



# CHRONIC DIARRHEA PRIMARY CARE PATHWAY

## 1. Diagnostic criteria

- 3 or more loose/watery stools per day
- Onset at least 4 weeks ago

## 2. Alarm features

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

YES

## 8. Refer to Gastroenterology

[Click here for Referral letter](#)

NO

## Perform investigations and management dependant on history

### 3. Baseline investigations

- Blood: CBC, electrolytes, ferritin, CRP, IgA with AntiTTG, TSH
- Stool: *C. difficile*, ova and parasites, C&S
- \*If high clinical suspicion of IBD, do fecal calprotectin (indication: 'IBD' on req)

Consider based on history

If fecal cal test > 120 mcg/g (Lifelabs) or TTG positive for celiac

### 4. Optimize management of secondary causes

- Take a detailed medical history and physical examination
- Consider Medication-induced diarrhea: optimize or discontinue use of culprit medications
- History of cholecystectomy? trial of cholestyramine
- Identify common triggers to avoid like sugar alcohols (mannitol, sorbitol), lactose, fructose, and gluten/wheat (low FODMAP diet)

## 5. General principles for treatment and management of chronic diarrhea

- Education on normal stool form and bowel movement frequency (different for every patient)
- Patient reassurance and management of expectations
- Modify diet, remove trigger foods, and space small meals throughout the day
- Soluble fibre supplementation and ensure adequate water intake
- Lifestyle modification: physical activity and psychological therapy (e.g. sleep disorder and stress management)

## 6. Pharmacological options for treating chronic diarrhea

- Soluble fibre supplements (Psyllium husk or Metamucil regularly)
- Anti-diarrheals/anti-motility agents (Loperamide, Diphenoxylate-atropine)
- Bile acid sequestrants (Cholestyramine)
- Mixed opioid agonists/antagonists (Eluxadoline)
- Tricyclic antidepressants (TCA)
- Antibiotics (Rifaximin)

If unsatisfactory response to management

If IBS suspected

**Follow IBS Pathway**  
[Click here for pathway](#)

## 7. Consider alternative diagnoses

- Microscopic colitis
- Irritable bowel syndrome-diarrhea predominant (IBS-D)
- Pancreatic exocrine insufficiency (PEI)
- Bile acid induced diarrhea (BAD)
- Small intestinal bacterial overgrowth (SIBO)

Other potential diagnoses suspected

**8. Refer to Gastroenterology**  
[Click here for Referral letter](#)

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## Chronic Diarrhea - What is it?

- Chronic diarrhea is defined as 3 or more loose or watery stools/day (Type 6-7 on the Bristol Stool Chart - [https://en.wikipedia.org/wiki/Bristol\\_stool\\_scale#/media/File:BristolStoolChart\\_\(cropped\).png](https://en.wikipedia.org/wiki/Bristol_stool_scale#/media/File:BristolStoolChart_(cropped).png)) that are often but not always associated with an increase in frequency and persisting for more than 4 weeks in duration. Symptoms may also include an urgent need to pass stool and occasional incontinence, with significant impact on the patient’s quality of life.
- Acute diarrhea in comparison is defined as having symptoms for 30 days or less. In Canada, acute diarrhea is most often infectious and often requires only self-limited symptom management.
- Chronic diarrhea is a common gastrointestinal disorder affecting approximately 3-5% of the general population.<sup>1</sup>  
Chronic diarrhea is more common among women than men and those with a body mass index > 30.
- Challenges may exist distinguishing between chronic diarrhea and irritable bowel syndrome diarrhea-predominant (IBS-D) as there is overlap in symptoms.
  - Pathogenic mechanisms of chronic diarrhea may be common to that of IBS, including underlying motility disruption.
  - Chronic diarrhea is distinct from IBS-D as it occurs characteristically without abdominal pain, thus visceral hypersensitivity is less of a feature.

### CHECKLIST TO GUIDE IN-CLINIC REVIEW OF YOUR PATIENT WITH CHRONIC DIARRHEA

<input type="checkbox"/>	Confirm absence of alarm features (see pathway point 2). If alarm features identified, refer to GI for consultation.
<input type="checkbox"/>	Assess Rome IV criteria for IBS – recurrent abdominal pain > 1 day per week in the last three months related to defecation or associated with change of frequency and/or form (appearance) of stool. If present, refer to the <a href="#">IBS pathway</a> .
<input type="checkbox"/>	Complete baseline investigations confirming no abnormal results (CBC, electrolytes, ferritin, celiac disease screen with antiTTG and IgA, TSH, and stool infectious testing including C.difficile).
<input type="checkbox"/>	Address other causes of diarrhea – medical conditions, culprit medications (see <a href="#">Table 1</a> ), alternative diagnoses, and dietary triggers.

