



CHRONIC CONSTIPATION PRIMARY CARE PATHWAY

1. Diagnostic criteria

Presence of at least 2 of these symptoms for at least 3 of the last 6 months:

- ≤ 3 spontaneous BMs per week
- Hard or lumpy stools (Bristol type 1-2)
- Straining during defecation
- Sensation of incomplete evacuation
- Sensation of anorectal blockage
- Manual maneuvers to facilitate defecation

2. Key history

- Duration and progression of symptoms - the trend is key
- Frequency of bowel movements
- Precipitating events (change in diet, fluid intake, travel, physical activity, new medication introduced)
- Past use of laxatives or other agents
- Factors that may indicate defecatory dysfunction (traumatic perineal injury, sense of "blockage" at the outlet, having to rotate or "wiggle" on the toilet to pass stool)

3. Is it IBS-C?

- Predominant symptoms of pain and/or bloating

YES

Follow IBS Pathway

[Click here for pathway](#)

NO

4. Physical examination

- Abdomen
- Digital anorectal exam

5. Alarm features

- Family history of colorectal cancer in first-degree relative(s)
- Sudden or progressive change in bowel habits
- Unintended weight loss ($>5\%$ over 6-12 months)
- Blood in stool
- Suspicious mass or irregular anal canal on exam
- Iron deficiency anemia (see information on iron)

YES

9. Refer to Gastroenterology

[Click here for Referral letter](#)

NO

6. Optimized management of secondary causes

- Prescription and OTC medications
- Supplements
- Medical conditions

If unsatisfactory response to management

7. Baseline investigations

- There is little evidence to support routine investigations
- CBC (if no recent result)
 - Consider glucose, creatinine, calcium/albumin, TSH, Celiac screen (anti-TTG and IgA), as indicated
 - Abdominal radiograph (may be useful in elderly)

8. Management

- Education, reassurance, and management of expectations
- Fibre, fluids, and physical activity
- Laxatives
- Bulk Forming (first-line)
- Osmotics (PEG - first-line)
- Stimulants
- Secretagogues / Prokinetics
- Probiotics

Management "failure" is subjective. Suggest at least 3-6 months of tritrated, multipronged therapy, mixing and matching various approaches to improve quality of life and symptom spectrum.

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Chronic Constipation - What is it?

- Chronic constipation is a common gastrointestinal disorder ranging in prevalence from 3-27% in the general population. Prevalence increases with age and is more common among women.
- Chronic constipation is most often a functional bowel disorder caused by a number of physiologic factors, including motility, secretion, and sensation abnormalities.
 - Symptoms and possible patterns of defecation include difficulty with defecation (straining) and/or unsatisfactory, incomplete, or infrequent evacuation for longer than 3 months.
 - Abdominal pain and/or bloating may be present in patients with chronic constipation, but it is not the major symptom. Predominant abdominal pain and/or bloating is more consistent with Irritable Bowel Syndrome - Constipation predominant (IBS-C), a diagnosis for which symptoms and treatment significantly overlap with chronic constipation.
- For additional information about IBS-C, please refer to the IBS pathway.
- The diagnosis of chronic constipation can often be made based on symptoms alone.
 - Given the mostly benign nature of constipation, diagnostic colonoscopy under age 50 is not recommended in the absence of alarm features.

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








<input type="checkbox"/>	Diagnostic criteria - Presence of at least 2 of these symptoms for at least 3 of the last 6 months <ul style="list-style-type: none"> • ≤ 3 spontaneous BMs per week • Straining during defecation • Sensation of anorectal blockage • Hard or lumpy stools (Bristol type 1-2) • Sensation of incomplete evacuation • Manual maneuvers to facilitate defecation
<input type="checkbox"/>	Detailed history
<input type="checkbox"/>	Detailed abdominal and anorectal examination
<input type="checkbox"/>	Absence of alarm features. If identified, recommend specialist consultation.
<input type="checkbox"/>	Identification and adjustment of medication and lifestyle factors that may cause or contribute to chronic constipation.
<input type="checkbox"/>	Baseline investigations completed showing no underlying medical condition as cause of constipation.
<input type="checkbox"/>	If symptoms resolve with management continue care in the Patient Medical Home. If not, recommend specialist consultation.

