

# Irritable Bowel Syndrome

Michelle M Olson, MD, MACM

Digestive Health Institute, Carle Health

Urbana, IL

# Earliest descriptions of IBS symptoms

- 1849 – W Cumming
  - “The bowels are at one time constipated, at another lax, in the same person. How the disease has two such different symptoms I do not profess to explain. . . .”
- 1962 – Chaudhary & Truelove
  - Irritable colon syndrome
- 1966 – CJ DeLor
  - Irritable bowel syndrome
- Other historical terms
  - mucous colitis
  - colonic spasm
  - neurogenic mucous colitis
  - irritable colon
  - unstable colon
  - nervous colon
  - spastic colon
  - nervous colitis
  - spastic colitis

# Historical perspective

- Long dismissed as a psychosomatic condition
- Predominantly affects women
- Attitudes have changed
- Incidence and prevalence not extensively monitored in the past



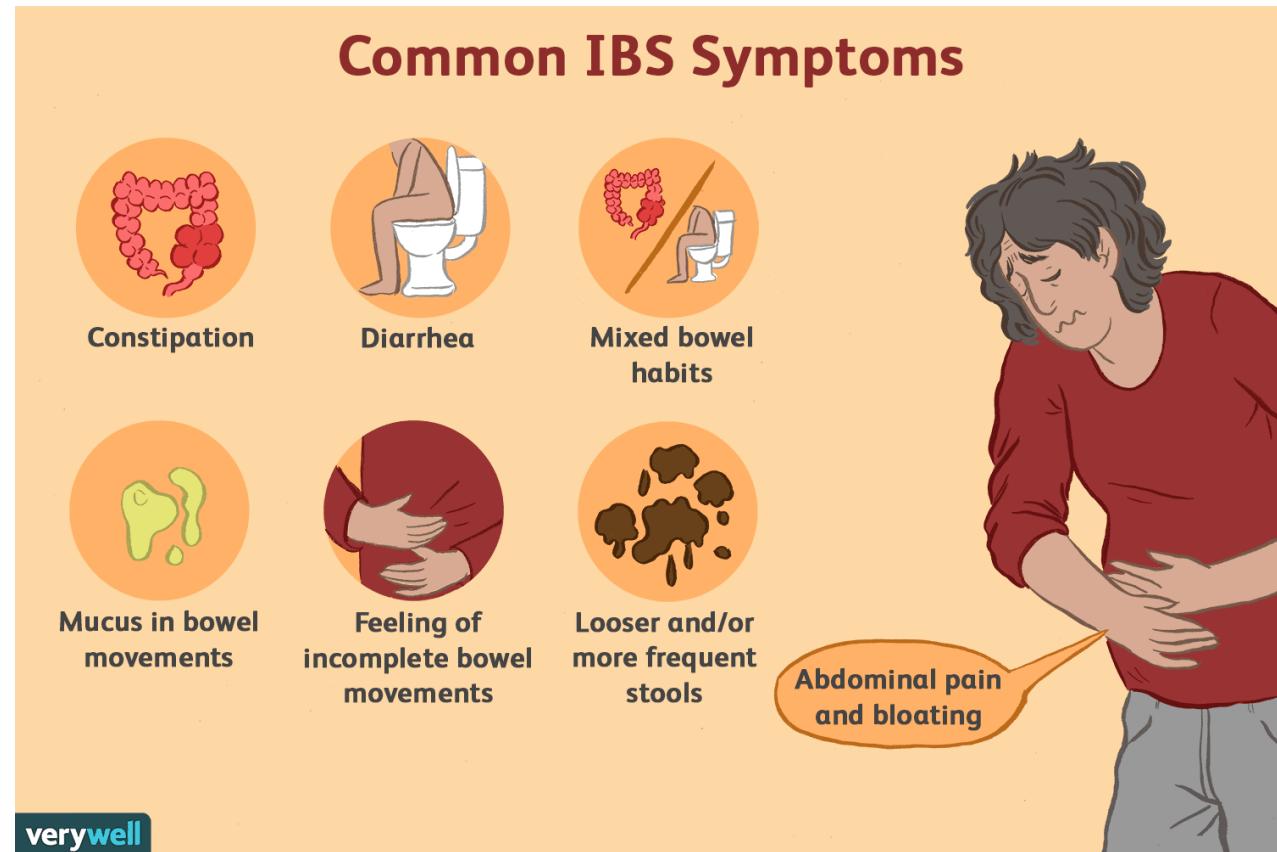
# Irritable Bowel Syndrome (IBS)

