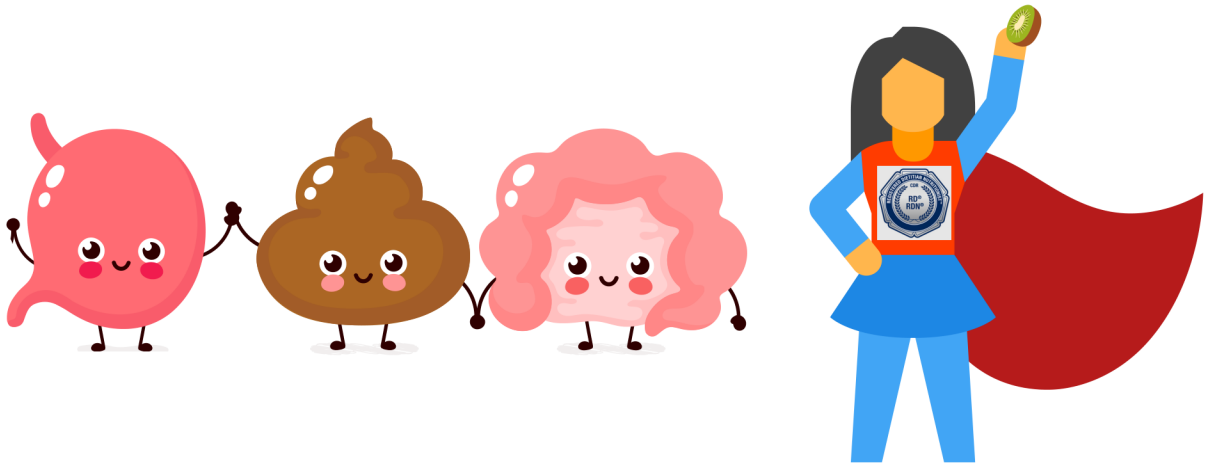
Poops, Toots, and Bloat: Clues to Digestive Distress and How the Dietitian Can Help



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NAND Annual Nutrition Conference, April 2023

AMENTA NUTRITION

Disclosures

-no disclosures-

Co-Founder, Amenta Nutrition

Learning Outcomes

1. Identify and define Disorders of the Gut-Brain Interaction (DGBIs).
2. Select appropriate dietary interventions to manage symptoms of DGBIs.
3. Recognize the potential effects of food in the digestive tract and their impact on symptoms.

Summary

According to a recent global study by the Rome Foundation, more than 40% of adults worldwide have Disorders of the Gut-Brain Interaction or DGBIs (formally known as functional gastrointestinal disorders). A large proportion of patients suffering from these complex disorders report that eating food triggers symptoms.

Over the past decade, an influx of research in this area has enhanced the understanding of the intricate relationship between food and the digestive systems. In addition to food's nutritive role, it possesses osmotic and physical properties that can impact the likelihood of symptom development.

As nutrition and food experts, RDNs are in a unique position to unveil these potential food triggers. This session will review DGBIs, diet therapies, the role of fiber in symptom management, and what the dietitian should be asking patients.

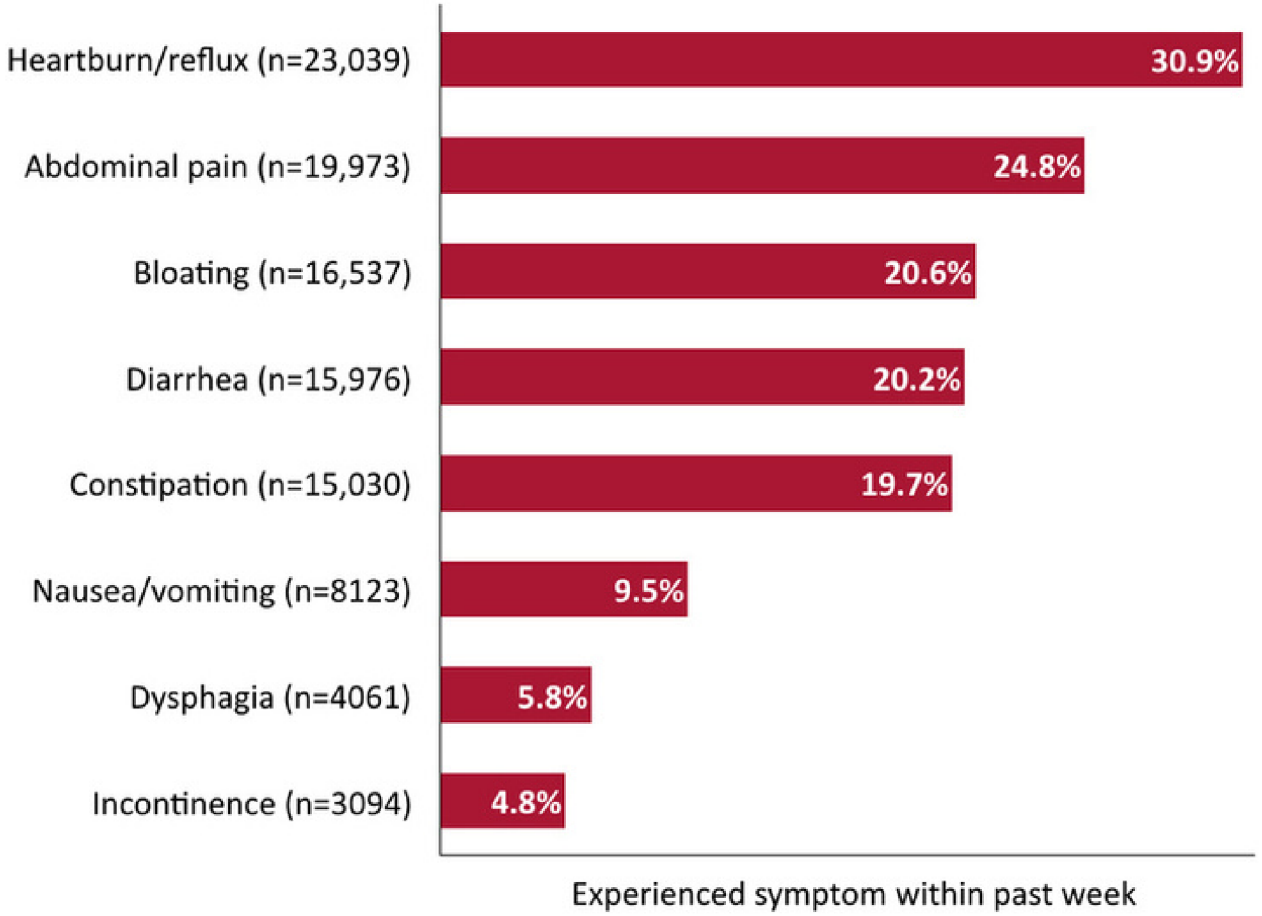
This is the summary I submitted for the talk - it won't be part of my presentation!

Why are we here?


FOR THE PATIENT!
Nutritional Adequacy
Symptoms
QOL

Gastrointestinal Symptoms

"National GI Survey"-a population-based audit of GI symptoms in >71,000 participants-to determine the prevalence and predictors of GI symptoms in community-dwelling Americans.

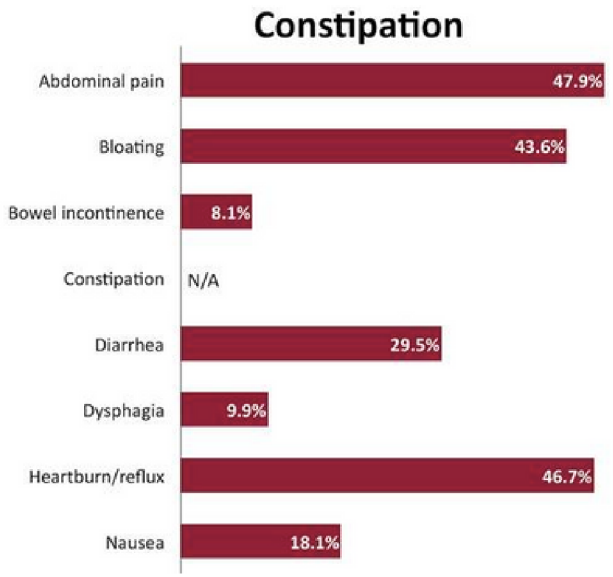


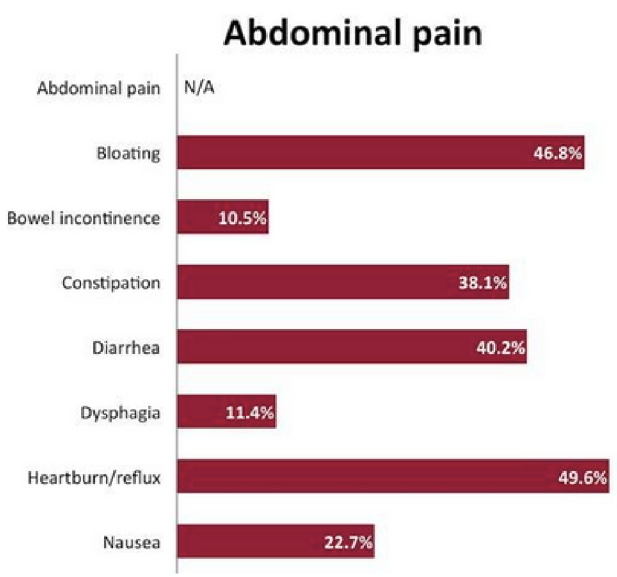
61% reported having had
≥1 GI symptom in the past week

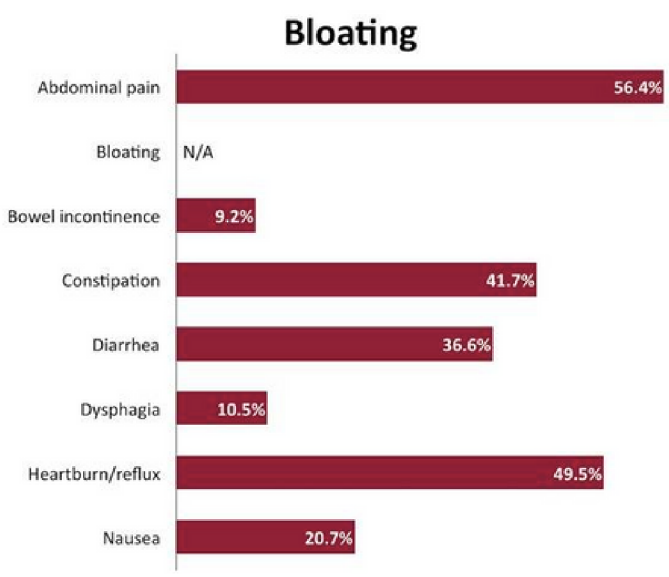
2 out of 3 people burdened
with GI symptoms!

