

# 2017 Calvary Hospital Education Day Functional Gut Disorders: Irritable Bowel Syndrome

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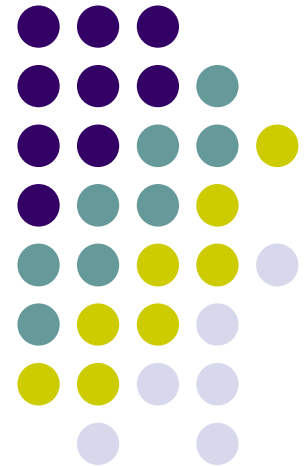
**Dr. Nak Jin CHOI**

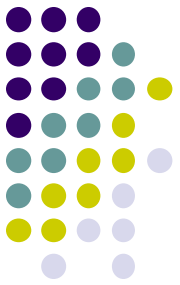
Gastroenterologist & General Physician

Lidia Perin Medical Centre, Deakin

Calvary Health Care, Bruce

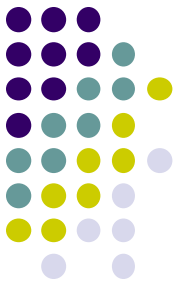
Clinical Lecturer, ANU





# Functional Gut Disorders

- Definition: disorders of the digestive system where symptoms occur without structural or tissue abnormality.
- Examples include:
  - functional heartburn
  - functional dyspepsia
  - belching
  - hiccups
  - gastroparesis
  - irritable bowel syndrome
  - functional bloating
  - functional diarrhoea
  - functional constipation.
- Overlapping symptoms between the functional GI disorders
- a diagnosis is important to direct management.

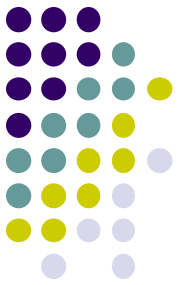


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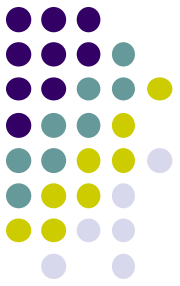
# Irritable bowel syndrome in adults



- characterized by **chronic abdominal pain and altered bowel habits** in the **absence of any organic cause**.
- most commonly diagnosed gastrointestinal condition
  - Prevalence: 10 -15 % in N America, 11.5 % in Europe
- Only 15 % of affected seek medical attention
  - IBS comprises 25 - 50 % of all referrals to gastroenterologists
- affects men and women, young and the elderly
  - Younger and women are more likely to be diagnosed with IBS = overall 2:1 female predominance
  - the second highest cause of work absenteeism after the common cold

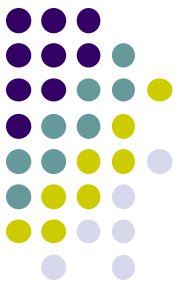
# DEFINITION of IBS

## (Irritable bowel syndrome)



- chronic functional disorder of the GIT
- chronic abdominal pain or discomfort
- altered bowel habits
- in the absence of an organic disease
- Many symptom-based criteria (owing to absence of a biologic disease marker) to standardize the diagnosis of IBS
  - Manning criteria —1978:
    - conflicting data regarding the predictive ability
  - Rome criteria —published a consensus definition in 1992
    - to standardize clinical research protocols
    - revised most recently in 2016

## Manning Criteria for irritable bowel syndrome 1978



### Manning criteria for the diagnosis of irritable bowel syndrome\*

Pain relieved with defecation
More frequent stools at the onset of pain
Looser stools at the onset of pain
Visible abdominal distention
Passage of mucus
Sensation of incomplete evacuation

\* The likelihood of irritable bowel syndrome is proportional to the number of Manning criteria that are present.



## Rome III diagnostic criteria\* for irritable bowel syndrome

**Recurrent abdominal pain or discomfort<sup>¶</sup> at least three days per month in the last three months associated with two or more of the following:**

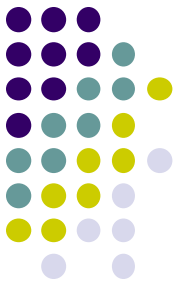
- (1) Improvement with defecation
- (2) Onset associated with a change in frequency of stool
- (3) Onset associated with a change in form (appearance) of stool

\* Criteria fulfilled for the last three months with symptom onset at least six months prior to diagnosis.

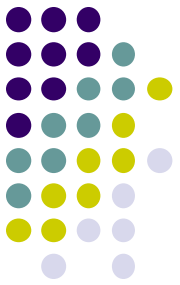
¶ Discomfort means an uncomfortable sensation not described as pain. In pathophysiology research and clinical trials, a pain/discomfort frequency of at least two days a week during screening evaluation for subject eligibility.

# DEFINITION of IBS

## Rome IV criteria (2016)



- recurrent abdominal pain
- on average, at least one day per week in the last three months
  - (Rome III : at least three days per month in the last three months)
- associated with two or more of the following criteria:
  - Related to defecation
  - Associated with a change in stool frequency
  - Associated with a change in stool form (appearance)



# DEFINITION Subtypes of IBS:

according to the predominant bowel habit

- **IBS-C** (IBS with constipation): the presence of
  - hard or lumpy stools with  $\geq 25$  % of bowel movements and
  - loose or watery stools with  $< 25$  % of bowel movements.
- **IBS-D** (IBS with diarrhea): the presence of
  - loose or watery stools with  $\geq 25$  % of bowel movements and
  - hard or lumpy stools with  $< 25$  % of bowel movements.
- **IBS-M** (Mixed IBS) :
  - hard or lumpy stools with  $\geq 25$  % of bowel movements and
  - loose or watery stools with  $\geq 25$  % of bowel movements.
- **IBS-U** (Unsubtyped IBS) :
  - there is insufficient consistency abnormality to meet the above subtypes



## Bristol stool form scale

Type 1



Separate hard lumps, like nuts (hard to pass)