Expanded Details of Chronic Constipation Clinical Pathway

1. Diagnostic criteria

- The diagnosis of chronic constipation is based on more than stool frequency. It includes the presence of at least 2 of these symptoms for at least 3 of the last 6 months.
 - ≤ 3 spontaneous bowel movements per week
 - Stool form that is hard or lumpy for $>25\%$ of defecations (Bristol Stool Scale 1-2; see Figure 1)
 - Straining during $>25\%$ of defecations
 - Sensation of incomplete evacuation for $>25\%$ of defecations
 - Sensation of anorectal blockage for $>25\%$ of defecations
 - Manual maneuvers needed to facilitate $>25\%$ of defecations
- Eliciting a careful history and personal concerns are important to understand challenges and impact of the condition on the patient's quality of life.
- Chronic constipation can be classified as primary, secondary, or related to defecatory dysfunction.
 - **Primary** chronic constipation can be sub-classified into normal-colonic transit times ("idiopathic") and slow-colonic transit times.
 - Determining the difference does not influence management.
 - **Secondary** chronic constipation is the result of extrinsic factors such as underlying medical conditions or, more commonly, medications (see Table 1 and Table 2 below).
 - Examples of underlying systemic illness include: scleroderma (rare), neurologic causes (e.g. Parkinson's disease), metabolic causes (e.g. diabetes), mechanical obstruction (e.g. diverticular stricture, colon cancer).
 - Mechanical or structural causes of constipation (e.g. mass, stricture) are relatively rare in practice and can usually be discerned by history, red flags, blood work (anemia), or physical findings (mass) on abdominal and/or anorectal exams.
 - There is no long-term increase in prevalence of colorectal cancer in patients with chronic constipation. A sudden and persistent/progressive change in bowel habit that is refractory to treatment may warrant further investigation for colorectal cancer with colonoscopy. Stable chronic constipation of >1 year in duration is unlikely to be caused by colon cancer.
 - **Defecatory** dysfunction (aka pelvic floor dyssynergia) diagnosis can be challenging.
 - This condition may be related to discoordination of the pelvic floor muscles and their innervation, but is often multifactorial and incompletely understood.
 - Complete evaluation requires specialty input, with possible tests, including anal manometry and defecography.

Figure 1: Bristol Stool Form Scale²

Bristol Stool Form Scale			
Type 1		Separate hard lump, like nuts (hard to pass)	Severe constipation
Type 2		Sausage-shaped but lumpy	Mild constipation
Type 3		Like a sausage or snake, but with cracks on the surface	Normal
Type 4		Like a sausage or snake, smooth and soft	Normal
Type 5		Soft blobs with clear-cut edges (passed easily)	Lacking fibre
Type 6		Fluffy pieces with ragged edges, a mushy stool	Mild diarrhea
Type 7		Watery, no solid pieces; entirely liquid	Severe diarrhea

2. Key history

- Patient history should include:
 - Duration and progression of symptoms (longstanding and stable vs. more recent onset and worsening) - the trend is key
 - Frequency of bowel movements
 - Associated symptoms of abdominal pain, bloating, and/or distention
 - Precipitating events such as changes in diet, fluid intake, travel, physical activity, and/or medications introduced around symptom onset
 - Laxatives or other agents tried or used in the past. Noting type, duration, and combination of agents helps discern undertreated chronic constipation from treatment resistant cases.
 - Factors that may indicate defecatory dysfunction such as:
 - History of traumatic perineal injury (e.g. traumatic vaginal delivery, significant perineal tears, episiotomy, assault)
 - A persistent and severe sense of incomplete evacuation or sense of “blockage” at the outlet
 - Having to rotate or “wiggle” on the toilet in order to pass stool

3. Is it IBS-C?

- If the patient assessment identifies with predominant symptoms of pain and/or bloating, please refer to the IBS pathway.