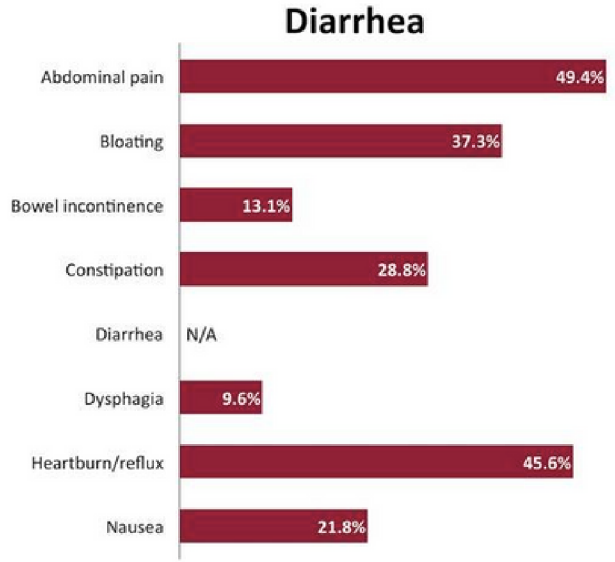
doi: 10.1038/s41395-018-0256-8

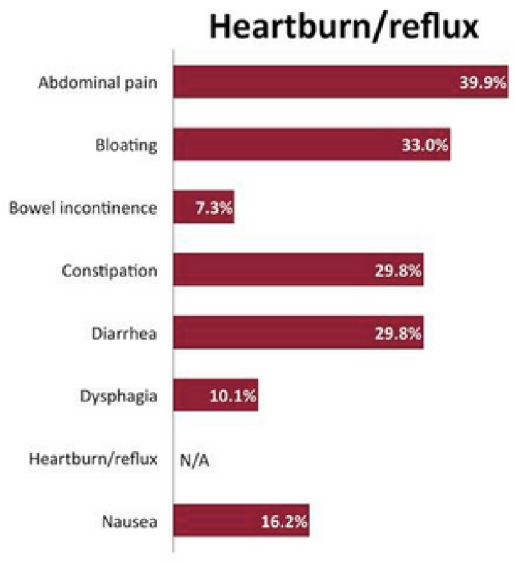
Concurrent Symptoms



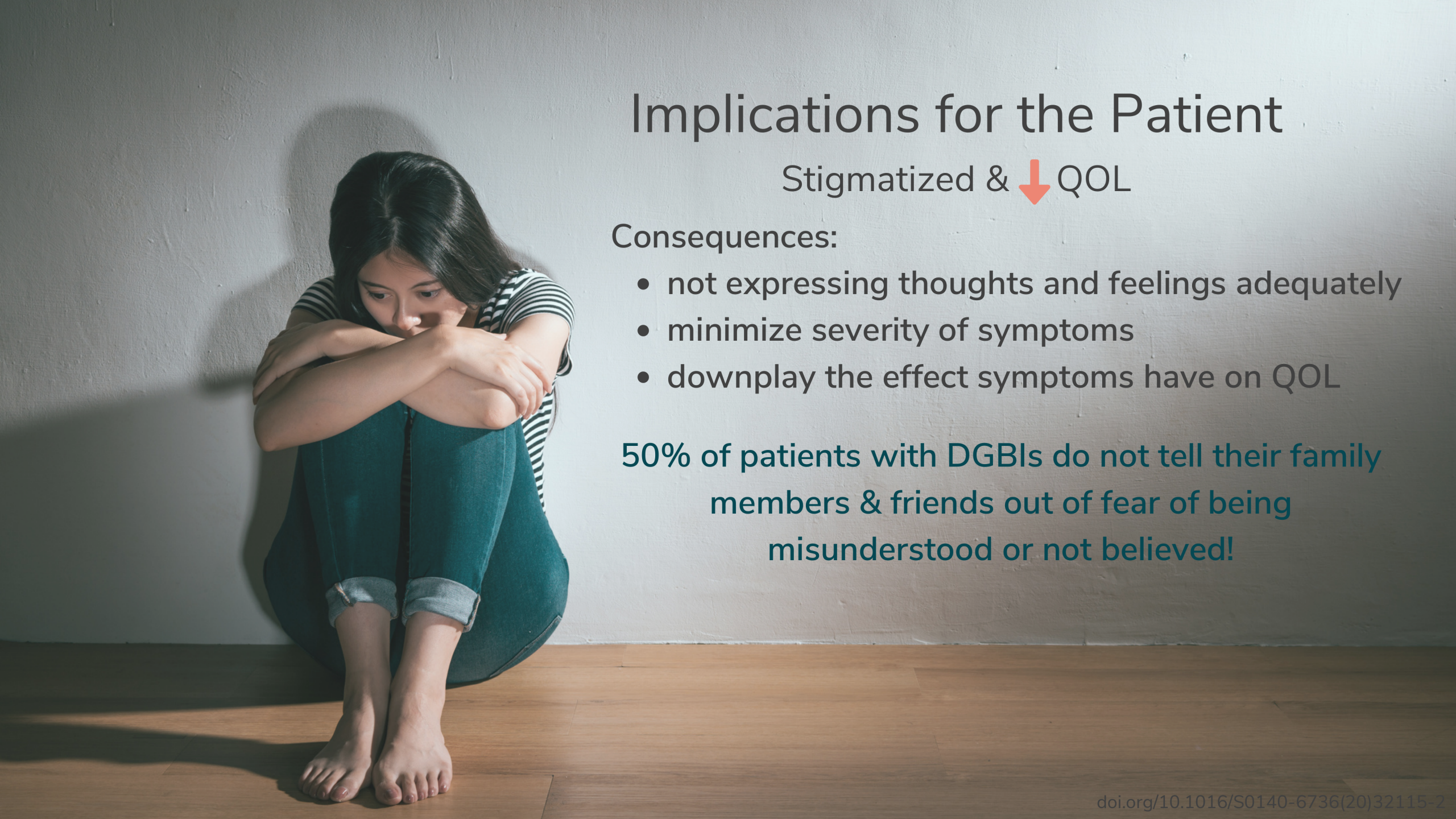








doi: 10.1038/s41395-018-0256-8



Implications for the Patient

Stigmatized & ↓ QOL

Consequences:

- not expressing thoughts and feelings adequately
- minimize severity of symptoms
- downplay the effect symptoms have on QOL

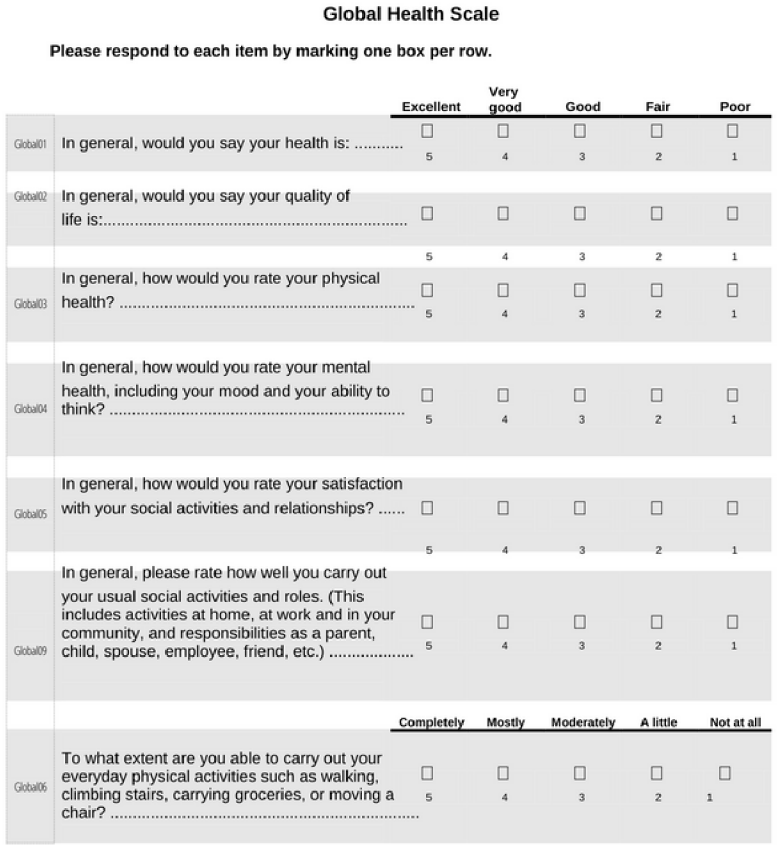
50% of patients with DGBIs do not tell their family members & friends out of fear of being misunderstood or not believed!

doi.org/10.1016/S0140-6736(20)32115-2

How is QOL effected?

HRQoI correlates with severity of symptoms and perceived impairment

In Research...



Global Health Scale

Please respond to each item by marking one box per row.

		Excellent	Very good	Good	Fair	Poor
Global01	In general, would you say your health is:	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
Global02	In general, would you say your quality of life is:.....	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
Global03	In general, how would you rate your physical health?	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
Global04	In general, how would you rate your mental health, including your mood and your ability to think?	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
Global05	In general, how would you rate your satisfaction with your social activities and relationships?	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
Global09	In general, please rate how well you carry out your usual social activities and roles. (This includes activities at home, at work and in your community, and responsibilities as a parent, child, spouse, employee, friend, etc.)	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

		Completely	Mostly	Moderately	A little	Not at all
Global06	To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair?	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

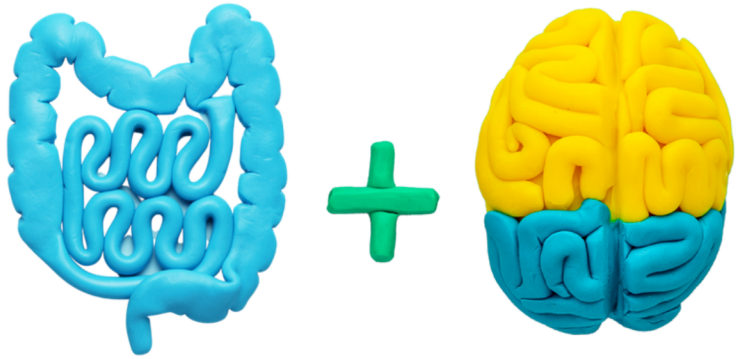
In Clinical...

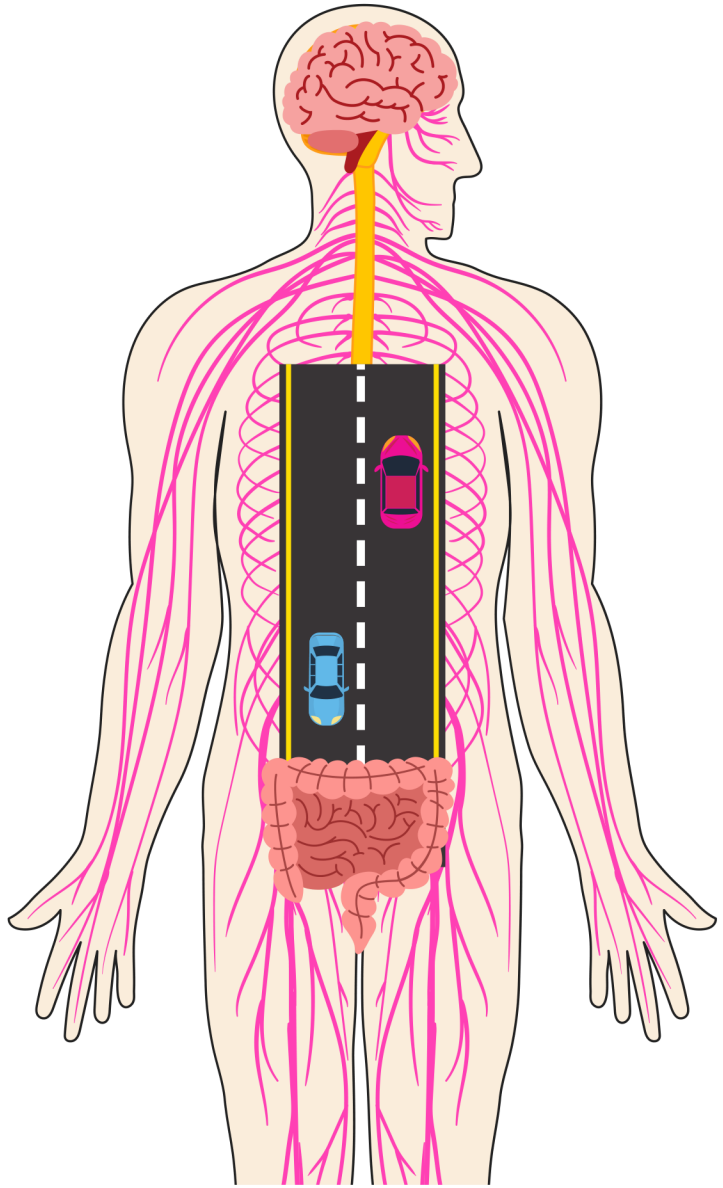
- "It is hard for me to leave my home for every day activities"
- "It was causing me to not to want to travel or even leave my house to visit a friend or go shopping"
- "I would like to enjoy food again with my family and friends and be able to dine out at a restaurant without so many restrictions."
- "I feel frustrated and angry when I think about food because I'm sick of it being such a big deal to me."
- "I feel upset because food used to make me excited and now it makes me feel confused. I can't enjoy a lot of my favorite foods nor can I partake in activities with friends because most things are centered around food or drinking"

DOI: 10.1097/MCG.0b013e31821fbf44

How Can We Help These Patients with Diet Therapy?

Disorders of the Gut-Brain Interaction (DGBIs)

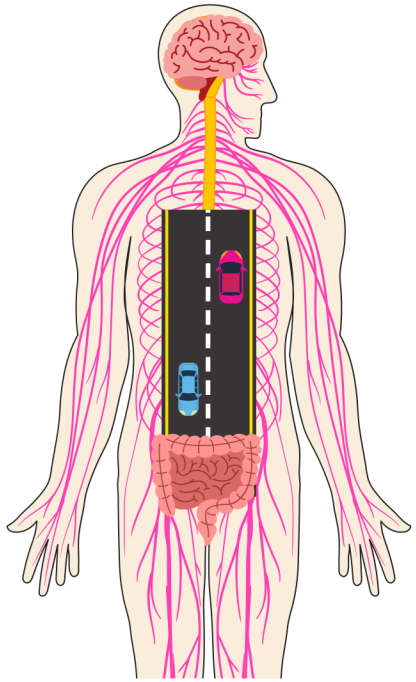




Disorders of Gut-Brain Interaction (DGBIs)

A group of disorders classified by GI symptoms related to any combination of:

- Motility disturbance
- Visceral hypersensitivity
- Altered mucosal and immune function
- Altered gut microbiota
- Altered central nervous system (CNS) processing



Abdominal pain

Dyspepsia

Diarrhea

Constipation

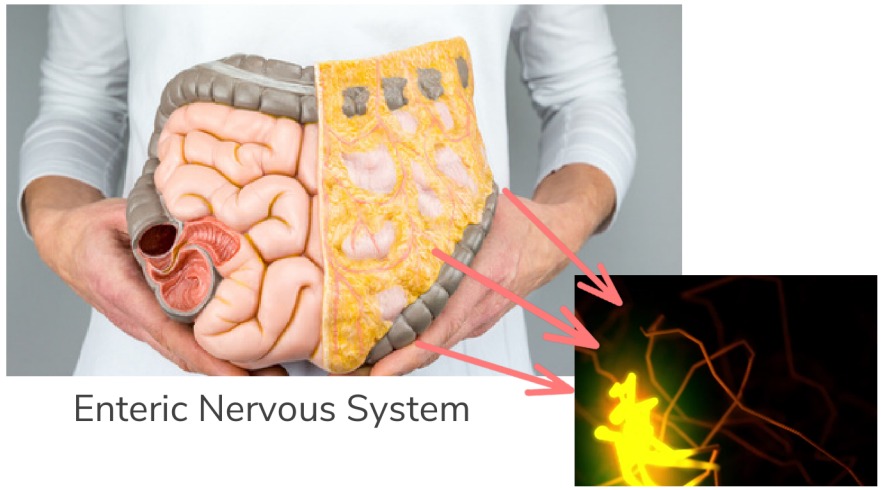
Bloating

doi: 10.7861/clinmed.2020-0980
Gastroenterology 2020;158:1262–1273

The Gut-Brain Interaction

Bi-directional communication between the gut and the brain via the vagus nerve that connects the central and enteric nervous systems.