## Expanded Details of Chronic Diarrhea Clinical Pathway

### 1. Diagnostic criteria

- A careful history will provide significant insight into the etiology of chronic diarrhea. There are two main categories to consider:
  - Functional causes
    - Functional diarrhea WITHOUT abdominal pain is not associated with inflammation or alteration to the gastrointestinal tract. It is distinct from IBS-D and post-infectious IBS, which is classically associated with pain/abdominal discomfort.
  - Organic causes
    - Irritable bowel disease (IBD), celiac disease, microscopic colitis, medication-induced diarrhea, bile acid induced diarrhea (BAD), or other rare causes of diarrhea (e.g. radiation induced).
- Chronic diarrhea can also be described as one of, or a combination of, the following pathophysiologic processes:
  - Watery Diarrhea:
    - Osmotic
      - The amount of water present in the stool is dependent upon the presence of solutes/effective osmoles (e.g. lactose, fructose).
      - The presence of poorly absorbed solutes (e.g. maldigested sugars) in the bowel inhibit normal water and electrolyte absorption and may lead to diarrhea (presence of higher water content in the stool).
      - Some laxatives( e.g.lactulose, magnesium citrate) or certain foods (e.g. lactose, sorbitol, and fructose) may not be well absorbed, leading to osmotic diarrhea.
      - When the solute is removed (excluded from the diet), the diarrhea typically resolves.
    - Secretory
      - Caused by excessive electrolyte secretions in the colon, leading to increased fluid in the stool.
      - One characteristic feature is the persistence of secretion during fasting/removal of food.
      - Medications (e.g. antibiotics, proton pump inhibitors( PPIs)), poorly reabsorbed bile acids or fatty acids in the colon, and microscopic colitis are possible causes; and rarely, hormone-producing tumors, excessive prostaglandin production, and other intestinal diseases (e.g. IBD and acquired immune deficiency syndrome (AIDS)).
  - Inflammatory Diarrhea
    - The presence of blood and mucous in the stool can occur from inflammation and this may be immune-mediated. This occurs with chronic conditions, including IBD and other rare chronic infections (e.g. amoebiasis, tuberculosis (TB)).
    - Mucous can be a normal presence in stool and does not necessarily reflect inflammation. The key difference is the presence of blood. Presence of blood is a red flag and necessitates referral.
  - Overflow Diarrhea
    - A history of antecedent chronic constipation, particularly in the elderly, necessitates consideration of overflow diarrhea as a source of new onset/ poorly controlled watery stools in this context.
    - Plain x-ray imaging of the abdomen to identify fecal loading may be helpful to direct management (see Chronic Constipation pathway).
- Medication review
  - Many medications can cause chronic diarrhea, including over the counter medications
- Travel history and associated illness (gastroenteritis)
  - IBS associated with prior short-term, self-limited gastroenteritis is common and can lead to longer-term altered bowel habit (post-infectious changes or IBS). This can occur in conjunction with pain
- Personal or significant family history of immune-mediated disease (e.g. thyroid disease, IBD, or celiac disease).
- A dietary review can be helpful to identify easily avoidable contributing factors, such as excessive caffeine, dairy products (e.g. high lactose foods, like milk and ice cream), sugar sweetened beverages, gluten/wheat, etc.

## 2. Alarm features

- If any of the following alarm features are identified, refer to GI 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 at or after age 50
  - Unintended weight loss (> 5% over 6-12 months)
  - Nocturnal symptoms or significant incontinence
  - Visible blood in stool
  - Iron deficiency anemia
- Although alarm features are important to recognize, they have not been shown to be highly predictive of colon cancer.

## 3. Baseline investigations

### • Blood

- CBC, electrolytes, ferritin, TSH
- C Reactive Protein (CRP): a non-specific marker of inflammation with modest accuracy for detecting inflammation. The sensitivity or false negative rate is approximately 70-75%. If elevated, it can be helpful, but if normal, it does not definitively exclude an inflammatory condition. A very low CRP value is however, reassuring.
- Celiac disease screen: a highly accurate (sensitivity is ~95%) antibody screen for this immune-mediated condition. Ensure diet is gluten inclusive for at least two weeks prior to testing to ensure no false negatives. Also ensure patient is not IgA deficient (check IgA level WITH Anti TTG).

