Constipation

Definition / Supporting Information

Constipation is common, especially in children and young people who have limited mobility due to disability or other causes (see Figure 1).

There are many definitions for constipation, which is not easy to define owing to considerable variation in ‘normal’ bowel habit in children, with 96% of children passing bowel motions between three times a day and alternate daily.

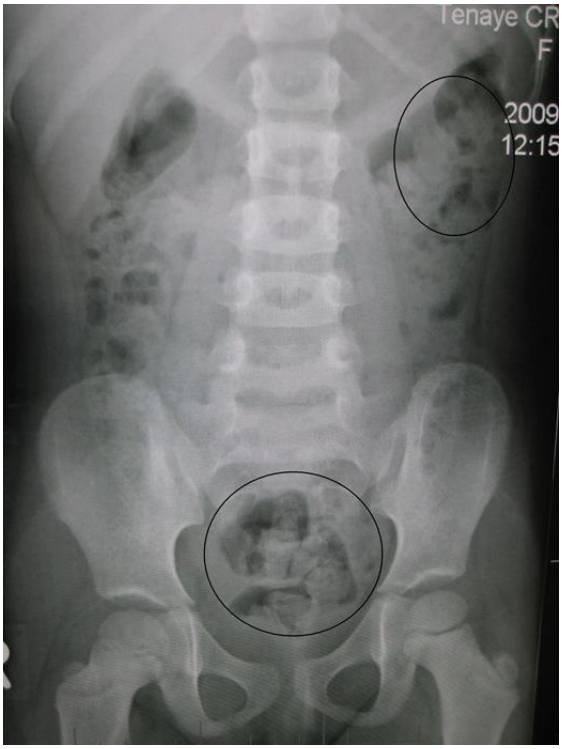

Figure 1. Constipation in a young child as seen on X-ray (circles indicate two areas of fecal material in the large bowel and rectum) (By James Heilman, MD - Own work, CC BY 3.0)

Two or more features from the following indicate constipation (see Constipation in children and young people: Diagnosis and management of idiopathic childhood constipation in primary and secondary care [NICE clinical guideline CG99]):

Potential findings in a child younger than 1 year

- Stool patterns:
  - Fewer than three complete stools per week (type 3 or 4, see Bristol Stool Form Scale; this does not apply to exclusively breastfed babies after 6 weeks of age)
  - Hard large stool
  - 'Rabbit droppings' (type 1, see Bristol Stool Form Scale)
- Symptoms associated with defecation:
  - Distress on passing stools
  - Bleeding associated with hard stool
  - Straining
- History:
  - Previous episodes of constipation
  - Previous or current anal fissure

Potential findings in a child / young person older than 1 year

- Stool patterns:
  - Fewer than three complete stools per week (type 3 or 4, see Bristol Stool Form Scale)
  - Overflow soiling (commonly very loose (no form), very smelly (smells more unpleasant than normal stools), stool passed without sensation. Can also be thick and sticky or dry and flaky.)
  - 'Rabbit droppings' (type 1, see Bristol Stool Form Scale)
  - Large, infrequent stools that can block the toilet
- Symptoms associated with defecation:
  - Poor appetite that improves with passage of large stool
  - Waxing and waning of abdominal pain with passage of stool
  - Evidence of retentive posturing: typical straight legged, tiptoed, back arching posture
  - Straining
  - Anal pain
- History:
  - Previous episode(s) of constipation
  - Previous or current anal fissure
  - Painful bowel movements and bleeding associated with hard stools

Keywords / also known as: infrequent bowel movement, abdominal pain, bloated

Essential History

Ask about:

- Timing of symptom-onset coinciding with:
  - Development of fissure
  - Change in diet / weaning
  - Potty-training / acute infections / taking medication
  - Significant events or family change
- Description of stools that child passes
  - Frequency
    - Fewer than three complete stools a week (type 3 or 4, see Bristol Stool Form Scale; this does not apply to children in nappies)
  - Parents describe stools 'too large for the child'
  - 'Rabbit droppings' (type 1, see Bristol Stool Form Scale)
- History of stool withholding
  - Particularly applies to children above 2 years of age
  - A positive history strongly supports functional / idiopathic constipation
- History of overflow incontinence / soiling
  - Parents will describe 'soiling accidents'
- Toilet-training experience
  - Whether successful
  - Critical in toddlers and preschool children
- Toilet experience at school
- Diet history
  - Excessive intake of milk
  - Balanced intake of sufficient fluid and fibre [NICE clinical guideline CG99, section 1.5, Table 5]
- Complications
  - Fissures
  - Bleeding (see Melaena / Bleeding Per Rectum)
  - Abdominal pain
  - Anorexia (see Loss of Appetite)
  - Enuresis
  - Urinary tract infection
  - Distension and vomiting (not caused by functional constipation)
- Change in urinary voiding pattern (bulky stools interfering with normal voiding; also possible occult spinal process affecting sacral nerves)
  - Urinary tract infections occur in 3–30% of children (literature variance) with stool retention
  - Occult spinal process affecting sacral nerves is rare

