

Complete Summary

GUIDELINE TITLE

Functional constipation and soiling in children.

BIBLIOGRAPHIC SOURCE(S)

University of Michigan Health System. Functional constipation and soiling in children. Ann Arbor (MI): University of Michigan Health System; 2003 Feb. 10 p. [8 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: University of Michigan Medical Center. Idiopathic constipation and soiling in children. Ann Arbor (MI): University of Michigan Health System; 1997. 5 p.

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SCOPE

DISEASE/CONDITION(S)

Functional pediatric constipation, with or without soiling

GUIDELINE CATEGORY

Diagnosis
Treatment

CLINICAL SPECIALTY

Family Practice
Pediatrics

INTENDED USERS

Advanced Practice Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To present methods for accurate and early diagnosis of functional constipation and soiling in children
- To identify methods for education, clean-out, maintenance and extended follow up
- To promote child and family adherence to treatment recommendations

Note: Encopresis (the voluntary or involuntary passage of formed, semi-formed or liquid stool into a place other than the toilet at regular intervals [at least once per month] after 4 years of age) without constipation is not specifically addressed.

TARGET POPULATION

Children from infancy to 18 years

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. Developmental history including stool frequency, consistency, and problems with stool passage; medications or environmental exposures which may contribute to constipation; past and current treatment of constipation and response; diet; and psychosocial and family history
2. Physical examination including abdominal, anal, neurologic, and skin/bone
3. Differential diagnoses for organic causes of constipation

Treatment

1. Education of child and caretaker, including description of functional constipation; possible causes and typical course including physiologic changes; need for adherence to treatment and maintenance
2. Clean out (disimpaction):
 - For infants: Glycerin suppositories and enemas
 - For children:
 - Enemas (mineral oil, normal saline, hypertonic phosphate, and milk with molasses)
 - Combination (enema, suppository, oral laxative)
 - Bisacodyl suppositories and tablets
 - Polyethylene glycol electrolyte solution (Golytely or Nulytely), oral or by nasogastric tube
 - Oral high-dose mineral oil
 - Senna (X-Prep)

- Magnesium citrate
3. Medication
- For infants: Juices with sorbitol; lactulose or sorbitol; corn syrup (light or dark); rectal suppositories
 - For children:
 - Oral medications
 - Lubricants (mineral oil)
 - Osmotic laxatives such as lactulose, magnesium hydroxide (milk of magnesia), or polyethylene glycol powder (Miralax) in water or juice, sorbitol
 - Stimulant laxatives (reserved for short term use) such as senna, and bisacodyl
 - Rectal suppositories such as bisacodyl and glycerin
 - Behavioral training including setting a good example; institution of positive toileting routines; documentation of all stool passage; incentives/rewards; avoidance of punitive approaches and embarrassment
 - Dietary choices to improve stool regularity: high fiber intake, juices and other non-dairy fluids
- Note:** Elimination of dairy products is considered but not recommended.
- Follow up
 - Assess adherence and adequacy of treatment
 - Medication withdrawal
 - Gradual weaning
 - Tracking stool outputs

MAJOR OUTCOMES CONSIDERED

Recovery rates (with and without treatment)

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases
Searches of Unpublished Data

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The literature search for the current update was based on a supplemental Medline search of literature from 1997 through May 2001. The population was children (infancy to 18 years) and the results were limited to English language. The major key words were: constipation (e.g., constipation, idiopathic constipation, encoprisis, fecal incontinence, soiling), clinical trials (e.g., clinical trials, cohort studies, meta-analysis), and guidelines (e.g., clinical protocols, practice guidelines, consensus development conferences). Additional search terms were: symptoms (e.g., impacted feces, intestinal obstruction, painful defecation), coexisting conditions (e.g., lead poisoning, codeine, ritalin, chemotherapy), confused conditions (e.g., pseudo obstruction syndrome, spinal cord abnormal,

hypothyroidism, autism), evaluation (e.g., thyroxine with analysis or blood, T4 analysis, calcium testing), diagnosis (e.g., diagnosis, sensitivity and specificity), behavioral treatment (e.g., behavioral therapy, toilet habits, parent-child relations, patient education, parental education), dietary and allergy (e.g., diet, dietary fiber, dairy products, lactose intolerance), and medications (e.g., bisacodyl, laxatives, suppositories, magnesium, enema, microlax, mineral oil, molasses). A complete list of search terms is available upon request.