Type 2



Sausage-shaped but lumpy

Type 3



Like a sausage but with cracks on the surface

Type 4



Like a sausage or snake, smooth and soft

Type 5



Soft blobs with clear-cut edges

Type 6



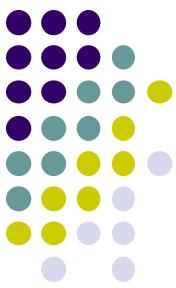
Fluffy pieces with ragged edges, a mushy stool

Type 7

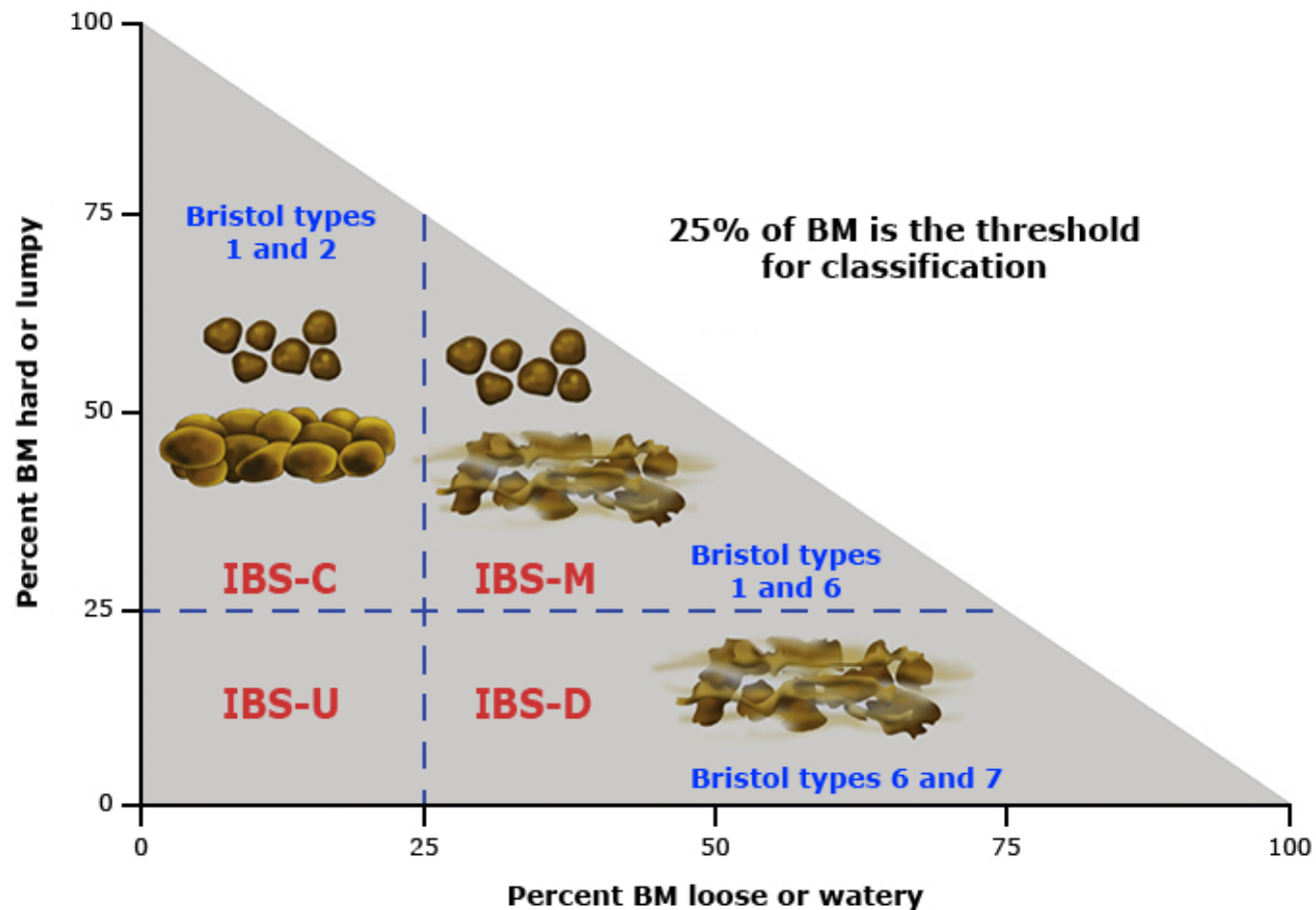


Watery, no solid pieces, entirely liquid

The Bristol stool form scale (BSFS) is a useful tool to evaluate bowel habits. Abnormal stool forms are types 1 to 2 (constipation) and types 6 to 7 (diarrhea). The BSFS has been shown to be a reliable surrogate marker for colonic transit.<sup>[1]</sup>

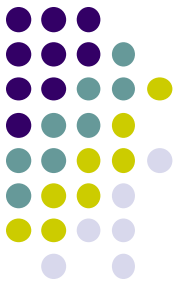


## Diagnostic criteria for irritable bowel syndrome subtypes



IBS subtypes should be established according to stool consistency, using the BSFS. IBS subtyping is more accurate when patients have at least four days of abnormal bowel habits per month. Bowel habit subtypes should be based on BSFS for days with abnormal bowel habits.

- Predominant bowel habits are based on stool form on days with at least one abnormal bowel movement.\*

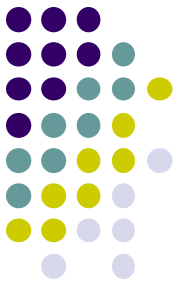


# DEFINITION Subtypes of IBS:

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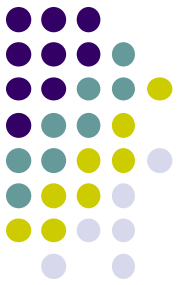
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- **IBS-M** (Mixed IBS) :
  - hard or lumpy stools with  $\geq 25$  % of bowel movements and
  - loose or watery stools with  $\geq 25$  % of bowel movements.
- **IBS-U** (Unsubtyped IBS) :
  - there is insufficient consistency abnormality to meet the above subtypes
- IBS-D & IBS-Mixed subtypes > IBS-C
- Subclassification of patients allows therapy to be directed at the predominant symptoms, important to guide management





