

Pediatric Functional Abdominal Pain Treatment and Referral Guidelines



Developed in a collaboration of pediatric gastroenterologists from the Departments of Pediatrics at Carolinas Health Care, Duke University, East Carolina University, University of North Carolina, and Wake Forest University and primary care providers from across North Carolina

This guideline, for use by primary care providers, explains the treatment and referral process for functional abdominal pain in pediatric patients (ages 5 to 21).

Introduction

Chronic abdominal pain is defined as persistent or recurrent episodes of pain lasting for more than 2 months. The pain may be caused by a specific organic disease or be due to a functional disorder. Functional gastrointestinal disorders are defined as chronic or recurrent gastrointestinal symptoms not explained by any identifiable structural or biochemical abnormalities (Table 1).

Table 1. Abdominal Pain-Related Functional Gastrointestinal Disorders (See Rome III Conditions and Criteria Appendix)

Functional dyspepsia

Irritable bowel syndrome

Abdominal migraine

Functional abdominal pain

Adapted from Rasquin A, Di Lorenzo C, Forbes D, et al. Childhood functional gastrointestinal disorders: child/adolescent. *Gastroenterology*. 2006;130:1527-1537.

Functional abdominal pain in children is much more common than pain due to an organic disease. Most children referred to pediatric gastroenterologists for abdominal pain do not have a serious inflammatory, anatomic, metabolic, or neoplastic process and could be managed by a community-based child health professional.

For the diagnosis of chronic functional abdominal pain, the following must be present at least once per week for 2 months:

1. Episodic or continuous abdominal pain
2. No evidence of inflammatory, anatomic, metabolic, or neoplastic process that explains symptoms

The approach to a child with chronic abdominal pain involves looking for red flag symptoms and signs on history and physical examination that suggest the pain is more likely due to an organic disease. If none are present, providers should be prepared to make a positive diagnosis of a functional disorder with minimal diagnostic work up and appropriate management.

History and Physical Exam

1. Take a complete history, including social and dietary history and look for red flag symptoms and signs on page 2
2. Conduct a thorough physical exam, including rectal exam with stool hemoccult OR perianal exam with hemoccult of stool brought in by patient/family
3. Review the child's growth chart

History (continued on next page)

- Social history:
 - Emotional or physical abuse
 - Life stressors such as divorce, bullying, alcohol or drug abuse in home, relationship with family members, changes in school performance
 - Interference with school extracurricular activities

- Lifestyle history:
 - Find out if the child is eating regular "sit-down" meals with the family; if the child consumes adequate amounts of high-fiber foods and fluids; if the child avoids sources of excessive juice, soda, or sugar-free gum; if the child gets outside for regular physical activity one hour every day; and if the child has a regular bedtime and gets an appropriate amount of sleep each night.
- Family history:
 - Inflammatory bowel disease (IBD) (Crohn's Disease, Ulcerative Colitis), peptic ulcer disease (PUD) or celiac disease

History: Red Flags

- Weight loss
- Unexplained fevers
- Unexplained rashes
- Dysphagia/odynophagia
- Persistent vomiting
- Hematemesis
- Bilious emesis
- Chronic diarrhea (> 2 weeks)
- Hematochezia/melena
- Persistent right upper or right lower quadrant pain
- Pain radiating to the back
- Arthritis
- Recurrent oral ulcers
- Anal/perianal ulcers
- Nocturnal symptoms (waking with diarrhea and/or vomiting)
- Delayed puberty
- Deceleration of linear growth velocity

Physical Exam: Red Flags

- Decline in weight/height parameters
- Pallor or anemia
- Abdominal distension
- Organomegaly (hepatosplenomegaly)
- Abdominal mass
- Localized tenderness
- Perianal fissures or ulcers
- Positive hemoccult stool test

Laboratory and Radiologic Evaluation

Simple screening tests can be helpful in guiding the diagnostic process to more specific investigations.

- Hemoccult testing on the stools may indicate PUD, IBD, or constipation.
- Complete blood count (CBC) demonstrating anemia or eosinophilia may indicate PUD, IBD, or eosinophilic intestinal disease.
- An elevated erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP) suggests an inflammatory process and may indicate IBD.
- A comprehensive metabolic panel (CMP) can detect hypoproteinemia or elevated liver enzymes.
- Urinalysis, urine culture can detect renal disease.
- Stool tests for culture, ova & parasites, giardia antigen, Clostridium difficile toxin, and cryptosporidia antigen are indicated when there is chronic diarrhea.
- Celiac serology to include tTG and serum IgA only if considering referral to pediatric gastroenterology because of signs and symptoms of celiac disease.
- IBD panels and helicobacter pylori serum antibody tests are not recommended.

