

Clinical Guideline

ABDOMINAL PAIN (CHRONIC) IN CHILDREN

SETTING	Primary and secondary care
FOR STAFF	Doctors
PATIENTS	Children with chronic abdominal pain

[Summary Algorithm](#)**Definition:**

Chronic abdominal pain is defined as 3 or more episodes over at least 3 months duration that is severe enough to affect daily activities in a child over 3 years of age.

Key points:

- Common, affecting 10–14% children in the UK
- Only 5–10% have an underlying organic cause
- Higher prevalence in preschool children and early adolescents
- Constipation can present as chronic abdominal pain and should be excluded through a detailed history ([Constipation in Children Guideline](#))
- Those without an underlying organic cause have a diagnosis of 'Functional Abdominal Pain' (see Rome III criteria, Appendix 1)

Alarm symptoms and signs associated with a higher prevalence of organic disease:

- Involuntary weight loss/failure to thrive
- Gastrointestinal bleeding
- Chronic, persistent diarrhoea or vomiting
- Persistent right upper quadrant or right lower quadrant abdominal pain
- Unexplained fever
- Family history of inflammatory bowel disease (IBD)
- Jaundice
- Urinary symptoms, back or flank pain
- Abnormal examination findings

Laboratory evaluation:

In those without alarm findings, *consider* coeliac screen, but no other investigations.

In those with associated alarm findings, perform initial tests:

- FBC, plus ESR or Plasma Viscosity
- Ferritin
- CRP
- U/E, Creatinine, Glucose
- Amylase
- LFT
- Coeliac screen
- Urinalysis +/- urine culture (if urinalysis indicative of infection)

Additional tests may be warranted if specific conditions suspected:

- Pancreatitis - serum amylase or lipase
- Enteric parasitic/protozoal infection - stool for ova/parasites and *Giardia* antigen
- Enteric bacterial infections - *Clostridium difficile* toxin and stool cultures (e.g. for *Salmonella*, *Shigella*, *Yersinia*, *Campylobacter*, and *E coli*)
- Pregnancy - urine test for human chorionic gonadotropin
- Chronic, severe, treatment-resistant constipation – thyroid function tests

H pylori screening is not helpful and should not be undertaken in first line investigations.

Radiologic evaluation depends upon the diagnostic possibilities being considered (see algorithm).

Management:

- Following a thorough history and examination, if no alarm symptoms or signs are present, a positive diagnosis of 'Functional Abdominal Pain' should be made.
- Functional Abdominal Pain is managed optimally by making a positive diagnosis, providing reassurance and education, avoiding extensive investigations and focussing on a return to normal function rather than resolution of pain.
- Investigations do not help distinguish between organic and functional pain in the absence of alarm symptoms and signs and should ideally be avoided (other than coeliac screen).
- Follow-up to provide advice, support and re-assessment.
- Consider use of psychological and pharmacological interventions in the management of functional abdominal pain in children (Appendix 2).
- Provide information leaflet on functional abdominal pain ([link](#) to info leaflet – in progress)
- Symptom and/or stool diary can be helpful at follow-up

Indications for referral:

- Children and adolescents with chronic abdominal pain and alarm findings.
- If possible, perform full set of initial screening tests (above) prior to child being seen in clinic.

Summary Algorithm

Chronic abdominal pain:

- Child >3 years old
- ≥ 3 episodes over ≥ 3 month period
- Affecting daily activities

Alarm symptoms/signs?

- Involuntary weight loss/failure to thrive
- Gastrointestinal bleeding
- Chronic, persistent diarrhoea or vomiting (some minor vomiting may occur in Functional Abdominal Pain)
- Persistent right upper quadrant or right lower quadrant abdominal pain
- Unexplained fever
- Family history of inflammatory bowel disease (IBD)
- Jaundice
- Urinary symptoms, back or flank pain
- Abnormal examination findings

[History of constipation – manage constipation, [Constipation in Children Guideline](#)]

[In pubertal girls, consider pregnancy test & screening for sexually transmitted disease]

Yes

No

Investigate:

Blood tests (all) – FBC, ESR/PV, Ferritin, CRP, U/E, LFT, glucose, amylase/lipase, Coeliac screen

Urine test (all) – Urinalysis +/- culture if dip test suggests UTI

Ultrasound (selective) – if right upper quadrant pain, right lower quadrant pain, jaundice, urinary symptoms, back/flank pain, weight loss/failure to thrive, abnormal examination

Coeliac screen

Functional Abdominal Pain:

Reassurance and education

Focus on resuming normal function rather than on complete resolution of pain

Consider psychological, pharmacological intervention if pain persists (Appendix 2)

Positive

Refer:

Paediatric Gastroenterology (BRHC) if positive coeliac screen or investigations strongly suggestive of IBD (especially if positive family history).