This gut-brain connection links emotional and cognitive centers of the brain with peripheral intestinal functions



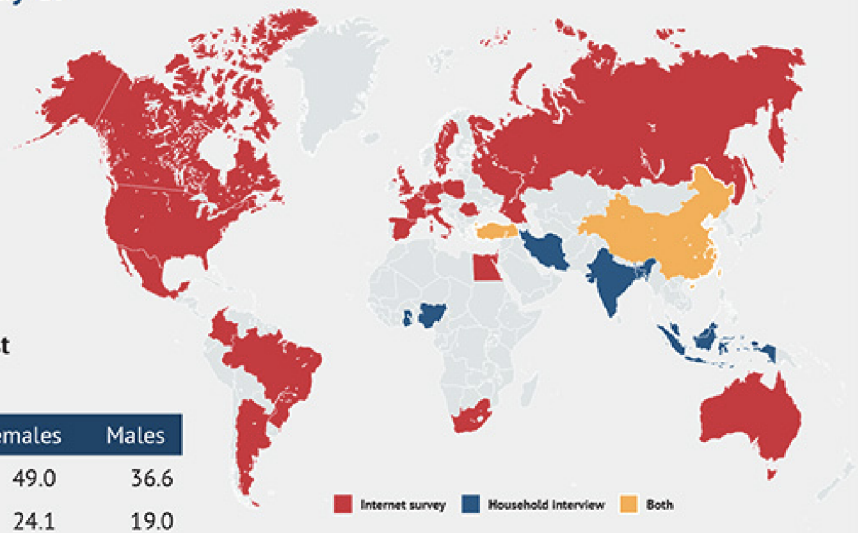
Enteric Nervous System

Central abnormalities in sensory, emotional arousal, and prefrontal cortical regions of the brain leads to altered visceral sensation AKA hypersensitivity in the gut.

= abdominal pain & spasms!

A global epidemiological study of functional GI disorders

- 73,076 adults surveyed (33 countries, 6 continents)
- Data collection: By Internet (24 countries, red), by household interview (7 countries, blue), or both methods (China and Turkey, green)



Prevalence of meeting criteria for at least one of 22 functional GI disorders (%):

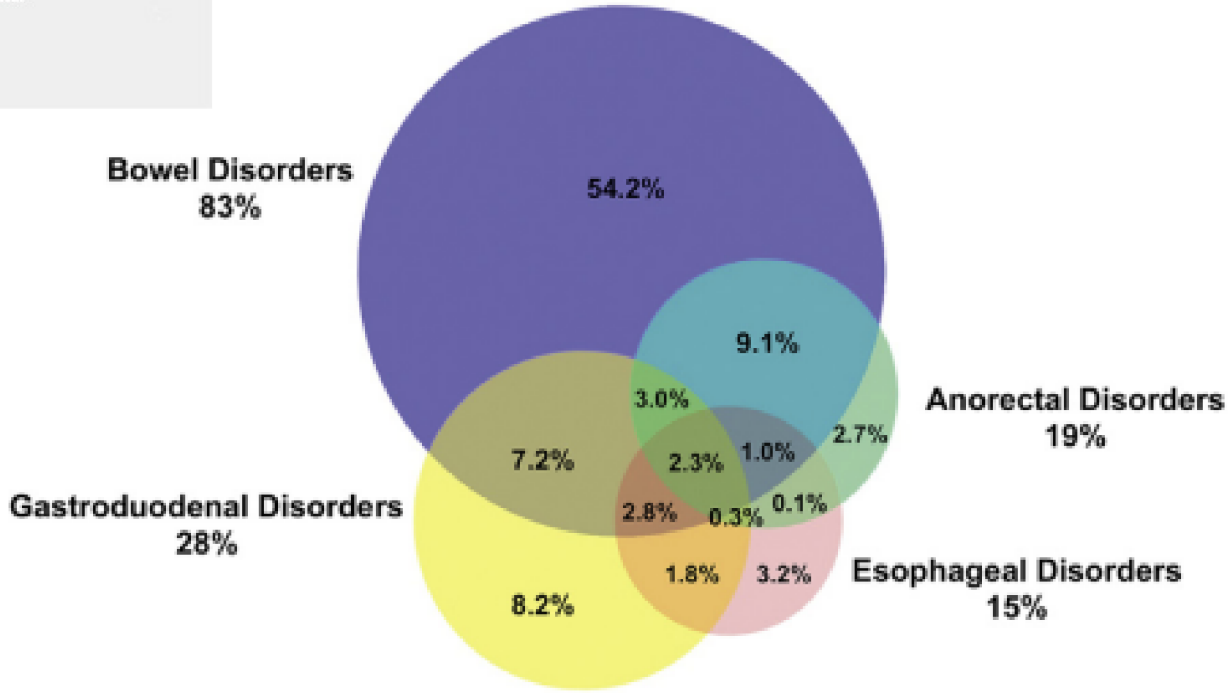
	All Participants	Females	Males
Internet Surveys	42.7	49.0	36.6
Household Surveys	21.6	24.1	19.0

Prevalence of DGBIs

>40% of persons worldwide

>25% have symptoms in more than one region:

- Esophageal
- Gastroduodenal
- Bowel
- Anorectal

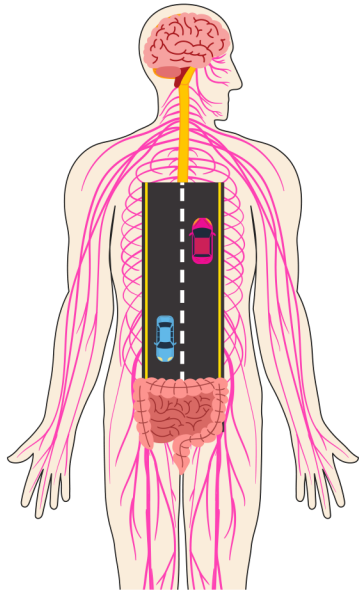


DOI:https://doi.org/10.1053/j.gastro.2020.04.014 https://doi.org/10.1016/j.cgh.2021.05.042

Disorders of Gut-Brain Interaction (DGBIs)

Esophageal disorders
Globus
Functional chest pain
Functional heartburn
Functional dysphagia
Reflux hypersensitivity

Gastroduodenal disorders
Functional dyspepsia
Belching disorders
Nausea and vomiting disorders
Rumination syndrome

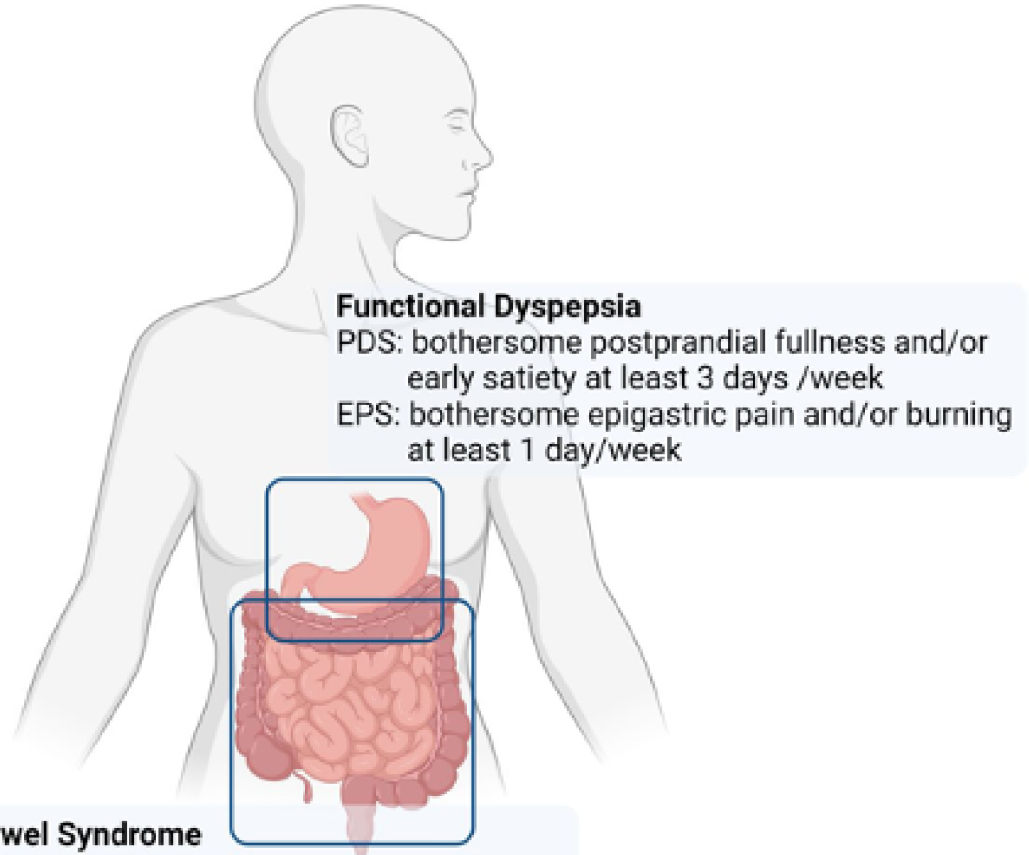


Bowel disorders and abdominal pain
Irritable bowel syndrome (IBS)
Functional abdominal bloating/distension
Functional constipation
Functional diarrhea

Anorectal disorders
Fecal incontinence
Functional anorectal pain
Functional defecation disorders

ROME FOUNDATION

Most Common DGBIs: FD & IBS



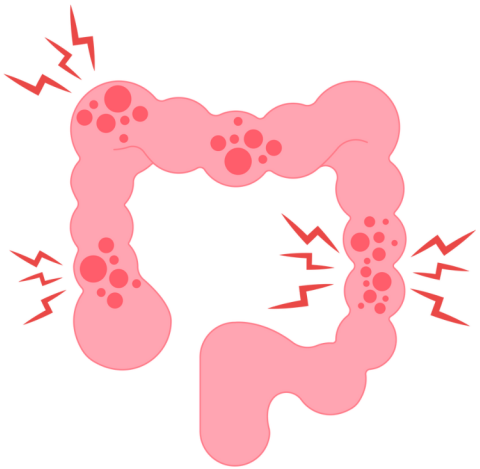
Functional Dyspepsia
PDS: bothersome postprandial fullness and/or early satiety at least 3 days /week
EPS: bothersome epigastric pain and/or burning at least 1 day/week

Irritable Bowel Syndrome
Recurrent abdominal pain at least 1 day/week
+ at least 2 of the following:
- related to defaecation
- associated with a change in frequency of stool
- associated with a change in from of stool

DOI:https://doi.org/10.1016/j.cgh.2020.03.056

Irritable Bowel Syndrome

IBS estimated to effect 10% to 15% of the population worldwide, making it the most prevalent DGBI!



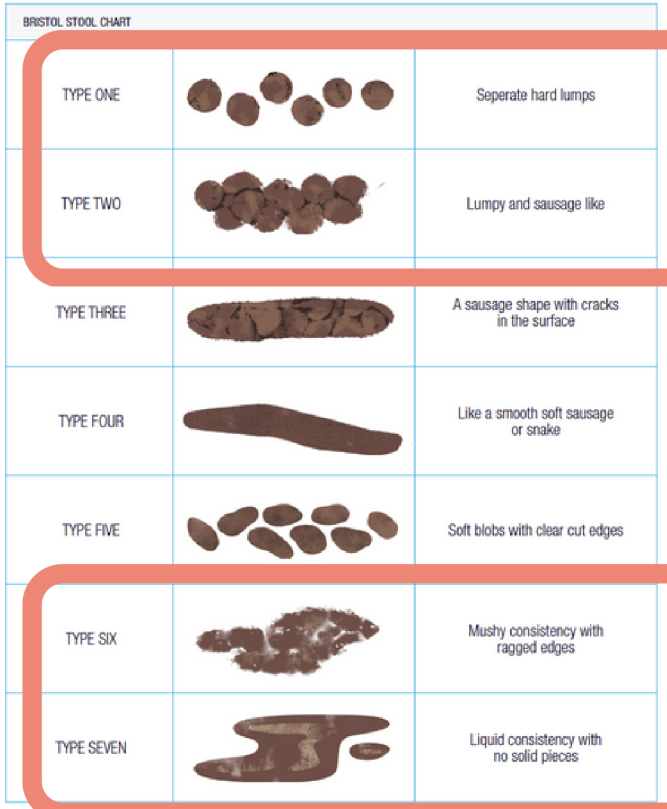
- In IBS, the normal functioning of the bowels are affected and don't work properly.
- Sometimes **motility** is abnormal – the bowels move too much or too often, and sometimes they don't move enough or often enough.
- Usually **sensory perception** is abnormal – the nerves in the bowels are more sensitive to stretch or movement and this can lead to more pain.
- These abnormalities may in turn relate to **disordered gut-brain communication**, **genetic factors**, **infection** and **altered gut bacteria**, and **intestinal inflammation**.

