

Irritable Bowel Syndrome (IBS) Primary Care Pathway

1. Suspected IBS

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

- Related to defecation (either increasing or improving pain)
- Associated with a change in frequency of stool
- Associated with a change in form (appearance) of stool
- Typical symptoms - bloating, flatulence, nausea, burping, early satiety, dyspepsia
- Other symptoms - dysuria, frequent/urgent urination, widespread musculoskeletal pain, dysmenorrhea, dyspareunia, fatigue, anxiety, depression, headaches

2. Baseline investigations

- Medical history, physical exam, assess secondary causes of symptoms
- CBC, ferritin
- Celiac disease screen

Positive for celiac

6. Refer for consultation/ endoscopy

Yes

3. Alarm features

- Family history (first degree relative) of IBD or colorectal cancer
- Onset of symptoms after age 50
- Unintended weight loss (> 5% over 6-12 months)
- Visible blood in stool
- Nocturnal symptoms
- Iron deficiency anemia (see Iron Primer)

No

Failed or inadequate response consider GI referral for consultation

Presumed Diagnosis of IBS

4. Potential approaches to IBS treatment (all subtypes)

- Dietary modifications: assess common food triggers, soluble fibre supplementation, ensure adequate fluids
- Physical activity: 20+ minutes of physical activity/day, aiming for 150 min/week
- Psychological treatment: patient counselling and reassurance, Cognitive-Behavioural Therapy and hypnotherapy, screen and treat underlying sleep or mood disorders
- Pharmacologic therapy: antispasmodics, enteric coated peppermint oil

5. Specific approaches based on IBS subtypes

IBS-D
(diarrhea predominant)

Further testing for patients with high suspicion of IBD. Do fecal calprotectin test.

If fecal cal test > 200mcg/g, refer to consultation/ endoscopy

- Loperamide
- Tricyclic antidepressants
- Probiotics
- Low FODMAP diet
- Second line therapies*:
- Rifamixin
- Eluxadolone
- *See expanded details

IBS-M/U
(mixed/undefined)

- Pay particular attention to lifestyle & dietary principles
- Probiotics
- Low FODMAP diet
- Tricyclic antidepressants

IBS-C
(constipation predominant)

- Adequate fibre and water intake
- Osmotic laxatives
- Linaclotide
- Prucalopride
- SSRIs

Thank you to Alberta Health Services-GI Central Access and Triage for their contribution of this form

This primary care pathway was co-developed by primary and specialty care and includes input from multidisciplinary teams. It is intended to be used in conjunction with specialty advice services, when required, to support care within the medical home. Wide adoption of primary care pathways can facilitate timely, evidence-based support to physicians and their teams who care for patients with common low-risk GI conditions and improve appropriate access to specialty care, when needed. To learn more about primary care pathways visit <https://www.specialistlink.ca/clinical-pathways-and-specialty-access>

IRRITABLE BOWEL SYNDROME (IBS) PATHWAY PRIMER

- IBS is a brain-gut disorder characterized by recurrent abdominal pain/discomfort and altered bowel habits (constipation, diarrhea, or both). It is often associated with bloating or abdominal distention. These key symptoms can vary in severity and tend to remit and recur, often affected by dietary exposures and stress.
- IBS is considered to be a manifestation of bidirectional disordered communication within the brain-gut axis that influences gastrointestinal motility, secretion, and sensation.¹
 - Contributing factors include visceral hypersensitivity, altered gastrointestinal (GI) motility, post-infectious diarrhea, chronic stress, altered brain networks, and the microbiome. Alterations in the colonic immune system, neuronal activity, and gut permeability also play a role.
- It is one of the most common GI disorders affecting approximately 10% of the general population and can have significant impact on a patient's quality of life.^{2,3}
- Historically, many providers believe it is a diagnosis of **exclusion**, but this notion is changing and moving towards a positive, symptom-based diagnosis.
 - The current recommended diagnostic criteria for IBS are the **Rome IV criteria**:
 - Recurrent abdominal pain (≥ 1 day/week for ≥ 3 months) associated with two or more of the following: related to defecation, associated with a change in the frequency of stool, associated with a change in the form (appearance) of stool.
 - Typical associated lower GI symptoms include bloating and flatulence. Upper GI symptoms include nausea, burping, early satiety, and dyspepsia.
 - Relief of abdominal discomfort after a bowel movement or in association with a change in stool form or frequency is a defining feature. Bowel dysfunction includes frequent bowel movements, fecal urgency, altered stool form (hard/lumpy or loose/watery), sense of or incomplete evacuation, straining with stool passage, and passage of mucous.
 - IBS correlates with other pain syndromes, so other symptoms such as dysuria, frequent/urgent urination, widespread musculoskeletal pain, dysmenorrhea, dyspareunia, fatigue, anxiety, depression, and headaches may also be present. Pain often is variable and may be related to the subtype.⁴
- IBS is subtyped according to stool consistency:
 - Constipation-predominant (IBS-C, > 25% hard stools and < 25% loose stools)
 - Diarrhea-predominant (IBS-D, > 25% loose stools and < 25% hard stools)
 - Mixed bowel habits (IBS-M, > 25% loose stools and > 25% hard stools)
 - Unclassified (IBS-U, < 25% loose stools and < 25% hard stools)
- The most common diseases mislabeled as IBS are celiac disease, Crohn's disease, and microscopic colitis. GI cancers are unlikely in patients that meet usual criteria for IBS in the absence of red flags/abnormal blood work.