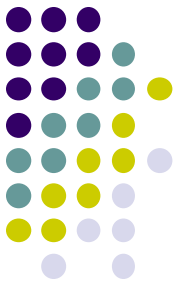
# Clinical features: summary

- IBS patients present with a wide array of symptoms:
  - gastrointestinal :
    - chronic abdominal pain and altered bowel habits (diarrhea, constipation, or both)
      - are primary characteristic of IBS (but nonspecific)
      - in IBS, pain should NOT be associated with alarm features
    - faecal urgency (particularly after meals)
    - need to strain when passing a stool
    - a feeling of incomplete evacuation
    - passage of mucus
    - abdominal bloating
    - dyspepsia
    - Clinical signs are usually absent on physical examination (except abdominal tenderness)



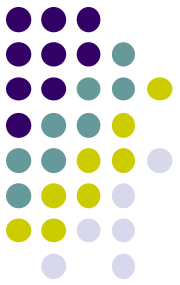
# Clinical features: summary

- IBS patients present with a wide array of symptoms:
  - gastrointestinal :
  - extraintestinal :
    - impaired sexual function, dyspareunia, dysmenorrhea
    - increased urinary frequency and urgency
    - fibromyalgia symptoms
    - headaches
    - psychosocial problems
      - anxiety and depression



# Diagnosis of IBS

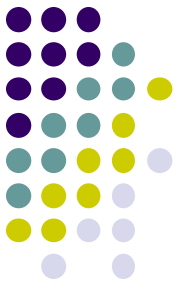
- diagnosis should be based on
  - Identification of positive symptoms** of IBS (per Rome criteria):  
and  
Exclusion of alarm symptoms or signs (on the Hx and Ex)  
followed by
  - **rule out organic illness** with **minimal**/limited investigations, guided by clinical features: FBC, coeliac serology, CRP, TSH, faecal calprotectin (for IBS-D)



# Differential diagnosis of IBS-

- endometriosis
- SIBO (small intestinal **bacterial overgrowth**)
  - particularly elderly patients with bloating and flatulence
- functional constipation
- functional bloating
- functional abdominal pain

# Clinical alarm features for further investigation



- family history of colorectal cancer, inflammatory bowel disease, or coeliac sprue
- >50 years at symptoms onset
- significant weight loss
- nocturnal or progressive symptoms
- severe abdominal pain
- persistent vomiting
- dysphagia (difficulty swallowing)
- severe large-volume diarrhoea
- steatorrhoea
- gastrointestinal bleeding (haematemesis, PRB, +ve FOBT)
- Anaemia (Fe, B12, chronic disease)
- fever
- inflammation on blood tests or stool samples (calprotectin)
- significant abnormality on physical examination of abdomen



### **The burden of illness of irritable bowel syndrome**

IBS is a prevalent and expensive condition that is associated with a significantly impaired health-related quality of life (HRQOL) and reduced work productivity. Based on strict criteria, 7 to 10 percent of people have IBS worldwide. Community-based data indicate that diarrhea-predominant IBS (IBS-D) and mixed IBS (IBS-M) subtypes are more prevalent than constipation-predominant IBS (IBS-C), and that switching among subtype groups may occur. IBS is 1.5 times more common in women than in men, is more common in lower socioeconomic groups, and is more commonly diagnosed in patients younger than 50 years of age. Patients with IBS visit the doctor more frequently, use more diagnostic tests, consume more medications, miss more workdays, have lower work productivity, are hospitalized more frequently, and consume more overall direct costs than patients without IBS. Resource utilization is highest in patients with severe symptoms, and poor HRQOL. Treatment decisions should be tailored to the severity of each patient's symptoms and HRQOL decrement.

### **The utility of diagnostic criteria in irritable bowel syndrome**

IBS is defined by abdominal pain or discomfort that occurs in association with altered bowel habits over a period of at least three months. Individual symptoms have limited accuracy for diagnosing IBS and, therefore, the disorder should be considered as a symptom complex. Although no symptom-based diagnostic criteria have ideal accuracy for diagnosing IBS, traditional criteria, such as Kruis and Manning, perform at least as well as Rome I criteria; the accuracy of Rome II and Rome III criteria has not been evaluated.

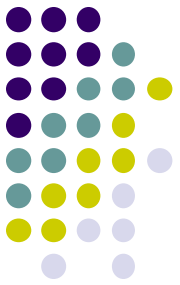
### **The role of alarm features in the diagnosis of IBS**

Overall, the diagnostic accuracy of alarm features is disappointing. Rectal bleeding and nocturnal pain offer little discriminative value in separating patients with IBS from those with organic diseases. Whereas anemia and weight loss have poor sensitivity for organic diseases, they offer very good specificity. As such, in patients who fulfill symptom-based criteria of IBS, the absence of selected alarm features, including anemia, weight loss, and a family history of colorectal cancer, inflammatory bowel disease, or celiac sprue, should reassure the clinician that the diagnosis of IBS is correct.

### **The role of diagnostic testing in patients with IBS symptoms**

Routine diagnostic testing with complete blood count, serum chemistries, thyroid function studies, stool for ova and parasites, and abdominal imaging is not recommended in patients with typical IBS symptoms and no alarm features because of a low likelihood of uncovering organic disease. Routine serologic screening for celiac sprue should be pursued in patients with IBS-D and IBS-M. Lactose breath testing can be considered when lactose maldigestion remains a concern despite dietary modification. Currently, there are insufficient data to recommend breath testing for small intestinal bacterial overgrowth in IBS patients. Because of the low pretest probability of Crohn's disease, ulcerative colitis, and colonic neoplasia, routine colonic imaging is not recommended in patients younger than 50 years of age with typical IBS symptoms and no alarm features. Colonoscopic imaging should be performed in IBS patients with alarm features to rule out organic diseases and in those over the age of 50 years for the purpose of colorectal cancer screening. When colonoscopy is performed in patients with IBS-D, obtaining random biopsies should be considered to rule out microscopic colitis.