Abdominal pain | Dyspepsia | Diarrhea | Constipation | Bloating

Rome IV Diagnostic Criteria for Irritable Bowel Syndrome

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

- Related to defecation
- Associated with a change in a frequency of stool
- Associated with a change in form (consistency) of stool
- Symptoms must have started at least 6 months ago



IBS-C: hard or lumpy stools >25% and loose or watery stools <25% of bowel movements

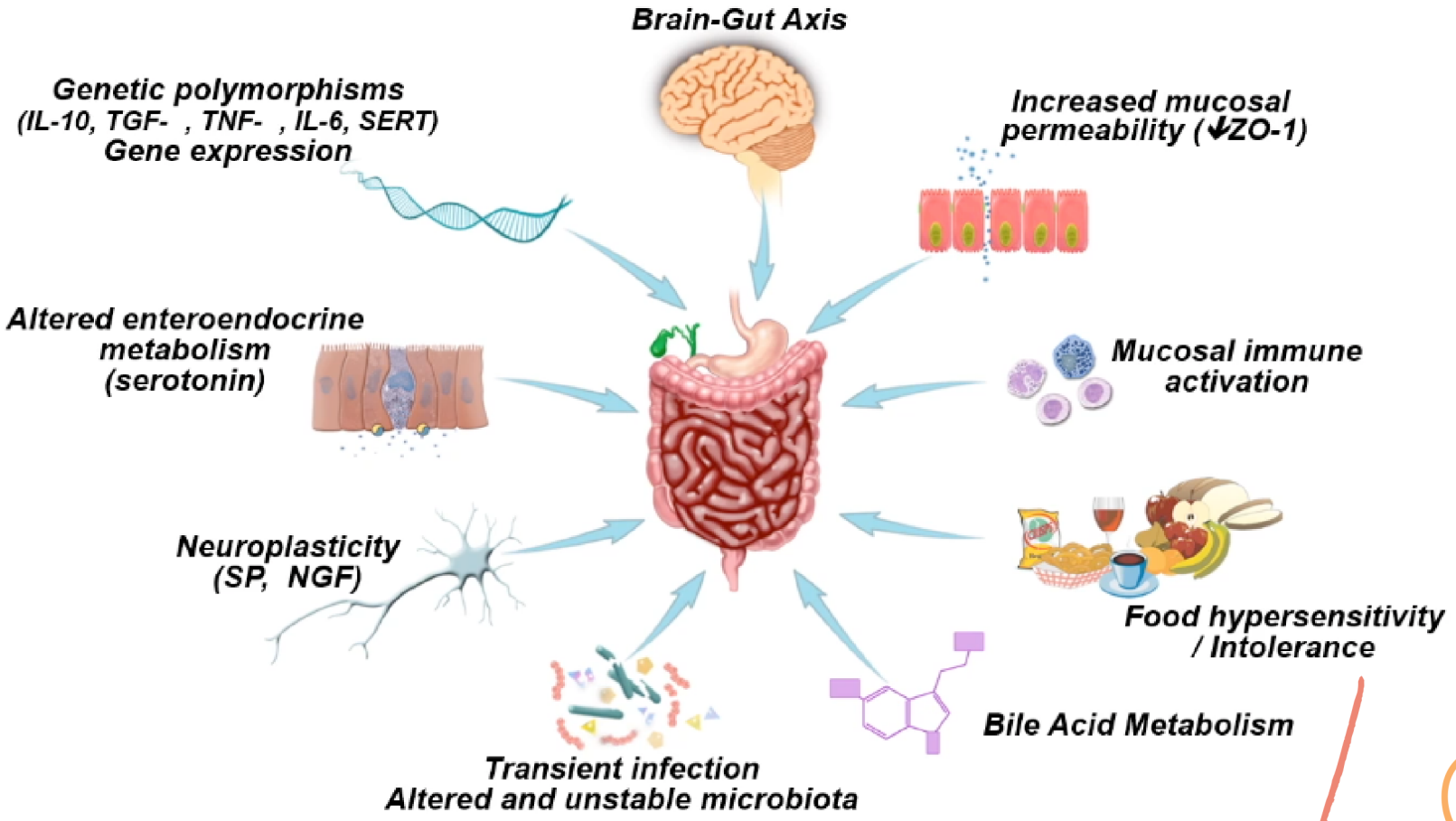
IBS-M: hard or lumpy stools >25% and loose or watery stools >25% of bowel movements

IBS-D: loose or watery stools >25% and hard or lumpy stools <25% of bowel movements

ROME FOUNDATION

Pathophysiology

heterogeneous --> range of abnormalities



Wow!

Food-related GI symptoms are reported by up to 84% of patients with IBS!

ROME FOUNDATION

Differential Diagnosis

Given the relative lack of symptom specificity, the differential diagnosis of IBS is broad and includes:

- Inflammatory bowel disease (IBD)
- Celiac disease
- Bile acid diarrhea
- Carbohydrate malabsorption (i.e., lactose or fructose intolerance, CSID, etc)
- Microscopic colitis
- Colorectal cancer
- Chronic GI infection
- Pancreatic exocrine insufficiency
- Small Intestinal Bacterial Overgrowth

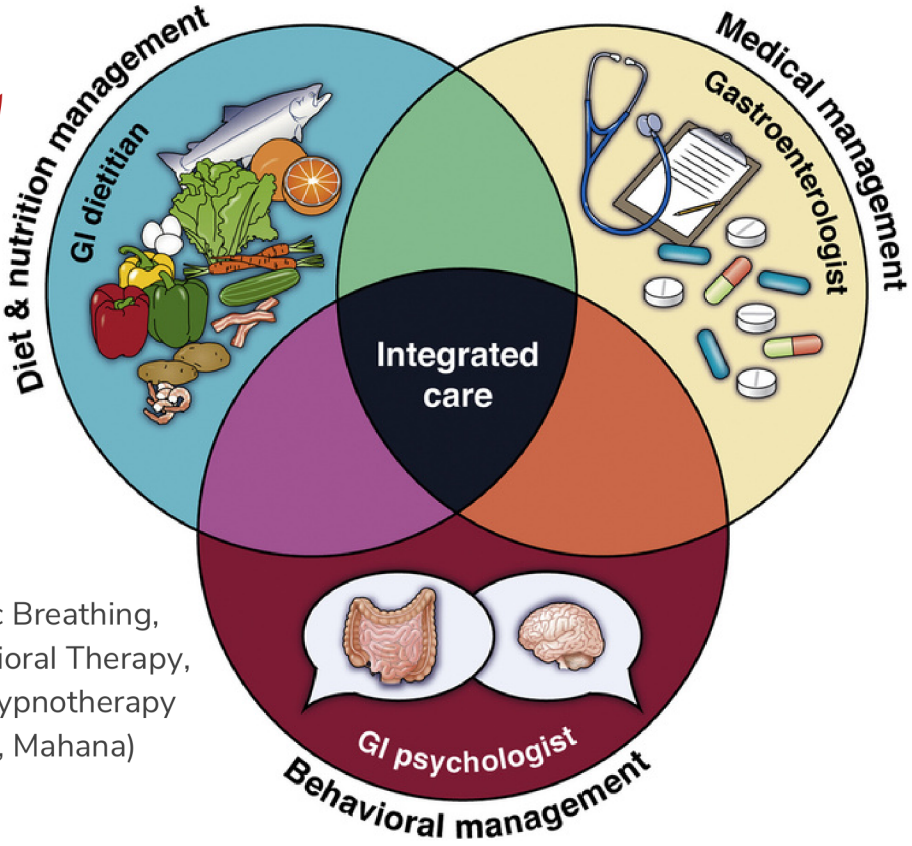
Concerning Features for Organic Disease

- Symptom onset after age 50 y
- Severe or progressively worsening symptoms
- Unintentional weight loss
- Recent changes in bowel habits
- Nocturnal diarrhea
- Family history of organic gastroenterological diseases, including colon cancer, celiac disease, or inflammatory bowel disease
- Rectal bleeding, blood in stool, melena
- Unexplained iron-deficiency anemia
- Palpable abdominal mass
- Evidence of inflammation on blood or stool testing
- Hx cholecystectomy or terminal ileal resection

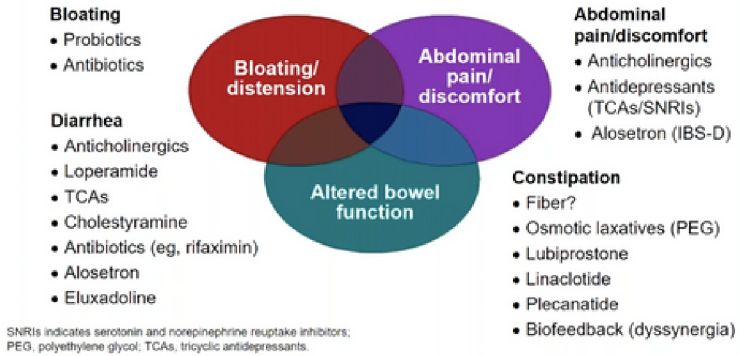
DOI: 10.1016/S2468-1253(20)30212-0 doi.org/10.14309/ajg.0000000000001036

Multidisciplinary Approach to Managing IBS

"IBS care in 2022 and beyond no longer relies on just the gastroenterologist — it is a 'team sport',"
William D. Chey, MD, FACG, of Michigan Medicine,



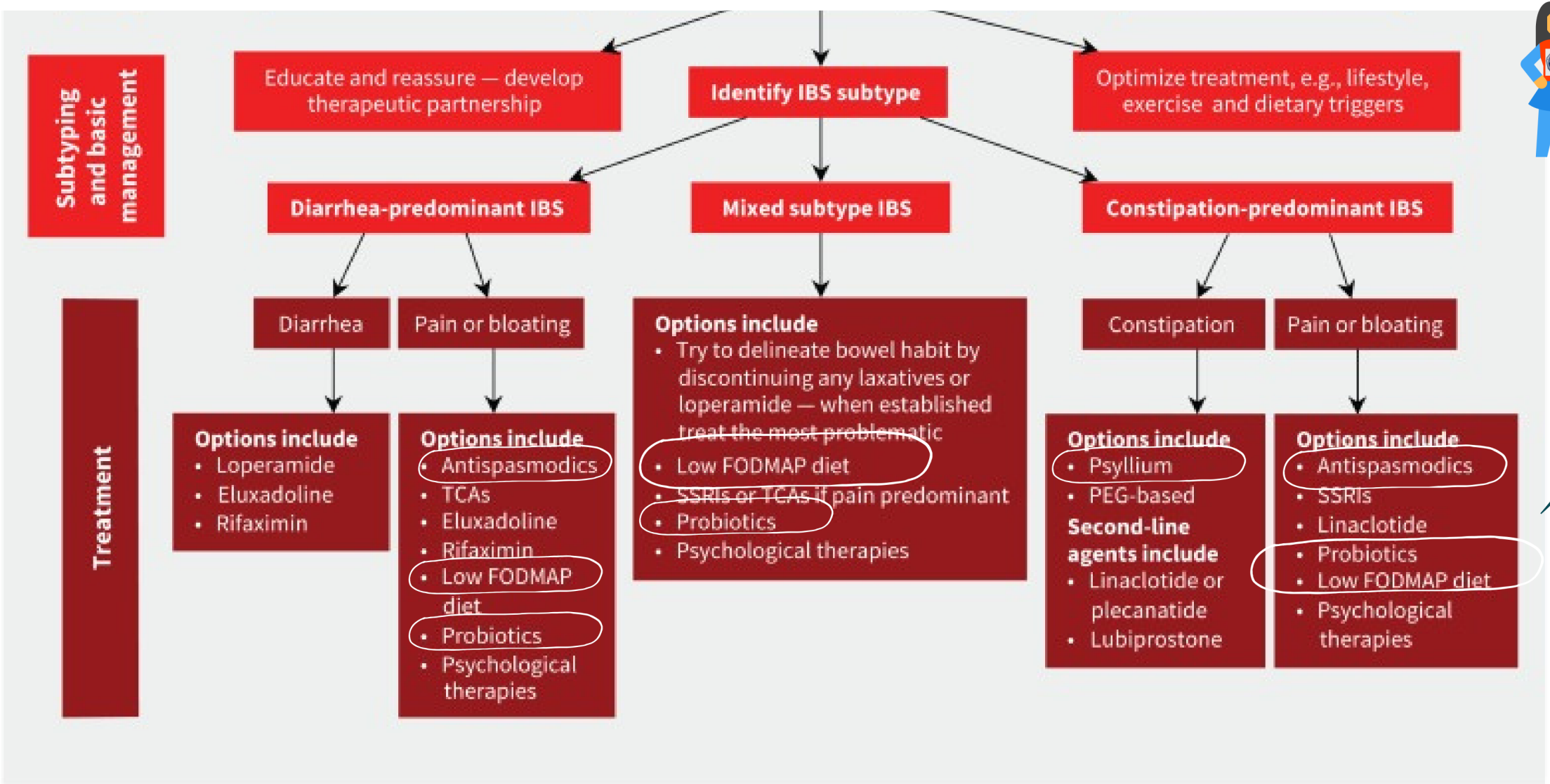
Diaphragmatic Breathing,
Cognitive Behavioral Therapy,
Gut-Directed Hypnotherapy
(apps: Nerva, Mahana)



Optimizing Diagnosis & Management of IBS -
Drossman, President of Rome Foundation