### • Stool

- C. difficile, stool for C and S, stool for ova and parasites
- Commonly encountered parasites are Giardia, Cryptosporidium, and Entamoeba histolytica, but others may be indicated if there has been travel history. If there is a relevant travel history or other relevant factors, provide this information in the details of the ova and parasites requisition.
- **Note:** Tests such as stool leukocytes and fat globules are generally **not** recommended. Fecal immunochemical testing (FIT) has **NOT** been validated for investigation of chronic diarrhea-like symptoms. Ordering FIT in this circumstance is **inappropriate** given the presence of symptoms.
- Further investigation using fecal calprotectin - consider ordering a fecal calprotectin if there is a high clinical suspicion of inflammation. Most labs will do it now. Ensure indication says 'IBD' for MSP coverage.
- Fecal calprotectin is a stool-based test used to detect a protein released into the gastrointestinal tract from inflammatory cells (neutrophils) when present. Fecal calprotectin may be elevated and useful when there is a high clinical suspicion of IBD. Do not order this test unnecessarily.
- Results vary by methodology. Lab targets by Lifelabs (below) are about 40% lower than other labs
  - Fecal calprotectin < 50 mcg/g = Unlikely the patient has IBD
  - Fecal calprotectin 50-120 mcg/g = Inconclusive. Test again in 4-6 weeks. Order a CRP test as well
  - Fecal calprotectin > 120 mcg/g = Likely IBD. Refer to GI for consultation.
- Elevated levels of fecal calprotectin are found in inflammatory bowel disease (Crohn's disease and ulcerative colitis). However, 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. By contrast, in functional disorders such as IBS, fecal calprotectin levels are normal.

## 4. Optimize management of secondary causes

- A detailed medical history and physical examination should be performed at presentation to assess for a multitude of other conditions that mimic functional diarrhea.
- A careful review of medications should be performed to identify ones that may be causing GI side effects. Some common medications include PPIs and acetylsalicylic acid (ASA)

- Laxatives/antacids, magnesium supplements, metformin, antidepressants, antigout agents, anti-hypertensives, and herbal products
  - Optimization of underlying medical conditions, including diabetes and thyroid disorders
  - Discontinue use or reduce dosage of culprit medications.
- Ask about a history of cholecystectomy and whether this coincided with onset or worsening of symptoms. Post-cholecystectomy diarrhea, due to Bile acid diarrhea, can be treated with cholestyramine. Most commonly used dose is 4g at night. Can start with a lower dose and advance as tolerated after a week.
- Ask about a history of bariatric surgery and whether this coincided with onset or worsening of symptoms.
- Ask about history of COVID-19 infection.
- Assess common dietary triggers - excessive intake of sugar sweetened beverages, juice, alcohol, caffeine (e.g. coffee, tea), artificial sweetener (e.g. sorbitol, diet pop), dairy (e.g. high lactose content in milk and ice cream), and gluten/wheat.

#### COMMON MEDICATIONS THAT MAY CAUSE DIARRHEA

System	Class	Common culprits
Cardiovascular	Anti-platelets	ASA
	Antiarrhythmics	Digoxin, procainamide
	Antihypersensitives	Angiotensin converting enzyme inhibitor (ACEi), angiotensin receptor blocker (ARBs)*, beta-blockers
	Cholesterol/lipid-lowering agents	Statins
Central nervous system	Antidepressants	Selective serotonin reuptake inhibitor (SSRIs)
	Anti-parkinsonian medications	Levodopa, ramipexole, entacapone
	Others	Lithium
Endocrine	Oral hypoglycaemic agents	Metformin, acarbose, GLP-1 receptor agonists
	Thyroid replacement	Levothyroxine
Gastrointestinal	Anti-secretory agents / antacids	Proton pump inhibitors (PPIs), magnesium-containing antacids
	Laxatives	Any
	Other	Orlistat
Musculoskeletal	NSAIDs	ASA, ibuprofen, naproxen
	Gout therapy	Colchicine, allopurinol
Other	Antibiotics	Most**
	Antineoplastic agents	Several
	Immunosuppressants	Mycophenolate, cyclosporine, tacrolimus, sirolimus
	Vitamin supplements	Vitamin C - doses over the upper limit of 2000mg/day Magnesium - doses over the upper limit of elemental Mg 350mg/day potassium chloride
	Herbal supplements	

