

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, check out this short video.

GERD PATHWAY PRIMER

- The reflux of gastric contents into the esophagus is a normal physiological phenomenon.
 - Reflux is deemed pathological when it causes esophageal injury or produces symptoms that are troublesome to the patient (typically heartburn and/or regurgitation). This is a condition known as gastroesophageal reflux disease (GERD).
- A diagnosis of GERD can be made in patients with any of the clinical symptoms described above (without alarm features). Generally, no investigations are required as part of the initial workup.
- Treatment at the primary care level is focused on lifestyle, smoking cessation, dietary modifications to avoid GERD triggers and achieve a healthy body weight, and optimal use of proton pump inhibitors (PPI), if needed.
- Screening for *H. pylori* is not recommended in GERD. Most patients with GERD do not have *H. pylori* and will have improvement or resolution of symptoms through lifestyle and dietary modifications or when treated with a PPI or H₂RA.
- Endoscopy is warranted in patients presenting with dysphagia or other alarm features and in those refractory to adequate initial and optimized PPI treatments. Esophageal pH or impedance-pH reflux monitoring studies are sometimes arranged by GI after endoscopy.
- GERD can be complicated by Barrett's esophagus, esophageal stricture, and, rarely, esophageal cancer.
- To learn more about deprescribing PPIs, refer to the six vignettes in the Provider Resources section.

Checklist to guide in-clinic review of your patient with GERD		
	Diagnostic criteria: Predominant heartburn +/- regurgitation.	
	Confirm absence of alarm features (see algorithm Box 3).	
If alarm features are identified, refer for specialist consultation.		
	Consider screening for Barrett's esophagus in males with chronic (> 10 years) and/or frequent (weekly or more) symptoms of GERD, but only if at least two risk factors are present (see algorithm Box 4). If appropriate, consider specialist consultation.	
	Identification and adjustment of medication and lifestyle factors that may cause or contribute to GERD.	
	If unsatisfactory response to management and / or inclusion of pharmacologic therapy (see algorithm Box 6), consider using an advice service before referring. Otherwise, continue care in the Patient Medical Home.	

EXPANDED DETAILS

1. Suspected GERD

- A diagnosis of GERD can be made in patients with predominant symptoms of heartburn and/or regurgitation.
- In some patients, GERD has a wider spectrum of symptoms including chest pain, dysphagia, globus sensation, odynophagia, nausea, and water brash.
- If patients with suspected GERD have chest pain as a dominant feature, cardiac causes should first be excluded. GERD treatment can be started while doing cardiac investigations.



2. Is it dyspepsia?

• If the patient's predominant symptom is epigastric pain and/or upper abdominal bloating, refer to the <u>Dyspepsia pathway</u>.

3. Alarm features

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

- Unintended weight loss (> 5% over 6-12 months)
- Progressive dysphagia
- Odynophagia
- Persistent vomiting (not associated with cannabis use)
- Black stool or blood in vomit (see Primer on Black Stool). If yes, do CBC, INR, and BUN as part of referral.
- Iron deficiency anemia (see Iron Primer)
- Abdominal mass

4. Consider need to screen for Barrett's esophagus

- Males with chronic (> 10 years) and/or frequent (weekly or more) symptoms of GERD may be considered for a referral for screening for Barrett's esophagus, but **only** if at least two risk factors are present¹:
 - Age > 50 years
 - o Caucasian
 - Presence of central obesity (waist circumference > 102 cm/40" or waist-hip ratio > 0.9)
 - Current or history of smoking
 - o Confirmed family history (first degree) of Barrett's esophagus or esophageal cancer
- Females with chronic GERD have a substantially lower risk of esophageal cancer (when compared with males), and therefore screening for Barrett's esophagus in females is not recommended¹. Screening could be considered in individual cases as determined by the presence of multiple risk factors as per above.
 - For females, central obesity = waist circumference > 88 cm/35" or waist-hip ratio > 0.8)
- These screening guidelines are based on the consensus opinions of subject matter experts after critical review of the available literature. Due to a lack of quality study data, Barrett's screening has long been an area of controversy with some groups recommending against any screening and others advocating for a graded approach as reflected in this guiding document.
- Before screening is performed, the overall life expectancy of the patient should be considered, and subsequent implications, such as the need for periodic endoscopic surveillance and potential therapy, should be discussed with the patient.