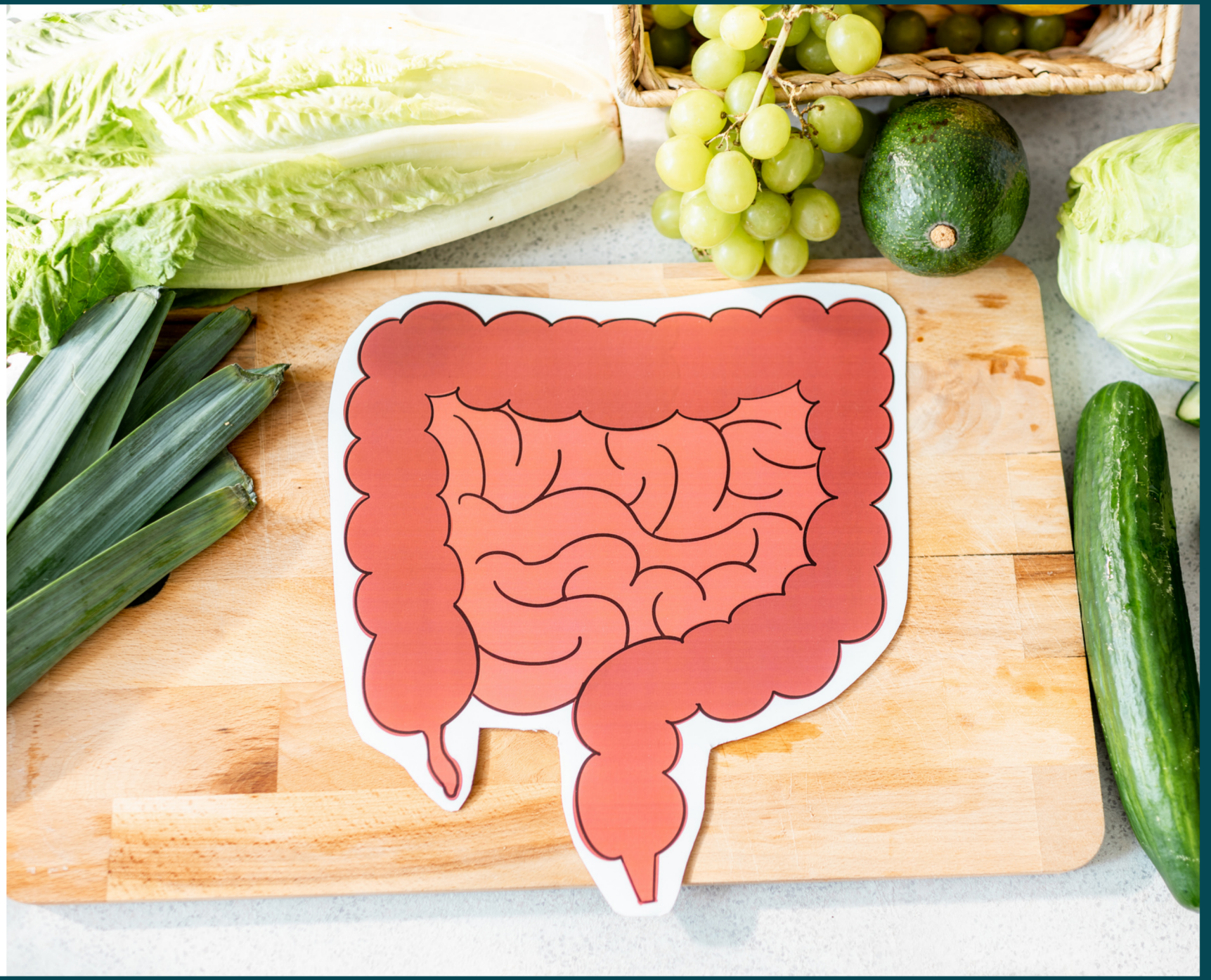
DOI: 10.1053/j.gastro.2020.06.099

Management for Irritable Bowel Syndrome



doi: 10.1503/cmaj.190716

How Food or Food Components Can Contribute to GI Symptoms



How food can contribute to GI symptoms

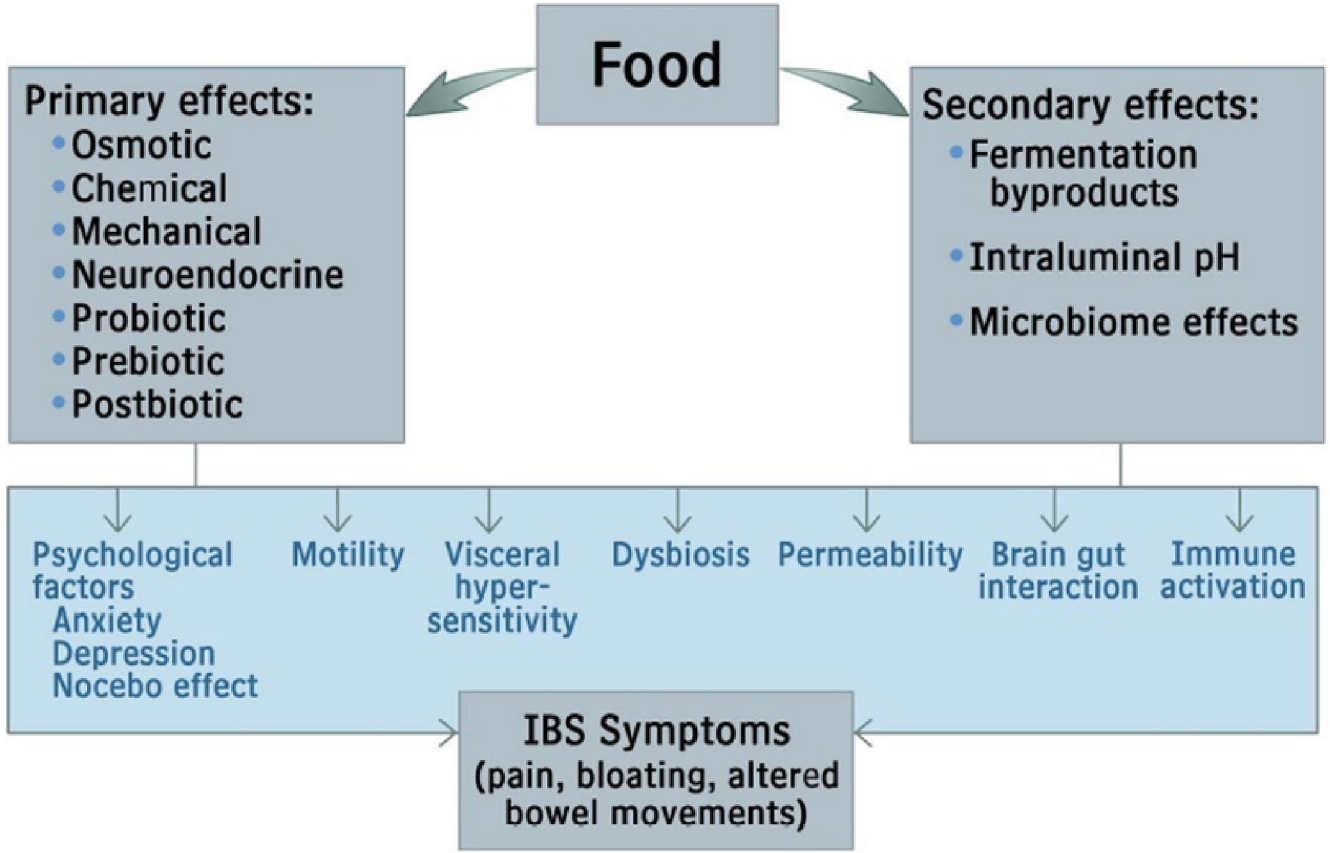


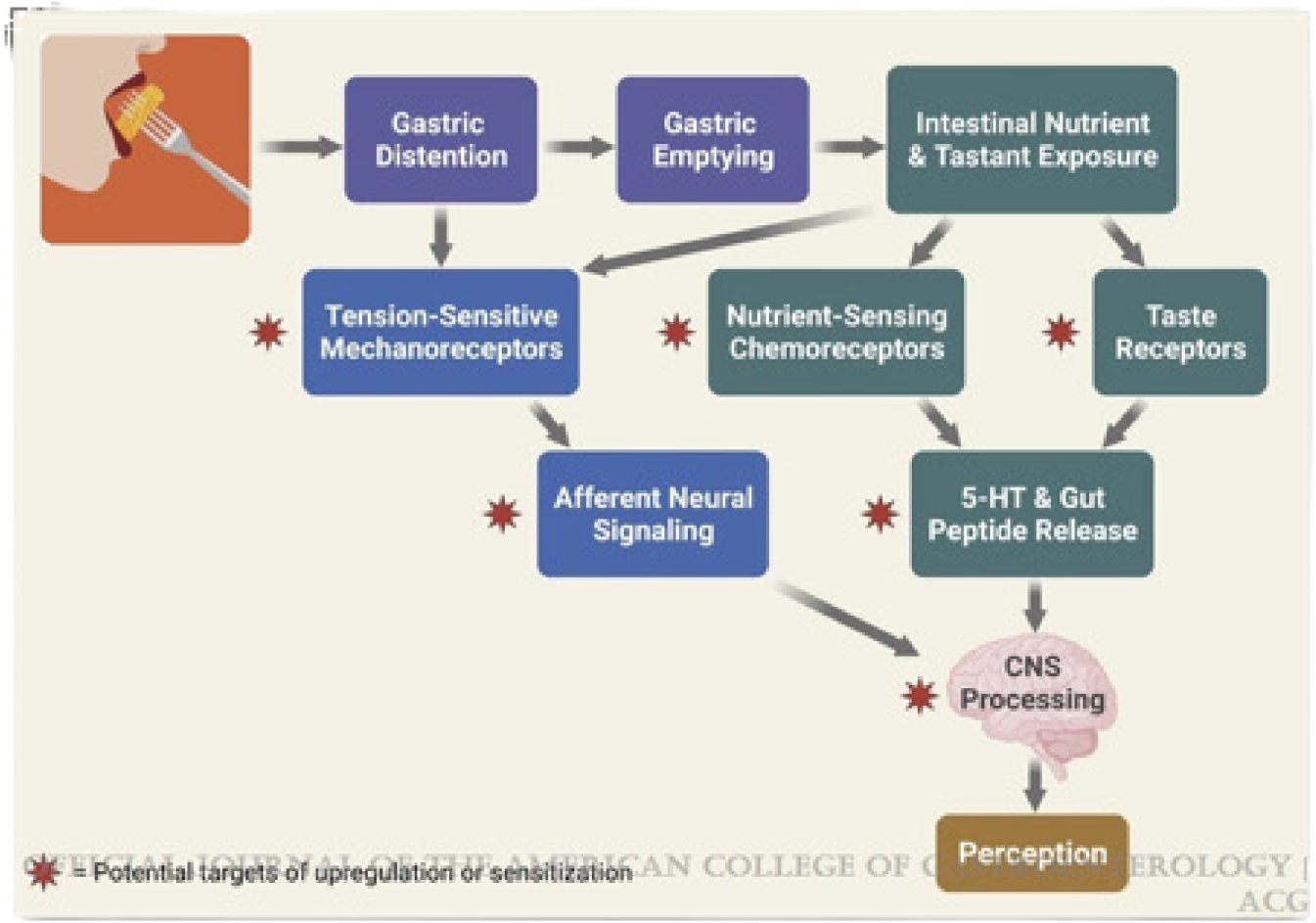
Fig. 1. Mechanisms by which food may result in irritable bowel syndrome (IBS) symptoms.

doi:10.1007/s11938-014-0031-x

Nutrient Sensing

Activated by food ingestion:

- Mechanosensitivity (mainly in stomach)
- Chemosensitivity (upper small intestine)
- Thermosensitivity



Sequence of physiological events related to the presence and sensing of nutrients in the gastrointestinal tract. Potential sites of upregulation or sensitization leading to visceral hypersensitivity are indicated by red stars.

