



## Bellyaches in Children

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Every child complains about a bellyache now and then. How can a parent tell what is wrong, and if it is dangerous? It is not always easy. Children less than 5 or 6 years of age often do not have the words to describe their sensations accurately. Toddlers do not separate emotional from physical distress. The young child's bellyache may represent hunger, fatigue, or a need to use the bathroom. School age children may wake with bellyaches on school days. Are they sick, or just anxious about an important test? What about when the bellyache comes at a birthday party? Some bellyaches come from too much excitement or worry. How can parents learn when to be concerned?

### **There are clues to help to decide if the bellyache is a medical problem:**

**Intensity.** If the child is smiling and standing comfortably as they report the bellyache, the pain is mild. If the child is grimacing and frowning, and has stopped normal activities, the pain is moderate. If the child is lying down, legs flexed and crying, the pain is severe.

**Duration.** If the pain lasts less than 5 minutes, it is unlikely to be anything to worry about, even if it comes and goes for many days.

**Chronicity.** Chronic or recurrent bellyaches are common, affecting more than 10% of school-aged children, and more than 10% of teens and adults. Most chronic bellyaches are *functional*, meaning that the pain is real, but is not due to any disease. The pain is due to an altered way in which the body is working, not due to a disease characterized by tissue damage, inflammation, or a structural abnormality. Like shivering in the cold, or a runner's leg cramp, functional abdominal pain is a symptom that falls within the expected range of behaviors for a person's body.

**Position.** The closer the pain is to the bellybutton, the more likely it is functional.

**The Rule of Ones.** The Rule of Ones states that if a person has only one symptom, that symptom is probably functional. If there is more than one symptom, it may be best to see your doctor. For example, bellyache alone—probably functional. Bellyache and fever, bellyache and vomiting, bellyache and weight loss—may not be functional, see your doctor.

**Loss of ability to participate in routine activities.** If chronic or recurrent bellyaches prevent a child from doing their usual activities like eating, going to school, playing with friends, or sleeping through the night, then it is time to see your doctor.

A functional disorder is characterized by symptoms that are caused by an altered way in which the body is working rather than a disease characterized by tissue damage or inflammation. There are several pediatric functional gastrointestinal disorders associated with abdominal pain. For most of the functional disorders no medical tests are necessary or desirable, because there is no test that confirms the functional gastrointestinal disorders. The diagnosis for each pediatric functional gastrointestinal disorder depends upon meeting symptom-based criteria, in the absence of warning signs of disease like fevers, weight loss, or bloody bowel movements. Children old enough to give accurate pain histories may have the same functional abdominal pain disorders as adults. In both children and adults functional gastrointestinal disorders are more common than gastrointestinal disease.

See your doctor if your child exhibits warning signs like: fever, weight loss, blood in the stools, waking in the night with pain, difficulty swallowing, or pain with urination.

### **Rome IV diagnostic criteria for pediatric functional disorders associated with bellyaches:**

#### **Functional dyspepsia**

Must include one or more of the following bothersome symptoms at least 4 times a month for at least 2 months:

- 1) An uncomfortable fullness after eating
- 2) Feeling full after eating a small portion
- 3) Pain or a burning sensation at the top of the abdomen, not associated with a bowel movement
- 4) After appropriate evaluation, the symptoms cannot be explained by another medical condition

### ***Irritable bowel syndrome (IBS)***

Must include all of these features for at least 2 months:

- 1) Abdominal pain at least 4 days a month associated with one or more of these features:
  - a) Related to bowel movements
  - b) A change in bowel movement frequency
  - c) A change in bowel movement form (appearance)
- 2) In children with abdominal pain and constipation, the pain does not disappear when the constipation gets better.
- 3) After appropriate evaluation the symptoms cannot be explained by another medical condition

### ***Abdominal migraine***

Must include all of these features occurring at least twice:

- 1) Paroxysmal episodes of intense, acute pain around the bellybutton or all over the abdomen lasting 1 hour or more
- 2) Episodes are separated by weeks to months
- 3) The pain is incapacitating and interferes with normal activities
- 4) Repeated pattern and symptoms in the individual patient
- 5) The pain is associated with two or more of these features:
  - a) Headache
  - b) Sensitivity of the eyes to light
  - c) Vomiting
  - d) Loss of appetite
  - e) Nausea
  - f) Pallor.
- 6) After appropriate evaluation the symptoms cannot be explained by another medical condition

