

## International Foundation for Functional Gastrointestinal Disorders

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# A Noisy Tummy: What Does it Mean?

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"Our digestions...going sacredly and silently right, that is the foundation of all poetry."

- G. K. Chesterton 1909

Most of the time, our gastrointestinal tract attracts little public attention provided that we appropriately fill and empty it at regular intervals. However, a noisy bowel may be, or seem to be, apparent to all within earshot. While seldom of medical importance, for some a rumbling, growling stomach can be a source of profound embarrassment. Picturesquely dubbed "borborygmi," bowel sounds seem loudest to the owner, who is sometimes mistakenly convinced they are obvious to all. Hence they feel embarrassment. However, most such noises are inaudible, and many people are unaware of them or at least unconcerned. In some persons, fear that their intestines may be heard by others hampers their social functioning. Such fear is usually the only important consequence of normally occurring tummy noises.

#### What Causes Bowel Sounds?

In order for the intestines to be heard, three conditions must be met: muscular contraction of the intestinal wall, and the presence within the intestines of both liquid and gas. When we are awake, our intestines rhythmically move as the walls contract and relax to mix food with secretions and move it haltingly along from mouth to anus. The occasional "peristaltic rush" may be heard as intestinal contents are moved some distance. It is important to separate borborygmi from other gaseous phenomena such as belching (See *Belching: is it Normal*? IFFGD Fact Sheet No. 511), bloating, and the passing of flatus. While these may occur in the same person, they are causally unrelated, and will not be discussed here.

Within the intestines, ingested fluids and solids are mixed with the daily secretion of about eight liters (two gallons) of enzyme-rich fluid, most of which is subsequently absorbed. However, fluid moving through a tube is silent – it is only when there is air in the pipes that we hear the plumbing. In the intestine ever-present gases originate from swallowed air and the release of hydrogen, carbon dioxide, and other gases by the bacterial fermentation of undigested food in the lower gut.

Even when inaudible to the intestines' owner, characteristic sounds may be listened to (auscultated) by a doctor or nurse using a stethoscope. While the noisy movement of fluid and gas occurs at all levels, the most audible sounds originate from the stomach.

## Medical Importance of a Noisy Bowel

Whether audible or not, bowel sounds in the absence of other significant symptoms are normal phenomena of no medical significance. Their harm is embarrassment, a social rather than a medical affliction. However, in certain medical circumstances, hyperactive or absent bowel sounds are abnormal.

*Hyperactive Bowel Sounds* – Bowel sounds are often noted by an examining physician to be hyperactive when the patient is experiencing diarrhea. The increased peristaltic movement of the intestines coupled with increased net intestinal accumulation of fluid and gas conspire to amplify the sounds of watery stool splashing through the gut. Certain malabsorption states are associated with exaggerated bowel sounds. For example, reduced small intestinal levels of the enzyme needed to digest the milk sugar lactose, permits that sugar to reach the colon intact where it is fermented by colon bacteria. These organisms release hydrogen and products that attract fluids into the gut and stimulate its contractions. Significant lactose intolerance is much less common than is popularly believed, particularly in those of European descent (See Chronic Diarrhea: Could it have an Everyday Cause? IFFGD Fact Sheet No. 150.) These amplify the three conditions that produce abdominal sounds: gut movement, gas, and fluid. Another example of malabsorption is that occurring with celiac disease.

A more serious instance of hyperactive bowel sounds occurs in incomplete mechanical obstruction of the gut. In this emergency situation, increased intestinal contractions attempt to force solids, liquids, and air through a narrowing of the intestine producing very loud sounds, often in high-pitched peristaltic episodes. When obstruction occurs, illness is obvious and the patient suffers severe abdominal pain and malaise.

While there are occasions where observers agree that a person's bowel sounds are hyperactive, the threshold of abnormality is indistinct. There is much individual variation, and even ingestion of a large amount of fluid can result in loud tummy gurgling. It is safe to say that noises emanating from an otherwise healthy tummy during a lull in a cocktail party are not the result of bowel obstruction. Moreover, borborygmi, however loud, are seldom a sign of disease in the absence of diarrhea or other symptoms and are a rare and unreliable sign of malabsorption.

Absent Bowel Sounds – While the intestines may be quiet during sleep and at certain times of the day, their complete absence during an attack of severe abdominal pain is a sign of a serious intra-abdominal event; an emergency requiring immediate admission to hospital and sometimes surgery. Examples of such uncommon events are a perforated duodenal ulcer or a ruptured colon diverticulum. The sudden abdominal pain marks the soiling of the abdominal (peritoneal) cavity. The ensuing acute peritonitis (infection of the lining of the abdominal cavity) shuts down all intestinal movements. The abdomen then becomes eerily quiet even when examined by stethoscope. The intestines also become quiet following abdominal surgery and the return of bowel sounds is an early and reliable sign of recovery.

### **Technology**

There have been attempts to refine the diagnostic efficiency of bowel sounds. Various listening devices record the amplitude, frequency, and location of the sounds, but add little to the examination of a skilled doctor. In the context of other symptoms such sound interpretations do not replace the need to consider more traditional and accurate examinations such as ultrasound and CT scan. For the ordinary noisy tummy unaccompanied by other clues, no tests are indicated.

#### What Can Be Done about a Noisy Bowel?

There is no specific treatment for borborygmi. They may accompany common disturbances of intestinal function such as dyspepsia or irritable bowel syndrome. If diarrhea is present, or malnutrition/malabsorption is suspected, a doctor should be consulted. Otherwise, most will have to grin and hear it.

Some promoted treatments for borborygmi may be harmful. The use of antibiotics to alter the abdominal flora is futile and potentially dangerous, allowing the growth of bacteria that may be very unfriendly. Probiotics (some kinds of "friendly" bacteria), are promoted for many abdominal afflictions, but there is no evidence that they will help here.

Diet may help if lactose intolerance is truly present, or if there is excessive ingestion of fructose or the artificial sweetener (and also laxative) sorbitol. These are commonly present in diet gums, candies, and preserves. Excessive amounts of these sugars (not just one stick of diet gum) may cause diarrhea, flatus, and increased intestinal noise.

While some believe that tummies should be seen and not heard, any expert will tell you that noise goes with the territory. But if, despite these explanations, you feel that your bowels' noises are interfering with your enjoyment of life, you should discuss the problem with your family doctor

#### Tip

Too much of certain sugars may cause a noisy tummy. Try reducing the amount of fructose and sorbitol that you eat.

- Fructose, naturally present in onions, artichokes, pears, and wheat, is also used as a sweetener in some soft drinks and fruit drinks.
- Sorbitol, found naturally in fruits, including apples, pears, peaches, and prunes, is also used as an artificial sweetener in many dietetic foods and sugar-free candies and gums.

#### Reference

*The Ulcer Story*. W. Grant Thompson. Perseus Press. 1996 Chapter 20.

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