5. Non-pharmacological therapy (see Patient Resources)

- Smoking cessation is essential.
- Weight loss in patients who are overweight or who have recently gained weight (even if at a normal BMI).
- Elimination of food and drink triggers including alcohol, caffeine, carbonated beverages, chocolate, mint, and spicy/fatty/acidic foods, is reasonable but is not supported by clear evidence of physiological or clinical improvement of GERD.
- Avoid meals three hours before bedtime for patients with nocturnal GERD.
- Consider elevating the head of bed 4-6 inches using blocks or foam wedges. An extra pillow for sleeping is not sufficient.



¹ Shaheen, N. J., Falk, G. W., Iyer, P. G., & Gerson, L. B. (2016). ACG clinical guideline: diagnosis and management of Barrett's esophagus. *Official journal of the American College of Gastroenterology ACG*, *111*(1), 30-50.

6. Pharmacological therapy

	Treatment Options
	• Evidence: may improve GERD symptoms, but are less effective than PPIs. The relief of GERD symptoms with H ₂ RAs appears similar to antacids, but the duration of effect is longer. ²
Histamine	• Place in therapy: If symptoms are mild and infrequent (< 2 times per week), H ₂ RAs may provide rapid on-demand relief of heartburn and avoid prematurely committing some patients to long-term use of PPI.
H ₂ -receptor antagonists (H ₂ RAs)	• Consider addition to daytime PPI therapy in selected patients with objective evidence of nighttime reflux, if needed.
	• Mechanism of action : Reduce gastric acid by blocking histamine receptors, which reversibly inhibit the action of the proton pump and prevents the movement of hydrogen ions into the stomach.
	• Efficacy of H ₂ RAs may be limited by tachyphylaxis after several weeks. ³
	Available agents: Ranitidine, Famotidine.
	• Evidence: may provide short-term relief from heartburn, but may not provide prolonged symptom relief or prevent GERD complications. ³
	• Place in therapy: Relief of heartburn occurs in approximately 20% of patients and the esophagus is protected from gastric contents for roughly 1.5 hours.
Antacids	• Adverse effects: Magnesium containing salts can cause diarrhea. Calcium containing salts can cause constipation. Caution in those with renal impairment.
	Available antacids (in order of acid-neutralizing potency): ²
	 Calcium salts (most potent) - Rolaids[®], Tums[®]
	 Sodium bicarbonate - Alka-Seltzer[®]
	 Magnesium salts - milk of magnesia
	 Aluminum salts (least potent) - Gaviscon[®]
	• Evidence: PPI therapy is 1 st line treatment for GERD if patient is experiencing symptoms ≥ 2 times per week. ³
	• Mechanism of action: Suppresses gastric acid secretion by inhibiting the parietal cell H ⁺ /K ⁺ ATP pump.
	• Initial PPI therapy should be once daily, 30 minutes before breakfast on an empty stomach.
	• If there is inadequate response after 8 weeks, step up to BID dosing, or switch to a different PPI.
Droton nump	• If symptoms are controlled, it is advisable for most patients to titrate the PPI down to the lowest effective dose and attempt once yearly to taper or stop PPI use.
Proton pump inhibitors (PPIs)	 Note: patients with Barrett's esophagus require lifetime daily PPI, regardless of whether symptoms continue.
	• PPI deprescribing resources are available on the <u>Digestive Health Strategic Clinical Network website</u> .
	There are no major differences in efficacy between PPIs.
	Commonly prescribed agents:
	 Rabeprazole - 10 mg Pantoprazole - 40 mg Dexlansoprazole - 30 mg
	 ○ Omeprazole - 20 mg ○ Lansoprazole - 30 mg ○ Esomeprazole - 40 mg
	See <u>Table 1</u> for PPI pricing.