DOI: 10.14309/ajg.0000000000001812

Gastrocolic Reflex

The gastrocolic reflex is a physiological reflex that controls the motility of the lower GI tract following a meal

- series of coordinated signals via the enteric nervous system + neuropeptides (serotonin, gastrin, CCK)
- colon is stimulated ---> HAPCs
- these contractions usually occur after food intake
- they help propel food bolus towards the rectum for defecation

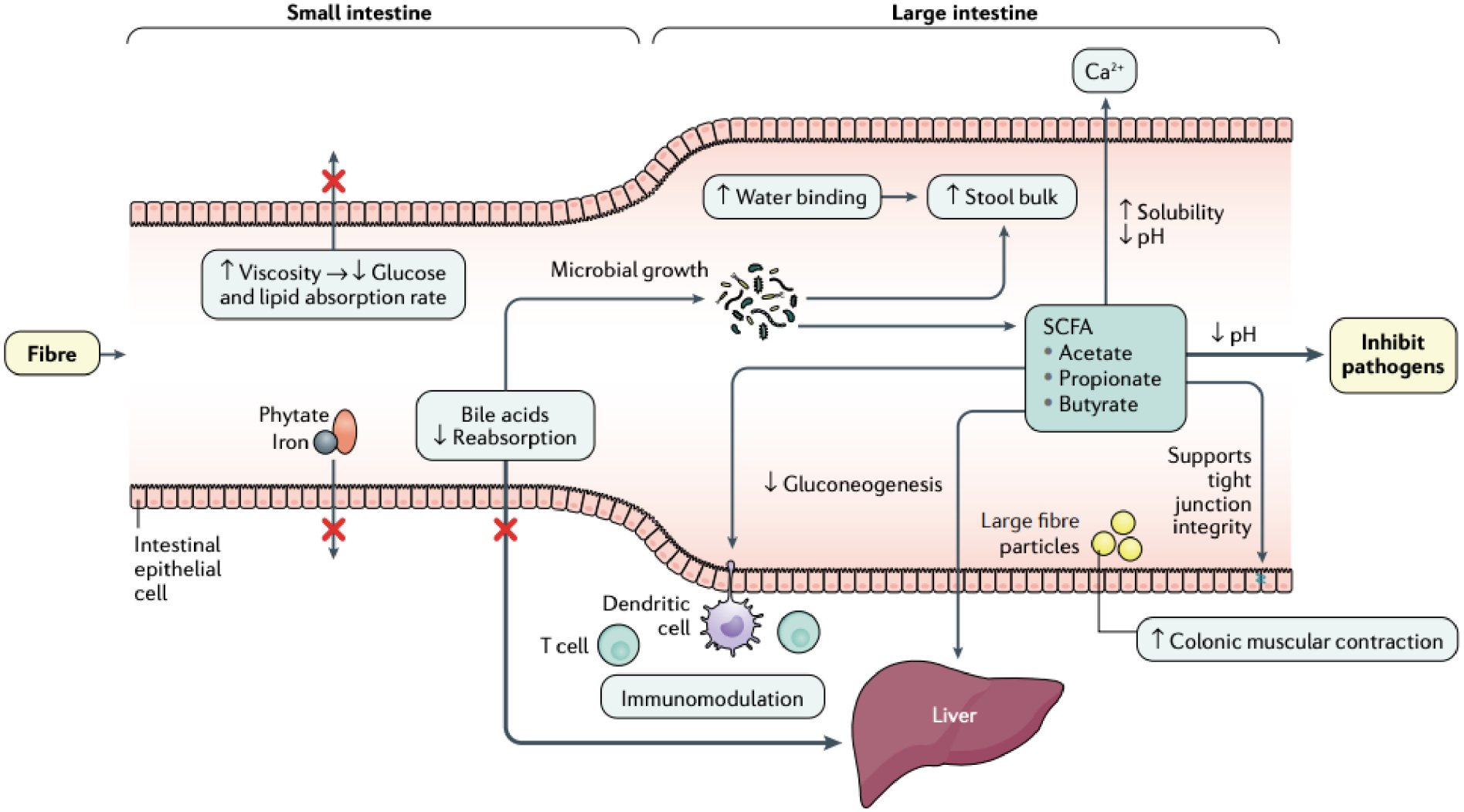
Common Triggers

- Caffeine/Chlorogenic Acid
- Alcohol
- Fried/Fatty Foods
- Spicy Foods
- Large Meals

doi: 10.1007/s11894-022-00849-2

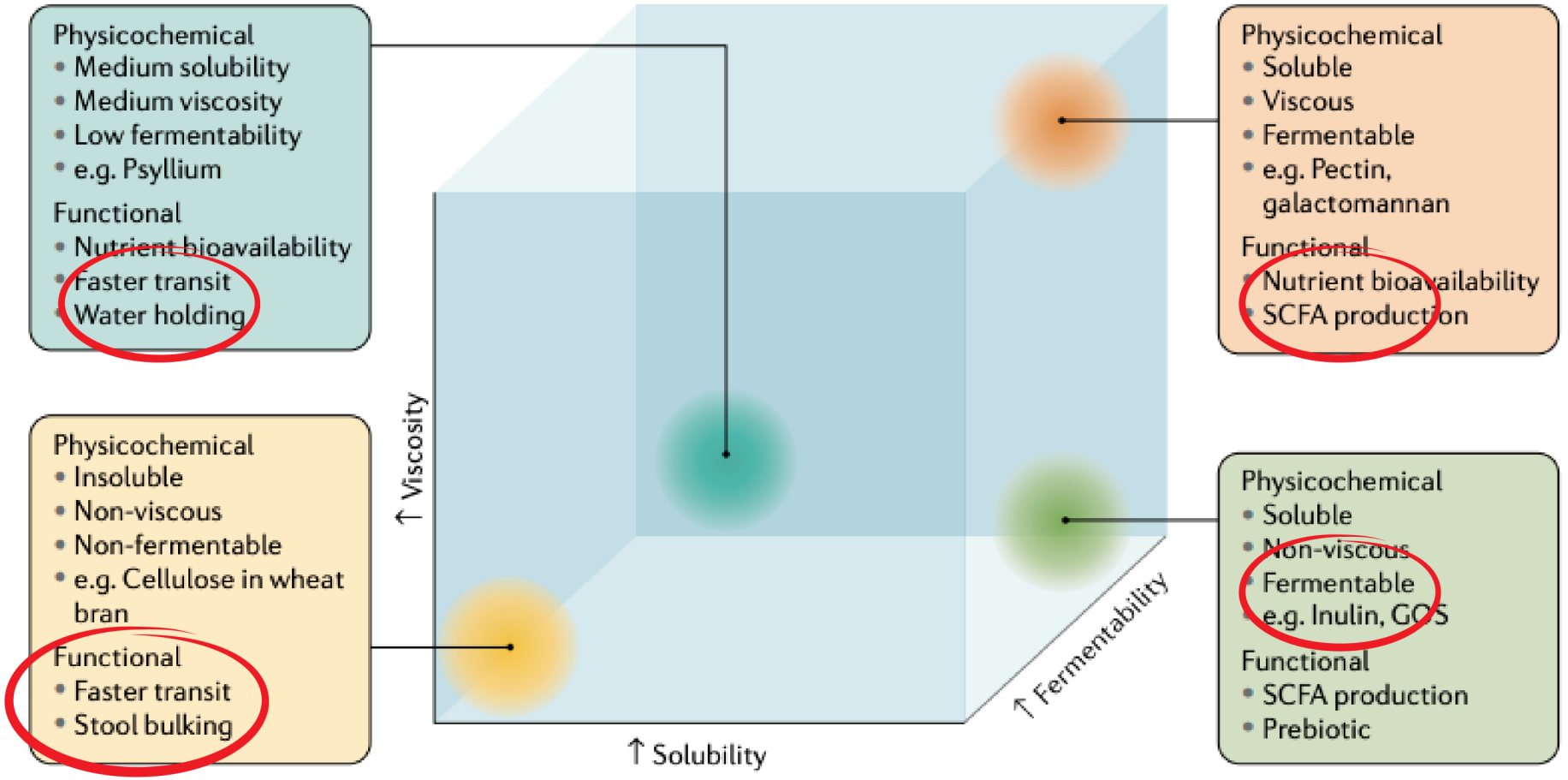
DOI: 10.14309/ajg.0000000000001812

Fiber & How it can contribute to GI symptoms



Mechanisms by which Fiber Affects theGut

Functional Effects of Fiber in the Gut



doi.org/10.1038/s41575-020-00375-4

Fermentable

Oligosaccharides

Disaccharides

Monosaccharides

and

Polyols

FODMAPs are carbohydrates found in foods that may be poorly absorbed in the small intestine.

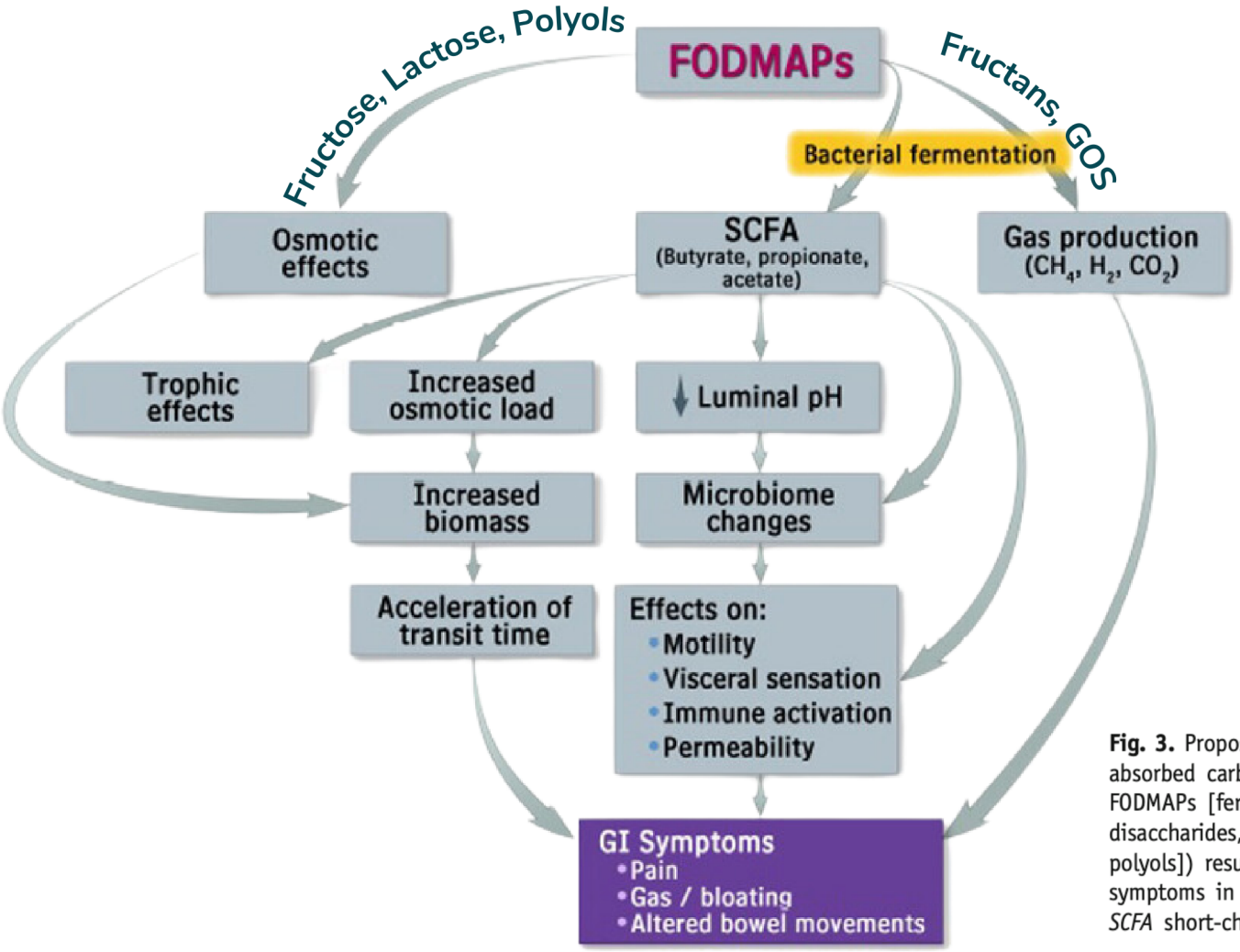
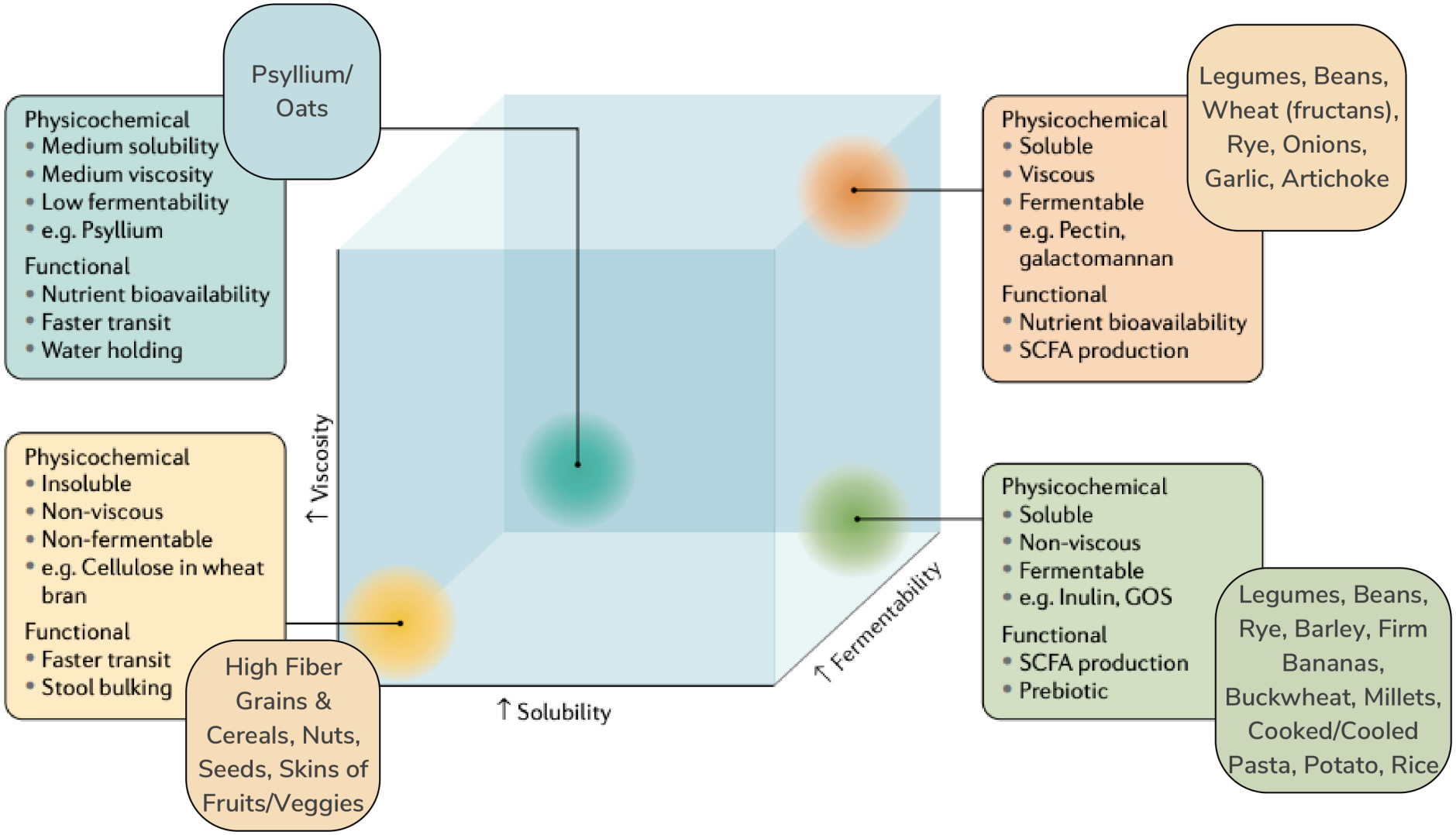


Fig. 3. Proposed process by which non-absorbed carbohydrates (such as FODMAPs [fermentable oligosaccharides, disaccharides, monosaccharides, and polyols]) result in gastrointestinal (GI) symptoms in irritable bowel syndrome. *SCFA* short-chain fatty acids.