### ***Functional abdominal pain—not otherwise specified***

Must include all these features at least four times a month for at least 2 months before diagnosis:

- 1) Episodic or continuous abdominal pain that does not occur exclusively during specific events like eating, having a bowel movement, exercise, or menses
- 2) Insufficient criteria for other functional disorders, such as functional dyspepsia, IBS, and abdominal migraine
- 3) After appropriate evaluation the pain cannot be fully explained by another medical condition

### ***Functional constipation***

Must include 2 or more criteria for a month with insufficient criteria for IBS:

- 1) Two or fewer bowel movements per week
- 2) Stool retention, purposeful attempts to avoid passing stool
- 3) Hard or painful bowel movements
- 4) A large mass of stool in the rectum
- 5) Large stools that may obstruct the toilet
- 6) At least 1 episode of stool incontinence per week in a child with developmental age of at least 4 years

Accompanying symptoms may include irritability, abdominal cramps, and decreased appetite. These symptoms disappear immediately following passage of a large stool. [For more details about functional fecal retention, see IFFGD publication No. 810, *Childhood Defecation Disorders: Constipation and Soiling.*]

If your child meets the criteria for a functional gastrointestinal disorder, your physician may choose to do some tests to confirm the absence of disease, such as upper endoscopy for dyspepsia, or blood tests for celiac disease or inflammatory bowel disease.

Many children have bellyaches that do not meet the criteria for a functional gastrointestinal disorder, often because the symptoms are not as frequent, or have not been going on for as long as required for the symptom-based diagnosis.

Some children with functional abdominal pains get pale skin or blotchy skin, dizziness or faintness, or fatigue when they get a bellyache. These are signs of autonomic arousal, the chemical and hormone response of the body to the stress of a bellyache. Some children get headaches or body aches at the same time they get bellyaches.

If your child seems to have the symptoms that qualify as a functional gastrointestinal disorder, it is a good idea to learn more about these disorders by visiting your child's physician. Communication is a key to effective management of functional gastrointestinal disorders. No one knows your child as well as you do, but the physician knows about illness. Effective communication helps ensure that your child's problems are understood and treated properly. The treatment goal with functional bellyaches is to relieve suffering.

### **Here are answers to some common questions about bellyaches:**

**Question:** How can I tell if my child is faking a bellyache?

**Answer:** Assume the bellyache is real.

**Q:** How is a functional gastrointestinal disorder different from a disease?

**A:** In this context, pain associated with disease is caused by anatomic abnormalities, inflammation, and/or tissue destruction. Functional pains are caused by an altered way in which the body is working.

**Q:** If my child has symptoms, but the tests are negative, does it mean it is all in my child's head?

**A:** No. Functional pains are influenced by a combination of mental (mind) and medical (physical) factors—a brain-gut interaction. The gastrointestinal tract is connected to the brain by millions of nerves, and each system influences the other.

**Q:** If symptoms persist, does my child need more tests?

**A:** The parent who asks this question either does not accept the concept of functional disorders, has not accepted their child's diagnosis, or has fears related to the child's health that have not yet been addressed. If the parent has taken the child to other physicians who may not have come to a symptom-based diagnosis, trust in a functional diagnosis might not come easily. A knowledgeable physician can diagnose a functional gastrointestinal disorder by careful review of the child's symptoms and a physical examination. If any selected diagnostic procedures are performed, they are often limited to a few basic tests. Functional gastrointestinal disorders are not dangerous, and we know how to manage them. Talk to your physician if you have questions or if you observe a change in symptoms.

**Q:** How can you be sure there is no disease?

**A:** Worries about the child's health are normal. Repeated explanations may be necessary because the concept of functional symptoms may be new. There are no tests for diagnosis of a functional gastrointestinal disorder, but there are symptom-based diagnostic criteria. Functional

gastrointestinal disorders are common; diseases are unusual. If your child's symptoms meet the diagnostic criteria for a functional gastrointestinal disorder, stop worrying that it is something else. Ask your physician to reevaluate the child promptly if the symptoms change.

**Q:** How do you treat the pain in functional disorders?

**A:** Conceptually, functional abdominal pain may be treated 1) with education, 2) from the top down, 3) from the bottom up, or 4) with any combination of these.