# 2009 American College of Gastroenterology (ACG) recommendations for the diagnosis of irritable bowel syndrome (IBS)



## The role of alarm features in the diagnosis of IBS

The diagnostic accuracy of alarm features is disappointing.

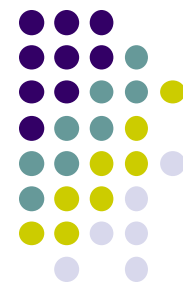
**Rectal bleeding** and **nocturnal pain** offer little discriminative value in separating patients with IBS from organic diseases.

**Anemia** and **weight loss** have poor sensitivity, but very good specificity for organic diseases

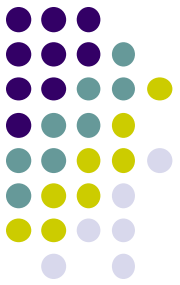
In patients who fulfill symptom-based criteria of IBS should reassure the clinician that the diagnosis of IBS is correct, only in the **absence** of selected **alarm features (anemia, weight loss, family history of colorectal cancer, inflammatory bowel disease, or celiac sprue)**.

# 2009 ACG recommendations for the diagnosis of irritable bowel syndrome (IBS)

## The role of diagnostic testing in patients with IBS symptoms



- typical IBS symptoms and no alarm features  
→ routine diagnostic testing (**FBC, UEC, TSH, stool OCP, abdo imaging**) is **not** recommended -low likelihood of organic disease
- in patients <50 years of age with typical IBS symptoms and no alarm features, pretest probability of Crohn's disease, ulcerative colitis, and colonic neoplasia is low→ no routine colonic imaging
- in patients with IBS-D and IBS-M  
→ recommend serologic **coeliac screening** (prevalence 4%).
- When colonoscopy is performed in IBS-D, obtain random biopsies to rule out **microscopic colitis**
- IBS patients with alarm features→ colonoscopic imaging to rule out organic diseases
- IBS patients >50 years →colorectal cancer screening colonoscopy
- lactose maldigestion remains a concern despite dietary modification



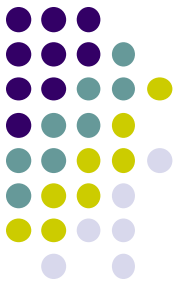
# INDICATIONS FOR REFERRAL in IBS

- The diagnosis of IBS is based on the symptoms and requires minimal investigation.

But

- It is important to check for clinical alarm features that warrant further investigation and consider endoscopic evaluation
  - More than minimal rectal bleeding
  - Weight loss
  - Unexplained iron deficiency anemia
  - Nocturnal symptoms
  - Family history of selected organic diseases including colorectal cancer, inflammatory bowel disease (IBD), or celiac disease

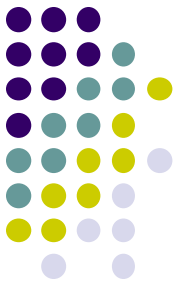
# Pathophysiology of irritable bowel syndrome



- complex and not fully understood, conflicting data
- ?result of interaction among a multiple factors
- alterations in gastrointestinal motility
- visceral hypersensitivity
- psychosocial factors
- Inflammation
- alterations in gut microbiota
- bacterial overgrowth
- food sensitivity
- genetic predisposition
- may all contribute to symptoms, via pathways mediated by serotonin and other enteric neurotransmitters





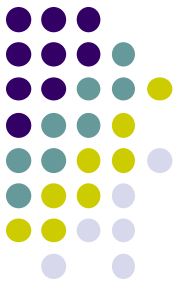


# Treatment of IBS:

- Good therapeutic patient-doctor relationship
- Pt needs to feel appropriately assessed with a thorough history and examination
  - precipitant for current presentation in the chronic course of illness
  - Symptomatic due to psychological stress?
- Reassure there are no long-term sequelae from IBS
- Educate need for simultaneous multifactorial intervention
  - diet, psychological, gut microbiota, visceral hypersensitivity
- individualised treatment for presenting symptoms and precipitants (evidence to support the efficacy of common therapies is limited)

# Treatment of IBS:

## Initial dietary therapy



dietary history & get food diary

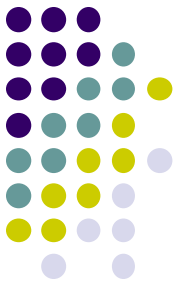
- look for common food triggers
  - caffeine
  - alcohol
  - carbonated drinks
  - fatty food
  - fibre
  - lactose-containing food
  - wheat

→ If a single food trigger is identified, try a brief **exclusion diet** till symptom improvement

→ followed by **gradual reintroduction** to confirm triggers and avoid over-restriction

# Treatment of IBS:

## Initial dietary therapy

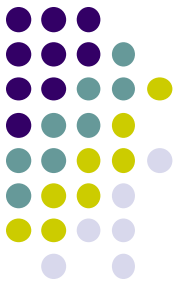


### Exclusion of gas-producing foods

- exclude foods that increase flatulence
  - beans, onions, celery, carrots, raisins, bananas, apricots, prunes, Brussels sprouts, wheat germ, pretzels, and bagels, alcohol, and caffeine
- Underlying visceral hypersensitivity may explain the exaggerated discomfort in IBS

# Treatment of IBS:

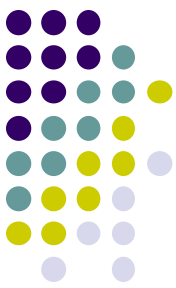
## Initial dietary therapy



Explore the dietary history & get food diary to look for

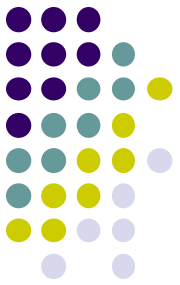
- common food triggers
  - irregular eating patterns
    - encourage regular meal times and portion control
  - nutritional adequacy.
- 
- If no clear benefit from initial dietary therapy, refer to experienced IBS-dietitian for trial of a low FODMAP diet