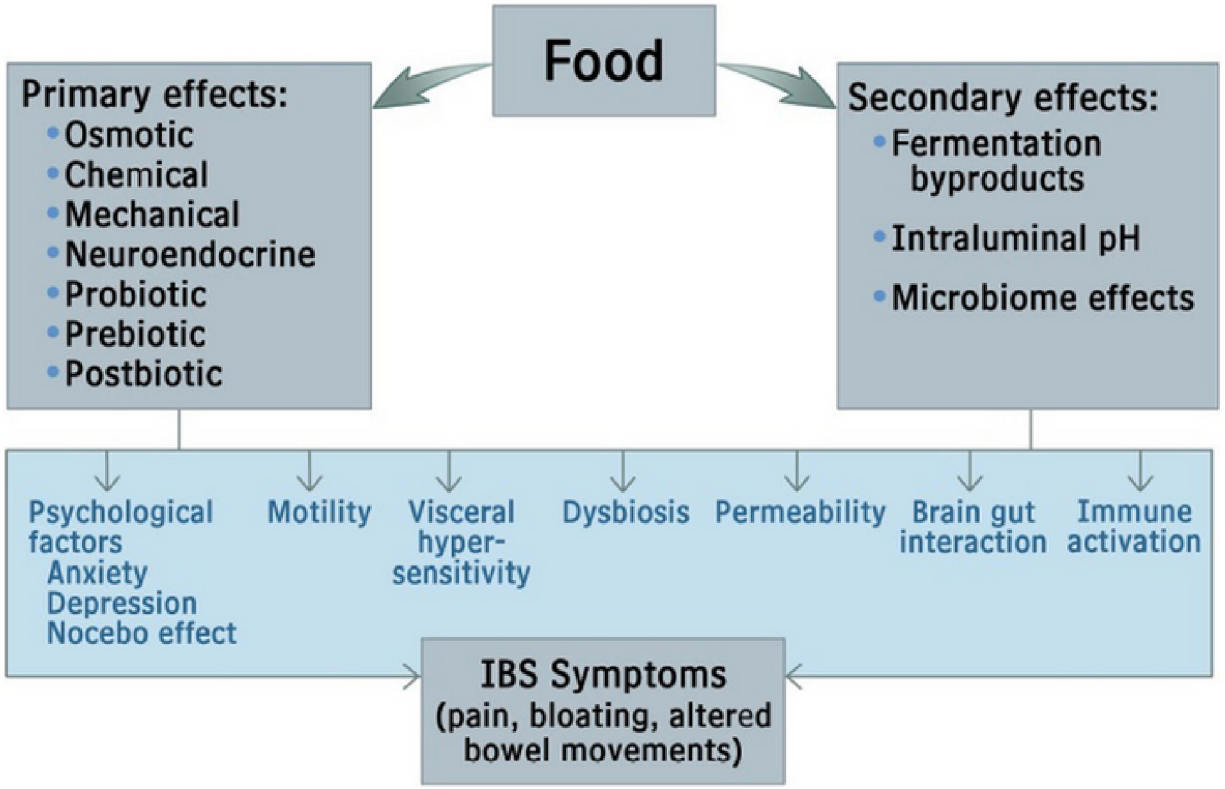
doi:10.1007/s11938-014-0031-x

Food Sources of Fiber



10.1016/S0140-6736(20)32115-2

Food Can Impact GI Symptoms in the Many Ways...



Other Considerations

- NCWS
- Immune Mechanisms. -mucosal alterations, mast cells
- Microbiota + Food interactions (on the horizon)


Medical Nutrition
Therapy for DGBIs

Treat the Symptoms!

Ask yourself:

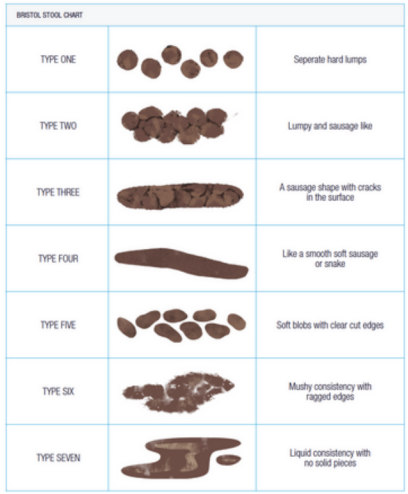
What is the relationship, if any, between what they're eating and how they're feeling?

What Should You Be Asking Your Patients?

Example Intake Questions

Gastrointestinal

Stool frequency/consistency (Bristol Stool Chart)
Color of stool
Type of symptoms
Impact on QoL (i.e. Likert scale)



Diet

FF Questionnaire
Allergies
Known Food Triggers/Intolerances

Other

Additional Lifestyle questions
VERY IMPORTANT= ED screening (SCOFF, etc)
-DIGID group: ED and GI

Please check off any of these common bowel issues that you experience. *

- [ ] Bloating (above belly button)
- [ ] Bloating (below belly button)
- [ ] Gas (burping)
- [ ] Gas (flatulence)
- [ ] Acid reflux/indigestion
- [ ] Abdominal Pain
- [ ] Straining to have bowel movement
- [ ] Abdominal Distention
- [ ] Diarrhea
- [ ] Constipation
- [ ] Daily/frequent use of stool softeners
- [ ] Daily/frequent use of laxatives
- [ ] Nausea
- [ ] Vomiting
- [ ] Rectal bleeding
- [ ] Blood in your stool

More detailed questions reserved for nutrition counseling sessions

MNT for DGBIs

Goals:

- Offer most nutritionally-adequate, least-restrictive eating pattern that's comfortable for patient
- Reduce symptom severity
- Promote regular, complete bowel movements
- Increase quality of life

Considerations:

- Fiber Modification
  - amount/soluble/insoluble
- Portion Size
- Meal Pattern/Timing/Spacing
  - small, frequent meals
- Low-FODMAP diet
- Probiotics?

Gastrocolic Reflex Triggers:

- Caffeine
- Alcohol
- Fat/Fried Foods
- Spicy Foods
- Large Meals

Highly Individualized!

Modified NICE GUIDELINES

- Eat regular meals & take the time to eat ✓
- Avoid skipping meals & long gaps between meals ✓
- Drink at least 8 cups of fluid/day
- Have no more than 3 cups/day of coffee & tea ✓
- Reduce intake of alcohol and carbonated drinks ✓
- Limit intake of foods high in insoluble fiber
- Reduce intake of resistant starch
- Limit fruit intake to 3 servings/day
- Avoid sorbitol (sugar alcohols) ✓
- Oats may be helpful for those with gas & bloating
- Healthcare pros should review fiber intake & adjust insoluble /soluble
- If trialing probiotics, they should be taken for a minimum of 4 weeks
- Discourage the use of aloe vera

- If symptoms persist, single food avoidance & exclusion diets like low-FODMAP can be trialed (only be given by a healthcare professional with expertise in dietary management)

NICE
Recommendations | Irritable bowel syndrome in adults: diagnosis and management |...
nice.org.uk

The low-FODMAP diet

Low-FODMAP Diet: Evidence-based therapeutic diet for IBS

Original Contribution | Open Access | Published: 14 February 2021

Efficacy of a low-FODMAP diet in adult irritable bowel syndrome: a systematic review and meta-analysis

Anne-Sophie van Lanen, Angelika de Bree & Arno Greyling

European Journal of Nutrition 60, 3505–3522 (2021) | Cite this article
8127 Accesses | 13 Citations | 10 Altmetric | Metrics

A Correction to this article was published on 28 June 2021

This article has been updated

Abstract

Purpose

This review provides an updated overview of observational and intervention studies investigating the effect of a low-FODMAP (fermentable oligo-, di- and monosaccharides, and polyols) diet (LFD) on gastrointestinal (GI) symptoms, quality of life (QoL), nutritional adequacy, and gut microbiome in irritable bowel syndrome (IBS) patients.

Methods

We systematically searched available literature until October 2020 for studies that investigated the effect of LFDs on GI symptoms, QoL, nutritional adequacy, and the gut microbiome in IBS patients. The data were represented as standardized mean differences (SMD) for IBS severity, and as mean differences (MD) for IBS-QoL. Meta-analyses were performed for the quantitative analyses using random effects models with inverse variance weighing.

Results

Twelve papers (nine parallel trials, three crossover studies) were included for the meta-analysis. The LFD reduced IBS severity by a moderate-to-large extent as compared to a control diet (SMD − 0.66, 95% CI − 0.88, − 0.44, I^2 = 54%). When analyzing only studies that used the validated IBS-SSS questionnaire, a mean reduction of 45 points (95% CI − 77, − 14; I^2 = 89%) was observed. Subgroup analyses on adherence, age, intervention duration, IBS subtype, outcome measure, and risk of bias revealed no significantly different results. The LFD also increased IBS-QoL scores, when compared with a control diet (MD 4.93; 95% CI 1.77, 8.08; I^2 = 42%).

Conclusions

The low-FODMAP diet reduces GI symptoms and improves quality of life in IBS subjects as compared to control diets. Future work is required to obtain definitive answers regarding potential long-term effects of such diets on nutritional adequacy and the gut microbiome.

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A Low-FODMAP Diet Improves the Global Symptoms and Bowel Habits of Adult IBS Patients: A Systematic Review and Meta-Analysis

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Author information · Article notes · Copyright and License information Disclaimer

This article has been cited by other articles in PMC.

Associated Data

Supplementary Materials

Data Availability Statement

Abstract

Go to:

Background: A low-fermentable oligo-, di-, monosaccharides, and polyols (FODMAP) diet has been reported to be associated with improving the symptoms of irritable bowel syndrome (IBS); however, its efficacy as evaluated by different studies remains controversial.

Objective: A systematic review and meta-analysis of randomized controlled trials (RCTs) were conducted to explore the efficacy of a low-FODMAP diet (LFD) in alleviating the symptoms of IBS.

Methods: A search of the literature for RCTs that assessed the efficacy of an LFD in treating IBS patients was conducted using the electronic databases PubMed, Embase, Cochrane Central Register of Controlled Trials, and Web of Science. The searches in each database were conducted from the inception of the database to February 2021. Two independent reviewers screened citations and a third reviewer resolved disagreements. Two independent reviewers also performed eligibility assessments and data extraction. The RCTs that evaluated LFDs vs. a normal IBS or usual diet and assessed changes of IBS symptoms were included in the search. Data were synthesized as the relative risk of global symptoms improvement, mean difference of IBS Severity Scoring System (IBS-SSS) score, sub-items of IBS-SSS irritable bowel syndrome-related quality of life (IBS-QOL), hospital anxiety and depression scale (HADS), stool consistency/frequency, and body mass index (BMI) using a random effects model. The risk of bias was assessed using Risk of Bias Tool 2 (RoB 2). The bias of publication was assessed based on Egger's regression analysis. The quality of evidence was assessed using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodology.

Results: A total of 2,768 citations were identified. After full-text screening, a total of 10 studies were eligible for the systematic review and were subsequently used to compare an LFD with various control interventions in 511 participants. An LFD was associated with the improvement of global symptoms [n = 420; Risk Ratio (RR) = 1.54; 95% Confidence Interval (CI) 1.18 to 2; I^2 = 38%], improvement of stool consistency [n = 434; Mean difference (MD) = −0.25; 95% CI −0.44 to −0.06; I^2 = 19%), and a reduction trend of stool frequency (n = 434; MD = −0.28; 95% CI −0.57 to 0.01; I^2 = 68%) compared with control interventions. There was no statistically significant change in IBS-QOL (n = 484; MD = 2.77; 95% CI −2 to 7.55; I^2 = 62%), anxiety score (n = 150; MD = −0.45; 95% CI −3.38 to 2.49; I^2 = 86%), depression score (n = 150; MD = −0.05; 95% CI −2.5 to 2.4; I^2 = 88%), and BMI (n = 110; MD = −0.22; 95% CI −1.89 to 1.45; I^2 = 14%). The overall quality of the data was "moderate" for "global improvement of IBS symptom," "stool consistency," "stool consistency for IBS with diarrhea (IBS-D)," and "stool frequency for IBS-D," and "low" or "very low" for other outcomes according to GRADE criteria.