  - A history of voiding pattern involves asking about:
    - Stream
    - Continence
- Family history of:
  - Functional constipation
  - Irritable bowel syndrome with constipation
  - Coeliac disease [NICE guideline NG20]
  - Predisposing conditions for idiopathic constipation:
    - Physical disability associated with reduced gut motility (e.g. Cerebral palsy) [NICE guideline NG 62, section 1.13]
    - Trisomy 21
    - Autism Spectrum Disorder

'Red Flag' Symptoms and Signs

See Constipation in children and young people: Diagnosis and management of idiopathic childhood constipation in primary and secondary care [NICE clinical guideline CG99, section 1.1.3].

Any 'red flag' symptoms and signs should prompt an urgent referral to a paediatrician

Ask about:

- Onset from birth or first few weeks of life
- Failure to pass meconium / delay (> 48 hours after birth in term baby)
- Previously unknown or undiagnosed weakness in legs, locomotor delay
- Abdominal distension with vomiting
- Failure to thrive (weight loss, poor growth)
- Persistent anal fissures, perianal disease
- Persistent blood in stool (see Melaena / Bleeding Per Rectum)

Look for:

- Evidence of poor growth (see Faltering Growth)
- Gross abdominal distension with or without palpable faecal mass
- Abnormalities on spine / lumbosacral region / gluteal examination
  - Asymmetry or flattening of the gluteal muscles
  - Evidence of sacral agenesis
    - Absence of sacral spinous processes on palpation
  - Central pit (dimple that you cannot see the bottom of)
- Abnormal appearance / position / patency of anus
  - Fistulae
  - Bruising (see Petechiae and Purpura)
  - Multiple fissures

  - Deformity in lower limbs such as talipes
  - Abnormal neuromuscular signs unexplained by any existing condition, such as cerebral palsy and conditions with a low muscle tone (see Hypotonia)

Digital examination should be carried out only by a skilled practitioner (usually a paediatrician) able to detect paediatric anorectal diseases.

If the history taking or the physical examination show evidence of possible maltreatment, treat for constipation and refer to safeguarding (see Child maltreatment: When to suspect child maltreatment in under 18s [NICE clinical guideline CG89])

Differential Diagnosis / Conditions

- Despite the large number of possible diagnoses, at least 90% of affected children have functional constipation
  - Findings that support the diagnosis of functional constipation are:
    - Onset after infancy
    - Presence of stool-withholding behaviour including soiling
    - Episodic passage of large-calibre stools
  - Absence of ‘red flags’
- Anal and rectal disorders
  - Anal fissure
  - Anterior ectopic anus
  - Anal stenosis
  - Anal abscess and inflamed anal tags
    - Constipation when present secondary to painful anal abscesses may be due to inflammatory bowel disease.
    - This requires a referral to a paediatric gastroenterologist.
  - Anorectal malformations
  - Pelvic mass, such as:
    - Neuroblastoma
    - Presacralteratoma
    - Ovarian tumour
    - Haematocolpos
- Neurological disorders
  - Hirschsprung’s disease should be considered in any child with refractory constipation who has had any of:
    - Failure to pass meconium in the first 24 hours of life
    - Onset of constipation before 3 months of age, especially in the first few weeks (rather than closer to 3 months of age)
    - Symptoms of intestinal obstruction at any time (distension with or without vomiting)

        - Chronic constipation resistant to treatments (after excluding compliance problems) requiring enemas on an almost daily basis
        - Faltering growth
        - Family history of Hirschsprung's disease
    - Spinal cord lesions
        - Consider if visible abnormalities or palpable deformities of the lumbosacral spine
    - Cerebral palsy
    - Neuromuscular diseases with hypotonia
- Metabolic and endocrine disorders
    - Hypothyroidism
    - Diabetes insipidus
    - Hypercalcaemia
    - Hypokalaemia
- Medication and toxin related
    - Antihistamines
    - Proton pump inhibitors used for treatment of GOR / GORD have been reported to cause constipation
    - Anticonvulsants
    - Opioids
    - Tricyclic antidepressants
    - Iron preparations (not iron-fortified formulas)
    - Anticholinergics
- Coeliac disease, food allergy and cystic fibrosis [NICE clinical guideline CG116]
    - Should be considered in children with:
        - Persistent and refractory constipation
        - Faltering growth in weight or height
        - Recurrent respiratory symptoms
        - Anaemia
        - Hypoproteinaemia

