Children's Health Ireland

Departments of General Paediatrics, Emergency Medicine, Surgery, Gastroenterology, Pharmacy

Constipation

**Dr David Coghlan, Dr. Lorraine Stallard, Dr. Carol Blackburn,
Prof. Billy Bourke, Prof. Alan Mortell, Ms. Anne Fitzpatrick**

Aim

To assist medical care providers in the evaluation and management of children with functional constipation

Definition of terms

"faecal incontinence", "encopresis" and "soiling" will be used synonymously to imply the undesired passing of faecal material

Faecal Impaction: A hard mass in the lower abdomen identified on physical examination or excessive stool in the distal colon on abdominal radiography

Target Patient Population

This evidence summary applies to children and young people with functional constipation. It does not deal with organic causes of constipation.

Target Users

This guide is directed at health-care professionals engaged in the care of children and young people with functional constipation presenting to OPD or through the Emergency Department.

Assessment

- Constipation is common, occurring in 5-30% of children[1,2]. Most children defecate at least every 2-3 days.
- Breastfed babies may defecate as infrequently as once a week [3,4].
- Healthy infants (<6 months) can strain and cry before passing soft stools (dyschezia). Unless the stools are also hard, this is not constipation and will self-resolve.
- Young children may ignore the urge to defecate, causing a build-up of large hard stool. Painful defaecation leads to apprehension, retention, passage of hard stool and a cycle of withholding and passage of hard stool [5,6].
- Constipation is particularly common during the introduction of solid foods to the diet, during toilet training and at school entry [7].

Symptoms/Signs of Functional Constipation [8]

- ≤2 stools/week
- History of withholding or incomplete evacuation
- History of painful or hard bowel movements
- History of large-diameter stools
- Presence of a large faecal mass on abdominal palpation
- Soiling/incontinence after the acquisition of toileting skills

Further History

Stool consistency [5]

Blood on wiping [1,5]

Straining [1,5]

Past medication use and effectiveness [3]

Painful or frightening precipitant prior to onset of constipation [5]

Toilet refusal/withholding behaviours [3]

Faecal incontinence [1,3]

Family history of coeliac disease [3]

Red Flags

Poor growth/weight loss [5]

Persistent vomiting [1,5]

Persistent blood PR [1,3]

Ribbon like stools [5]

Delayed passage of meconium [5]

Abdominal mass not consistent with a faecal mass [3]

Constipation starting before 1 month of age [3]

Examination

•Abdomen - palpable faeces.

•Lower Back/Spine – consider occult spinal dysraphism/tethered cord

•Neurology - assessment of lower limbs (including reflexes), observation of gait.

•Perianal area –fissures, placement of anus, anal wink / tone, or other abnormalities.

• Avoid rectal examinations if possible - it is rarely helpful and usually traumatic to the child [1,3,5]

Investigations

Abdominal x-rays are prone to over interpretation and rarely indicated.[3,4,9,10]

Dietary Assessment – maybe useful BUT constipation in young children is rarely primarily caused by low fibre/inadequate fluid intake, it is important not to inadvertently misdirect parents into a new battleground around feeding preference

Persistence of constipation is usually due to inadequate treatment/compliance. However, if constipation persists despite adequate behavioural modification and laxative therapy, consider investigating for less common conditions if indicated by the history and examination:

- coeliac disease,
- hypothyroidism,
- cow's milk protein allergy,
- hypercalcaemia
- hirschsprungs,
- anatomic malformations of the anus,
- spinal cord malformations

Management

Disimpaction

Assess for faecal impaction using history and examination – overflow soiling, faecal mass on palpation of abdomen.

Children with faecal impaction require a disimpaction regime before maintenance therapy can begin. Disimpaction treatment should be carried out as an outpatient.

First line treatment for disimpaction:

Iso-omotic laxative (Macrogol) [1,3,5] and/or stimulant laxative (Biscodyl/Senna) [1]

Lactulose for children under 1 year [1,3]

Macrogols (Movicol®/ Laxido® Paediatric Plain sachets)

Age	Day 1	2	3	4	5	6	7
1-<5 years	2	4	4	6	6	8	8
5-12 years	4	6	8	10	12	12	12

Young people > 12 years: Movicol® (adult formula) 4 sachets Day 1 and increase in steps of 2 sachets daily to a maximum of 8 sachets / day

Stimulant laxatives: Bisacodyl is available as tablets only and should not be crushed. Senna is available as liquid and tablets and may be a more appropriate choice for young children who cannot swallow tablets.

Bisacodyl

1-5 years: 1 tablet daily (5mg) for 3 days

> 5 years: 2 tablets daily (10mg) for 3 days

Senna: Oral Liquid

2 - <6yrs: 2.5 -5ml nocte PO
6 - <12yrs: 5-10ml nocte PO
≥12yrs: 10-20ml nocte PO

If tablets are not tolerated Sodium Picosulfate (Dulcolax Pico Liquid®) can be used when Senna liquid is not tolerated or ineffective. This is not routinely stocked in CHI @ Crumlin. Please always ensure it is prescribed generically as Sodium Picosulfate as there is often confusion between Dulcolax® tablets (Bisacodyl) and Dulcolax Pico® liquid (Sodium Picosulfate)

Sodium Picosulfate (Dulcolax Pico Liquid®

<4 years: 0.25mg/kg Max. 10mg once daily

4 years – 10years: 2.5mg – 5mg once daily

>10 years: 5mg – 10mg once daily

Lactulose

1 month – 1 year: 2.5ml twice daily

1 year – 5 years: 5ml twice daily

5 years – 10years: 10mL twice daily

>10years: 15mL twice daily

Adjust dose according to response. May take 48 hours to take full effect.