Abdominal pain or discomfort

+

Altered Bowel habits

Absence of any other causative disease

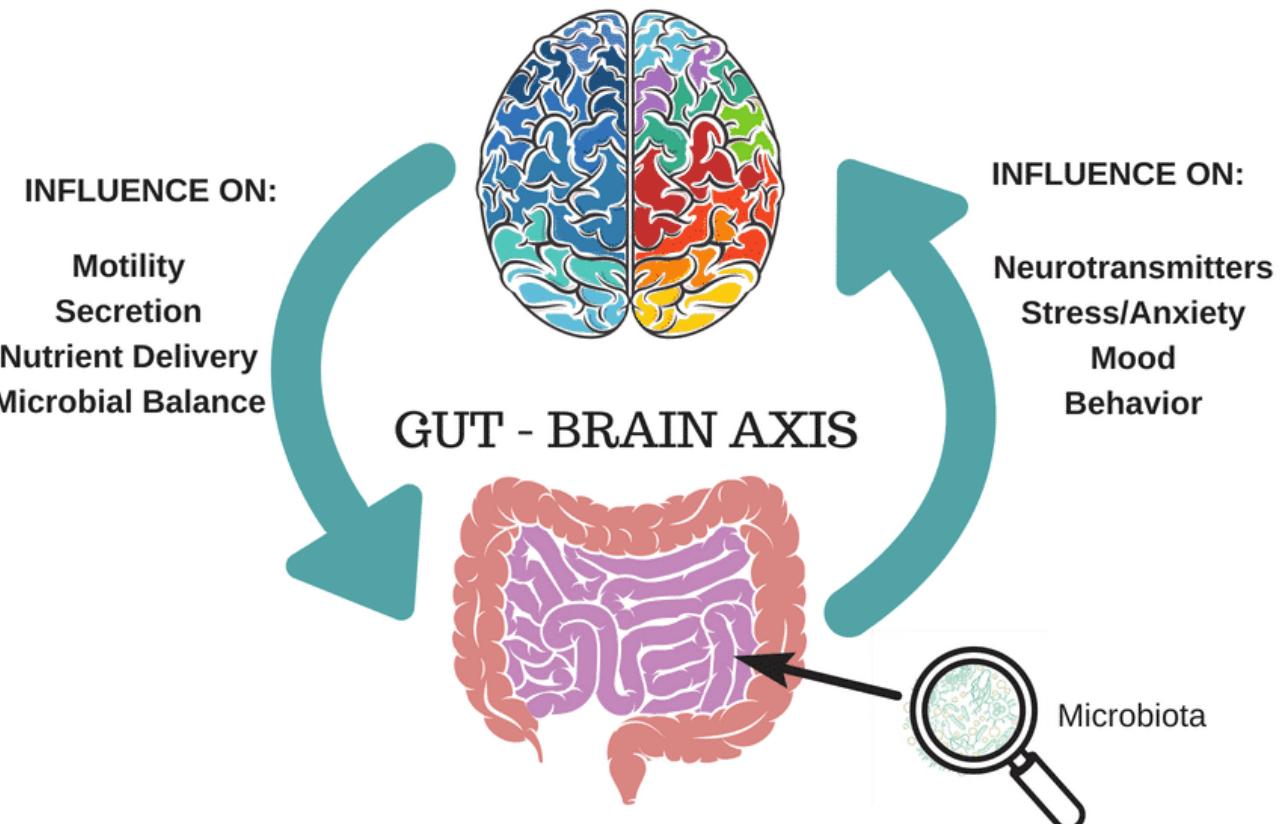


# Background

- Commonly diagnosed
  - in the top 10 reasons for PCP visit
- But also underreported
  - Less than 50% of patients seek medical care
- Most prevalent of the Functional Gastrointestinal Disorders (FGIDs)
  - 12% estimated worldwide prevalence
  - In North America, 1.5-2x more prevalent in women than men
  - Prevalence decreases with age
- Greatly affects patient quality of life
  - Individuals with IBS restrict activities an average of 73 days/year
- Significant economic burden on healthcare system

# Pathophysiology

- Broad, but incompletely understood
- Abnormalities to:
  - Motility
  - Visceral sensation
  - Brain-gut interaction
  - Psychosocial distress
  - Intestinal/colonic microbiome
  - Gut immune activation



# Making the Diagnosis

- Difficult to diagnose
- Symptoms can change over time
- Symptoms can mimic other disorders
- No specific diagnostic test
- Providers lack awareness of current guidelines
- Patients may seek out multiple providers/opinions



# Historical Context

- Development of symptom criteria for diagnosis of IBS
- Manning Criteria (1978): 6 symptoms
  - Widely used and studied
  - Sample size from initial paper was small
  - No differentiation between IBS-D and IBS-C
  - Currently out of favor
- Krius Criteria (1984): similar symptoms, greater emphasis on symptom duration, consideration of warning signs and basic labs
  - Too cumbersome

# Historical Context

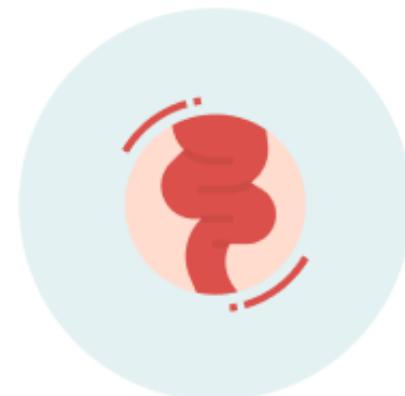
- Rome Criteria (1992)
  - Based on consortium of international expert opinion
  - Criteria easily incorporated into research but cumbersome for clinical practice
- Rome II (1999)
  - Revisions of original Rome I
  - Added “discomfort” to definition, required symptoms to be present for at least 12 weeks of the preceding 12 months
- Rome III (2006)
  - Added subtype classification, eliminated abdominal bloating as a primary symptom