## Characteristics and sources of common FODMAPs



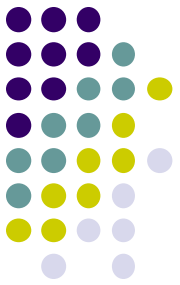
<b>F</b>	<b>Fermentable</b>		
<b>O</b>	<b>Oligosaccharides</b>	Fructans, galacto-oligosaccharides	Wheat, barley, rye, onion, leek, white part of spring onion, garlic, shallots, artichokes, beetroot, fennel, peas, chicory, pistachio, cashews, legumes, lentils, and chickpeas
<b>D</b>	<b>Disaccharides</b>	Lactose	Milk, custard, ice cream, and yogurt
<b>M</b>	<b>Monosaccharides</b>	"Free fructose" (fructose in excess of glucose)	Apples, pears, mangoes, cherries, watermelon, asparagus, sugar snap peas, honey, high-fructose corn syrup
<b>A</b>	<b>And</b>		
<b>P</b>	<b>Polyols</b>	Sorbitol, mannitol, maltitol, and xylitol	Apples, pears, apricots, cherries, nectarines, peaches, plums, watermelon, mushrooms, cauliflower, artificially sweetened chewing gum and confectionery





# Treatment of IBS: Fibre

- The role of fiber in patients with IBS is controversial
- particularly useful for constipation-predominant IBS.
- Adequate fibre intake is recommended =30 g daily
- (if low) gradually increase intake of fibre from fruit and vegetables
- The **solubility** and **fermentability** of type of fibre is important :
- trial a **less fermentable soluble fibre** supplement (eg psyllium) or a **nonfermentable insoluble fibre** supplement (eg sterculia)
  - useful for both constipation and diarrhoea (acts as bulking agent)
- **avoid** slowly fermented insoluble fibres, or rapidly fermented soluble fibres (wheat bran and large quantities )
- ensure adequate fluid intake to maximise effect of fibre.
- If symptoms **worsen** with fibre supplementation, a **low-fibre diet** may be trialled to assess if this relieves symptoms



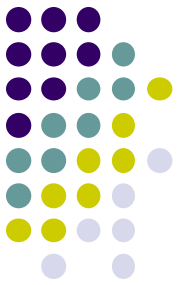
# Treatment of IBS:

## Types of fibre, Effects on the bowel, role in IBS

### 1 Soluble fibre

- some grains (eg oats, rye, barley, millet, buckwheat)
- some fruit and vegetables (eg artichoke, onion, garlic)
- seed husk (eg psyllium husk)
- cooked (from dried) or canned legumes
- dissolves in water forming a thick gel in the intestine
  - slows digestion and subsequently prolongs satiety
- generally has a weak laxative effect and is **rapidly fermented** in the terminal ileum and proximal colon
  - causing gas, flatus and other GI symptoms
- **long chain soluble fibre** (eg psyllium, some other seeds of plants, oats) is **less fermentable**, has a good laxative effect and is better tolerated in IBS, with some (weak) evidence for efficacy

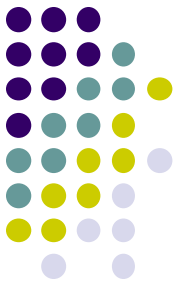
# Treatment of IBS: Types of fibre, Effects on the bowel, role in IBS



## 2 Insoluble fibre

- **Insoluble** fibre is either **slowly fermentable** or **nonfermentable** →  
→add bulk to the stool to promote regular bowel function
- generally has a good laxative effect and reduces intestinal transit
- **nonfermentable insoluble fibre** (eg the skins of fruit and vegetables, some nuts and seeds, other whole grains, sterculia) may be useful in IBS due to decreased potential for gas production, but evidence is lacking
- **slowly fermentable insoluble fibre** (particularly wheat bran) should be avoided in IBS due to excessive gas and bloating (possibly due to fructans)

# Treatment of IBS: Types of fibre, Effects on the bowel, role in IBS

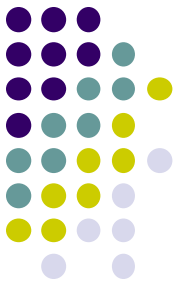


## 3 Resistant starch

- cooked and cooled pasta, rice, potatoes, firm bananas
- Hi-Maize (present in commercial products - breads and cereals)
- resists digestion in the small intestine; bacterial fermentation in the large intestine
- produces short-chain fatty acids → promote colonic health
- but can contribute to gas and flatus.

# Treatment of IBS: Low FODMAP diet

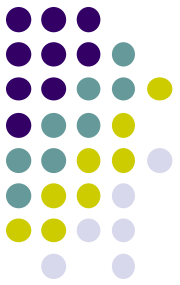
fermentable oligosaccharides, disaccharides, monosaccharides and polyols



- low in FODMAPs diet effective for IBS symptoms, all IBS subtype.
- FODMAPs are poorly absorbed **fermentable** carbohydrates  
→ become substrates for bacterial metabolism in the large bowel  
→ bloating, diarrhoea and discomfort
- The impact of long-term restriction of FODMAPs on the gut microbiota ? Long term use is not recommended.
- refer patients to an Accredited Practising Dietitian (APD) if initial dietary therapy fails
- → 4- to 6-week trial of a low FODMAP diet and identifying triggers, then gradual reintroduction of foods to avoid over-restriction (ensure nutritional adequacy)

# Treatment of IBS: diarrhoea

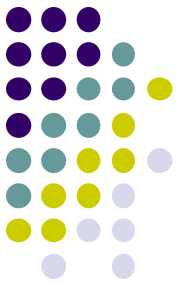
## DDx chronic diarrhoea



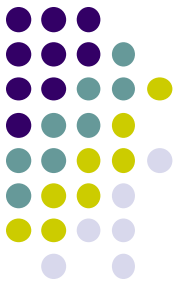
- functional gastrointestinal disorders—functional diarrhoea, IBS
- inflammatory diseases—Crohn disease, ulcerative colitis, microscopic colitis
- malabsorption syndromes—coeliac disease, villous damage caused by tropical sprue or chronic infection, pancreatic insufficiency, small intestinal bacterial overgrowth (SIBO), carbohydrate malabsorption, after surgery (eg bowel resection)
- chronic GIT infections -*Clostridium difficile*, *Giardia* species, *Entamoeba histolytica* (amoebiasis), *Cryptosporidium* species
- drug-induced diarrhoea—metformin, antibiotics, NSAID, magnesium-containing products, antiarrhythmic and antihypertensive drugs, alcohol
- bile salt diarrhoea—after cholecystectomy, bile salt malabsorption
- endocrine causes—hyperthyroidism, Addison disease, diabetic autonomic neuropathies, hypoparathyroidism, neuroendocrine tumours
- laxative abuse
- factitious diarrhoea