4. Physical examination

- **Abdomen:** noting distention, focal discomfort, palpable mass, inguinal lymphadenopathy
- **Digital anorectal examination:** noting anal stricture, rectal mass or irregularity of anal canal, rectal prolapse

5. Alarm features (warranting consideration of referral for consultation/endoscopy)

- Family history of colorectal cancer in first-degree relative 5% over 6-12 months)
- Blood mixed in stool (beyond scant blood on the tissue paper)
- Suspicious mass or irregularity of anal canal on physical exam
- Iron deficiency anemia (see information on iron)

More Information on Black Stools and Iron Levels

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 **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 (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).

6. Optimize management of secondary causes

- Chronic constipation is often caused or compounded by secondary causes (see Table 1 and 2 below).
- Review medication history
 - Focus on those associated with time of onset of constipation
 - Don't forget to ask about OTC medications and supplements
- Chronic constipation in older adults can be challenging to assess and treat. Secondary causes are common in the elderly and may include:
 - Multiple medical conditions
 - Medications that predispose to chronic constipation
 - Limited physical activity
 - Less control of, or attention to, diet and fluid intake
 - Failure to maintain a bowel regimen or recognize the call to defecate
- Consider a multi-disciplinary approach to management, including pharmacist, dietitian, physiotherapist, nursing, and/or geriatric resources, as appropriate and available.

MEDICATIONS TO CONSIDER AS SECONDARY CAUSES

Antacids	
Anticholinergics	Antihistamines (diphenhydramine), antispasmodics (scopolamine), antidepressants (e.g. TCAs)
Anticonvulsants	Phenytoin
Anti-diarrheal agents	Loperamide, Lomotil
Antiemetics	5HT3 Antagonists (e.g. Ondansetron)
Antihypertensives	Calcium channel blockers, diuretics, alpha2 agonists (e.g. Clonidine)
Antiparkinsonian agents	Levodopa, carbidopa, amantadine, benzotropine, trihexyphenidyl
Antipsychotics	Clozapine, Quetiapine, Olanzapine
Bile acid sequestrants	Cholestyramine, colestipol
Bisphosphonates	Zoledronic acid
Iron and calcium supplements	
NSAIDs	
Opioids	
Vinca alkaloids	Vincristine

MEDICAL CONDITIONS / PHYSIOLOGICAL STATES TO CONSIDER AS SECONDARY CAUSES

Anorexia nervosa	Hypothyroidism
Autonomic neuropathy	Lupus
Cerebrovascular disease	Muscular dystrophies
Cognitive impairment/ stroke	Multiple sclerosis
Depression	Obesity
Diabetes mellitus	Parkinson's disease
Hypercalcemia and hypocalcemia	Pregnancy
Hyperparathyroidism	Renal dysfunction
Hypomagnesemia and hypokalemia	

7. Baseline investigations

- There is little evidence to support routine investigations for chronic constipation
- Patient history, medication review, and physical examination should guide the use of selected laboratory tests, particularly in the presence of new symptoms or alarm features.
 - CBC should be tested, if not performed recently.
 - Serum ferritin, transferrin saturation, MCV should be ordered if iron deficiency anemia is suspected (see Iron Primer).
 - Consider glucose, creatinine, calcium/albumin, TSH, and/or a celiac screen for assessment of secondary causes.
 - An abdominal radiograph may be useful in elderly patients with episodic diarrhea and fecal incontinence to evaluate the possibility of severe constipation with overflow and reduce risk of erroneous prescription of antidiarrheals.