¹ Farmer, A. D., Wood, E., & Ruffle, J. K. (2020). An approach to the care of patients with irritable bowel syndrome. *CMAJ*, 192(11), E275-E282.2 Moayyedi, P., Andrews, C. N., MacQueen, G., Korownyk, C., Marsiglio, M., Graff, L., ... & Sidani, S. (2019). Canadian Association of Gastroenterology clinical practice guideline for the management of irritable bowel syndrome (IBS). *Journal of the Canadian Association of Gastroenterology*, 2(1), 6-29.3 Palsson, O. S., Whitehead, W., Törnblom, H., Sperber, A. D., & Simren, M. (2020). Prevalence of Rome IV Functional Bowel Disorders Among Adults in the United States, Canada, and the United Kingdom. *Gastroenterology*. Shah, E. D., Almario, C. V., Spiegel, B. M., & Chey, W. D. (2020). Presentation and Characteristics of Abdominal Pain Vary by Irritable Bowel Syndrome Subtype: Results of a Nationwide Population-Based Study. *American Journal of Gastroenterology*, 115(2), 294-301

Checklist to guide in-clinic review of your patient with IBS

<input type="checkbox"/>	Recurrent abdominal pain at least one day per week (on average) in the last three months, with two or more of the following: <ul style="list-style-type: none"> • Related to defecation (either increasing or improving pain) • Associated with a change in frequency of stool • Associated with a change in form (appearance) of stool
<input type="checkbox"/>	Complete detailed medical history, physical examination, and review of medications.
<input type="checkbox"/>	Complete baseline investigations confirming no abnormal results (CBC, ferritin, serological testing to exclude celiac disease).
<input type="checkbox"/>	Confirm absence of alarm features (see algorithm Box 3). If alarm features identified, refer for specialist consultation.
<input type="checkbox"/>	In diarrhea predominant patients - review history of cholecystectomy and consider ordering fecal calprotectin if there is a high clinical suspicion of irritable bowel disease (IBD).

EXPANDED DETAILS

1. Suspected IBS

- Recurrent abdominal pain at least one day per week (on average) in the last three months, with two or more of the following:
 - Related to defecation (either increasing or improving pain)
 - Associated with a change in frequency of stool
 - Associated with a change in form (appearance) of stool
- Are symptoms consistent with IBS? Some important questions to guide the history.
 - Do you experience pain?
 - Does the pain improve/worsen/stay the same with bowel movements?
 - When the pain is present, is it often associated with a change in stool frequency or stool form?
 - Do these symptoms represent an acute change?
 - Typical associated lower GI symptoms include bloating and flatulence. Upper GI symptoms include nausea, burping, early satiety, and dyspepsia.
 - IBS correlates with other pain syndromes, so other symptoms such as dysuria, frequent/urgent urination, widespread musculoskeletal pain, dysmenorrhea, dyspareunia, fatigue, anxiety, depression, and headaches may also be present. Pain often is variable and may be related to the subtype.
- It is vital to understand a patient's predominant symptom (pain, constipation, or diarrhea) as this influences treatment selection.

2. Baseline investigations

- A detailed medical history and physical examination should be performed at presentation to assess other conditions that mimic IBS. This should include a careful review of medications to identify those potentially causing GI side effects (e.g. PPI, ASA/NSAIDs, laxatives/antacids, iron/calcium/magnesium supplements, antidepressants, opioids, metformin, use of cannabis, and herbal products).
- In patients with diarrhea-predominant symptoms, ask about a history of cholecystectomy and whether this coincided with onset or worsening of symptoms. Post-cholecystectomy diarrhea, due to bile acid diarrhea (BAD), can be treated with cholestyramine.
- IBS requires few standard initial laboratory investigations.
 - CBC and ferritin should be tested.
 - Serological testing is suggested to exclude celiac disease, but **routine testing** for inflammation using C-reactive protein (CRP) or food allergies is not generally recommended.

- Anemia or other alarm features (see Section 3) increase the likelihood of organic disease. If present, the patient will require further investigation.
- Patients often ask about small intestinal bacterial overgrowth (SIBO) as a cause of symptoms. Although there may be a link between SIBO and IBS, the quality of the existing evidence is low. The accuracy of the breath test for SIBO is highly variable and may be unreliable. Routine testing for SIBO is not currently recommended.^{1,5}
- Additional testing can be considered based on patient history
 - *C.difficile* or ova and parasites if there has been recent travel and diarrhea is the main concern.
 - A significant percentage of patients with chronic abdominal pain or other functional GI disorders have a history of trauma (e.g. sexual assault or physical and psychological abuse) or PTSD. This type of trauma may contribute to symptoms through the brain-gut axis, so it is important to explore this in a compassionate manner. Undergoing endoscopy may trigger a negative response in survivors of trauma. Addressing this possibility may be appropriate if considering a referral for endoscopy when the clinician is aware of a history of trauma.

3. Alarm features

If any of the following alarm features are identified, refer for consultation/endoscopy. Include any and all identified alarm features in the referral to ensure appropriate triage.