Investigations

See Constipation in children and young people: Diagnosis and management of idiopathic childhood constipation in primary and secondary care [NICE clinical guideline CG99, section 1.3]

To be undertaken by a non-specialist practitioner:

- Not indicated in evaluating for functional constipation

To be undertaken by specialist practitioners (eg, Emergency Department / Paediatric Team(s)):

- To be done in cases of refractory constipation and consider earlier if faltering growth, or short stature
  - Thyroid function tests
  - Coeliac panel
- With delayed passage of meconium
  - Sweat test
- Imaging
  - Do not use a plain abdominal radiograph to make a diagnosis of idiopathic constipation
  - Consider using a plain abdominal radiograph only if requested by specialist services in the ongoing management of intractable idiopathic constipation
    - It may be preferable to consider a transit marker study instead, which is likely to provide more useful information than a single abdominal X-ray
- Manometry
  - Do not use anorectal manometry to exclude Hirschsprung's disease in children and young people with chronic constipation

Treatment Approach

See Constipation in children and young people: Diagnosis and management of idiopathic childhood constipation in primary and secondary care [NICE clinical guideline CG99, section 1.4]

To be undertaken by non-specialist practitioners (eg, General Practitioner (GP) Team):

- Maintenance therapy
  - Polyethylene glycol 3350 plus electrolytes (macrogol 3350 with potassium chloride, sodium bicarbonate and sodium chloride) as first-line treatment
    - Adjust the dose according to symptoms and response
  - Add a stimulant laxative if polyethylene glycol 3350 plus electrolytes does not work
    - However, a stimulant laxative may be an early consideration, especially in classic stool withholders
  - Substitute a stimulant laxative if the child does not tolerate polyethylene glycol 3350 plus electrolytes
    - Add another laxative such as lactulose or docusate sodium if stools are hard
  -

  - Continue medication at maintenance dose for several weeks after regular bowel habit is established
    - This may take several months
  - Some children may require laxative therapy for several years
    - A minority may require ongoing laxative therapy
- Disimpaction (see below) can be initiated in primary care

To be undertaken by specialist practitioners (eg, Emergency Department / Paediatric Team(s)):

- Disimpaction
  - Assess all children and young people with idiopathic constipation for faecal impaction
  - Offer the following oral medication regimen for disimpaction if indicated:
    - Polyethylene glycol 3350 plus electrolytes, using an escalating dose regimen, as the first-line treatment
    - Polyethylene glycol 3350 plus electrolytes may be mixed with a cold drink
    - Add a stimulant laxative if polyethylene glycol 3350 plus electrolytes does not lead to disimpaction after 2 weeks
    - Substitute a stimulant laxative singly or in combination with an osmotic laxative such as lactulose if polyethylene glycol 3350 plus electrolytes is not tolerated
    - Inform families that disimpaction treatment can initially increase symptoms of soiling and abdominal pain
- Maintenance therapy (see recommendations for non-specialist practitioners above)
  - Start maintenance therapy as soon as the bowel is dis-impacted
  - Reassess children frequently during maintenance treatment to ensure that they do not become re-impacted, and assess issues in maintaining treatment such as taking medicine and toileting
- Diet and lifestyle
  - Do not use dietary interventions alone as first-line treatment for idiopathic constipation, particularly in young children
  - Treat constipation with laxatives and a combination of:
    - Negotiated and non-punitive behavioural interventions suited to the child or young person’s stage of development
      - These could include scheduled toileting and support to establish a regular bowel habit, maintenance and discussion of a bowel diary, information on constipation, and use of encouragement and rewards systems
    - Dietary modifications to ensure a balanced diet and sufficient fluids are consumed

  - Advise parents and children and young people (if appropriate) that a balanced diet should include adequate fluid intake and adequate fibre, including foods with a high fibre content (such as fruit, vegetables, high-fibre bread, baked beans, and wholegrain breakfast cereals) (not applicable to exclusively breastfed infants) [NICE clinical guideline CG99, section 1.5, Table 5]
    - Do not recommend unprocessed bran, which can cause bloating and flatulence and reduce the absorption of micronutrients
    - Start cow's milk exclusion only on the advice of relevant speciality services