Sometimes getting a diagnosis and learning about a functional disorder is enough to reduce the worries a family has about the health of their child. All parents ask the same four questions when they see a clinician: 1) What is wrong? 2) Is it dangerous? 3) Will it go away? 4) What can we do about it?

In the case of a functional bellyache the answers are: 1) It's a functional bellyache, 2) It is not dangerous, 3) It comes and goes, 4) There are several ways to treat it. If the answers satisfy and the child is not disabled by pain in any way, further treatment may be unnecessary. The goal is to help the child cope with symptoms so that they don't miss daily obligations and activities.

*Top down treatment*—Children can learn to use the thinking parts of their brains to reduce pain. Research has proven that cognitive behavioral therapy (CBT) and hypnosis are just as good as medicine in relieving functional gastrointestinal symptoms. CBT is a series of lessons that teach a child (or adult) how to use the thinking part of their brain to reduce pain from functional disorders. Usually a psychologist teaches these lessons for an hour each week for about ten weeks. It is the child's responsibility to practice the techniques at home every day, so CBT requires active participation in the treatment.

A second top-down treatment is hypnosis. In carefully designed research, hypnosis was as good as medicine in treating IBS after a few weeks. If these top-down methods are available, they have several advantages: 1) They teach the child the skills needed to reduce pain without medication, 2) They add to the child's skills at coping with other kinds of adversity and stress, like taking tests at school or hiking up a mountain, and 3) If practiced regularly, the skills are a permanent improvement in coping with life's stress.

*Bottom up treatment*—Children may benefit from small doses of chronic pain medicines, or medicine to take away acid or intestinal muscle spasm. These medications are safe and effective in most, but not all, children.

Choice of treatment(s) depends on how disabling the pain is to daily activities, and the availability of the treatments. If the pain does not disrupt daily activities, then education and reassurance may be all that is needed. If pain is changing the child's behavior or disrupting the family, than CBT, hypnosis, or medicine may be advisable. If a functional bellyache prevents school attendance or normal eating, than a combination of top down, bottom up treatments may work best.

**Q:** Is dietary fiber important?

**A:** In large population-based studies, fiber seems to have some long-term advantages. In the short term, increasing fiber in your child's diet may not be worth the fuss. In toddlers, getting them to eat anything regularly becomes a struggle, because it is developmentally appropriate for them to be testing their ability to control their environment. The same thing goes for adolescents. In addition, fiber is often associated with an increase in intestinal gas production, and may increase abdominal cramps and flatulence. Flatulence is especially embarrassing to the school-age child. Soft stools and painless defecation are most often achieved with daily oral polyethylene glycol, as directed by your child's physician.

**Q:** Is diet an important factor?

**A:** Diet is very important, but each child is different. It is important to eat a well-balanced diet. If it is possible to identify foods that trigger symptoms, those foods can be reduced or eliminated from the diet. Many people with IBS – working with a knowledgeable dietitian – improve on a low FODMAP diet. FODMAP stands for “**F**ermentable **O**ligo-saccharides, **D**i-saccharides, **M**ono-saccharides, **A**nd **P**olyols.” Present in many foods, FODMAPs are small molecules that are converted to gas by bacteria in the intestines.

**Q:** How do you know when a child who does not talk yet has a bellyache?

**A:** Chronic pain makes a child change behavior. Infants and toddlers will not eat when it hurts to eat or they fear it

will hurt to eat. Infants and toddlers will stop pooping if they experience pain when they poop. Refusal to eat and refusal to poop are two symptoms that indicate it is time for a visit to the doctor. Crying or fussiness alone may be an expression of physical or emotional distress.

**Q:** Should I keep my child home for an early morning bellyache?

**A:** No. If there are no warning signs of disease it is a parent's job to help their child learn to cope with a functional disorder. Remind the child that the functional bellyache is not dangerous, and that the pain will not differ at home or in school, so the child may as well go to school and learn. A few children and adolescents have diarrhea and pain from IBS that comes every morning and lasts several hours. Early morning diarrhea and pain symptoms usually improve with bedtime low-dose amitriptyline. A few more children and adolescents experience intense upper abdominal nausea and vomiting for several hours each morning. Early morning nausea and vomiting usually improve with bedtime mirtazapine.

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