- Family history (first degree relative) of IBD or colorectal cancer
- Onset of symptoms after age 50
- Unintended weight loss (> 5% over 6-12 months)
- Visible blood in stool
- Nocturnal symptoms
- Iron deficiency anemia (see [Iron Primer](#))

4. Potential approaches to IBS treatment (overview for all subtypes)

Treatment options – all IBS subtypes	
Patients with IBS will benefit from a multipronged, individualized approach to treatment, including dietary modifications, psychological, and pharmacological therapies. ^{1,6}	
Dietary modifications	<ul style="list-style-type: none"> ● All subtypes of patients with IBS are likely to benefit from dietary modifications. . ● Assess common food triggers: Follow a systematic approach to effectively guide modifications and understand the impact changes make on symptoms. ● Diets high in processed foods, fatty foods, caffeine, sugar alcohols, alcohol, and insoluble fibre (e.g. wheat bran, raw vegetables, the skin of fruits, and cruciferous vegetables such as broccoli, cauliflower, Brussels sprouts, and legumes) can increase IBS symptoms. ● It may be helpful for patients to use the Food and Lifestyle Symptom Diary to understand their symptoms, food triggers, and stressors. Use the diary to determine how dietary modifications and psychological and pharmacological therapies impact their symptoms. ● Assess dietary intake compared to Canada's Food Guide. ● Referral to a Registered Dietitian can be helpful to support dietary changes.

◦ Shah, A., Talley, N. J., Jones, M., Kendall, B. J., Koloski, N., Walker, M. M., ... & Holtmann, G. J. (2020). Small intestinal bacterial overgrowth in irritable bowel syndrome: a systematic review and meta-analysis of case-control studies. *American Journal of Gastroenterology*, 115(2), 190-201.

◦ Black, C. J., Yuan, Y., Selinger, C. P., Camilleri, M., Quigley, E. M., Moayyedi, P., & Ford, A. C. (2020). Efficacy of soluble fibre, antispasmodic drugs, and gut-brain neuromodulators in irritable bowel syndrome: a systematic review and network meta-analysis. *The Lancet Gastroenterology & Hepatology*, 5(2), 117-131.

<p>Dietary modifications cont'd</p>	<ul style="list-style-type: none"> • Total fibre: Adults are recommended to consume 14 g/1000 kcal of fibre per day. Suggest about 21-38 g/day for most adults. • Two Types of fibre: <ul style="list-style-type: none"> ○ Insoluble fibre is found in wheat bran, the skin of fruits, and many raw vegetables. It adds bulk to the stool and contributes greatly to daily total fibre requirements. It may not add therapeutic health benefits like soluble fibre. ○ Soluble fibre is found in psyllium, oats, barley, fruit, and seeds. It absorbs water in the intestine to form a viscous gel that thickens the stool and stimulates peristalsis. • Soluble Fibre Supplementation: <ul style="list-style-type: none"> ○ May provide symptom relief for patients with IBD, IBS, constipation, and diarrhea. The therapeutic goal is 5-10 g/day of soluble fibre from foods and supplements including: <ul style="list-style-type: none"> • 1 tbsp. psyllium husk or powder supplement - 3.0 grams • 2 tbsp. ground flaxseed - 1.8 grams • 1/2 cup kidney beans - 2.8 grams • 1 pear - 2.2 grams • General Care: <ul style="list-style-type: none"> ○ Increasing fibre intake may result in negative side-effects that can be minimized or avoided. <ul style="list-style-type: none"> • Slowly increase fibre to prevent gas, abdominal pain, and bloating. Start with a third of a dose and determine tolerance. • Drink additional fluid (water) to compliment a high fibre diet. Inadequate fluid may lead to constipation, hardening of stool, bloating, and abdominal pain. • Caution soluble fibre intake for people with, or at risk of, a bowel obstruction or narrowing of the esophagus, stomach, or intestine. • Fibre supplements may reduce or delay absorption of certain medications. ○ See Patient Resources section for more information on fibre supplementation. • Ensure adequate fluids: 2 L/day for females, 3 L/day for males.
<p>Physical activity</p>	<ul style="list-style-type: none"> • 20+ minutes of physical activity/day, aiming for 150 min/week is known to be an effective strategy for stress reduction. • See the Canadian 24-Hour Movement Guidelines.
<p>Psychological therapy</p>	<ul style="list-style-type: none"> • Patient counselling and reassurance. A key to effective long-term management of IBS is to provide patients reassurance after their initial diagnosis and offer points of reassessment and reappraisal to establish a therapeutic relationship. <ul style="list-style-type: none"> ○ Reassurance about potential inconsistency in the pattern of symptoms in response to triggers may be necessary. Not all elimination/avoidance of food triggers consistently or predictably improves symptoms. The contribution from food is complex and symptoms are often the result of multiple contributing factors (e.g. "I tried cheese last week and felt just fine. Today, I have terrible bloating and diarrhea!"). • Cognitive-Behavioral Therapy and hypnotherapy may help with stress management and gastrointestinal symptoms.⁷ It is recommended that therapy be provided by a regulated health professional such as a registered psychologist. • Screening for, and treating, any underlying sleep or mood disorders may be important.