² CPS [Internet]. Ottawa (ON): Canadian Pharmacists Association; c2015 [cited 2021 June 11]. Available from: <u>http://www.e-therapeutics.ca.</u>



³ DynaMed. Gastroesophageal Reflux Disease (GERD). EBSCO Information Services. Accessed June 11, 2021. <u>https://www-dynamed-com.ahs.idm.oclc.org/condition/gastroesophageal-reflux-disease-gerd</u>

	 It is estimated that 1/3 of patients with GERD will not adequately respond to PPI. Factors that predict PPI failure include obesity, poor adherence to PPI treatment, and psychological factors.
	 Patient non-adherence to treatment with PPI is common. Confirm that the patient has taken the intended dose of PPI daily, 30 minutes before breakfast.
Proton pump inhibitors (PPIs) cont'd	 Patients with persistent, troublesome GERD symptoms, despite optimized use of PPI, should be referred for diagnostic evaluation (endoscopy ± pH/impedance reflux monitoring) to discern GERD from non-GERD etiologies.
	 There is weak/unclear evidence about familial association for esophageal or gastric cancer. If there is family history (first degree relative), a lower threshold for referral of patients unresponsive to therapy may be warranted.

Table 1 – PPI Pricing

PPI	Dosage	Estimated 90-day cost (2021) ⁴	Coverage
Rabeprazole	10 mg	\$20	Covered by Blue Cross/non-insured health benefits
Pantoprazole	4 0mg	\$35	Covered by Blue Cross/non-insured health benefits
Omeprazole	20 mg	\$35	Covered by Blue Cross/non-insured health benefits
Lansoprazole	30 mg	\$60	Covered by Blue Cross/non-insured health benefits
Dexlansoprazole	30 mg	\$250	Not covered by Blue Cross/non-insured health benefits
Esomeprazole	40 mg	\$210	Not covered by Blue Cross/non-insured health benefits

7. When to refer for consultation and/or endoscopy

- If alarm features are identified
- If positive screening for Barrett's esophagus
- If unsatisfactory response to pharmacologic therapy
 - Note: Consider using an advice service before referring
- 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 recorded⁵.

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. Another option is to seek specialist advice (see <u>Advice Options</u>) to convey your concerns.



⁴ Maximum Allowable Cost (MAC) pricing exists for PPIs paid for by Alberta government sponsored drug programs. The drug plan will only pay the cost of rabeprazole 10 mg for lansoprazole 15 mg, omeprazole 10 mg and rabeprazole 10 mg, or the cost of pantoprazole magnesium 40 mg for all other covered PPIs. The patient will have to pay out of pocket for any difference between that price and the price of the prescribed PPI. See link for details.

⁵ 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.

PRIMERS

Primer on Black Stool

- Possible causes of black stool
 - Upper GI bleeding
 - Slow right-sided colonic bleeding
 - Epistaxis or hemoptysis with swallowed blood
- Melena is dark/black, sticky, tarry, and has a distinct odour
- Patient history should include:
 - Any prior GI bleeds or ulcer disease
 - Taking ASA, NSAIDs, anticoagulants, antiplatelets, Pepto Bismol, SSRIs, or iron supplements
 - o Significant consumption of black licorice
 - Significant alcohol history or hepatitis risk factors
 - Any other signs of bleeding (e.g. coffee ground emesis, hematemesis, hematochezia, or bright red blood per rectum)
 - Any dysphagia, abdominal pain, change in bowel movements, constitutional symptoms or signs/symptoms of significant blood loss
- Physical exam should include vitals (including postural if worried about GI bleeding) and a digital rectal exam for direct visualization of the stool to confirm, in addition to the remainder of the exam.
- Initial labs to consider include CBC, BUN (may be elevated with upper GI bleeding), INR.
- If the patient is actively bleeding, suggest calling GI on call and/or the ED for assessment, possible resuscitation, and possible endoscopic procedure.

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 below the lower limit of normal (lower limit of normal is 30 µg/L for men and 20 µg/L for women), 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 (< 16%) demonstrate low iron stores in conjunction with a ferritin < 100 μg/L.

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).



BACKGROUND

About this Pathway

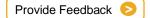
- Digestive health primary care pathways were originally developed in 2015 as part of the Calgary Zone's Specialist LINK initiative. They were co-developed by the Department of Gastroenterology and the Calgary Zone's specialty integration group, which includes medical leadership and staff from Calgary 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.

Authors & Conflict of Interest Declaration

This pathway was reviewed and revised under the auspices of the DHSCN in 2019, by a multi-disciplinary team led by family physicians and gastroenterologists. For more information, contact the DHSCN at Digestivehealth.SCN@ahs.ca.