# Rome IV Criteria (2016)

- Recurrent abdominal pain on average 1 day/week in the last 3 months, associated with 2 or more of:
  - Related to defecation
  - Associated with a change in the frequency of stool
  - Associated with a change in the form/appearance of stool
- Symptom onset at least 6 months prior to diagnosis

# Subtypes

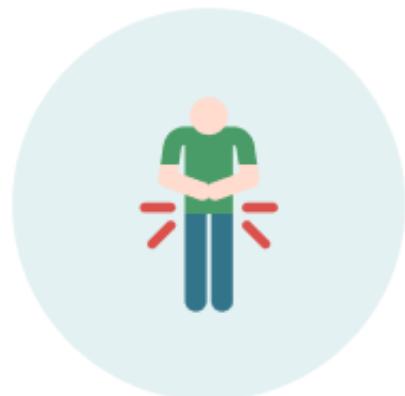
- IBS-D (diarrhea predominant)
- IBS-C (constipation predominant)
- IBS-M (mixed bowel patterns)



IBS with constipation



IBS with diarrhea

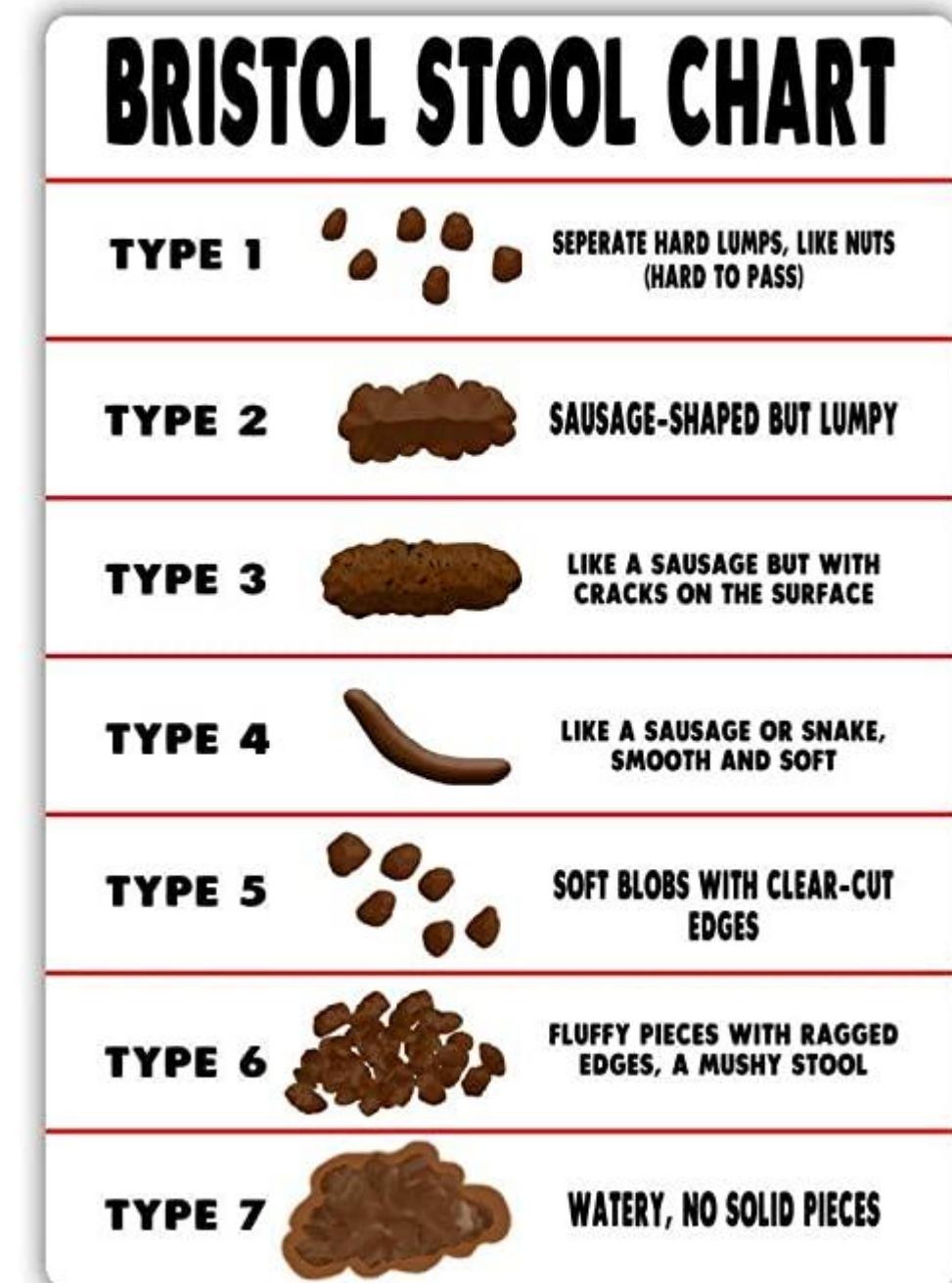


IBS with alternating  
constipation and  
diarrhea

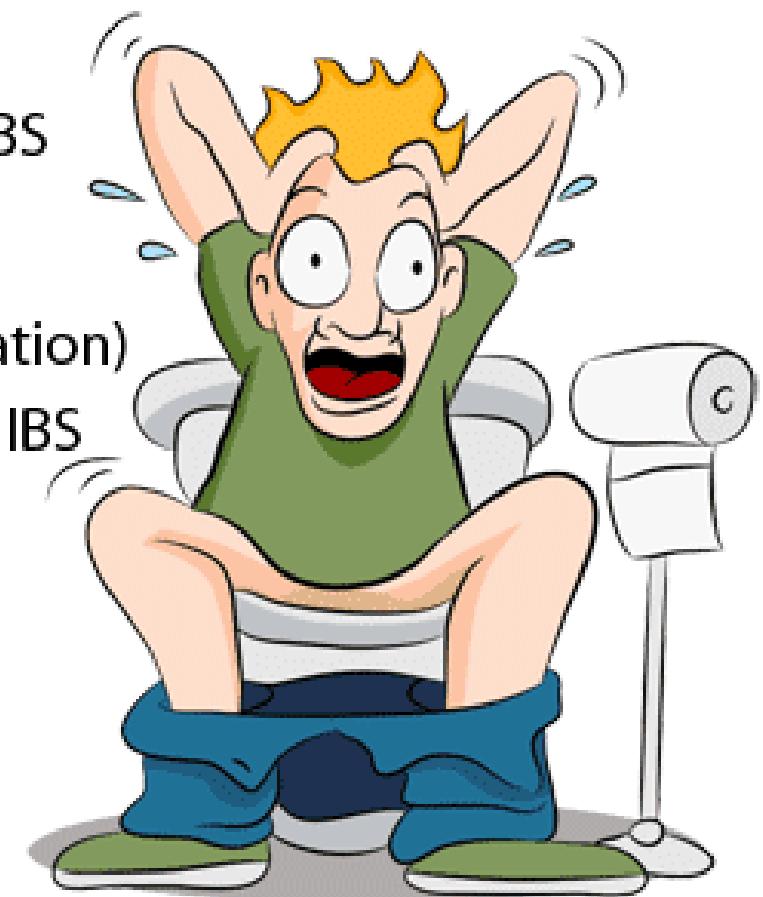
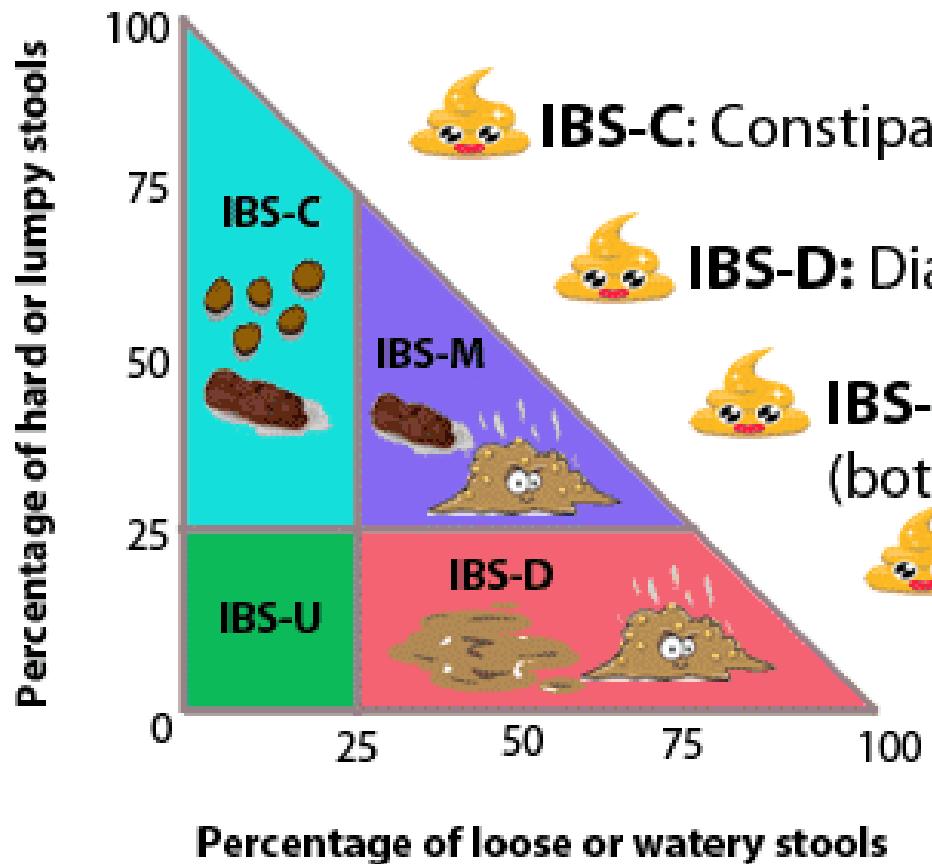
- Subtype is explicitly based on the predominant bowel habit on days with abnormal BMs (not the average of all days)