8. Management

- **Education, reassurance, and management of expectations**
 - Reassure patients that there is a wide range of what is considered to be a normal bowel function. A bowel movement ranging from 3 times daily to once every 2-3 days is considered within normal limits. Some variability of stool form and frequency can be expected. The Bristol Stool Scale can help to better quantify stool form; normal/ideal is considered to be type 3 and 4, most of the time.
 - Patients gain reassurance in knowing altered bowel function often improves with simple interventions.
 - Encourage patients to incorporate time for a bowel routine. Ignoring the urge for a bowel movement can cause the stool to become hard and dry, making it difficult to pass.
 - Patient adherence to principles of constipation treatment tends to be low, needing frequent monitoring, reinforcement, and encouragement.
 - The literature consistently demonstrates that most individuals with constipation do not require extensive investigations. Colonoscopy rarely helps to explain motility disorders and should be avoided in the absence of alarm features.
- **Fibre, fluid, and physical activity**
 - 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. It is also important to combine fluid and fibre, as increased fluid intake alone will only result in increased urination.

- The recommended total fibre for adults 19–50 years old is 38 g/day for men and 25 g/day for women and adults over 50 years old is 30 g/day for men and 21 g/day for women³. (see patient handout Manage Constipation)
- There are two types of fibre: soluble and insoluble
 - **Soluble** fibre holds water and can improve stool consistency.
 - **Insoluble** fibre improves the movement of food through the intestine, absorbing water into the system and promoting normal laxation.
- Consider fibre supplements, such as psyllium, inulin, methylcellulose, and wheat bran. Be mindful that fibre supplements can cause gas, cramps, and bloating, especially if introduced rapidly, and need adequate fluid to work effectively.
- Consuming approximately 3.0L (12.5 cups) of fluid for men and 2.0L (8.5 cups) of fluid for women each day is recommended for most adults. Women who are pregnant should consume 2.4L (10 cups) daily and women who are breastfeeding should consume 2.8L (12 cups) daily.
 - Increase dietary fibre and fluid intake gradually to minimize adverse associated effects such as bloating and flatulence, which may limit compliance.
- Physical activity improves defecation patterns and colonic transit time.
 - 20+ minutes of exercise almost daily, aiming for 150 min/week is recommended.
- Consider dietitian referral, particularly for patients who may need more complex plans such as diabetic, gluten-free, and low-FODMAPs diets.
- **Laxatives**
 - Bulk forming agents are synthetic polysaccharides or cellulose derivatives that absorb water in the gut to increase stool volume and mass. These are suggested as first-line laxatives.
 - All bulk forming agents should be taken with adequate fluids.
 - Osmotic agents are poorly absorbable or non-absorbable sugars that draw water into the bowel to loosen stool and increase frequency.
 - Polyethylene glycol (PEG) is also suggested as a first-line laxative.
 - Stimulant laxatives increase secretory and propulsive activity in the intestine by altering electrolyte transport in the gut mucosa.
 - They may be used as rescue therapy or as an adjunct to PEG, but can cause abdominal cramping and diarrhea.
 - Additionally, they are best used for limited duration as their long-term safety has not been established and can cause electrolyte disturbances (hypokalemia, hyponatremia).
 - Addition of secretagogues and promotility agents, which increase intestinal transit, are also an option, taken regularly or on a prn basis.
 - Surfactants soften stool by breaking surface tension on formed stool allowing water to penetrate, however their use is not evidence-based, so they have been taken off most formularies.
 - Many of these medications can be combined, particularly when the mechanisms of action differ, but may be synergistic. A graduated/layered approach is often successful (e.g. consider starting with fibre, then increasing fluid intake, then adding on an osmotic agent).
 - If not already done, consider a team approach, including dietitian and pharmacist involvement

Management of constipation is most successful when multiple approaches are instituted and/or combined (diet, fibre, exercise, and therapeutics medication). Similarly, the approach to medication often necessitates more than one agent/laxative, with the goal of titration to optimal effect (e.g. starting with fibre, adding an osmotic, titration of the osmotic, and, if no improvement, addition of a secretagogue, such as Constella®, where permitted). Addition of the secretagogue may require cessation of the osmotic, as diarrhea can result. The ‘art’ of management involves some trial and error.