⁷DynaMed Plus. (2018, September 10). *Confidence in Practice. Irritable bowel syndrome (IBS)*. <https://www.dynamed-com.ahs.idm.oclc.org/results?q=ibs&lang=en>

Pharmacological therapy – all IBS subtypes	
<p>The use of pharmaceuticals in IBS is generally reserved for those who have not adequately responded to dietary and lifestyle interventions, or in those with moderate or severe symptoms that impair quality of life. These often need to be tailored to the patient’s predominant subtype presentation (e.g. pain vs. diarrhea vs. constipation).</p>	
Antispasmodics	<ul style="list-style-type: none"> • Evidence: May reduce symptoms of abdominal pain, however, it is not clear if one agent is more effective than another.⁸ • Place in therapy: May provide symptom relief. Consider peppermint oil as first line as it is generally well tolerated and appears to be effective. • Mechanism of action: Smooth muscle relaxation by various mechanisms. • Adverse effects: Anticholinergic reactions with some agents (CNS depression, xerostomia), dyspepsia (peppermint oil).⁹ • Dose: A reasonable trial is 1-2 agents (not at once) given for 4 weeks as listed below. Could use regularly or PRN. <p>Recommended Medications:</p> <ul style="list-style-type: none"> • Trimebutine (Modulon®) - 100-200 mg TID (\$40-80/month). • Pinaverium Bromide (Dicetel®) - 50-100 mg TID (\$50-75/month). • Hyoscine Butylbromide (Buscopan®) - 10 mg TID-QID (\$25-40/month). • Dicyclomine hydrochloride (Bentylol®) - 20 mg TID-QID (\$25-40/month).
Enteric coated peppermint oil	<ul style="list-style-type: none"> • Place in therapy: Shown benefit for reducing abdominal pain^{10,11} • Adverse effects: May interact with medications. It is important to discuss use with their pharmacist and/or healthcare team.⁹ <p>Recommended Medications:</p> <ul style="list-style-type: none"> • Enteric coated peppermint oil capsules (0.2-0.275 mL caps) - 2 capsules BID (\$20-25/month, unlikely to be covered by insurance providers) • IBgard® - 80 mg/capsule. Max dose is 6 capsules/day or 480 mg/day (\$70-100/month). Take 2 capsules 30-90 minutes before meals.

5. Specific approaches based on IBS subtypes

Categorizing IBS by dominant subtype guides specific treatment approaches.

IBS-D (diarrhea-predominant)

Fecal calprotectin

- Consider ordering a fecal calprotectin in IBS-D patients if there is a high clinical suspicion of IBD.
- Calprotectin is a protein released into the gastrointestinal tract when it is inflamed and can be detected in the stool by laboratory assay.
- Elevated levels of fecal calprotectin are found in inflammatory bowel disease (Crohn’s disease and ulcerative colitis). Mid-range levels can also be found in several benign conditions, such as in patients on NSAIDs or PPIs or those with GI infections, celiac disease, and microscopic colitis (see [Microscopic Colitis Primer](#)) By contrast, in functional disorders such as IBS, fecal calprotectin levels are normal.¹²

⁸ Ruepert, L., Quartero, A. O., de Wit, N. J., van der Heijden, G. J., Rubin, G., & Muris, J. W. (2011). Bulking agents, antispasmodics and antidepressants for the treatment of irritable bowel syndrome. *Cochrane database of systematic reviews*, (8).

⁹ Lexicomp, Inc., Lexi-Drugs Online, Hudson, Ohio; UpToDate, Inc; 2013; [cited 27 Apr 2021].

¹⁰ Khanna, R., MacDonald, J. K., & Levesque, B. G. (2014). Peppermint oil for the treatment of irritable bowel syndrome: a systematic review and meta-analysis. *Journal of clinical gastroenterology*, 48(6), 505-512.

¹¹ Cappello, G., Spezzaferro, M., Grossi, L., Manzoli, L., & Marzio, L. (2007). Peppermint oil (Mintoil®) in the treatment of irritable bowel syndrome: A prospective double blind placebo-controlled randomized trial. *Digestive and liver disease*, 39(6), 530-536. ¹² York Teaching Hospital – NHS Foundation Trust & Yorkshire and Humber Academic Health Sciences Network (2016, July) *The York Fecal Calprotection Care Pathway Information for GPs*. <https://www.yorkhospitals.nhs.uk/seecmsfile/?id=941>

Fecal calprotectin < 100 mcg/g = Unlikely the patient has IBD
 Fecal calprotectin 100-200 mcg/g = Test again in 4-6 weeks and order a CRP test as well
 Fecal calprotectin > 200 mcg/g = Higher risk of IBD. Refer for specialist consultation.

