

Constipation in infants and children

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Constipation is a common problem in children and is usually functional, related to stool-withholding. Successful management requires parent education, behavioural strategies, laxative agents (often long term) and ongoing review.

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REMEMBER

- Constipation is a common paediatric presentation in general practice.
- Constipation is defined based on the frequency of stooling (which varies widely depending on the age of the child), and more importantly the consistency, size and difficulty with which stools are passed (see the box on page 72).¹
- Constipation arising beyond the neonatal period is most often functional (i.e. does not result from any identifiable organic pathology), and may be perpetuated by voluntary withholding of stool to avoid painful defaecation.
- There are several 'red flags' that should prompt further investigation for a contributing medical or surgical condition, but these are uncommon (see the box on page 72).^{2,3}
- Faecal incontinence is thought to be related to over-distension of the rectum with stool, shortening of the anal canal and resulting impairment of normal continence mechanisms. Incontinence is not deliberate or caused by laziness on the part of the child.
- Untreated constipation and faecal incontinence (encopresis) can have a significant psychosocial impact on a child.
- Management of constipation is often a long-term process that requires the complementary approaches of careful education of the child and parents, behavioural techniques, laxative agents and review.⁴

ROME III DIAGNOSTIC CRITERIA FOR FUNCTIONAL CONSTIPATION IN CHILDREN¹

At least two of the following features have been present for at least two months in a child aged 4 years or older (developmental age):

- two or fewer defaecations in the toilet per week
- at least one episode of faecal incontinence per week
- history of retentive posturing or excessive volitional stool retention
- history of painful or hard bowel movements
- presence of a large faecal mass in the rectum
- history of large diameter stools that obstruct the toilet

ASSESSMENT

- The focus should be on identifying the rare child with an organic cause for constipation, and determining whether the child has faecal impaction.
- The history should include a detailed description of the child's stool, stool frequency, incontinence, withholding behaviour and any symptoms associated with defaecation, such as pain, bleeding and straining.
- Important aspects of the history include age at onset, growth trends, diet history and the presence of 'red flags' (see the box on this page).
- A thorough physical examination should be performed, particularly focusing on growth parameters, palpable abdominal faecal masses, inspection of the perianal and lumbosacral regions and lower limb neurological examination. Poor growth may occur with Hirschsprung disease, hypothyroidism and coeliac disease.
- Digital rectal examination should be avoided in primary health care as it rarely contributes to the clinical assessment and can be particularly

distressing for the child.

- Impaction is suggested by faecal incontinence or a palpable faecal mass (preferably determined via abdominal palpation).
- If the likely diagnosis is functional constipation then no further investigation is needed. Abdominal x-rays are not needed to diagnose constipation or to determine response to therapy.⁵
- If a pathological cause for constipation is suspected then appropriate investigations should be performed in consultation with a paediatrician or paediatric surgeon.

MANAGEMENT

- A combination of management approaches that complement each other are almost always required in the management of childhood constipation. Individual elements in isolation (e.g. disimpaction without maintenance laxatives) are unlikely to be unsuccessful.
- Education of parents and caregivers about the relationship between behavioural aspects (e.g. fear of pain and withholding) and functional constipation is vital. They should be informed that this is usually a chronic problem, requiring long-term management. The rationale behind the various aspects of management should be made clear, and education should be reviewed on subsequent visits.
- Faecal disimpaction, if necessary, should be achieved using laxatives (see the Table). Except in infants, oral therapy should generally be tried first. In children, rectal therapy should usually be reserved for those with more severe or unresponsive constipation, leading to persistent rectal discomfort or unproductive straining. Oral macrogol 3350 (polyethylene glycol) was found to be equally effective to enema therapy for disimpaction in a randomised

'RED FLAG' FEATURES^{2,3}**History**

- Constipation from the neonatal period
- Failure to pass meconium by the age of 48 hours
- 'Ribbon stools' suggesting anorectal stricture or stenosis
- Abdominal distension and vomiting
- Poor weight gain or weight loss
- Leg weakness or delayed gross motor development

Examination

- Gross abdominal distension
- Abnormal appearance, position or patency of anus – fistulae, bruising, multiple fissures or fissures away from the midline, tight or patulous anus, anteriorly placed anus, absent anal wink
- Lumbosacral abnormalities – evidence of sacral agenesis, discoloured skin, naevi, sinus, hairy patch, lipoma, central pit, scoliosis
- Gluteal asymmetry or wasting
- Absent cremasteric reflex
- Abnormal results on lower limb neurological examination – deformity such as talipes, abnormal reflexes

study of 90 children.⁶ If multiple enemas or nasogastric lavage are required for disimpaction then a paediatrician or paediatric surgeon should be involved.

