# **Pediatric Laxatives**



Approximately three to eight percent of children are believed to suffer from constipation.<sup>4</sup> Although several conditions may cause constipation, 95 percent of children with constipation suffer from idiopathic or functional constipation: constipation that is not associated with organic disease.<sup>6</sup>

Researchers believe that idiopathic constipation is multifactorial: caused by dietary, psychological and social factors.<sup>4</sup> There are few randomized trials to provide evidence for successful treatments, however, and most clinicians rely instead on expert opinion. Treatments that traditionally have had good results include enemas, dietary alterations, and laxatives, which, according to researchers, are the most important agents to successfully treat constipation.<sup>6</sup>

Laxatives are grouped into the following categories:<sup>7</sup>

- Bulk-forming: An agent that increases bulk volume and water content of the stool, which then promotes bowel movement.
- Carbon dioxide-releasing: A suppository agent that contains ingredients that release carbon dioxide, which then induce gentle pressure in the rectum and promotes bowel movement.
- Hyperosmotic: An agent that attracts water into the stool and promotes bowel movement.
- Lubricant: An agent that lubricates the contents of the intestinal tract, which promotes bowel movement.
- Saline: An agent that increases water in the intestine, which promotes bowel movement.
- Stimulant : An agent that promotes bowel movement by directly acting on the intestine
- Stool softener: An agent that penetrates and softens stool, which promotes bowel movement.

It is recommended that a thorough medical history be developed as part of an evaluation of a child who may suffer from constipation. Determining his or her regular bowel habits, temperament and family structure, for example, are key factors in deciding which type of laxative will work best. According to S Baker et al., several steps should be followed when approaching a child with idiopathic constipation:

Determine whether fecal impaction is present,



- Treat the impaction if present,
- Initiate treatment with oral medication,
- Provide parental education and close follow-up,
- Adjust medications as needed.<sup>1</sup>

The Federal Drug Administration (FDA) has listed the following ingredients found in Fleet Pedia-Lax products as Generally Recognized as Safe and Effective (GRASE): glycerin (hyperosmotic laxative), magnesium hydroxide (saline laxative), sodium phosphate (saline laxative), sennosides (stimulant laxatives), and docusate sodium (stool softener).

Magnesium hydroxide is often recommended when a laxative is necessary to relieve occasional constipation.<sup>1</sup> It acts osmotically, releasing a peptide that stimulates gastrointestinal secretion and motility. Magnesium hydroxide generally produces bowel movement in 30 minutes to six hours.

Like magnesium hydroxide, sodium phosphate is a saline laxative that acts osmotically to relieve constipation. It can be delivered orally or rectally (enema), but parents of children under two years old should consult a doctor before administering sodium phosphates rectally, and parents of children under five years old should consult a doctor before administering sodium phosphates orally.<sup>7</sup> A sodium phosphates enema will cause bowel movement within one to five minutes.

Glycerin laxatives are used to treat occasional constipation and are delivered rectally via suppositories or enemas. They produce bowel movement within 15 minutes to 1 hour.

Sennosides are often useful in children who have more-difficult-to-treat constipation.<sup>5</sup> When a stool mass is difficult to evacuate, senna may be used to successfully remove the retained stool because it causes more significant rectal contractions as well as providing more fiber and bulk.<sup>2</sup> It is also beneficial in helping school-age children who suffer from constipation because it doesn't provoke rectal filling and contraction until after a certain amount of time has passed (approximately six to 12 hours), which allows them to plan their day around the treatment.<sup>2</sup>

Docusate sodium acts as a stool softener for the prevention of hard, dry stools as well as to relieve occasional constipation. It facilitates water absorption by the stool, which makes it softer



and easier to pass. The oral dosage produces bowel movement within 12 to 72 hours.<sup>7</sup> At the Pediatric Bowel Management Clinic at Hotel Dieu Hospital, Kingston, Ontario, 653 pediatric patients were studied for 16 months to learn more about successful treatments of constipation. The most common laxatives used were senna (32 children) and docusate sodium (32 children), both of which have had favorable results in clinical use.<sup>6</sup>

The following guidelines were created by the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition to determine how to best evaluate and treat constipation in infants and children who have no preexisting medical condition.<sup>5</sup> Created by a NASPGHN constipation committee, the guidelines target infants and children with constipation and recommend which medications are helpful and effective. Approximately 160 articles were reviewed through Medline to create these guidelines.<sup>5</sup> It was published in 1999 and revised in September 2006.<sup>3</sup>

### **General Recommendations**

- A thorough history and physical examination are an important part of the complete evaluation of the infant or child with constipation.
- Performing a thorough history and physical examination is sufficient to diagnose functional constipation in most cases.
- A stool test for occult blood is recommended in all constipated infants and in those children who also have abdominal pain, failure to thrive, diarrhea or a family history of colonic cancer or polyps.
- In selected patients, an abdominal radiograph, when interpreted correctly, can be useful to diagnose fecal impaction.
- Rectal biopsy with histopathological examination and rectal manometry are the only tests that can reliably exclude Hirschsprung disease.
- In selected patients, measurement of transit time using radiopaque markers can determine whether constipation in present.



#### **Recommendations for Infants**

- In infants, juices that contain sorbitol, such as prune, pear, and apple juices can decrease constipation.
- Barley malt extract, corn syrup, lactulose, or sorbitol (osmotic laxatives) can be used as stool softeners.
- Enemas, mineral oil and stimulant laxatives are not recommended for infants.

#### **Recommendations for Children**

- In children, disimpaction can be achieved with either oral or rectal medication, including enemas.
- In children, a balanced diet, containing whole grains, fruits, and vegetables, is recommended as part of the treatment for constipation.
- The use of medications in combination with behavioral management can decrease the time to remission in children with functional constipation.
- Mineral oil (a lubricant) and magnesium hydroxide, lactulose, and sorbitol (osmotic laxatives) are safe and effective medications.
- Rescue therapy with short-term administration of stimulant laxatives can be useful in selected patients.
- Senna and bisacodyl (stimulant laxatives) can be useful in selected patients who are more difficult to treat.
- Polyethylene glycol electrolyte solution, given in low dosage, may be an effective longterm treatment for constipation that is difficult to manage.
- Biofeedback therapy can be an effective short-term treatment of intractable constipation.



## References

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