

Constipation

Management Guidelines
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Relevant links

[Constipation pathway](#)

[Constipation management plan](#)

Constipation is one of the most common complaints in paediatrics. It can present as history of infrequent stooling (3 or fewer stools per week), passage of large and/or hard stool associated with painful defaecation, intermittent abdominal pain, incomplete evacuation of rectal contents, involuntary soiling (encopresis), or inability to pass stool at all.¹

Constipation is a symptom not a disease. Constipation in children is most commonly due to a *functional* cause (95%), that is, it is not due to an organic or anatomic cause, or secondary to the intake of medication. However, many different disorders can cause constipation. **Although relatively rare, some causes of constipation are potentially life threatening and need to be recognised promptly by emergency doctor.**

Table 1

Normal stooling pattern of children :

- It varies widely based on age and diet.
- Some newborn infants may have a stool with every feed while others who are breastfed may have large soft stools once every 7-14 days.
- Children 1- 4 years of age may have a bowel motion 1-2 per day.
- 85% of children by 4 years old have a bowel movement every 1-2 days.
- Infant dyschezia - healthy infant under 6 mo may cry and strain before passing a soft stool.¹²

Table 2

Most Common cause ⁴	Causes Not to be Missed ⁴	Causes of Delayed Passage of Meconium ⁴
1. Idiopathic/functional - 95%	1. Hirschsprung's disease 2. Spinal dysraphism 3. Abdominal or pelvic mass 4. Medication side effects 5. Gluten enteropathy 6. Hypokalaemia/hypothyroidism 7. Cystic fibrosis 8. Heavy metal poisoning eg. lead 9. Infantile botulism (child given honey)	1. Intestinal obstruction- duodenal atresia, webs, volvulus 2. Hirschsprung's disease 3. Meconium ileus - cystic fibrosis 4. Functional ileus - prematurity, sepsis, respiratory distress, electrolytes disturbances 5. Small left colon - increased incidence with maternal diabetes 6. Hypothyroidism

DIFFERENTIAL DIAGNOSIS

Constipation is a symptom associated with many gastrointestinal disorders and systemic diseases. The differential diagnosis is considerable.

Table 3

Non organic Causes of Constipation - Functional Constipation

Functional (or idiopathic) constipation accounts for 95% of cases.

- Situational
 - Harsh toilet training/excessive parental interventions
 - Change of environment or routine - new diet (infant started cow's milk) or school bathroom avoidance
 - Postponing defaecation – child too busy, lack of privacy, or unavailability of toilet
 - Painful defaecation, toilet phobia
- Psychosocial: Family stress, Sexual abuse, Emotional disturbance
- Intercurrent illness: Post gastroenteritis with adynamic ileus or post viral illness with decreased fluid intake.
- Developmental: Cognitive handicaps/Mental retardation, attention deficit disorder
- Depression

Table 4

Organic Causes of Constipation
Neurogenic and neuropathic
<ul style="list-style-type: none"> • Hirschsprung's disease • Spinal dysraphism • Cerebral palsy • Spinal cord injury • Neurofibromatosis • Neuromuscular disorders • Coeliac disease
Endocrine and metabolic disorders
<ul style="list-style-type: none"> • Hypothyroidism • Renal acidosis • Diabetes insipidus • Hypo or Hypercalcaemia • Hypokalaemia • Pheochromocytoma
Anorectal
<ul style="list-style-type: none"> • Anorectal anomalies • Anal fissures • Haemorrhoids
Chronic intestinal pseudo-obstruction ⁵
<ul style="list-style-type: none"> • A rare but severe form of intestinal motility disorders • Mostly congenital/genetic causes, but some are acquired • Intestinal myopathic/neuropathic causes, infective causes e.g herpes simplex, CMV or EBV infections, autoimmune e.g autoimmune myositis, or post abdominal surgery
Constipation induced by drugs
<ul style="list-style-type: none"> • Methylphenidate • Phenothiazine • Phenobarbital • Imipramine hydrochloride • Phenothiazine • Antacids • Vincristine • Opiates e.g. codeine, morphine

Table 5

Red Flags - (point to a possible organic cause which will require further investigation)^{3,4}	
HISTORY	EXAMINATION
1. Delayed passage of meconium for more than 48 hours	1. Lower spine abnormalities
2. Constipation present from birth or early infancy	2. Absent anal wink or absent cremasteric reflex
3. Failure to thrive, significant weight loss	3. Decreased lower limbs tone, reflex or strength
4. Abdominal distension, bilious vomit or ileus	4. Tight, empty rectum in presence of palpable faecal mass
5. Child is systemically unwell, fever, vomiting	5. Unexplained abdominal or pelvic mass
6. Fatigue, polyuria, polydipsia	6. Patulous anus, anal prolapse, anteriorly placed anus
7. Urinary incontinence	7. Blood in stool not attributable to anal fissure
8. Extraintestinal symptoms	8. Representation, or failed standard treatment

EVALUATION AND DECISION MAKING

The evaluation of the child presumed to have constipation should begin with a thorough history and physical examination with special attention to potential [red flags](#).