Pathway Feedback and 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, however, we welcome feedback at any time. Click on the Provide Feedback button to provide your feedback



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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 health care professional. It is expected that all users will seek advice of other appropriately qualified and regulated health care providers with any issues transcending their specific knowledge, scope of regulated practice or professional competence.

PROVIDER RESOURCES

Advice Options

Non-urgent advice is available to support family physicians.

 Non-urgent gastroenterology electronic advice is available across the province via Alberta Netcare eReferral eConsult (responses are received within five calendar days). Visit the <u>eReferral Learning</u> <u>Centre</u> for more information.



- Non-urgent telephone advice connects family physicians and specialists in real time via a tele-advice line. Family physicians can request non-urgent advice from a gastroenterologist:
 - In the Calgary Zone at <u>specialistlink.ca</u> or by calling 403-910-2551. This service is available from 8:00 a.m. to 5:00 p.m. Monday to Friday (excluding statutory holidays). Calls are returned within two (2) hours.
 - In the Edmonton and North Zones by calling 1-844-633-2263 or visiting <u>pcnconnectmd.com</u>. This service is available from 9:00 a.m. to 6:00 p.m. Monday to Thursday and from 9:00 a.m. to 4:00 p.m. Friday (excluding statutory holidays and Christmas break). Calls are returned within two (2) business days.

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Resources for appropriate PPI prescribing. Alberta Health Services – Digestive Health Strategic Clinical Network website.

- PPI guideline <u>ahs.ca/assets/about/scn/ahs-scn-dh-ppi-guideline.pdf</u>
- PPI co-decision making tool ahs.ca/assets/about/scn/ahs-scn-dh-ppi-decision-tool.pdf
- PPI patient poster ahs.ca/assets/about/scn/ahs-scn-dh-ppi-patient-poster.pdf

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



	 Predicting Dyspepsia Patient Resources to PPI - youtu.be/XT0MxefpNYQ
	 Clinical Diagnosis of GERD - <u>youtu.be/d_M8_S8lcyl</u>
PPI Depresribing Vignettes	 How to Know if PPI is working - <u>youtu.be/tttOBXPLR7U</u>
	 GERD Patients and PPI Doses - <u>youtu.be/u15sPirE4EE</u>
	 How is Dyspepsia Defined? - <u>youtu.be/F0E5rce-NSM</u>
	 Addressing Return of Symptoms - <u>youtu.be/9008u9kyyDU</u>



PATIENT RESOURCES

Information

Description	Website
General information on GERD (MyHealth.Alberta.ca)	myhealth.alberta.ca/health/pages/conditions.aspx?Hwid=hw99177
General information on GERD (Canadian Digestive Health Foundation)	cdhf.ca/digestive-disorders/gerd/what-is-gastroesophageal-reflux-disease-gerd/
General information on GERD (UpToDate® – <i>Beyond the Basics</i> Patient information)	uptodate.com/contents/search Search: GERD
General information on weight management (MyHealth.Alberta.ca)	myhealth.alberta.ca/health/healthy-living/pages/conditions.aspx?Hwid=center1038
Online learning module on weight management (MyHealth.Alberta.ca)	myhealth.alberta.ca/learning/modules/Weight-Management
Nutrition Education Material	ahs.ca/NutritionResources

Services available

Description	Website
Services for patients with chronic conditions (Alberta Healthy Living Program - AHS)	ahs.ca/ahlp
Supports to quit smoking (Alberta Quits)	albertaquits.ca
Supports for working towards healthy lifestyle goals and weight management (Weight Management – AHS)	ahs.ca/info/Page15163.aspx
	• Visit <u>Alberta Referral Directory</u> and search for nutrition counselling.
	 To learn more about programs and services offered in your zone, visit <u>Nutrition Services</u>.
Referral to a Registered Dietitian	 <u>Health Link</u> has Registered Dietitians available to answer nutrition questions. If a patient has nutrition-related questions, they can call 8-1-1 and ask to talk to a Dietitian.
	 Patients can also complete the Health Link Dietitian <u>Self-Referral</u> <u>Form</u>.

PATIENT PATHWAY

GERD patient pathway