Treatment options	
All prescribed medications should be fully discussed with the patients in terms of specific risks and side effects and appropriateness of use in context of their full medical history.	
Loperamide (Imodium®)	<ul style="list-style-type: none"> • Evidence: Does not affect global IBS symptoms, but may help with frequency and consistency of bowel movements. Suggested against for overall symptom improvement.¹³ • Mechanism of action: Through μ (mu) opioid receptor agonist, thus decreasing GI motility. • Place in therapy: Effective antidiarrheal. Does not lead to overall symptom improvement in patients with IBS. • Adverse effects: Sedation, nausea, abdominal cramps.¹¹ Lowest addiction potential of all opioids. • Dose: 4 mg initially, followed by 2 mg after each loose bowel movement. Max 16 mg/day.
Tricyclic antidepressants (TCAs)	<ul style="list-style-type: none"> • Evidence: The most studied antidepressant class for treatment of abdominal pain.¹⁴ • Mechanism of action: Suggested to be beyond serotonin and norepinephrine, and as a result of blocking voltage-gated ion channels, opioid receptor activation and potential neuro-immunologic anti-inflammatory effects.⁹ Their anticholinergic properties also slow GI transit time. • Place in therapy: Recommended for overall symptom improvement in patients with IBS, as well as sleep issues, anxiety, or depression. • Adverse effects: Anticholinergic and antihistaminic (drowsiness/insomnia, xerostomia, palpitations, weight gain, constipation, urinary retention).¹³ • Use with caution in patients at risk of prolonged QT. • It can take 2-3 months to reach maximum effect. • The lowest effective dose should be used. Reassess therapy after 6-12 months. • Dose should be gradually reduced if discontinuing. <p style="text-align: center;">Recommended Medications</p> <ul style="list-style-type: none"> • Nortriptyline - 10-25 mg qhs. Increase dose by 10-25 mg every 3-4 weeks (due to delayed onset). May require 25-75 mg/day. Often takes 2-3 months for peak effect. (\$20-60/month). • Amitriptyline - 10-25 mg qhs. Increase dose by 10-25 mg every 3-4 weeks (due to delayed onset). May require 25-75 mg/day. Often takes 2-3 months for peak effect. (\$15-20/month). • Desipramine - 25 mg qhs. Increase based on response and tolerability. Doses up to 150 mg daily have been evaluated for IBS (~\$25/month).
Probiotics	<ul style="list-style-type: none"> • Evidence: May improve symptoms in patients with IBS, but overall conclusions are limited by inconsistency in specific probiotics studied. • Place in therapy: May improve global symptoms, bloating, and flatulence. • The most effective probiotic strain is unknown. Patients should be encouraged to select products that are licensed by Health Canada's Natural and Non-prescription Health Products Database. Refer to Probiotic Chart for up to date evidence. These strains have the most evidence to support benefits (a one month trial is reasonable). Probiotics have not been conclusively shown to improve symptoms of IBS.¹⁵

¹³ DynaMed. Irritable Bowel Syndrome (IBS). EBSCO Information Services. Accessed June 10, 2021. <https://www.dynamed.com.ahs.idm.oclc.org/condition/irritable-bowel-syndrome-ibs>

¹⁴ Törnblom, H., & Drossman, D. A. (2016). Centrally targeted pharmacotherapy for chronic abdominal pain: understanding and management. *Gastrointestinal Pharmacology*, 417-440.

¹⁵ Su, G. L., Ko, C. W., Bercik, P., Falck-Ytter, Y., Sultan, S., Weizman, A. V., & Morgan, R. L. (2020). AGA Clinical Practice Guidelines on the Role of Probiotics in the Management of Gastrointestinal Disorders. *Gastroenterology*.

Probiotics cont'd	<p>Recommended Strains with the Most Evidence</p> <ul style="list-style-type: none"> Align® - 1 capsule/day (\$40/month) TuZen® - 1-2 capsules/day (\$40-80/month) Visbiome® - 0.5-1 sachet/day (\$50-100/month)
Low FODMAP Diet	<ul style="list-style-type: none"> A trial of a low fermentable oligosaccharides, disaccharides, monosaccharides, polyols (FODMAP) diet is suggested, while an exclusive gluten-free diet is not. Some patients may wish to trial the elimination of a single nutrient/food (e.g. lactose, fructans, fructose, sugar alcohols) or an elimination of multiple nutrients/foods using this diet. Referral to a dietitian should be considered if this diet is planned. A single nutrient/food elimination trial is the removal of a nutrient/food for 2-4 weeks. Use a symptom diary to note the impact of the dietary modification. If no improvement, the nutrient/food can be added back and a second single nutrient/food elimination trial can be tested. A low FODMAP diet trial is the removal of multiple nutrients/food all at once for 2-6 weeks (max) until symptoms have improved. A single nutrient/food is then added back into the diet, using a food diary to test for tolerance.

Second line therapies	
Consider consulting a GI using Specialist Link, Connect MD, or e-Referral Advice Request for guidance on these treatments.	
Rifaximin (Zaxine®)	<ul style="list-style-type: none"> A non-systemically absorbed antibiotic. Mechanism of action: Not clearly identified, but may alter the microbiome, thus reducing gas production. Dose: 550 mg 3 x/day for 2 weeks. This is a safe medication, but tends to require multiple recurrent courses. There is no long-term safety or efficacy data over 3 courses. (~\$325/month, not covered by public insurers).
Eluxadoline (Viberzi™)	<ul style="list-style-type: none"> Mechanism of action: Belongs to the class of medications called opioid receptor agonists/antagonists. Works in the bowel to regulate muscle activity and slow the rate that material passes through the digestive system, thus improving diarrhea. It can also improve the pain of IBS. Dose: Take 100 mg po BID with food. (~\$135/month, not covered by insurance). Not recommended for patients over age 65, given limited evidence for safety. Contraindicated in patients with significant alcohol use (more than 3 drinks/day), pancreatitis, prior cholecystectomy, and severe liver impairment.

