



Gas and Bloating—Controlling Emissions: A Case-Based Review for the Primary Care Provider

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CME Activity

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Abstract

The evaluation of the patient with gas and bloating can be complex and the treatment extremely challenging. In this article, a simplified approach to the history and relevant physical examination is presented and applied in a case-oriented manner, suitable for application in the primary care setting.

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Gas-related symptoms (GRSs) such as bloating, belching, and flatulence are common and are a consequence of an incompletely understood interaction between gastrointestinal (GI) motility and gas production.¹ Bloating can be defined as a sense of gassiness or a sense of being distended, whereas belching (also referred to as eructation) reflects the expulsion of excess gas from the esophagus or stomach and may or may not occur in association with bloating. Bloating

should be distinguished from abdominal distention, the latter being an objective increase in abdominal girth. Abdominal distension occurs in only 50% of patients who experience bloating.² Although occasional flatulence³ and belching after meals is not considered abnormal, these symptoms can be bothersome, particularly when they occur in excess.⁴ An important consideration is that the threshold for a patient to seek medical evaluation is affected by their perception of what is "normal."⁵ Although this

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is a useful factor to be aware of, a careful evaluation is required to ensure an organic disorder is not the underlying etiology.

These symptoms occur in both functional GI disorders, such as irritable bowel syndrome (IBS),¹ and in the general population.⁶ In a study⁷ of a random selection of the general US population, almost 1 in 3 respondents met Rome I criteria for functional bloating. Gas-related symptoms can markedly impair the health-related quality of life of affected patients.^{4,6} Despite the increasing number of promising pharmacotherapies and dietary interventions that may help alleviate these symptoms,^{8,9} an effective management strategy can be hard to elucidate, frustrating both patients and clinicians. In this review, we will present some key aspects of the history and physical examination that guide the further assessment and management of GRSs. We will then apply these concepts in 4 case scenarios describing commonly encountered clinical phenotypes.

A SIMPLIFIED 5-STEP APPROACH TO THE CLINICAL HISTORY

The initial approach to the patient with GRSs is to obtain a detailed history and perform a physical examination. We propose a simple 5-step approach to the clinical history, supplemented by key physical examination findings, which can facilitate the work-up.

Clarify the Predominant Symptom, as Well as Its Timing of Onset

The predominant symptom, be it belching or bloating, should be ascertained initially to help direct questioning. Next, the timing of the onset of symptoms relative to food ingestion should also be clarified. The onset of symptoms soon after eating suggests a gastric etiology, whereas delayed symptoms may suggest a small bowel origin. A simplified approach to the evaluation of the patient with GRSs is outlined in [Figure 1](#).

Perform a Thorough Dietary Evaluation

Primary care physicians should explore the patient's eating pattern and relationship of symptoms. The patient should be asked to describe how much and how frequently they eat. Eating large meals less frequently may contribute to postprandial discomfort. Eating meals quickly, without thorough chewing, and gulping food may contribute to GRSs.

Some patients may associate their symptoms with ingestion of foods associated with increased intestinal gas production, such as onions, beans, and legumes. Intolerance of food types containing lactose,¹⁰ gluten,¹¹ and fructose¹² may also be related to gas. The patient may have experienced GRSs improvement with prior dietary modification, and this should be pursued in the history.

The patient should be asked about consumption of large quantities of caffeine or carbonated drinks, as these can contribute to GRSs. Belching, in particular, can be associated with caffeine ingestion because of transient lower esophageal sphincter relaxation (TLESR).¹³

Artificial sweeteners, specifically sugar alcohols such as sorbitol, mannitol, and glycerol, promote gas production, and frequent use of such products should be sought in the clinical history. These are often contained in chewing gum, even if "sugar-free."

Ask About Associated GI Symptoms, Specifically Abdominal Pain, Diarrhea, Constipation, and Weight Loss

The coexistence of abdominal pain, alteration in bowel habit, and abdominal bloating suggests a potential diagnosis of IBS. However, many other conditions leading to GRSs may also cause abdominal pain.

The patient should be questioned with respect to the form and frequency of stool, as well as the ease of stool passage, as constipation can induce GRSs. The presence of incomplete evacuation of stool, straining with defecation, or manual removal of stool suggests a diagnosis of pelvic floor dysfunction. The presence of diarrhea should prompt consideration of small intestine bacterial overgrowth (SIBO) and celiac disease.

Weight loss history should always be sought in patients presenting with GI symptoms. Substantial weight loss raises concern for an underlying neoplasm or malabsorptive conditions, such as celiac disease. Patients with severely restricted caloric intake, sometimes due to dietary intolerance or even functional dyspepsia, may also report marked weight loss.

Review the Patient's Medications, and Enquire About Supplements

Medication review is necessary in all patients with chronic unexplained GI symptoms.

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