# Treatment of IBS:

## InVx of diarrhoea



- Look for relationship between symptoms and diet, drugs or stress.
- Investigations :
  - stool microscopy (to identify infectious agents)
  - faecal calprotectin
  - faecal elastase (to identify pancreatic exocrine dysfunction)
  - C-reactive protein (to identify inflammation)
  - coeliac serology
  - thyroid function tests
  - gastroscopy (with duodenal biopsy)
  - colonoscopy (with biopsies to exclude microscopic colitis).
- endocrine causes
- neuroendocrine tumours if clinical suspicion

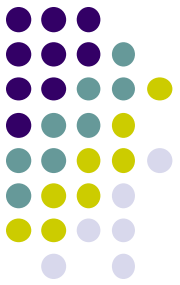


# Treatment of IBS: diarrhoea

- Fibre: increased intake of nonfermentable insoluble fibre (eg sterculia).
- if the patient's diet is high in insoluble fibre, try reducing fibre
- Some may benefit from restriction of FODMAPs
- To treat diarrhoea, use:
  - loperamide 2 mg orally, 1 to 4 times daily as requiredOR
  - cholestyramine 4 to 8 g orally, up to twice daily as required.
- Avoid codeine-containing preparations because of the risk of dependence.
- Diphenoxylate+atropine (Lomotil) is not recommended because it can cause anticholinergic adverse effects in elderly

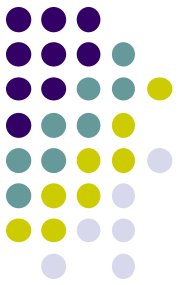


# Treatment of IBS: constipation



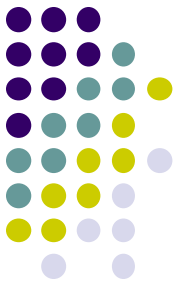
- It is important to clarify what a patient means when they complain of constipation.
- Ask all patients with constipation about symptoms of dyssynergic defecation (functional defecation disorder).
- Take a detailed medication history, including prescription and over-the-counter drugs, complementary and alternative medicines, and laxatives.
- Constipation is an adverse effect of many commonly used drugs and changing medication may be all that is needed to restore bowel function.

# Treatment of IBS: Constipation in adults : drugs that commonly cause constipation



- opioids
- anticholinergic effects (eg oxybutynin, benzhexol, tricyclic antidepressants, clozapine, olanzapine, risperidone, quetiapine)
- 5-HT<sub>3</sub>–receptor antagonists (eg ondansetron)
- aluminium- and calcium-containing antacids
- oral calcium supplements
- oral iron supplements
- verapamil

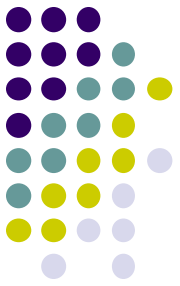
# Treatment of IBS: Constipation in adults : Other causes 1



- range from common dietary or lifestyle factors, to mechanical obstruction associated with pelvic floor dysfunction.
  - inadequate dietary fibre
  - dehydration
  - inappropriate bowel habits (eg ignoring the urge to defecate)
  - inadequate physical activity (eg from decreased mobility)
  - change in environment (eg holiday, entry a into residential aged care facility)
  - painful anorectal disorders (eg haemorrhoids, anal fissure)
  - loss of muscle power caused by other medical conditions (eg chronic obstructive pulmonary disease).

# Treatment of IBS:

## Management of constipation in adults

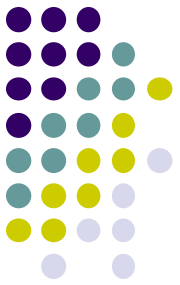


### Diet and lifestyle

- Physical activity → reduces intestinal transit time and stimulates regular bowel movements.
- encouraged to respond to an urge to defecate
  - especially after meals or on waking
- correct positioning when seated on the toilet
  - (with knees above the level of the hips to reduce the rectal angle—a footstool may be needed).

# Treatment of IBS:

## Management of constipation in adults

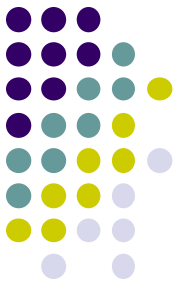


### Diet and lifestyle

- trial of gradually increased fibre and fluid if the existing diet is inadequate
- encourage to choose a **variety** of foods containing insoluble and soluble fibre (eg fruit and vegetables; wholegrain or wholemeal products such as breads, cereals, pastas and rice; legumes; seeds and nuts) rather than eating a few very high-fibre foods (eg unprocessed bran).
- Foods high in insoluble fibre (wheat bran) and polyols (prunes, pears, stone fruit) can make symptoms worse for IBS patients

# Treatment of IBS:

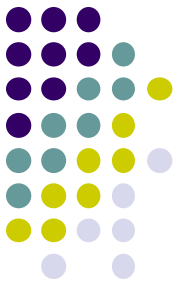
## constipation : Choice of laxative



- Numerous laxatives are available; they are classified by mechanism of action
- Choice depends on
  - the cause of constipation
  - comorbidities
  - Preference
  - adverse effect profile
- Identifying the most effective and well-tolerated regimen usually involves trialling different laxatives.
- Often a **combination** of laxatives with **different mechanisms** of action is more beneficial than a large dose of one laxative.