IBS M/U (mixed/undefined)

Treatment options	
Lifestyle and dietary principles	<ul style="list-style-type: none"> Refer to Section 4
Probiotics	<ul style="list-style-type: none"> See IBS-D treatment recommendations
Low FODMAPS diet	<ul style="list-style-type: none"> See IBS-D treatment recommendations
TCAs	<ul style="list-style-type: none"> See IBS-D treatment recommendations

IBS-C (constipation predominant)

Treatment options	
Fibre and fluids	<ul style="list-style-type: none"> See Patient Resources section
Osmotic laxatives	<ul style="list-style-type: none"> Evidence: Laxatives do not affect global IBS symptoms, but may help with frequency and consistency of bowel movements.¹³ Mechanism of action: Drawing water into the colon to increase bowel movements and allow easier passage of stool.

Osmotic laxatives cont'd	<ul style="list-style-type: none"> • Place in therapy: Consider use of laxatives in patients with constipation. Advise titration of dose to assure well-formed stool. Stepwise treatment with laxatives of increasing strength is recommended until constipation relief is reached. • Adverse effects: Avoid use of lactulose due to common side-effects of bloating, distention, and cramps. <p>Recommended Medications</p> <ul style="list-style-type: none"> • Polyethylene Glycol (PEG 3350) – Start with 17 g at night dissolved in 250 mL of liquid. Titrate to effect or max 34 g/day. Onset of action 48-96 hours. Safe for long-term use. (\$25-50/month). • Milk of Magnesia - 30-60 mL/day. Onset of action 1-6 hours. Avoid in renal failure due to risk of hypermagnesemia.
Linaclootide (Constella®)	<ul style="list-style-type: none"> • Mechanism of action: A guanylate cyclase agonist which increases chloride and bicarbonate secretion from enterocytes, and increases intestinal transit. May decrease visceral pain by reducing pain-sensing nerve activity.¹³ • Place in therapy: For persistent IBS symptoms with patients motivated for more intensive or expensive treatments. • Adverse effects: Diarrhea, upper abdominal pain. • Dose: 290 mcg daily PO 30 minutes before the first meal of the day (\$160/month).
Prucalopride (Resotran®)	<ul style="list-style-type: none"> • Evidence: Shown to be effective in idiopathic constipation, there is less evidence of the effect of prucalopride in IBS-C. Has not been studied for use in men.¹⁶ • Mechanism of action: Through 5-HT₄ receptor agonism, leading to prokinetic activity. • Adverse effects: Nausea, diarrhea, abdominal pain, headache. • For constipation: 2 mg PO daily. Reduce dose to 1 mg PO daily if (\$120/month): <ul style="list-style-type: none"> ○ > 65 years old ○ CrCl < 30 mL/min ○ Severe hepatic impairment • Discontinue therapy if no benefit provided with 4 weeks of treatment.
Selective serotonin reuptake inhibitors (SSRIs)	<ul style="list-style-type: none"> • Evidence: Limited data to support use of SSRIs for IBS-C. • Place in therapy: Can be helpful with abdominal pain and may loosen bowel movements for patients. • Adverse effects: Nausea, diarrhea, weight gain, sexual dysfunction, tremor, insomnia. • Caution with citalopram in patients with prolonged QT. • Lowest effective dose should be used. It can take 2-3 months to reach maximum effect. Reassess therapy in 6-12 months. Dose should be gradually reduced if discontinuing. <p>Recommended Medications</p> <ul style="list-style-type: none"> • Fluoxetine (Prozac®) - 10 mg daily. May dose escalate up to 60 mg daily (~\$25/month). • Citalopram (Celexa®) - 10-20 mg daily. May dose escalate up to 40 mg daily (~\$15/month).

NOTE: Alternative Remedies

Given the significant impact of IBS on quality of life, many patients pursue alternative, and often complementary, therapies to treat their symptoms (e.g. acupuncture, yoga, and reflexology). Although there are no evidence-based guidelines to support these alternative therapies, it is important to keep communication open.

6. When to refer for consultation and/or endoscopy

- If alarm features are identified

¹⁶ CPS [Internet]. Ottawa (ON): Canadian Pharmacists Association; c2015 [cited 2021 June 10]. Available from: <http://www.e-therapeutics.ca>.

- If investigations reveal a positive celiac disease screen
- If the fecal calprotectin result is > 200 mcg/g
- In patients with IBS-D who have persistent symptoms or limited benefits from treatments, a referral may be helpful to investigate for Crohn's disease and microscopic colitis.
- For patients with IBS-C or alternating diarrhea and constipation, colonoscopy is unlikely to yield relevant findings.
- If recommended strategies have not led to satisfactory treatment or management of symptoms.
- Provide as much information as possible on the referral form, including identified alarm feature(s), important findings, and treatment/management strategies trialed with the patient.
- In the absence of alarm features for patients under age 50, colonoscopy is unlikely to be additive for the diagnosis of IBS. Studies show that a colonoscopy does not provide reassurance to patients with IBS¹⁷.

Still concerned about your patient?

The primary care physician is typically the provider who is most familiar with their patient's overall health and knows how they tend to present. Changes in normal patterns, or onset of new or worrisome symptoms, may raise suspicion for a potentially serious diagnosis, even when investigations are normal and typical alarm features are not present.

There is evidence to support the importance of the family physician's intuition or "gut feeling" about patient symptoms, especially when the family physician is worried about a sinister cause such as cancer. A meta-analysis examining the predictive value of gut feelings showed that the odds of a patient being diagnosed with cancer, if a GP recorded a gut feeling, were 4.24 times higher than when no gut feeling was recorded.¹⁸

When a "gut feeling" persists in spite of normal investigations, and you decide to refer your patient for specialist consultation, document your concerns on the referral with as much detail as possible.