# Bristol Stool Form Scale

- Developed in the 1990s
- Bristol Royal Infirmary (England)
- 1 and 2 = Constipation
- 6 and 7 = Diarrhea
- 3 and 4 = Normal



## IBS - subtypes on the basis of stool consistency



# Diagnosing IBS

- Detailed History
- Rule out Warning signs
  - Age over 50 without prior colorectal cancer (CRCA) screening
  - Overt GI bleeding
  - Nocturnal passage of stools
  - Unintentional weight loss
  - FHx of Inflammatory Bowel Disease (IBD) or CRCA
  - Recent changes in bowel habits
  - Palpable abdominal mass or lymphadenopathy

## IBS Red Flags

Be on the safe side and call your doctor if you have:



Stomach  
pain that  
keeps you  
awake



Diarrhea  
that wakes  
you



Rectal  
bleeding or  
blood in your  
stool



Unexplained  
weight loss

# Diagnosing IBS

- Quantify duration of symptoms
  - Occurrence of symptoms at least once per week on average over the last 3 months
  - Symptoms have occurred for more than 6 months
- Association of abdominal pain to bowel habits
  - Defecation
  - Stool frequency
  - Change in appearance of stool (Bristol Scale)
- Physical Exam
  - Should be benign

# Diagnosing IBS

- In patients meeting Rome IV criteria, extensive diagnostic testing is unlikely to uncover a new diagnosis
- Recommended labs:
  - CBC (r/o anemia)
  - CRP or fecal calprotectin
  - Celiac testing
- Selective Colonoscopy
  - Age >45, without recent screening
  - Persistent diarrhea
- Consideration of dietary trials – lactose, fructose, gluten, or low-FODMAP

# Other Assessments

- Identify symptom triggers
- Assess symptom impact on daily life
- Assess for psychological comorbidities
- Assess for other physical comorbidities
- Explore patient's values and preferences

# Management of IBS

- Establish the diagnosis
- Provide reassurance
- Gastroenterology and/or Nutrition Evaluations
- Work on symptom management



## Conservative management

### 1. Identify key patient characteristics

- Identify the predominant symptom
- Consider previous therapies, preferences and patient expectations

### 2. Educate and reassure the patient

- Name and explain the condition
- Provide reassurance

### 3. Optimise treatment

Consider non-pharmacological and pharmacological treatments based on the predominant symptom, patient preferences and expectations

#### Lifestyle and dietary modifications

(usually tried BEFORE the pharmacological interventions and advanced management strategies outlined below)

*If no response or refractory to these measures, base the sequence of treatments on:*

Predominant symptom

Quality of the evidence

Individual patient assessment

Preference and availability

**Management targeted at predominant symptom  
(order of use according to IBS subtype)**

IBS-D	Diarrhoea	Bloating	Pain
	<i>Loperamide</i> <i>Eluxadoline</i> <i>Cholestyramine</i> <i>Ondansetron</i> <i>Rifaximin</i>	<i>Rifaximin</i> <i>Eluxadoline</i> <i>Low-FODMAP diet</i> <i>Probiotics</i>	<i>Antispasmodics</i> <i>Eluxadoline</i> <i>TCAs</i> <i>Psychological therapy</i> <i>Bile acid sequestrants</i> <i>Probiotics</i>
IBS-C	Constipation	Bloating	Pain
	<i>Water-soluble fibre</i> <i>Laxatives</i> <i>Linaclotide</i> <i>Lubiprostone</i> <i>Prokinetics</i>	<i>Linaclotide</i> <i>Lubiprostone</i> <i>Low-FODMAP diet</i> <i>Probiotics</i>	<i>Antispasmodics</i> <i>Linaclotide</i> <i>SSRIs</i> <i>Psychological therapy</i> <i>Probiotics</i>
IBS-M	Laxative user	Loperamide user	Pain
	<i>Stop laxative</i>	<i>Stop loperamide</i> <i>Low-FODMAP diet</i>	<i>Antispasmodics</i> <i>SSRIs or TCAs</i> <i>Psychological therapy</i> <i>Probiotics</i>

**4. Follow-up**

- Reassess at 4–8 weeks
- Assess relief, satisfaction, compliance and tolerability strategies

# Symptom Management

- Constipation
  - Fiber supplementation
  - Physical activity
  - Laxative regimens
  - Other medications
    - Lubiprostone, Linaclotide, Plecanatide)
- Diarrhea
  - Loperamide
  - Probiotics
  - Alosetron, Eluxadoline, Rifaximin
- Pain, Bloating, Cramping
  - Dicyclomine, Hyocystamine
  - Low FODMAP diet
  - Tri-cyclic antidepressants, SSRIs

# FODMAPs



## Excess Fructose

Honey, apples, pears, peaches, mangos, fruit juice, dried fruit

## Fructans

Wheat (large amounts), rye (large amounts), onions, leeks, zucchini

## Sorbitol

Apricots, peaches, artificial sweeteners, artificially sweetened gums

## Raffinose

Lentils, cabbage, brussels sprouts, asparagus, green beans, legumes

FODMAPs = Fermentable Oligosaccharides, Disaccharides, Monosaccharides, and Polyols