Sodium Picosulfate (Picolax®)

Outpatient treatment is recommended as first line [2]

If inpatient disimpaction is required Sodium Picosulfate (Picolax®) can be used either orally or via NGT [5]

2-4 years: ½ sachet BD for 1/7

4 – 9 years: 1 sachet first dose, ½ sachet second dose (12 hours after first dose) for 1/7
>9 years: 1 sachet BD for 1/7

Rectal medications for disimpaction are not advised unless all oral medications have failed [3,5].

Rectal treatment easily traumatises young children and can reinforce dysfunctional defecation behaviours

Maintenance Treatment

- Behaviour Modification
- Laxatives
- Dietary Modification

Behaviour Modification

- Position – footstool to ensure knees are higher than hips. Lean forward and put elbows on knees. A toilet ring should be placed over the toilet seat if needed [6,11].
- Toilet sits – up to 5 minutes, three times a day, preferably after meals. Praise child for sitting on toilet and keep toileting a positive experience [1,2].
- Chart or diary – depending on age of child. To reinforce positive behaviour and record frequency of bowel actions [6].
- Delay toilet training attempts until constipation has resolved [3,5]

Medications

Laxatives are generally required on a long term basis – parents need to be reassured that this is safe and does not cause a 'lazy' bowel.

Medication needs to be titrated to aim for 1 soft bowel motion per day

Recurrences frequently occur due to medication being stopped too early [12]

First Line – Macrogols i.e. Laxido® Paediatric / Movicol® Paediatric should be used as first line treatment for maintenance therapy [3,13–15]

Infants 1 month – <1 year: Laxido® paediatric /Movicol® paediatric ½ - 1 sachet /day (to start) or Lactulose 2.5ml BD

Children 1-<7 years.: Laxido® paediatric /Movicol® paediatric 1 sachet / day (to start). Up to 4 sachets/day may be needed

Children 7-<12 years: Laxido® paediatric / Movicol® paediatric 2 sachet / day (to start). Up to-4 sachets/day may be needed

Children >12 years: 1 – 3 sachets Movicol®/ day (Adult formula)

Second Line – Liquid paraffin or Lactulose

Liquid paraffin may not be used in children with swallowing difficulties due to aspiration risk. Where liquid paraffin is deemed necessary, it should only be prescribed following discussion with a consultant and only after all other treatment options have been exhausted.

3 - 12 years: Liquid Paraffin 1ml/kg/day to a max of 40ml/day

>12 years: Liquid Paraffin 10-40ml/day

Lactulose may be used if above not tolerated or swallowing difficulties

Stimulant laxatives (Bisacodyl or Senna) may be required in addition to Macrogols

Treatment with laxatives may need to be continued for years [16]

Laxatives need to be weaned gradually and should be continued for at least 2 months after symptom resolution [3,17]

Children who are toilet training should remain on laxatives until toilet training is well established [5]

Dietary Modification

- Encourage adequate fluid and fibre intake
  - Increasing dietary fibre alone is not an adequate treatment for constipation [13,18]
- Avoid excessive cow's milk intake – ie. <500ml in children over 18 months of age. [3]
- Although constipation as a symptom on its own is rarely caused by allergy, in infants under 6 months with constipation not responding to first line treatment a trial of hydrolysed formula is suggested [3]

Children with constipation and behavioural abnormalities may benefit from referral to a mental health provider/ community psychologist [1,3,6]

Follow-Up

General Practitioner

Children undergoing disimpaction regime require GP review within 4 weeks [3,5,17]

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Criteria for General Paediatrics OPD Review

- Red Flag symptoms listed above
- Chronic constipation not responding to treatment

Criteria for Gastroenterology OPD Review

- Features suggestive of Inflammatory Bowel Disease
  - Faltering growth
  - Persistent blood in stool
  - Perianal abnormalities – large skin tags, fistula, fissures
- Positive Coeliac Serology

Special Considerations

Common pitfalls:

1. If the stools are not hard and/or difficult to pass, then the problem is not constipation. Many children with functional abdominal pain are misclassified as having constipation on the basis of abdominal x-rays where faecal loading in the colon is commonly over diagnosed.
2. Lactulose is useful for mild constipation. However its effect is unpredictable and difficult to titrate. Side-effects such as cramping and gas from the malabsorbed sugar are common.
3. Stimulant laxatives such as Bisacodyl (Dulcolax®) or Senna (Senokot®) should not be used on a daily, long-term basis as tachyphylaxis can arise. There are also theoretical concerns regarding possible detrimental effects on colonic innervation. Stimulants should be reserved for the disimpaction phase of treatment.
4. Failure of the stools to soften despite large doses of Macrogols is sometimes reported by caregivers. However this is impossible to reconcile as Macrogols are not absorbable. Ensure adequate dilutions of Macrogols for each sachet administered.
5. Per rectum treatment should be avoided. It very commonly traumatises young children and makes the problem worse. Stimulant laxatives, as outlined above, should be used instead.
6. Overtreatment with Macrogols may cause diarrhea. However, parents sometimes misinterpret overflow soiling as overtreatment. If in doubt look for a large mass of retained faeces in the rectum –this is the one situation where abdominal x-rays are useful, especially if the child is overweight or difficult to examine. For the same reason we avoid treatment per rectum, we do not perform digital examinations on children except in very rare circumstances as it can traumatise them.

Companion Documents

- *Parent information leaflet*
- *References*

Links to useful websites

- *https://www.hse.ie/continencecare*
- *https://www.rch.org.au/clinicalguide/guideline_index/Constipation_Guideline/*
- *http://www.nice.org.uk/guidance/cg99/chapter/1-recommendations*
- *http://www.olchc.ie/Healthcare-Professionals/Nursing-Practice-Guidelines/Poo-Passport-.pdf*