Management failure is subjective; suggest at least 3-6 months of titrated, multipronged therapy, mixing and matching various approaches to improve quality of life and symptom spectrum. Advice via phone or email is welcome to support management.

TYPE	NAME	DESCRIPTION	RECOMMENDED DOSING
Bulk-forming	Psyllium (Metamucil)	<ul style="list-style-type: none"> Intermediate soluble and fermentable fibre has good laxative effect Common adverse effects include abdominal cramping, bloating, flatus, and has risk of hypersensitivity reaction 	Start with lower dose and titrate to effect, following product instructions
	Methylcellulose (Citrucel)	<ul style="list-style-type: none"> Insoluble, non-fermentable fibre Good laxative effect Onset of action: 12-72 hours. Common adverse effects include abdominal pain, abdominal cramping, and flatulence. Less bloating and flatulence than other agents. 	2 caplets OD-QID
	Calcium Polcarbophil (Prodiem)	<ul style="list-style-type: none"> Good laxative effect Onset of action: 12-72 hours Adverse effect noted is gastrointestinal fullness. Less risk of bloating and flatulence compared to other bulk-forming agents. 	2 caplets OD-QID
	Inulin (Benefibre)	<ul style="list-style-type: none"> Non-absorbed fermentable sugar Mild laxative effect Onset of action: 24-48 hours May cause bloating, pain, or flatulence 	1-2 tsp OD-TID
Osmotic	Polyethylene glycol (PEG 3350) (Lax-A-Day®, RestoraLAX®, PEGalax®, Relaxa®)	<ul style="list-style-type: none"> Onset of action: 48-96 hours Studies suggest superior to lactulose Common adverse effects include flatulence, diarrhea, nausea, abdominal pain and bloating. Less abdominal discomfort compared to other laxative agents. 	Start with 17g at night dissolved in 250 mL of liquid; titrate to effect or max 34g/day.
	Magnesium hydroxide (Milk of Magnesia, various brands)	<ul style="list-style-type: none"> Reduces stomach acid and increases water in the intestinal tract Onset of action: 30 minutes-6 hours Common adverse effects include flatulence, diarrhea, nausea, abdominal pain and bloating. 	Follow instructions on product
	Lactulose	<ul style="list-style-type: none"> Onset of action: 24-48 hours May cause bloating, pain, or flatulence Common adverse effects include abdominal cramping, bloating, flatulence, diarrhea, nausea. 	15-30mL OD-TID
Stimulant	Bisacodyl (Dulcolax®)	<ul style="list-style-type: none"> Onset of action: oral - 6-12 hours, rectal - 0.25-1 hour (suppository), 5-20 minutes (enema). May cause abdominal cramping, nausea (both oral and rectal formats). 	Oral: 5-15 mg daily Rectal: 10 mg daily
	Bisacodyl (Dulcolax® The Magic Bullet®)	<ul style="list-style-type: none"> Onset of action: rectal - 0.25-1 hour (suppository) May cause abdominal cramping, nausea. 	10mg suppository PRN, max 30mg/day
	Sennosides (Senokot®)	<ul style="list-style-type: none"> Onset: 6-24 hours May cause abdominal cramps, diarrhea, and/or nausea. 	8.6 mg daily to 34.4 mg BID

Secretagogues	Linaclotide (Constella®)	<ul style="list-style-type: none"> • A guanylate cyclase agonist which increases chloride secretion from enterocytes and increases intestinal transit, plus modulates visceral sensitivity. • Minimal systemic absorption, thus reducing the likelihood of drug interactions. • Common adverse effects include diarrhea, headache, abdominal pain, flatulence, abdominal distension, upper respiratory tract infection. 	72-145 µg/day 30 minutes before breakfast
Prokinetics	Prucalopride (Resotran®)	<ul style="list-style-type: none"> • A prokinetic through serotonin agonism • Common adverse effects include headache, abdominal pain, nausea, diarrhea, dizziness, abdominal distension, flatulence 	2 mg/day 4 week trial