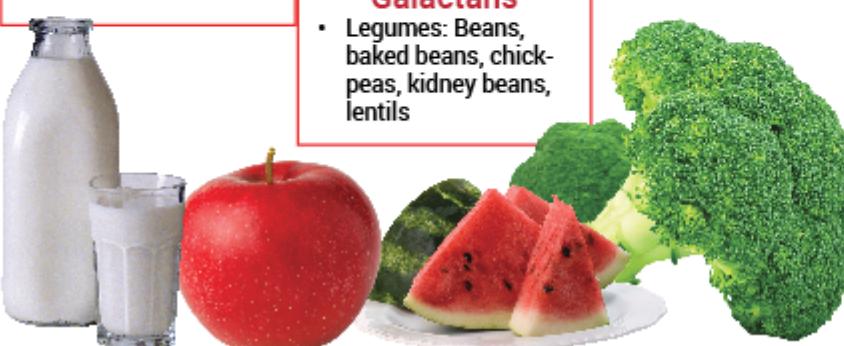
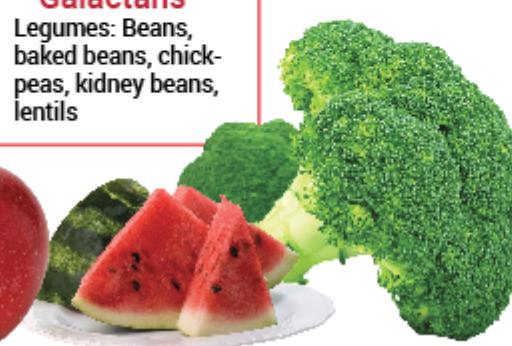
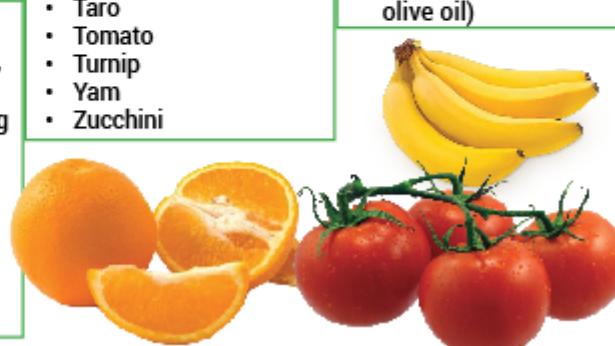
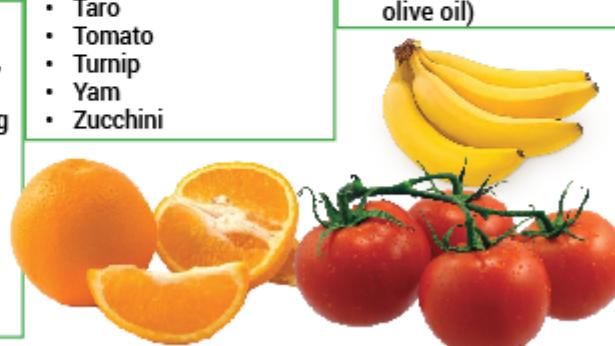
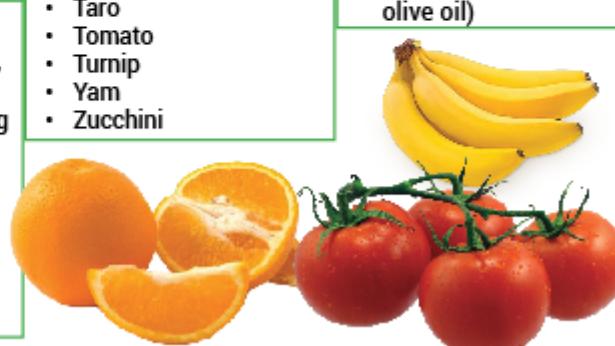
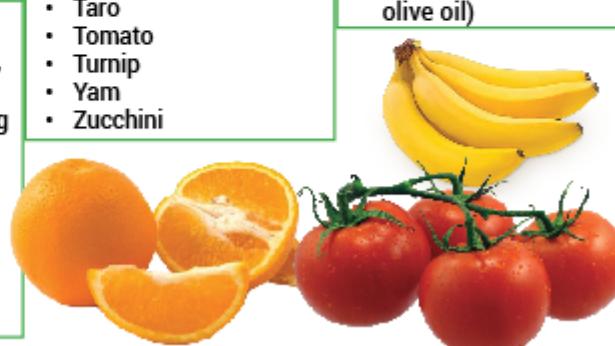
<sup>1</sup> Somers SC, Lembo A. *Gastroenterol Clin North Am.* 2003; 32:507

<sup>2</sup> Shepherd SJ, et al. *Clin Gastroenterol Hepatol.* 2008; 6:765

<sup>3</sup> Shepherd SJ, Gibson PR. *J Am Diet Assoc.* 2006; 106:1631

# Low FODMAP Diet

A low FODMAP diet may help people with gastrointestinal problems like bloating, gas, or irritable bowel syndrome (IBS).