\*Olmesartan has been associated with sprue-like enteropathy

\*\*Clindamycin, flouoroquinolones, and 3rd generation cephalosporins are common causes of C. Difficile-associated diarrhea

## 5. General principles for treatment and management of chronic diarrhea

- Patients with functional diarrhea often benefit from lifestyle and dietary modifications. These simple modifications may be all that is required in those with mild or intermittent symptoms where quality of life is not significantly impacted. Connecting patients with resources for diet, exercise, stress reduction, and psychological counseling, where available, can be helpful. Initial assessment should include screening for underlying sleep and/or mood disorders. Patients with mental health issues such as depression and anxiety may have refractory symptoms unless mental health issues are addressed.

### TREATMENT OPTIONS (NON-PHARMACOLOGICAL)

<p>Education on normal stool form and bowel movement frequency</p>	<ul style="list-style-type: none"> <li>• Details on variable frequency and form that is part of a normal spectrum of bowel habit and varies between individuals.</li> <li>• There is marked variation in what is considered a normal bowel habit. In a study of healthy individuals, stool frequency varied from a low of 3 to a high of 21 bowel movements per week as being in the normal range.<sup>4</sup> Similarly, there is some normal variation in stool consistency as measured by the Bristol Stool Chart. <a href="https://en.wikipedia.org/wiki/Bristol_stool_scale#/media/File:BristolStoolChart_(cropped).png">https://en.wikipedia.org/wiki/Bristol_stool_scale#/media/File:BristolStoolChart_(cropped).png</a></li> <li>• If stool habit change substantially, and persists, further investigations may be needed.</li> </ul>
<p>Patient reassurance and management of expectations</p>	<ul style="list-style-type: none"> <li>• A key to long-term, effective management is to provide patients reassurance after their initial diagnosis and offer points of reassessment and reappraisal to establish a therapeutic relationship.</li> <li>• Reassessment is recommended if there is a significant increase in diarrhea or signs and symptoms of dehydration.</li> </ul>
<p>Modify diet, remove trigger foods, and space small meals throughout the day</p>	<ul style="list-style-type: none"> <li>• Referral to a dietitian can be helpful.</li> <li>• Eat smaller meals spaced over the day to reduce gastric load.</li> <li>• Diets high in lactose, fructose, sugar sweetened beverages and juices, diet beverages, sugar free gum, sorbitol, caffeine, and gluten/wheat can increase symptoms (low FODMAP diets can help).</li> <li>• Water is the best choice for hydration.</li> <li>• Assess common food triggers. Follow a systematic approach of removing triggers and assessing symptoms before permanent elimination.</li> <li>• It may be helpful for patients to maintain a bowel and symptom journal to understand their symptoms, food triggers, and stressors. Use the diary to determine how dietary modifications, psychological, and pharmacological therapies impact their symptoms.</li> </ul>
<p>Fibre and fluids</p>	<ul style="list-style-type: none"> <li>• <b>Total fibre:</b> Adults are recommended to consume 14g/1000kcal of fibre per day. Suggest about 21-38 g/day for most adults.</li> <li>• <b>Two types of fibre:</b> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• There is a dose-response relationship between fibre plus fluid intake and stool output. This is important to quantify, as patients whose fibre and fluid intake is inadequate are most likely to benefit from this intervention. Fibre acts as a sponge, so it is important to combine fluid and fibre. Increased fluid intake on its own will only result in increased urination.</li> </ul> </li> <li>• <b>Soluble fibre supplementation:</b> <ul style="list-style-type: none"> <li>• 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"> <li>• 1 tbsp. psyllium husk or powder supplement - 3.0 grams</li> <li>• 2 tbsp. ground flaxseed - 1.8 grams</li> <li>• 1/2 cup kidney beans - 2.8 grams</li> <li>• 1 pear - 2.2 grams</li> </ul> </li> </ul> </li> </ul>