• Probiotics

- Creating and maintaining a healthy gut microflora can help improve normal gut functions. Data to support clinical effectiveness of probiotics for chronic constipation and IBS is limited and costs may be prohibitive. Decisions regarding patient use of probiotics for these indications should be shared between the patient and provider.
- Patients should be encouraged to select products that are licensed by Health Canada's Natural and Non-prescription Health Products Database. Information on probiotics can be found at http://www.probioticchart.ca/PBCAdultHealth.html?utm_source=adult_ind&utm_medium=civ&utm_campaign=CDN_CHART
- Probiotics listed below (see Table 4) may have benefits specific to chronic constipation (consider a one month trial if probiotics is management option agreed to).

BRAND NAME	PROBIOTIC STRAIN	FORM/ PLAIN LANGUAGE	FORM	LIVE BACTERIAL/DOSE	NUMBER OF DOSES PER DAY
Activia	B. (animalis) lactis CNCM I-2494	Yogurt drink	Fermented milk liquid	1 billion/serving (100mL)	1 serving daily (up to 2 servings daily)
BioGaia Protects Chew tabs	L. Reuteri DSM 17938	Chew tab	Chewable tablet	100 million/tablet	1 tablet twice daily
Visbiome (VSL#3)	L. acidophilus SD5212 L. casei SD5218 L. bulgaricus SD5210 L. plantarum SD5209 B. longum SD5219 B. infantis SD5220 B. breve SD5206 S. thermophilus SD5207	Powder	Sachet	450 billion/sachet	Studies were with 2/day (1-4 sachets daily recommended)

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 Constipation

1. What is Chronic Constipation?

- Chronic constipation means constipation that lasts for a long time (months or years) or keeps coming back over a long period of time.
- It can have many causes.
- Many people will have symptoms of chronic constipation at some point in their lives.
- Chronic constipation is usually cared for by healthcare provider(s) in your family doctor's office.

2. What is the chronic constipation pathway?

- It is a map for you and your healthcare provider(s) to follow. It makes sure the care you are receiving for chronic constipation is safe and effective to manage your symptoms.
- You and your healthcare provider(s) may modify the pathway to best suit your healthcare needs.
- If symptoms cannot be managed over time, you and your healthcare provider(s) may decide a referral to a specialist would be helpful.

3. Check your symptoms

Do you have 2 or more of the following symptoms for at least 3 of the last 6 months?

- Less than 3 stools per week
- Usually stool is hard or lumpy
- Straining during bowel movements
- Feel like you are unable to get all your stool out
- Feel like something is blocking your stool from coming out

4. Make lifestyle changes to manage symptoms

- Make time in your day for bowel movements; don't ignore the urge
- Make sure you get plenty of fluids daily
- Increase your fibre intake
- 20+ minutes of physical activity almost daily, aiming for 150 minutes/week
- Once you find something that works for you, stick with it

5. Tests that may be done

- Blood tests
- Other tests are rarely needed

6. Medicine that may be tried

- Various options can be used to promote bowel movements and improve your symptoms

7. Tell your healthcare provider if you have these symptoms:

- Family history of colon cancer
- Sudden change in bowel habits
- Stool with blood in it
- Unintended weight loss

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 *search Constipation
- Dietician services <https://www.healthlinkbc.ca/health-services/healthlink-bc-811-services/dietitian-services>
- More Information <https://pathwaysbc-production-content-item-documents.s3.amazonaws.com/documents/209/original/constipation.pdf?1353461798>
- Health Link BC <https://www.healthlinkbc.ca/healthy-eating-physical-activity/conditions/digestive/fibre-and-your-health>

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