# Treatment of IBS:

## constipation : Choice of laxative

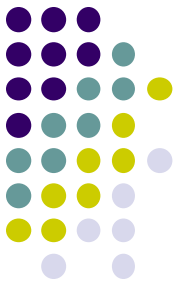


### bulk-forming laxatives

- Psyllium, ispaghula, sterculia
- increase bulk and moisture in the stool, stimulating colonic activity
- cheap (supermarkets and health food stores)
- rapidly increasing the dose may result in flatulence and bloating.
- ensure adequate fluid intake, or the stool can harden
- effect is usually apparent within 24 hours, but 2 to 3 days of therapy may be required
- less effective for nonambulant and chronically constipated patients.
- Do not use for patients with opioid-induced constipation.
- Poorly tolerated in patients with functional bloating

# Treatment of IBS:

## constipation : Choice of laxative

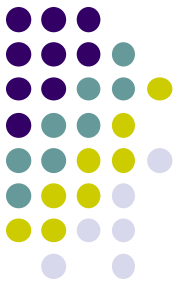


### osmotic laxatives

- Lactulose, sorbitol, macrogol 3350, magnesium salts
- pull water into/keep water in the colon, expanding and softening the stool
- useful for nonambulant and chronically constipated patients;
- for chronically constipated patients, regular small doses provide better symptom control than intermittent large doses
- more rapid effect when taken on an empty stomach; should work within 2 to 48 hours
- lactulose is not absorbed (OK for short term use in diabetic patients)
- some osmotic laxatives are not tolerated in IBS due to bloating and discomfort
- excessive use may cause fluid and electrolyte disturbance

# Treatment of IBS:

## constipation : Choice of laxative

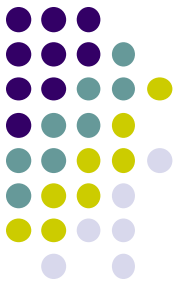


### stimulant laxatives

- Senna, bisacodyl, sodium picosulfate
- stimulate intestinal motility; can cause abdominal cramps
- useful for nonambulant patients
- available as single-ingredient preparations, in combination with stool softeners or in herbal preparations
- effect usually occurs within 6 to 12 hours
- poorly tolerated in patients with IBS or functional bloating
- although there is no evidence to suggest that stimulant laxatives impair the function of the colon, patients who abuse stimulant laxatives may have difficulty resuming a normal bowel pattern when these laxatives are stopped

# Treatment of IBS:

## constipation : Choice of laxative



### **stool-softener**

- docusate
- generally available in combination with a stimulant laxative

### **prokinetic drug**

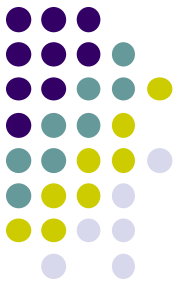
- Prucalopride (5-HT<sub>4</sub> receptor agonist)
- minimal adverse effects
- stop therapy if no significant effect after a 2-week trial

### **prosecretory drugs**

- lubiprostone
- linaclotide
- effective for chronic constipation. not available in Australia

# Treatment of IBS:

## constipation : Choice of laxative

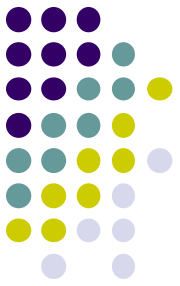


### Stepwise approach to laxative therapy 1

- check adherence to lifestyle modifications and laxatives before escalating therapy.
- Initially **bulk-forming** laxative
  - psyllium (eg Metamucil) or sterculia (eg Normafibe) is appropriate
- add or substitute an **osmotic** laxative (eg macrogol 3350).
  - Movicol up to 3 sachets daily /or OsmoLax up to 2 scoops daily
- add or substitute a **stimulant** laxative
  - bisacodyl 5 to 10 mg nocte PO up to 15 mg, or
  - docusate+senna 50+8 mg 1 or 2 tablets PO nocte up to 4 tablets
  - sodium picosulfate drops 7.5 mg/mL 10 drops (5 mg) PO nocte up to 20 drops at night.
- add or substitute prucalopride
  - prucalopride 2 mg (elderly patients: 1 mg) orally, once daily

# Treatment of IBS:

## constipation : Choice of laxative

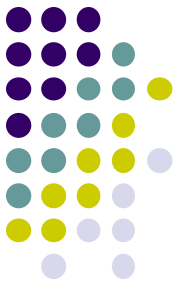


### Stepwise approach to laxative therapy 2

- constipation on opioid
  - non–bulk-forming laxative, or
  - oral modified-release oxycodone+naloxone (Targin) on long-term opioid therapy
  - Methylnaltrexone for patients receiving palliative care

# Treatment of IBS:

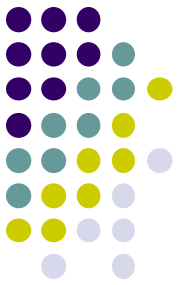
## constipation : Choice of laxative



### Faecal impaction in adults

- For faecal impaction (confirmed by rectal examination)  
→ combine high-dose oral macrogol 3350 (eg up to 8 sachets of Movicol orally, daily) and rectal therapy (suppositories or enemas) to try to clear the rectum.
- A **glycerol suppository** may stimulate evacuation of the rectum; if this is ineffective, an **osmotic enema** (Microlax) is more potent.
- Sodium **phosphate-based enemas** (Fleet) may be used for refractory cases, but repeated use is not recommended because of potential fluid shifts, electrolyte disruption and renal impairment.
- **Manual** disimpaction may be beneficial.
- If there is no clinical response, hospital ?



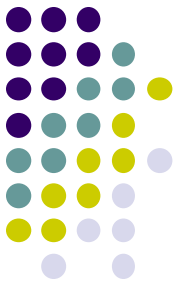


# Treatment of IBS: Abdominal pain

- antispasmodic drugs for pain and diarrhoea in IBS
  - peppermint oil (0.2 mL/capsule) 1 to 2 capsules orally, up to 3 times daily half an hour before food as required
  - hyoscine butylbromide 20 mg orally, up to 4 times daily as required
  - mebeverine 135 mg orally, up to 3 times daily as required.
- Iberogast (herbal preparation STW5) is well tolerated.
- address the patient's psychological health, and consider trialling a low-dose TCA or SSRI
- Referral to a specialist pain team.
  - Analgesics are generally ineffective in IBS pain.
  - opioids risk of dependence and narcotic bowel syndrome.