Fibre and fluids continued	<ul style="list-style-type: none"> <li>• <b>General care:</b> <ul style="list-style-type: none"> <li>• Increasing fibre intake may result in negative side-effects that can be minimized or avoided. <ul style="list-style-type: none"> <li>• Slowly increase fibre to prevent gas, abdominal pain, and bloating. Start with a third of a dose and determine tolerance.</li> <li>• Drink additional fluid (water) to compliment a high fibre diet. Inadequate fluid may lead to constipation, hardening of stool, bloating, and abdominal pain.</li> <li>• Use soluble fibre with caution in people with or at risk of a bowel obstruction or narrowing of the esophagus, stomach, or intestine.</li> <li>• Fibre supplements may reduce or delay absorption of certain medications.</li> </ul> </li> </ul> </li> <li>• <b>Ensure adequate fluids:</b> 2 L/day for females, 3 L/day for males</li> </ul>
Physical activity	<ul style="list-style-type: none"> <li>• 20+ minutes of physical activity/day, aiming for 150 min/week is known to be an effective strategy for stress reduction.</li> <li>• See the Canadian 24-Hour Movement Guidelines. <a href="https://csepguidelines.ca/">https://csepguidelines.ca/</a></li> </ul>
Psychological therapy	<ul style="list-style-type: none"> <li>• Cognitive-Behaviour Therapy and hypnotherapy may help with stress management and gastrointestinal symptoms. It is recommended that therapy be provided by a regulated health professional such as registered psychologist.</li> <li>• Screening for, and treating, any underlying sleep or mood disorders may be important.</li> </ul>

## 6. Pharmacological options for treating chronic diarrhea

### TREATMENT OPTIONS (PHARMACOLOGICAL)

The use of pharmaceuticals in functional bowel disorders 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.

Loperamide (Imodium)	<ul style="list-style-type: none"> <li>• <b>Evidence:</b> Effective for improved diarrheal symptoms, but has not been shown to consistently improve IBS-D symptoms.</li> <li>• <b>Mechanism of action:</b> Through mu opioid receptor agonist, thus decreasing GI motility.</li> <li>• <b>Place in therapy:</b> Effective antidiarrheal for prophylaxis for social situations or travel, however should not be prescribed for continuous use.</li> <li>• <b>Adverse effects:</b> Sedation, nausea, abdominal cramps. Lowest addiction potential of all opioids.</li> <li>• <b>Dose:</b> 4mg initially, followed by 2mg after each loose bowel movement. Max 16mg/day</li> <li>• Clinical improvement usually seen within 48 hours, if no clinical improvement after at least 10 days on maximum dose, symptoms unlikely to be controlled by further administration.</li> </ul>
Diphenoxylate-Atropine (Lomotil)	<ul style="list-style-type: none"> <li>• <b>Evidence:</b> Adjunctive therapy in management of moderate to severe diarrhea.</li> <li>• <b>Mechanism of action:</b> Through mu opioid receptor agonist, thus decreasing GI motility. Atropine is an anticholinergic that further decreases GI motility and also discourages abuse.</li> <li>• <b>Place in therapy:</b> Less effective than loperamide, but may be used for intermittent symptoms for some patients.</li> <li>• <b>Adverse effects:</b> Sedation, nausea, abdominal cramps, dry skin, and mucous membranes (from atropine). Some addiction potential.</li> <li>• <b>Dose:</b> 5 mg PO initially, then 2.5 mg PO after each loose bowel movement. Max 20 mg/day.</li> <li>• Elderly are more susceptible to anticholinergic effects.</li> <li>• Avoid concomitant use with monoamine oxidase inhibitors as this may precipitate hypertensive crisis.</li> </ul>

Tricyclic antidepressants (TCA)	<ul style="list-style-type: none"> <li>• <b>Evidence:</b> The most studied antidepressant class for treatment of abdominal pain.</li> <li>• <b>Mechanism of action:</b> 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. Their anticholinergic properties also slow GI transit time.</li> <li>• <b>Place in therapy:</b> Recommended for overall symptom improvement in patients with IBS, as well as sleep issues, anxiety, or depression.</li> <li>• <b>Adverse effects:</b> Anticholinergic and antihistaminic (drowsiness/insomnia, xerostomia, palpitations, weight gain, constipation, urinary retention).</li> <li>• Use with caution in patients at risk of prolonged QT.</li> <li>• It can take 2-3 months to reach maximum effect.</li> <li>• The lowest effective dose should be used. Reassess therapy after 6-12 months.</li> <li>• Dose should be gradually reduced if discontinuing.</li> <li>• <b>Recommended medications</b></li> <li>• Nortriptyline -10-25mg qhs. Increase dose by 10-25mg every 3-4weeks (due to delayed onset). May require 25-75 mg/day. Often takes 2-3 months for peak effect.</li> <li>• Amitriptyline -10-25mg qhs. Increase dose by 10-25mg every 3-4weeks (due to delayed onset). May require 25-75 mg/day. Often takes 2-3 months for peak effect.</li> <li>• Desipramine -25mg qhs, increase based on response and tolerability. Doses up to 150mg daily have been evaluated for IBS.</li> </ul>
Bile acid sequestrants	<ul style="list-style-type: none"> <li>• <b>Evidence:</b> Can cause diarrhea, malabsorption, but no data in IBS-D patients</li> <li>• <b>Mechanism of action:</b> Absorbs excess bile acid entering the colon</li> <li>• <b>Place in therapy:</b> Can reduce frequency of bowel movements</li> <li>• <b>Adverse effects:</b> Constipation, bloating, flatulence, and may bind with the medications reducing their effectiveness</li> <li>• <b>Recommended Medications:</b></li> <li>• Cholestyramine - 2-4g per day, can increase to 16g per day.</li> </ul>