Table 6

1. Age of patient	9. Any stool incontinence – encopresis, soiling
2. Age of onset of constipation	10. Associated abdominal pain or vomiting
3. Stool frequency	11. Child's general health & associated recent illness
4. Stool consistency and size (see Bristol stool chart below)	12. Is the child failing to thrive
5. Defaecation – painful or straining	13. Timing of passing first meconium after birth
6. Any blood on stool or toilet paper	14. Treatment/medication used and response
7. Length of time the constipation has been present	15. Psychosocial history – family, toilet habit etc
8. Relation to change in diet or child's environment	16. Past medical history, and developmental history








EXAMINATION

1. A thorough physical examination needs to be undertaken, including general appearance, vital signs, growth parameters. If concern about failure to thrive, always remember to check the growth parameters and plot them on a growth chart.
2. Physical examination often (not always) reveals palpable stool in the abdomen, especially at right iliac fossa.
3. Abdominal mass (e.g. tumour or enlarged organ) can cause constipation. Therefore, be careful to differentiate faecal and other abdominal mass during palpation. Do not hesitate to ask senior doctor if unsure or concerned.
4. The back should be inspected for skin changes over the sacral area (e.g. hair tuft, or pilonidal dimple), check for anal anomalies, and lower limbs' muscular tone, deep tendon reflexes and muscle power (especially infants).
5. A rectal examination is rarely required except in infant for Hirschsprung's disease. **In our ED, a digital rectal examination should be undertaken only by medical practitioners competent to interpret features of anatomical abnormalities or Hirschsprung's disease. (often the surgical registrar).**

[Bristol Stool Chart](#)

Types 1 and 2 indicate **constipation**, with 3 and 4 being the "ideal stools" especially the latter, as they are the easiest to **defecate**, and 5–7 tending towards **diarrhoea**.

Bristol Stool Chart

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on its surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges (passed easily)
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces. Entirely Liquid

An abdominal x-ray is rarely indicated.

A plain radiograph of the abdomen may be helpful in a child with faecal soiling who does not have a faecal mass palpable on abdominal or rectal examination, in children who vehemently refuse rectal examination, and in children who are markedly obese.

TREATMENT OF ACUTE CONSTIPATION

Acute treatment:

- **Neonate and Infant** - *Glycerine suppository* (700mg infant size) – insert one rectally and allow to remain for 15 to 30 minutes.
- **Children (>1 year old)** - *Microlax enema* (5ml pack) for over 1 year old. **Note: insert only half nozzle length for under 3 year old**
- **Children over 2 years old (only for healthy children)**
Use laxative such as Lactulose or Movicol
Consider using *Fleet enema* (contraindicated in <2 year old) for over 2 yr old - 3 ml/kg of body weight if child has significant abdominal pain and parents are happy, as enema can help to disimpact quicker.

Maintenance treatment

(For dosage, see TREATMENT OF CHRONIC RETENTIVE CONSTIPATION section below)

- **Neonate or infant under 6 months** - use a stool-softening agent such as **Coloxyl** for a period of 10-14 days.
- **Children older than 6 month old** - use an osmotic laxative such as Lactulose or movicol
- Education and Dietary advice is an important part of treatment. (See [Demystification and Education](#))

TREATMENT OF CHRONIC RETENTIVE CONSTIPATION (DISIMPACTION)

Disimpaction is necessary before initiation of maintenance therapy. It may be accomplished with either oral or rectal medication. There are no randomized studies that compare the effectiveness of 1 with the other.⁶ The oral approach is not invasive and gives a sense of power to the child, but adherence to the treatment regimen may be a problem. The rectal approach is faster but is invasive. **The choice of treatment is best determined after discussing the options with the family.**

1. Disimpaction Treatment:

- **Oral Disimpaction:** Movicol is the recommended laxative
Movicol (adult) - 1 sachet has 13.125g of Macrogol, mixed in 125 ml of water, 10ml≈1g Macrogol
(**Movicol** contains macrogol 3350 13.125 g, sodium chloride 350.8 mg, sodium bicarbonate 178.6 mg, potassium chloride 50.2 mg)

Macrogol (Polyethylene Glycol) has been studied in children of all ages

- >18 month old, effective dose of disimpaction is 1 - 1.5g/kg/day of Macrogol in 95% of cases.⁹
- >18 mo, effective maintenance dose ranges from 0.27g/kg/day - 1.42g/kg/day (mean 0.84 g/kg/day).¹⁰
- <18 mo, effective maintenance dose ranges from 0.26 - 1.26g/kg/day (mean 0.78 g/kg/day) is safe and effective¹¹.

Movicol Dosage (Increase the dose until disimpaction occurs and then commence maintenance dose)
(Chocolate flavoured Movicol (adult) is also available.)