Conclusion: An LFD is effective in reducing the global symptoms and improving the bowel habits of adult IBS patients. The efficacy for IBS-D patients can also be more pronounced.

Conclusion: An LFD is effective in reducing the global symptoms and improving the bowel habits of adult IBS patients. The efficacy for IBS-D patients can also be more pronounced.

Efficacy of a low FODMAP diet in irritable bowel syndrome: systematic review and network meta-analysis

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Affiliations + expand

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Free article

Abstract

Objective: A diet low in fermentable oligosaccharides, disaccharides, monosaccharides, and polyols (FODMAP) is recommended for irritable bowel syndrome (IBS), if general lifestyle and dietary advice fails. However, although the impact of a low FODMAP diet on individual IBS symptoms has been examined in some randomised controlled trials (RCTs), there has been no recent systematic assessment, and individual trials have studied numerous alternative or control interventions, meaning the best comparator is unclear. We performed a network meta-analysis addressing these uncertainties.

Design: We searched the medical literature through to 2 April 2021 to identify RCTs of a low FODMAP diet in IBS. Efficacy was judged using dichotomous assessment of improvement in global IBS symptoms or improvement in individual IBS symptoms, including abdominal pain, abdominal bloating or distension, and bowel habit. Data were pooled using a random effects model, with efficacy reported as pooled relative risks (RRs) with 95% CIs, and interventions ranked according to their P-score.

Results: We identified 13 eligible RCTs (944 patients). Based on failure to achieve an improvement in global IBS symptoms, a low FODMAP diet ranked first vs habitual diet (RR of symptoms not improving=0.67; 95% CI 0.48 to 0.91, P-score=0.99), and was superior to all other interventions. Low FODMAP diet ranked first for abdominal pain severity, abdominal bloating or distension severity and bowel habit, although for the latter it was not superior to any other intervention. A low FODMAP diet was superior to British Dietetic Association (BDA)/National Institute for Health and Care Excellence (NICE) dietary advice for abdominal bloating or distension (RR=0.72; 95% CI 0.55 to 0.94). BDA/NICE dietary advice was not superior to any other intervention in any analysis.

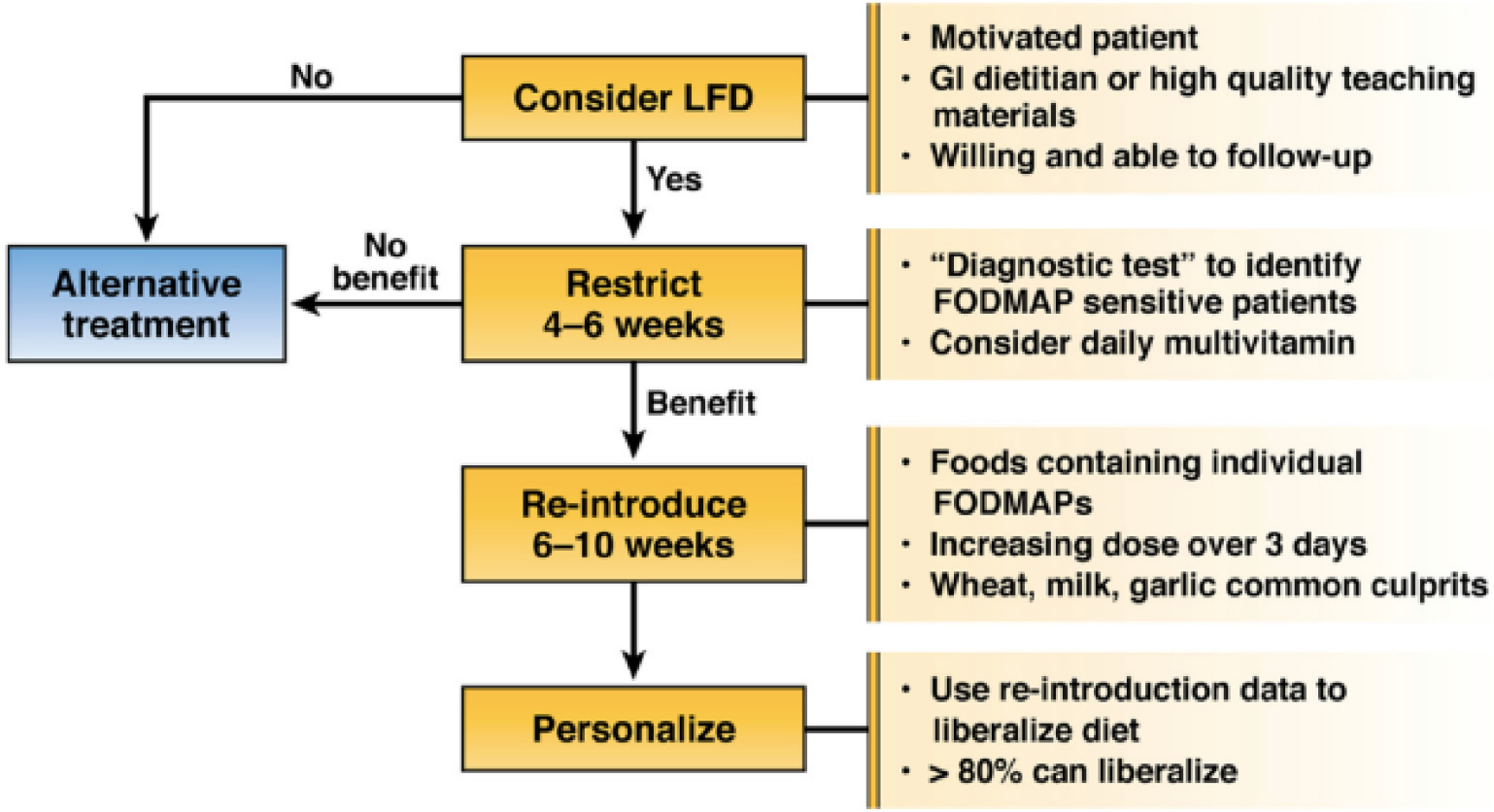
Conclusion: In a network analysis, low FODMAP diet ranked first for all endpoints studied. However, most trials were based in secondary or tertiary care and did not study effects of FODMAP reintroduction and personalisation on symptoms.

Conclusions

The low-FODMAP diet reduces GI symptoms and improves quality of life in IBS subjects as compared to control diets. Future work is required to obtain definitive answers regarding potential long-term effects of such diets on nutritional adequacy and the gut microbiome.

Conclusion: In a network analysis, low FODMAP diet ranked first for all endpoints studied. However, most trials were based in secondary or tertiary care and did not study effects of FODMAP reintroduction and personalisation on symptoms.

To FODMAP or Not?



https://doi.org/10.1053/j.gastro.2021.12.248

Contraindications for a Low-FODMAP Diet

Diet therapy may be contraindicated in patients who:

- are malnourished, or are at risk of malnutrition
- have a history of disordered eating (including ARFID)
- have symptoms that are not suspected to be triggered by diet
- have a low body weight (BMI <18.5kg/m2) or who have unintentionally lost weight (>5% during the last month) prior to the dietary treatment are likely not good candidates for the low FODMAP diet.
- have independently restricted foods from their diet
- are picky eaters or
- have dietary restrictions due to allergies or intolerances, religious or ethical considerations

These patients should be assessed to ensure nutritional adequacy, then referred onto other ‘non-diet’ therapies, such as medications or psychological approaches OR use a low-FODMAP "lite" or "gentle" approach


CASE
STUDY

Case Study #1: Jane with IBS?

Reason for visit: bloating, excessive flatulence, and irregular bowel movements

Presentation:

- 23yo F, 5' 4", 135 lb
- No sig. PMH
- Symptoms: reports sx for last 2-3 months: very bloated, cramping, lots of toots, constipated for a few days, then has loose stool (Type 1-2 or 5-6)
- Bloating increases after she eats anything and it gets worse as the day goes on (notices lower belly)
- Went to GI, nothing definitive, maybe IBS
- Labs WNL & tests came back normal
- Sleep: 7-8 hrs/night, PA: highly active, Stress: 6/10
- Currently taking Miralax 1x/day - not helpful
- Water: drinks 8-10 cups water/day
- Reports blood when wiping --> told GI: after workup, cleared r/t discovered hemorrhoids
- Known food triggers: lactose (avoids)
- In session:
    - Patient consuming small breakfast
    - Moderate-fiber diet that was predominately insoluble fiber
    - Snacks (pressed for time with hectic schedule): would eat two protein bars that had inulin and erythritol as ingredients
    - College student -had limited choices and was unable to cook for herself

Case Study #1: Jane with IBS?

First Session Info/Assessment/Plan:

- Patient with increased bloat after any foods (FODMAP maybe not appropriate)
- Rec'd
  - psyllium husk at bedtime - diet is low in soluble fiber
  - larger, soluble fiber-rich breakfast to stimulate the GCR
  - sip of coffee to stimulate the GCR
  - use squatty potty

Follow-Up Session (2 weeks later):

- only 1 day w/o BM (Type 4-5, formed and complete)
- bloating down 95%, exacerbated by restaurant/take out meals
- reports no more cramping
- patient now enjoys dancing even more, not stressed during practice

Case Study #2: Stacey with IBS-D

Reason for visit: diarrhea (almost daily), Abdominal pain and cramping, Abdominal bloating

Presentation:

- 29 y/o F, 5'3", 164 lbs
- PMH: IBS-D (9/2021)
- PT began experiencing bloating (above belly button), diarrhea, ab cramping in 2017
- Symptoms became more severe mid - 2020, saw GI: ruled out for infection, IBD, Celiac, stool burden: dx w/ IBS- D 9/2021
- Treated w/ Rifaximin (9/2021)- GI gave low-fiber/low-lactose diet: pt felt some relief, essentially put herself on low-FODMAP =less bloated on diet but hard to maintain
- Symptoms returned about 1.5 mos later
- Treated w/Rifaximin (1/2022), symptoms eased for 2 weeks but returned
    - Bloating (above belly button)- sticks out, uncomfortable, Abdominal Pain, Acid reflux/indigestion-after eating
    - Gas (burping) random- even with water; Gas (flatulence)- when waking, after eating all the time
    - Diarrhea Type 5, occ Type 6, 1-2x day

Diet: (via recall & photo food diary)

- **Breakfast:** 7am, oatmeal with water, frozen waffles; dairy-free or reg yogurt; toast, granola; sometimes strawberries; coffee w/lactaid
- **Lunch:** 2-3pm sometimes skips; leftovers; eggs w/toast & siracha; TJ's soup dumplings
- **Occasional afternoon snack:** mini sausage roll w/clementine; Takis Fuego
- **Dinner:** 6:30pm, burger w/cheese on bun, spicy sauce, air fries; breaded chicken, buttered noodles; chix tikka masala, naan, coke
- **Avoids:** Garlic, onions, bread, cauliflower, milk, tomato (raw)
- **Likes:** most fruit, veg, chicken, salmon, shrimp
    - **via diary**: many days w/ extreme hunger/headaches from waiting too long to eat

Case Study #2: Stacey with IBS-D

First Session Assessment/Nutrition Plan: address the bloating/diarrhea first with food

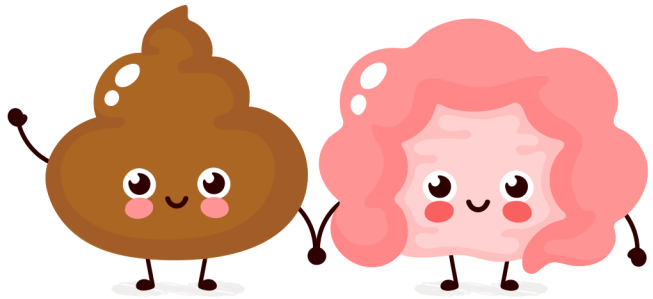
- Eat lunch and add 1-2 snacks between meals - the aim was for the main meals to be a little smaller, blood sugar balanced, & prevent extreme hunger and headaches
  - Example Schedule: Breakfast (7:30-8:30a), Snack (10:30-11:30a), Lunch (12:30-1:30p), Snack (3:30-4:30p), Dinner (6:30-8:00p)
- Add soluble-rich fruit or vegetable item to breakfast and dinner (low-FODMAP for now)- provided list of fruits & veg, snack ideas
- Trial reducing fat/oil when cooking & forgoing hot sauce

Second Session Info/Plan:

- Pt reports significant improvement in bloating (down 80%)
- Normal, complete BMs x 4 days! Having mostly type 4 stools, occasional type 5/6
- Eating lunch about 5 times a week
- Pt feeling confident & happy about adding foods to the diet, reports having more energy, less grazing/snacking at night
- New Plan: Add citrucel at night to help form BM & will trial garlic (already eats wheat) to see if any symptoms arise

Third Session Info/Plan

- Reintroduced garlic -day one: minimal bloat, no pain, second day: little bloat, but discomfort diminished, third day: lots of bloating, no pain --> pt learned her own personal tolerance (finished reintroducing all FODMAPs afterwards.
- Continues to have normal, complete bowel movements and uses Citrucel as needed (traveling, etc)
- She was so excited to eat an orange again!



AMENTA
NUTRITION

Thank You!