## SECOND LINE THERAPIES

Rifaximin (Zaxine)	<ul style="list-style-type: none"> <li>• A non-systemically absorbed antibiotic.</li> <li>• <b>Mechanism of action:</b> Not clearly identified, but may alter the microbiome, thus reducing gas production.</li> <li>• <b>Dose:</b> 550mg 3x/daily for 2weeks. This is a safe drug, but tends to require multiple recurrent courses. There is no long-term safety or efficacy data over 3 courses.</li> </ul>
Diphenoxylate-Atropine (Lomotil)	<ul style="list-style-type: none"> <li>• <b>Mechanism of action:</b> 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.</li> <li>• <b>Dose:</b> Take 100mg PO BID with food.</li> </ul> <p>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.</p>



## 7. Consider alternative diagnoses

- **Microscopic Colitis (See more information on Microscopic Colitis)**

- **Irritable Bowel Syndrome-diarrhea predominant (IBS-D)**

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. For patients with suspected IBS-D, the Rome IV diagnostic criteria may provide a guide. Recurrent abdominal pain, on average,  $\geq 1$  day per week in the last 3 months, associated with  $\geq 2$  of the following criteria where pain is:

- Related to defecation
  - Associated with a change in frequency of stool
  - Associated with a change in form (appearance) of stool
  - Criteria fulfilled for the last 3 months with symptom onset at least 6 months before diagnosis.
- If the patient assessment identifies predominant symptoms of pain and/or bloating, refer to the IBS pathway.
- **Bile acid induced diarrhea (BAD)**
  - Bile acids produced in the liver and stored in the gallbladder are normally secreted into the small bowel in response to a meal, and then reabsorbed in the distal ileum (also known as enterohepatic circulation). Bile acid overproduction or poor/ ineffective ileal reabsorption (bile acid malabsorption/ bile acid diarrhea or BAM/BAD) can dysregulate this process. Subsequent unabsorbed bile acids stimulate sodium and water secretion in the colon, increase motility, and stimulate defecation, thereby contributing to chronic diarrhea.
    - **There are several subtypes:**
      - Idiopathic: contributing to 25-35% of patients with chronic diarrhea-predominant IBS-D or chronic functional diarrhea
      - Post-cholecystectomy
      - Other: e.g. secondary to small bowel resection (Crohn's disease) or radiation therapy affecting the ileum
    - **Diagnosis and treatment:** Diagnosis may be challenging. Giving an empiric trial of bile acid sequestrants is reasonable, easy, and inexpensive.
  - **Small Intestinal Bacterial Overgrowth (SIBO)**
    - Unlike the colon, a significant number of bacteria do not normally reside in the small bowel. Small intestinal bacterial overgrowth (SIBO) is a condition where dysbiosis or increased bacteria are present proximal to the ileocecal valve and within the small bowel where there is normally less bacteria. SIBO is a rare cause of gastrointestinal symptoms.
    - SIBO should only be considered in patients who have:
      - Severe diabetic neuropathy
      - Advanced scleroderm
      - Anatomic alterations such as surgery for Crohn's disease, Crohn's strictures, and/or radiation
      - Immune deficiency (e.g. common variable immunodeficiency)
      - **Note:** The accuracy of the breath test for SIBO is highly variable and may be unreliable. Routine testing for SIBO is not currently recommended.
      - The use of hydrogen breath testing has been used in the past to make a diagnosis of SIBO. However, the accuracy is not consistent, therefore; should not be ordered in primary care.
    - Empiric antibiotic treatment for SIBO should only be considered for symptomatic patients with at least one of the above considered risk factors.