When to Refer

Refer to specialist practitioners (eg, Emergency Department / Paediatric Team(s)) if:

- Any 'red flag' symptoms or signs
- Findings that are inconsistent with functional constipation:
  - Faltering growth
  - Abdominal distension
  - Vomiting
  - Bleeding (see Melaena / Bleeding Per Rectum)
- Treatment is complicated by other significant problems:
  - Behavioural
  - Emotional
  - Parenting
  - Mental health issues
- Limited / no response to treatment
  - Child who is refractory to treatment or cannot wean from laxative therapy after 12 months
  - Child younger than 1 year with a possible diagnosis of idiopathic constipation that does not respond to treatment within 4 weeks
  - Refer children and young people with idiopathic constipation who do not respond to initial treatment within 3 months to a practitioner with expertise in the problem
- If Hirschsprung's disease is suspected
- Refractory cases will require a multidisciplinary management involving the paediatrician, GP, specialist nurses, community / school nurses and psychologist

Safety Netting Advice

Advise parents / carers to seek urgent medical advice if any 'red flag' signs or symptoms develop

Patient / Carer Information

Please note: whilst these resources have been developed to a high standard they may not be specific tochildren.

- Constipation (Web page), the NHS website
- ERIC (Education and Resources for Improving Childhood Continence) (Web page), The Children's Bowel & Bladder Charity
- Bladder & Bowel UK: Supporting people with bladder and bowel problems (Web page), Bladder & Bowel UK

Resources

National Clinical Guidance

Constipation in children and young people: diagnosis and management (Web page), NICE clinical guideline CG99, National Institute for Health and Care Excellence

Child maltreatment: when to suspect maltreatment in under 18s (Web page), NICE clinical guideline CG89, National Institute for Health and Care Excellence

Cerebral palsy in under 25s: assessment and management (Web page), NICE guideline NG62, National Institute for Health and Care Excellence

Coeliac Disease: recognition, assessment and management (Web page), NICE guideline NG20, National Institute for Health and Care Excellence

Food allergy in under 19s: assessment and diagnosis (Web page), NICE clinical guideline CG116, National Institute for Health and Care Excellence

Medical Decision Support

Child Sexual Abuse (Web page), RCPCH Child Protection Companion

Suggested Resources

Please note: these resources include links to external websites. These resources may not have national accreditation and therefore PCO UK cannot guarantee the accuracy of the content.

Abdominal Pain: Quick Reference Guide (PDF), RCPCH Paediatric Care Online (PCO UK)

Constipation: Quick Reference Guide (PDF), RCPCH Paediatric Care Online (PCO UK)

Abdominal Pain (Web page - requires log-in), Spotting the Sick Child

Bristol Stool Form Scale (Web page) Constipation (Web page), Public Health England

Afzal NA, Tighe MP, Thomson MA. Constipation in children. *Ital J Pediatr* 2011;37:28 [PubMed]

Howell DM, Wysocki K, Steiner MJ. Toilet training. *Pediatr Rev* 2010;31(6):262-263 [PubMed]

Glycerin (glycerol) suppositories for constipation (Web page), Medicines for Children

Lactulose for constipation (Web page), Medicines for Children

Levy EI, Lemmens R, Vandenplas Y, Devreker T. Functional constipation in children: challenges and solutions. *Pediatric Health Med Ther* 2017;8:19–27 [PubMed]

Movicol for constipation (Web page), Medicines for Children

Palit S, Lunniss PJ, Scott SM. The physiology of human defecation. *Dig Dis Sci* 2012;57(6):1445-1464 [PubMed]

Paul SP, Broad SR, Spray C. Idiopathic constipation in children clinical practice guidelines. *Arch Dis Child Educ Pract Ed.* 2016;101(2):65-9 [PubMed]

Tabbers MM, Boluyt N, Berger MY, Benninga MA. Nonpharmacologic treatments for childhood constipation: systematic review. *Pediatrics* 2011;128(4):753-761 [PubMed]

Tabbers MM, DiLorenzo C, Berger MY, et al; European Society for Pediatric Gastroenterology, Hepatology and Nutrition; North American Society for Pediatric Gastroenterology. Evaluation and treatment of functional constipation in infants and children: evidence-based recommendations from ESPGHAN and NASPGHAN. *J PediatrGastroenterolNutr* 2014;58(2):258-274. [PubMed]

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