Avoid			Enjoy		
<b>Excess Fructose</b> <ul style="list-style-type: none"> <li>Fruit: apple, mango, nashi, pear, canned fruit in natural juice, watermelon.</li> <li>Sweeteners: fructose, high fructose corn syrup, corn syrup, honey.</li> <li>Concentrated fructose: concentrated fruit, large servings of fruit, dried fruit, fruit juice.</li> </ul> <b>Lactose</b> <ul style="list-style-type: none"> <li>Milk: milk from cows, goats, or sheep.</li> <li>Custard, ice cream</li> <li>Yogurt</li> <li>Cheese: soft, unripened cheeses like cottage, cream, mascarpone, ricotta</li> </ul>	<b>Fructans</b> <ul style="list-style-type: none"> <li>Asparagus</li> <li>Beetroot</li> <li>Broccoli</li> <li>Brussels sprouts</li> <li>Cabbage</li> <li>Eggplant</li> <li>Fennel</li> <li>Garlic</li> <li>Leek</li> <li>Okra</li> <li>Onion (all)</li> <li>Shallots</li> <li>Cereals: wheat and rye in large amounts (e.g. bread, crackers, cookies, couscous, pasta)</li> <li>Fruit: custard apple, persimmon, watermelon</li> <li>Misc: chicory, dandelion, inulin</li> </ul> <b>Galactans</b> <ul style="list-style-type: none"> <li>Legumes: Beans, baked beans, chickpeas, kidney beans, lentils</li> </ul>	<b>Polyols</b> <ul style="list-style-type: none"> <li>Apple</li> <li>Apricot</li> <li>Avocado</li> <li>Blackberry</li> <li>Cherry</li> <li>Lychee</li> <li>Nashi</li> <li>Nectarine</li> <li>Peach</li> <li>Pear</li> <li>Plum</li> <li>Prune</li> <li>Watermelon</li> <li>Vegetables: Green bell pepper, mushroom, sweet corn</li> <li>Sweeteners: sorbitol (420), mannitol (421), isomalt (953), maltitol (965), xylitol (967)</li> </ul>	<b>Fruit</b> <ul style="list-style-type: none"> <li>Banana</li> <li>Blueberry</li> <li>Boysenberry</li> <li>Canteloupe</li> <li>Cranberry</li> <li>Durian</li> <li>Grape</li> <li>Grapefruit</li> <li>Honeydew melon</li> <li>Kiwi</li> <li>Lemon</li> <li>Lime</li> <li>Mandarin</li> <li>Orange</li> <li>Passionfruit</li> <li>Pawpaw</li> <li>Raspberry</li> <li>Rhubarb</li> <li>Rockmelon</li> <li>Star anise</li> <li>Strawberry</li> <li>Tangelo</li> </ul> <b>Misc</b> <ul style="list-style-type: none"> <li>Sweeteners - sucrose, glucose, artificial sweeteners not ending in "-ol", and sugar in small quantities</li> <li>Honey substitutes - small quantities of golden syrup, maple syrup, molasses, and treacle</li> </ul>	<b>Vegetables</b> <ul style="list-style-type: none"> <li>Alfalfa</li> <li>Artichoke</li> <li>Bamboo shoots</li> <li>Beat shoots</li> <li>Bok choy</li> <li>Carrot</li> <li>Celery</li> <li>Choko</li> <li>Choy sum</li> <li>Endive</li> <li>Ginger</li> <li>Green beans</li> <li>Lettuces</li> <li>Olives</li> <li>Parsnip</li> <li>Potato</li> <li>Pumpkin</li> <li>Red bell pepper</li> <li>Silver beet</li> <li>Spinach</li> <li>Summer squash (yellow)</li> <li>Swede</li> <li>Sweet potato</li> <li>Taro</li> <li>Tomato</li> <li>Turnip</li> <li>Yam</li> <li>Zucchini</li> </ul>	<b>Starch</b> <ul style="list-style-type: none"> <li>Gluten free bread or cereal products</li> <li>100% spelt bread</li> <li>Rice</li> <li>Oats</li> <li>Polenta</li> <li>Other: arrowroot, millet, psyllium, quinoa, sorgum, tapioca</li> </ul> <b>Dairy</b> <ul style="list-style-type: none"> <li>Milk - lactose-free milk, oat milk, rice milk, soy milk (check for additives)</li> <li>Cheeses - hard cheeses, brie, and camembert</li> <li>Yogurt (lactose free)</li> <li>Ice cream substitutes - gelati, sorbet</li> <li>Butter substitutes (e.g. olive oil)</li> </ul>
					

\* Level of scientific evidence supporting the recommendation, graded using the Practice-based evidence in nutrition (PEN) evidence grading criteria:

- level A - supported by good evidence;
- level B - supported by fair evidence;
- level C - supported by limited evidence or expert opinion;
- level D - evidence is limited.



#### FIBER INTAKE

It may be helpful eating soluble fiber (e.g., psyllium). Up to 2 tablespoons/day of linseeds may be helpful for constipation, abdominal pain, and bloating.<sup>B</sup> Ensure linseeds are always consumed with fluid (150 mL fluid/tablespoon).