- **Pancreatic exocrine insufficiency (PEI)**

- The normal functioning pancreas produces enzymes responsible for facilitating macronutrient digestion (enzymatic cleavage) so absorption can occur. Pancreatic insufficiency is not a common cause of chronic diarrhea, but may be a contributing component in the context of known pancreatic disease (e.g. chronic pancreatitis, cystic fibrosis, or prior surgical resection of the small bowel or stomach). If you suspect pancreatic insufficiency in someone with pancreatic disease, consider testing stool for fecal elastase (low levels suggest pancreatic insufficiency). Routine use of pancreatic enzymes to support digestion are not supported by evidence and are costly.

### **When to refer for consultation and/or endoscopy**

- If alarm features are identified
- If investigation reveals a positive celiac disease screen
- If the fecal calprotectin result is > 120 mcg/g (Lifelabs)
- Colonoscopy may be helpful in patients with chronic diarrhea who have persistent symptoms or limited benefit from usual treatments.
  - The purpose of endoscopic examination is to exclude chronic immune-mediated conditions including Crohn's disease and microscopic colitis
  - **Note:** Microscopic colitis is generally a benign condition that is most often treated with anti-diarrheal or binding agents).
- 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.

### **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.

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.

## More Information on Iron Levels and Microscopic Colitis

### Iron

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 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 their ferritin is low, it is diagnostic of iron deficiency with high specificity (98%)
- 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 ferrite is less than 100ug/L and there is no concurrent significant chronic renal insufficient, iron deficiency is very unlikely - even in the contact of acute inflammation/infection

The second step is to evaluate **transferritin 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 (less than 10%) demonstrate low iron stores in conjunction with a ferritin less than 100ug/L

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

### Microscopic Colitis

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

## Additional Information About this Pathway

### About this pathway

This primary care pathway was created using resources from Alberta Health Services and Alberta Primary Care Networks and further adapted by gastroenterologists at Kelowna Gastroenterology Associates from Kelowna, British Columbia. 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.

- 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 GI and the Calgary Zone's speciality integration group, which includes medical leadership and staff from Calgary and area Primary Care Networks, the Department of Family Medicine and Alberta Health Services.
- This pathway has been reviewed by the Kelowna Gastroenterology Associates and its physicians for content and use.

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# Patient Information Sheet for Managing Chronic Diarrhea

## 1. What is Chronic Diarrhea?

- Means loose or watery stool and often associated with an increase in frequency.
- Symptoms can also include an urgent need to pass stool and occasional incontinence.
- It is normal to have up to 3 bowel movements per day.
- It affects approximately 3-5% 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.

## 2. What is the chronic diarrhea pathway?

- It is a map for you and your healthcare providers to follow. It makes sure the care you are getting for chronic diarrhea 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.

## 3. Check your symptoms

- Loose watery stools that last for more than 4 weeks

## 4. Make lifestyle changes to manage symptoms

- Adjust or stop use of certain medicines
- Identify foods that cause symptoms and try to limit or avoid them. Maintain a food diary.
- Eat smaller meals throughout the day
- Increase your soluble fibre intake. Eat foods like oats, flax, chia, and barley. Slowly increase the amount of fibre you eat. Target 25 g for females and 38 g for males.
- Consider the use of a psyllium fibre supplement (e.g. Metamucil).
- 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 (e.g. walking, biking, gardening, stairs, or your favourite sports)..
- Identify what causes you stress and find ways to reduce it. You may want to try yoga, meditation, counselling, or a stress reduction program.
- 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.

## 5. Working through the chronic diarrhea 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 decide 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.

## 6. Tell your healthcare provider 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

If your symptoms don't improve, get worse, or keep interfering with your everyday activities, talk to your healthcare provider(s).

## You can find more information at:

- Canadian Digestive Health Foundation [www.cdhf.ca](http://www.cdhf.ca) \*search Diarrhea
- Diarrhea and Diet <https://badgut.org/information-centre/health-nutrition/diarrhea-and-diet/>
- Low FODMAP diet (CDHF) <https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-fibre-facts.pdf>
- Dietician services <https://www.healthlinkbc.ca/health-services/healthlink-bc-811-services/dietitian-services>

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