General Paediatrics (BRHC, Southmead, Thornbury, Cossham, South Bristol Community Hospital) if alarm symptoms/signs +/- abnormal test results.

Appendix 1 Rome III criteria for functional abdominal pain

Diagnosis	Rome III criteria*
Functional abdominal pain	<ul style="list-style-type: none"> ▪ Episodic or continuous abdominal pain ▪ Insufficient criteria for other functional gastrointestinal disorders
Functional abdominal pain syndrome	<ul style="list-style-type: none"> ▪ Functional abdominal pain for at least 25% of the time and one or more of the following: <ol style="list-style-type: none"> 1. Some loss of daily functioning 2. Additional somatic symptoms such as headache, limb pain, or difficulty sleeping
Functional dyspepsia	<ul style="list-style-type: none"> ▪ Persistent or recurrent pain or discomfort centred in the upper abdomen ▪ Not relieved by defecation or associated with a change in stool frequency or form
Irritable bowel syndrome	<ul style="list-style-type: none"> ▪ Abdominal discomfort or pain associated with two or more of the following at least 25% of the time: <ol style="list-style-type: none"> 1. Improved with defecation 2. Onset associated with a change in frequency of stool 3. Onset associated with a change in form of stool
Abdominal migraine	<ul style="list-style-type: none"> ▪ Paroxysmal episodes of intense, acute peri-umbilical pain that last for one or more hours ▪ Intervening periods of usual health lasting weeks to months ▪ The pain interferes with normal activities ▪ The pain is associated with two or more of the following: anorexia, nausea, vomiting, headache, photophobia, pallor

* There must be no evidence of an inflammatory, anatomical, metabolic or neoplastic process to explain symptoms. Criteria must be fulfilled at least once a week for at least 2 months before diagnosis, except abdominal migraine where criteria must be fulfilled two or more times in the preceding 12 months.

Appendix 2 Current evidence for the management of functional abdominal pain in children

Intervention	Evidence source	Outcome/conclusion
Psychological therapies	Meta-analysis 2011	10 controlled studies were reviewed demonstrating psychological therapies are effective in treating children with chronic abdominal pain ($p < 0.01$)
	Cochrane systematic review 2009	There is evidence that cognitive behavioural therapy (in person and online) and relaxation treatments, such as yoga and hypnosis, are effective at reducing CAP in children
	RCT of 53 children in 2007	At 1-year successful treatment was accomplished in 85% of the hypnotherapy group and 25% of the standard medical treatment group ($p < .001$)
Pharmacological treatment	Cochrane systematic review 2011	There is no evidence that anti-depressants (amitriptyline trialled) are beneficial in the treatment of recurrent abdominal pain in children and there is a risk of adverse events, some potentially life-threatening
	Cochrane systematic review 2009	There is weak evidence that pizotifen reduces the mean number of days in pain in those with abdominal migraine and famotidine with CAP associated with dyspepsia. There is no significant benefit to using peppermint oil capsules in CAP associated with IBS. The overall lack of evidence suggests there is little reason to prescribe drugs unless the pain is severe or used within a clinical trial
	APP & NASPGHAN clinical guidelines for CAP in children 2005	There is weak evidence for the use of peppermint oil in CAP associated with IBS based on a RCT of 42 children showing an overall reduced pain score in the treatment group at 2-weeks. However, there was no significant difference in the frequency or duration of pain or impact on daily life
Dietary interventions	Meta-analysis 2011	<i>Lactobacillus rhamnosus</i> GG moderately increases treatment success in children with recurrent abdominal pain, particularly those diagnosed with IBS. For IBS subgroup ($n=167$) NNT 4. There was no benefit for children with functional abdominal pain or functional dyspepsia
	Cochrane systematic review 2009	There is no evidence that fibre supplements, lactose free diets or lactobacillus supplements are effective

Acronyms:

APP - American Academy of Paediatrics

CAP - chronic abdominal pain

IBS - irritable bowel syndrome

NASPGHAN - North American Society for Paediatric Gastroenterology, Hepatology & Nutrition

RCT - randomised controlled trial

FBC – full blood count

ESR – erythrocyte sedimentation rate

CRP – C reactive protein

U/E – urea and electrolytes

LFT – liver function tests

UTI – urinary tract infection

Main reference:

Wright NJ, Hammond PJ, Curry JI Chronic abdominal pain in children: help in spotting the organic diagnosis. *Arch Dis Child Educ Pract Ed* 2013;**98**:32-39 doi:10.1136/archdischild-2012-302273

Also:

Chronic abdominal pain in children. American Academy of Pediatrics Subcommittee on Chronic Abdominal Pain, North American Society for Pediatric Gastroenterology Hepatology, and Nutrition: *Pediatrics*. 2005;115(3):e370.

RELATED DOCUMENTS Constipation guideline

SAFETY Nil

QUERIES Contact General Paediatrics Department by post