Radiologic studies are not necessary for most patients with chronic abdominal pain. There are some patients, however, who warrant more in-depth evaluation based on the presence of red flags or abnormal findings on initial screening tests. Additional investigations to consider in these cases include:

- Kidney, ureter, and bladder (KUB) x-ray if appropriate to evaluate for intestinal obstruction or fecal impaction.
- Ultrasound to evaluate right upper quadrant pain in males and females or pelvic pain in a female.

Contact a pediatric gastroenterologist for consultation if one or more red flags or concerning symptoms or signs within the history, physical, and laboratory/radiologic sections of the evaluation process are identified.

If there are no red flags or concerning signs and symptoms, then assume that the patient has a functional gastrointestinal disorder and consult the Rome Criteria appendix of this document.

Principles of Treatment for Functional Abdominal Pain

1. Acknowledge

Acknowledge that the pain the child is experiencing is real and show empathy for their concerns.

2. Education

Educate parents on the concept of functional abdominal pain, current understanding of the role of intestinal hypersensitivity and the brain-gut axis and how this can result in a heightened sense of awareness of the pain when the child is subject to life stressors. Educate parents on possible stressors that could be from home, school, or personal anxiety.

3. Identify

Identify precipitating and associated factors from the History and Physical to guide towards treatment options. Precipitating factors include certain foods, emotions, and stress. Associating factors include changes in bowel movement, pain associated or relieved with defecation, or excessive gas production.

4. Minimize Pain

- a. Explain that initial management should be directed towards decreasing factors that aggravate intestinal hypersensitivity. This involves minimizing intestinal gas production that results from one or more of the following: excess sorbitol or fructose ingestion, lactose intolerance, or constipation.
- b. Emphasize the importance of adopting a healthy lifestyle including a high fiber/low fat diet (5-a-day servings of fruits and vegetables, fiber cereal for breakfast, 1% low fat or skim milk), plenty of water, adequate sleep, and regular exercise.
- c. There are no medications that have been proven to be of value for children and adolescents with functional abdominal pain. Avoid using non-steroidal anti-inflammatory drugs (NSAID's) and narcotics.
- d. Aggressively treat constipation (see CCNC's [Pediatric Constipation Treatment and Referral Guidelines](#))

5. Reassure

Reassure the child and family that although the pain may be bothersome, the child is in no danger and functional pain is an otherwise benign condition.

Emphasize to the child and family that it is unlikely the pain will disappear completely but that with these practical measures the pain will decrease significantly and allow the child to function normally. Emphasize the need for coping mechanisms and the value of referral to a behavioral health professional skilled in cognitive behavioral therapy (CBT). Be sure to enlist the support of school staff so that the child remains at school unless the child is having fever or persistent vomiting.

Many children with functional abdominal pain will respond to the simple measures outlined above. In others, the pain will continue and become severe enough to affect the child's ability to go to school and function normally. For these cases, additional measures will be needed including possible referral to a pediatric gastroenterologist and/or to a behavioral health professional. Management of these more difficult cases often requires a team approach using a combination of dietary modification, pharmaceutical agents, family support, school support, and cognitive behavioral therapy.

Follow Up

In all cases, it is extremely important to maintain contact with the child and the family to monitor response to therapy and advise them on next steps. At every visit, reconsider the possibility of an underlying organic disease and review for the presence of red flags or concerning signs and symptoms. Continued absence of any red flags is reassuring that the most likely diagnosis is still a functional disorder. It is important to follow these patients periodically (once a month) until families are satisfied.

At the follow-up visit:

1. Check weight
2. Reassess for red flags
3. Determine whether treatment plan was successful
4. Review calendar of pain with parents
5. Provide counseling to families

If new red flags are present, consider laboratory/radiologic tests and possible referral to a pediatric gastroenterologist. If no red flags are present, seriously consider referral for Cognitive Behavioral Therapy.

Prognosis

Pain resolves in 30% to 70% of patients by 2 to 8 weeks after diagnosis. Factors associated with worse prognosis include “painful family,” male gender, age younger than six years at diagnosis, more than six months duration of pain before seeking treatment, and high levels of depression/anxiety symptoms.

Referral

Refer to pediatric gastroenterologist if:

- Presence of red flags
- Symptoms worsen and cause loss of functionality (e.g., interference with school attendance, sleep, pleasurable activities)

When referring a patient to pediatric gastroenterology, **always send**:

1. Growth charts
2. Any labs
3. Any x-rays (note: send actual copies of films, especially the KUB, not just the radiology reports)
4. List of therapies that have been tried
5. Brief summary of the treatment course, including medications (written or dictated by referring MD)
6. Reason for consult

Appendices

See additional information about the diagnosis and treatment of pediatric abdominal pain in these appendices:

- Algorithm for Functional Abdominal Pain
- Rome III Conditions and Criteria
- Tips for Providers