Table 7

For Disimpaction, usually takes 3-5 days: Use <i>Movicol Adult (Macrogol 3350 13.125g/sachet)</i>					
Age	Day1	Day 2	Day 3	Day 4	Day 5
Under 1 year old	¼ sachet	½ sachet	½ sachet	½ sachet	½ sachet
1-5 years	1 sachets	2 sachets	2 sachets	3 sachets	3 sachets
6 -12 years	2 sachets	3 sachets	4 sachets	5 sachets	6 sachets

- **Rectal Disimpaction:**

Phosphate enemas are contraindicated in <2 years old, Hirschsprung's disease, congenital megacolon, or renal failure

This is most easily undertaken with the use of a hypertonic phosphate enema (*Fleet* phosphate enema). The phosphate enemas should be given in a dose of 3mL/kg of body weight. These can be repeated after 12 hours.

Precaution with phosphate enemas:

Severe vomiting with hyponatraemia, hyperphosphataemia, hypocalcaemia, hypokalaemia, dehydration, seizures, coma and death have been reported in a few children less than five years of age after use of a single hypertonic phosphate enema. It is important to observe the child carefully after administration of a hypertonic phosphate enema.

OR *Microlax* enema x 2 can be tried

If disimpaction is not achieved with the enema or oral medication, or in a child with a large amount of faeces palpable through the abdominal wall, admission to hospital for oral or nasogastric colonic lavage is advisable.

Recommended: *Colonlytely* (50-75 mL/kg/day)

- Orally or via nasogastric tube over 10 hour period
- Repeat as necessary to clear the colon

2. Maintenance Treatment: Movicol is the recommended laxative

Often only need one of the following. The choice among these is based on safety, cost, the child's preference, ease of administration, and the practitioner's experience.

Dose can be increased or decreased by 20% each time every 2 – 3 days to adjust to the optimal maintenance dose.

Table 8

Osmotic agent: Movicol (Chocolate flavoured *Movicol (Adult)* is available)

Maintenance treatment of <i>Movicol (Adult)</i> :		
Age	Daily requirement	Maximum daily dose
Under 1 year old	¼ sachet daily	Up to ½ sachet daily
1-6 years	½ sachet daily	Up to 1 sachets daily
6-12 years	1 sachets daily	Up to 2 sachets daily

Table 9

Other Laxatives commonly used at Emergency Department

<p>Osmotic agent: <i>Lactulose</i> or <i>sorbitol</i></p> <ul style="list-style-type: none"> • <1 years = 5mls daily, adjusted according to respond. (Maximum dose 10ml per day) • 1-6 years = 10-20mls daily, adjusted according to respond. (Maximum dose 40-90ml per day) • 7-14years = 20-30mls daily, adjusted according to respond. (Maximum dose 40-90ml per day)
<p>Stool softener: <i>Coloxyl</i></p> <ul style="list-style-type: none"> • <6 months = 0.3ml tds • 6-18 months = 0.5ml tds • 18-36 months = 0.8ml tds
<p>Lubricant: <i>Parachoc</i>: (not to be used in less than 3 years)</p> <ul style="list-style-type: none"> • 3-6 years = 10-12mls daily • 7-12 years 20mls daily • >12 years 40 mls daily
<p>Stimulant: <i>Senokot</i> granules, divided in one or two doses</p> <ul style="list-style-type: none"> • 2-6 years: ¼ - ½ teaspoon daily • > 6 years: ½ - 1 teaspoon daily <p><i>Senokot</i> Granules may be stirred into hot or cold milk, sprinkled on food or eaten plain. Be careful of long term use of <i>senekot</i> (senna) which can cause melanosis coli, and should be used for disimpaction - short periods or intermittently.</p>

It must be emphasised that long-term treatment needs to be under the supervision of the child's local doctor or physician.

While Emergency Department treatment may control symptoms in the short-term, long-term treatment with laxatives may be needed before a "cure" is achieved.

DEMYSTIFICATION and EDUCATION:

- Explanation of the pathogenesis of constipation and encourage parents to maintain a consistent, positive and supportive attitude in all aspect of treatment
- Encourage high fibre diet if intake was deficient
- Encourage fruits or juices contain sorbitols (stool softener) - prune, pear, apple, or white grape
- Negotiated and non-punitive behavioural intervention suited to the young child or young person's stage of development. These could include scheduled toileting twice a daily for 5 to 10 minutes each time and use of encouragement and rewards systems.
- Children with chronic constipation (constipation > 4 weeks) need treatment for a period up to several months (up to 4- 6 months) to allow dilated bowel to return to normal
- Recommended website for parents education if they want to read more about constipation:
 1. <http://raisingchildren.net.au/articles/constipation.html/context/485>
 2. www.childhoodconstipation.com

DISPOSITION and FOLLOW UP:

- Constipation Treatment Plan and Constipation fact sheet
- Acute constipation – GP follow up PRN
- Chronic constipation (functional) – GP follow
- Chronic constipation (complicated or possible organic causes) – General Paediatric Clinic referral or other appropriate subspeciality depending on what you are concern about.

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