PRIMERS

Iron Primer

Evaluation of measures of iron storage can be challenging. Gastrointestinal (occult) blood loss is a common cause of iron deficiency and should be considered as a cause when iron deficiency anemia is present. Menstrual losses should also be considered.

There are two serological tests to best evaluate iron stores (ferritin, transferrin saturation) - neither of which are perfect.

The first step is to evaluate **ferritin**:

- If the ferritin is low, it is diagnostic of iron deficiency with high specificity (98% specificity).
- Ferritin is an acute phase reactant which may be elevated in the context of acute inflammation and infection. If ferritin is normal or increased, and you suspect it may be acting as an acute phase reactant, order a transferrin saturation test (see below).
 - However, if the ferritin is > 100 µg/L and there is no concurrent significant chronic renal insufficiency, iron deficiency is very unlikely - even in the context of acute inflammation/infection.

The second step is to evaluate **transferrin saturation**:

- The transferrin saturation is a calculated ratio using serum iron and total iron binding capacity. Serum iron alone does **not** reflect iron stores.
- Low values (< 10%) demonstrate low iron stores in conjunction with a ferritin < 100 µg/L.

¹⁷ Spiegel, B. M., Gralnek, I. M., Bolus, R., Chang, L., Dulai, G. S., Naliboff, B., & Mayer, E. A. (2005). Is a negative colonoscopy associated with reassurance or improved health-related quality of life in irritable bowel syndrome? *Gastrointestinal endoscopy*, 62(6), 892-899.

¹⁸ Friedemann Smith, C., Drew, S., Ziebland, S., & Nicholson, B. D. (2020). Understanding the role of General Practitioners' gut feelings in diagnosing cancer in primary care: A systematic review and meta-analysis of existing evidence. *British Journal of General Practice*, 70(698), e612-e621.

In the absence of abnormal iron indices, anemia may be from other causes other than GI (occult) blood loss (e.g. bone marrow sources, thalassemia, and sickle cell anemia).

Microscopic Colitis Primer

Microscopic colitis is a benign condition with a median age of onset in the mid-60s, more often in women than men. It is characterized by non-bloody, watery/secretory diarrhea having significant potential impact on quality of life. Atypical presentations can also occur.

- Examination by colonoscopy reveals normal findings, inflammation is present only histologically (on biopsy).
- Medications have been implicated in the pathophysiology. Common offenders include NSAIDs, proton pump inhibitors (PPIs), statins, topiramate, and SSRIs. Consideration should be given to stopping these medications, if possible.
- This condition is non-progressive and therapy is directed to improving quality of life and stool habit regularity (<3 stools per day, minimal water content).
- Treatment for microscopic colitis is similar to those used in the treatment of IBS
 - Increased soluble fibre (psyllium, inulin) can be helpful to regular stool habit in addition to loperamide, as needed.
 - For more significant manifestations (defecation at night, incontinence), corticosteroid therapy may be indicated (e.g. budesonide/Entorcort® or Cortiment® (little to no evidence exists for prednisone).
- Total treatment duration ranges on response from 6-8 weeks to 12 weeks.

BACKGROUND

About this Pathway

- Digestive health primary care pathways were originally developed in 2015 as part of the Calgary Zone's Specialist LINK initiative. They were co-developed by the Department of Gastroenterology and the Calgary Zone's specialty integration group, which includes medical leadership and staff from Calgary and area Primary Care Networks, the Department of Family Medicine, and Alberta Health Services.
- The pathways were intended to provide evidence-based guidance to support primary care providers in caring for patients with common digestive health conditions within the patient medical home.
- Based on the successful adoption of the primary care pathways within the Calgary Zone, and their impact on timely access to quality care, in 2017 the Digestive Health Strategic Clinical Network (DHSCN) led an initiative to validate the applicability of the pathways for Alberta and to spread availability and foster adoption of the pathways across the province.
- This pathway has been expanded to other provinces and has been reviewed by gastroenterology and the endoscopy group at the Thunder Bay Regional Health Sciences Centre

Authors & Conflict of Interest Declaration

This pathway was reviewed and revised under the auspices of the DHSCN in 2021 by a multi-disciplinary team led by family physicians and gastroenterologists.

Pathway Review Process

Primary care pathways undergo scheduled review every three years, or earlier, if there is a clinically significant change in knowledge or practice. The next scheduled review is April 2024.

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Disclaimer

This pathway represents evidence-based best practice, but does not override the individual responsibility of healthcare professionals to make decisions appropriate to their patients using their own clinical judgment given their patients' specific clinical conditions, in consultation with patients/alternate decision makers. The pathway is not a substitute for clinical judgment or advice of a qualified healthcare professional. It is expected that all users will seek advice of other appropriately qualified and regulated healthcare providers with any issues transcending their specific knowledge, scope of regulated practice, or professional competence.

PROVIDER RESOURCES

Advice Options

The Ontario eConsult program is a secure web-based tool that allows physician or nurse practitioner timely access to specialist advice for all patients and often eliminates the need for an in-person specialist visit.:

- To sign up use your ONEID and get same day access, go to <https://otnhub.ca> visit the OTNhub sign up page <https://otnhub.ca/signup-info> to register.
- For physicians without a ONEID, you can register for one through your CPSO Member Portal. If you are a nurse practitioner or need assistance getting a ONEID please email us at eConsultCOE@toh.ca.