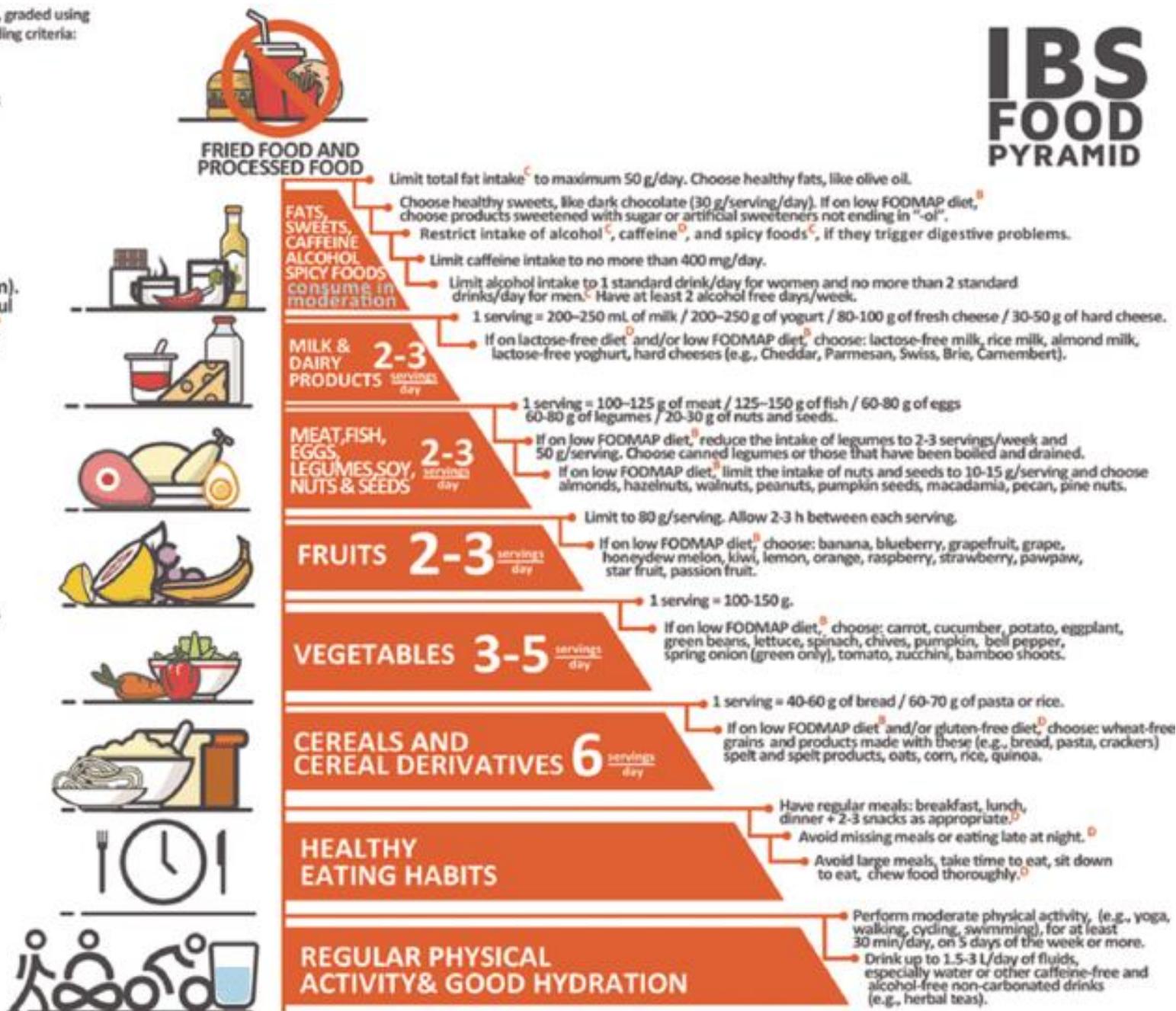


#### PROBIOTIC SUPPLEMENTS

You may wish to try probiotics. Take them daily, for at least 4 weeks, at the dose recommended by the manufacturer, to see if they improve symptoms.<sup>B</sup>



If you are considering a low FODMAP diet, meet with a healthcare professional with expertise in dietary management (e.g., a dietitian), who will make sure your eating plan is safe and healthy.



# Summary

- IBS is defined by abdominal pain and altered bowel habits in the absence of other causative disease
- Diagnosis made using thorough history, physical examination and use of focused testing
  - Consider symptom diary
- Rome IV criteria:
  - recurrent abdominal pain for >6 months occurring (on average) at least one day/week in the last 3 months associated with  $\geq 2$  of the following:
    - Related to defecation
    - Associated with a change in frequency of stools
    - Associated with a change in form/appearance of stools

# Summary

- Rule out warning signs
  - Age over 50, GI bleeding, Nocturnal stools, Unintentional weight loss, FHx of IBD/CRCA, sudden change in bowel habits, abdominal mass or lymphadenopathy, anemia, loss of appetite
- Provide a POSITIVE diagnosis of IBS (with subtype)
- Begin lifestyle and dietary modifications
  - Symptom diary
  - Consideration of Nutritionist referral
- Symptom management
  - Consideration of medications
  - Consideration of GI referral

# Summary

- Keep patients engaged
- Open dialogue to assess treatment compliance and symptom management
- Understand patient expectations
- There is no “cure” for IBS