# Treatment of IBS:

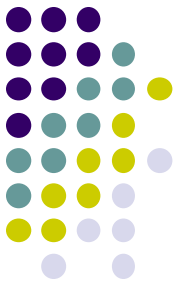
## Psychological therapies



- frequently associated with depression or anxiety
  - recognition and treatment of these conditions may lead to resolution of gastrointestinal symptoms.
  - Assess all patients with IBS for depression and anxiety; referral to a psychologist or psychiatrist may be appropriate.
  - Even if patients do not meet the diagnostic criteria for anxiety or depression, behavioural and psychological therapies can be effective for IBS.
- CBT (Cognitive behavioural therapy) for predictable situations
  - examinations, speaking in public, travelling on public transport
  - A counsellor who is familiar with IBS is ideal, but the CBT used to treat anxiety disorders can be modified for people with IBS.
- Gut-directed hypnotherapy for patients with refractory symptoms.

# Treatment of IBS:

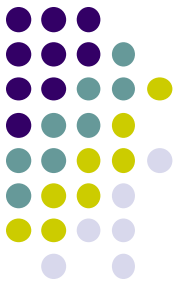
## Antidepressant therapy



- TCAs and SSRIs reduce visceral hypersensitivity in IBS and improves abdominal pain and provide global symptom relief, benefit is not restricted to patients with anxiety or depression
  - **Amitriptyline or nortriptyline** 5 to 10 mg orally, once daily at night. Increase slowly as tolerated up to 30 to 50 mg at night
  - generally lower than the doses than used anxiety or depression; adverse effects (eg drowsiness, dry mouth, constipation) may limit patient adherence
- anxiety or depression is prominent or intolerant to TCA, try
  - **citalopram or fluoxetine** 20 mg orally, once daily

# Treatment of IBS:

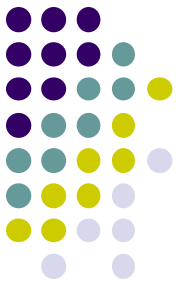
## Modification of the gut microbiota



### Probiotics

- Probiotics are beneficial for some patients with IBS, but there is little evidence to guide the choice of probiotic and the patient group most likely to benefit. The best evidence to date, albeit weak, is for ***Bifidobacterium*** species, which are available commercially (usually in combination products) from pharmacies or health food stores. If probiotics are used, the recommended duration of therapy is **4 weeks**.
- Probiotics are generally safe, but may aggravate symptoms in some patients. (should not be used in critically ill or immunocompromised)

# Treatment of IBS: Modification of the gut microbiota



## Antibiotic therapy

- Limited evidence suggests that nonabsorbable antibiotics (eg rifaximin) may reduce bloating and flatulence in nonconstipated patients.
- Due to the risk of antimicrobial resistance, antibiotic therapy should be reserved for patients with refractory symptoms





**Table 111-2 Differential Diagnosis of Crohn's Disease****Differential Diagnosis of Ileitis**

Backwash ileitis in ulcerative colitis

Drug-related

Ischemia (oral contraceptives, ergotamine, amphetamines, phenylephrine, cocaine)

NSAID-related ulcer or stricture

Gynecologic disorders

Ectopic pregnancy

Endometriosis

Ovarian cyst or tumor

Ovarian torsion

Pelvic inflammatory disease

Tubo-ovarian abscess

Ileitis associated with spondyloarthropathy

Infection

*Adinomyces israelii**Anisakis simplex**Cryptococcus neoformans*

Cytomegalovirus

*Histoplasma capsulatum**Mycobacterium avium* complex*Mycobacterium tuberculosis*

Neutropenic enterocolitis

*Salmonella* spp.*Yersinia enterocolitica**Yersinia pseudotuberculosis*

Infiltrative disorders

Amyloidosis

Eosinophilic gastroenteritis

Other inflammatory disorders

Appendicitis/appendiceal abscess

Cecal diverticulitis

Lymphoid nodular hyperplasia

Neoplasms

Carcinoid tumor

Cecal or ileal adenocarcinoma

Lymphoma

Metastatic cancer

Radiation enteritis

Torsion of the appendiceal epiploica

Vascular disorders

Behçet's disease

Intestinal ischemia: focal segmental ischemia: acute enteritis, chronic enteritis, stricture; chronic mesenteric ischemia

Vasculitis: Henoch-Schönlein purpura, polyarteritis nodosa, Churg-Strauss syndrome, systemic lupus erythematosus, Takayasu's arteritis, Wegener's granulomatosis, lymphomatoid granulomatosis, giant cell arteritis, rheumatoid vasculitis, thromboangiitis obliterans

**Differential Diagnosis of Colitis**

Acute self-limited colitis

Behçet's disease

Chronic granulomatous disease

Diversion colitis

Diverticulitis

Drug-related intestinal inflammation (NSAIDs, gold, penicillamine)

Eosinophilic gastroenteritis

Graft-versus-host disease

Indeterminate colitis

Infections

*Aeromonas* spp.*Campylobacter* spp.*Clostridium difficile*

Cytomegalovirus

*Entamoeba histolytica**Escherichia coli* (enterohemorrhagic, enteroinvasive)*Mycobacterium tuberculosis**Salmonella* spp.*Schistosoma mansoni**Shigella* spp.*Strongyloides stercoralis**Yersinia enterocolitica*

Ischemic colitis

Chronic ischemic colitis

Ischemic stricture

Ischemic colitis with toxic megacolon

Transient ischemic colitis

Microscopic colitis

Collagenous colitis

Lymphocytic colitis

Radiation colitis

Sarcoidosis

Segmental colitis associated with diverticular disease (SCAD)

Solitary rectal ulcer syndrome

Ulcerative colitis