Resources	
Nutrition Guideline: Household Food Insecurity	ahs.ca/assets/info/nutrition/if-nfs-ng-household-food-insecurity.pdf
Poverty: A Clinical Tool for Primary Care Providers (AB)	cep.health/media/uploaded/PovertyflowAB-2016-Oct-28.pdf

PATIENT RESOURCES

Information

Description	Website
Understanding Irritable Bowel Syndrome (Canadian Digestive Health Foundation)	cdhf.ca/digestive-disorders/irritable-bowel-syndrome-ibs/
Irritable Bowel Syndrome (UpToDate® – <i>Beyond the Basics</i> Patient information)	uptodate.com/contents/irritable-bowel-syndrome-beyond-the-basics
Managing Constipation	ahs.ca/assets/info/nutrition/if-nfs-managing-constipation.pdf
Fibre Facts	ahs.ca/assets/info/nutrition/if-nfs-fibre-facts.pdf
Food, Lifestyle, and Symptom Diary	ahs.ca/assets/info/nutrition/if-nfs-food-lifestyle-symptom-diary.pdf
Nutrition Education Material	ahs.ca/NutritionResources
Gut Health Patient Journal (Physician Learning Program)	9c849905-3a37-465a-9612-7db1b9a0a69c.filesusr.com/ugd/7b74c181f1695f08214a66bc339462c52cd011.pdf

Your Pathway for Managing Irritable Bowel Syndrome (adults)

What is IBS?

- A disorder that causes pain, bloating, and cramping.
- There may be constipation or diarrhea.
- Symptoms can vary in severity and tend to come and go.
- Symptoms are often related to dietary triggers and stress.
- It affects approximately 10% of the population.
- It can affect your every day activities and have a negative impact on quality of life.
- Usually cared for by healthcare providers in your family doctor's office.

What is the IBS patient pathway?

It is a map for you and your healthcare providers to follow. It makes sure the care you are getting for IBS is safe and helpful in managing your symptoms.

You and your healthcare providers may modify the pathway to best suit your healthcare needs.

If symptoms cannot be managed over time, you and your healthcare providers may decide a referral to a specialist would be helpful.

1. Check your symptoms

- Pain or discomfort in your stomach that is related to bowel movements and their frequency or change in form
- Stomach pain may or may not be improved with bowel movements
- Passage of mucous, constipation, or diarrhea
- Bloating or gas

2. Make lifestyle changes to manage your symptoms (see over for details)

- Identify foods that cause symptoms and try to limit or avoid them
- Increase your fibre intake
- Make sure to get plenty of water daily
- Try to get at least 20 minutes of physical activity daily. Aim for 150 minutes each week.
- Identify what causes you stress and find ways to reduce it

3. Tests that may be done

- Blood and stool tests
- Test to rule out celiac disease
 - Makes sure your diet includes gluten (e.g. white or whole wheat bread) for at least two weeks before testing

Tell your healthcare providers if you have these symptoms:

- Family history of colon cancer
- Losing weight without meaning to
- Symptoms that often wake you up at night
- Stool that is black in colour or has blood in it

Talk to your healthcare providers if your symptoms don't improve, get worse, or keep interfering with your everyday activities

Once you find something that works for you, stick with it.

You may need to keep trying other options to find what works best to manage your symptoms.



4. Medicine that may be tried

- Many options can be used to improve your symptoms
- Talk with your healthcare providers about what medicines may be right for you



What do I need to know about my symptoms and Irritable Bowel Syndrome?

Working through the IBS patient pathway can take several months:

- Your healthcare providers will ask you questions about your health and do a physical exam. They will also review any medicines you are taking.
- They may suggest certain tests to learn more about possible causes of your symptoms.
- They will talk with you about possible lifestyle habits that may be causing your symptoms and how you can make changes that could help you feel better.
- You may find it helpful to write down your symptoms and what seems to cause them (e.g. certain food or stress). You and your healthcare providers can make a plan to help manage your symptoms using this information.
- Together, you may decided to try certain medicines to help in treating your symptoms.
- You may use medicines for a short amount of time (or possibly longer) depending on whether your symptoms improve.

To manage your symptoms, try to:

- Identify foods that cause your symptoms. You may want to keep track of the foods you eat and how they affect your symptoms.
- Get at least 20 minutes of physical activity daily. Aim for 150 minutes each week (e.g. walking, biking, gardening, stairs, or your favourite sports).
- Choose high soluble fibre foods like oats, flax, chia, and barley. Slowly increase the amount of fibre you eat, targeting 25 g for females and 38 g for males.
- Consider the use of a psyllium fibre supplement (e.g. Metacmucil)
- Drink plenty of water throughout the day, aiming for 9-12 cups
- Identify what causes you stress and work on reducing it. You may want to try yoga, meditation, counselling or a stress reduction program.

Seeing a specialist is only recommended if:

- Your symptoms continue or get worse after following treatment and management options in the irritable bowel syndrome pathway.
- You and your healthcare providers identify concerning symptoms or test results.

You can find more information in the great resources below:

- Canadian Digestive Health Foundation
cdhf.ca
* search IBS

Write any notes or questions you may have here:



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