- Maintenance laxative therapy should be started after disimpaction and often needs to continue for many months after normalisation of stooling. A plan should be made to restart laxatives promptly on signs of relapse.
- The objectives of maintenance therapy are that:
 - the child passes regular soft stools (e.g. one to two per day) without discomfort or excessive effort
 - the rectum remains empty to prevent re-impaction.

TABLE. INITIAL LAXATIVE OPTIONS FOR INFANTS AND CHILDREN

	Infants (<12 months)	Children
Disimpaction	<ul style="list-style-type: none"> Glycerol suppository 700 mg 	<ul style="list-style-type: none"> Macrogol 3350 1 to 1.5 g/kg/day (max 52 g for children aged 2 to 5 years and 78 g for children aged 6 years and over) until disimpacted^{‡*}
Maintenance [†]	<ul style="list-style-type: none"> Sorbitol-containing fruit juices, such as prune, pear, apple (50 to 100 mL/day) or Lactulose 5 mL daily 	<ul style="list-style-type: none"> Macrogol 3350 0.4 to 0.8 g/kg daily up to 17 g* or Paraffin oil 1 to 3 mL/kg daily (start 10 to 20 mL daily)[‡] or Lactulose 10 to 15 mL daily

* Macrogol 3350 (polyethylene glycol) is available in Australia in a variety of formulations, in scoop packs or sachets.

[†] Doses are a guide only and should be titrated to effect every two to three days as required, with consideration of the maximum recommended dose.

[‡] Not recommended in infants, or in children with gastro-oesophageal reflux or risk of aspiration.

- There are many options available for maintenance laxative therapy (see the Table), with choice influenced by the age of the child, previous experience, ease of administration and palatability to the child:
 - Liquid paraffin should be avoided in infants and those at risk of aspiration because of the risk of lipoid pneumonia, and should not be given within two hours of sleep.
 - In children, the osmotic laxative macrogol was found to result in more stools per week and less need for additional therapy when compared with lactulose in a meta-analysis of four studies.⁷ Macrogol is not currently recommended for children younger than 2 years in Australia because of lack of safety data; however, these data are accumulating.
 - Stimulant laxatives such as bisacodyl, sennosides and sodium picosulfate are effective adjuncts to osmotic laxatives when necessary.
- There are few data to support widely held concerns regarding long-term use of laxatives, in particular stimulant laxatives. Clinical studies show that long-term use of osmotic laxatives is safe and well tolerated.⁷ Caregivers should be educated about this safety and the need for long-term maintenance therapy.
- Behavioural measures combined with laxative therapy are superior to

either therapy alone in children with faecal incontinence.⁸ It is important that behavioural measures are applied consistently with the aim of developing a healthy stooling habit. The child should be encouraged to sit on the toilet for five minutes, two or three times a day, within 30 minutes after meals to take advantage of the gastrocolic reflex. Positive reinforcement for sitting (e.g. using reward charts) should be encouraged. Children should never be punished for being constipated or incontinent.

- A healthy diet should be encouraged rather than a high-fibre diet, as there is little evidence that increasing dietary fibre is an effective treatment for childhood constipation.² There is limited evidence that avoiding cow milk may result in improvement in some children with chronic constipation, particularly those with atopic tendencies.^{9,10} Any trial of such an elimination diet should be limited to two to four weeks, and the child should be re-challenged to confirm any effect. Prolonged elimination diets require supervision by a qualified dietitian to prevent any nutritional deficiencies and there should be repeated attempts to normalise the diet.

- Aside from situations of clinical dehydration, there is no evidence that increasing water intake is beneficial in constipation. However,

ensuring adequate fluid intake is important when using osmotic laxatives to avoid dehydration.

- Regular review is required to monitor response to therapy, adjust laxative dose, reinforce education and support the family through what is often a long and frustrating period.
- Lack of response to management should prompt review of all aspects of the management plan. Persisting failure to respond may prompt reconsideration of pathological causes and investigation for these.

CONCLUSION

- Constipation is a common paediatric presentation in general practice and is usually functional.
- Further investigation or referral is guided by the presence of 'red flags'.
- Untreated constipation and faecal incontinence (encopresis) can have a significant psychosocial impact on a child.
- Management of constipation is often a long-term process that requires the complementary approaches of careful education of the child and parents, behavioural techniques, laxative agents and review. MT

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References are included in the pdf version of this article available at www.medicinetoday.com.au.

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