The search was conducted in components each keyed to a specific causal link in a problem structure. The search was supplemented with recent clinical trials known to expert members of the panel. The search was single cycle.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

- A. Randomized controlled trials
- B. Controlled trials, no randomization
- C. Observational trials
- D. Opinion of expert panel

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

UMHS guidelines are reviewed by leadership in departments to which the content is most relevant. This guideline was reviewed by members of the following departments: Pediatric Gastroenterology; Pediatric Surgery; General Pediatrics; and Pediatric Psychology.

Guidelines are approved by the Primary Care Executive Committee (PCEC) and the Executive Committee of Clinical Affairs (ECCA).

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Note from the National Guideline Clearinghouse (NGC): The following key points summarize the content of the guideline. Refer to the full text of the original guideline document for additional information, including detailed information on diagnosis and "red flags" for organic causes; dosing and possible side effects for infants and children; cost of medications; instructions on education and behavioral training; and dietary choices.

- **Diagnosis.** Symptoms of functional constipation often begin during late infant to toddler age. Inquiry at doctor visits about stool frequency, character, and painful stool passage may aid earlier diagnosis. History and physical examination are the best guide for accurate diagnosis.
- **Treatment.**
 - Provide child and family education.
 - Assure adequate clean-out.
 - Include behavioral, dietary and medication components in the maintenance phase of treatment.
 - Child and family adherence to treatment recommendations is a likely predictor of success.

CLINICAL ALGORITHM(S)

The original guideline document provides the following clinical algorithms:

- Diagnosis and management of functional constipation & soiling in infants <1 year
- Diagnosis and management of functional constipation & soiling in children >1 year

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

When possible, conclusions were based on prospective randomized clinical trials. In the absence of randomized controlled trials, observational studies were considered. If none were available, expert opinion was used.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- *Accurate and early diagnosis of idiopathic constipation:* Earlier diagnosis and effective management of constipation with or without soiling may improve outcome.
 - On average, one-half to two-thirds of children with functional constipation with or without soiling recover, meaning they are able to wean medication support. The rate of recovery is higher for children who begin intervention earlier.
- *Resolution of constipation, painful defecation, impaction and withholding, and associated soiling:* A combination of behavioral training and laxative therapy affords earlier remission for a majority of subjects
- *Patient and family education:* Explaining the physiologic basis of constipation and soiling alleviates blame and enlists cooperation; education improves family adherence to the treatment plan.
 - Although children frequently present with low self-esteem and other behavioral concerns, these symptoms are improved for a majority with education and management for the constipation and soiling.
- *Adequate follow-up:* Follow-up monitors and promotes effective clean-out and an effective maintenance phase.
 - Maintenance prevents reimpaction so that bowel rehabilitation can occur. Studies have reported recovery in 50 to 70% of children by 1 to 6 years from diagnosis. In one study, 50% of children were off laxatives in 1 year and an additional 20% were weaned by 2 years. However, others suggest, rate of improvement is small after 6 to 12 months of treatment and failure to improve during the first 2 weeks predicts treatment non-responders at 3 months.

POTENTIAL HARMS

- Enemas have a risk of mechanical trauma. Saline and hypertonic phosphate may cause abdominal cramping. Hypertonic phosphate has risk of hyperphosphatemia, hypokalemia, and hypocalcemia, and may not be recommended for children under 4 years of age. If enemas are considered for infants, administer first in doctor's office. Bisacodyl may cause abdominal cramping, diarrhea, hypokalemia.
- Polyethylene glycol electrolyte solution may cause nausea, cramping, vomiting, bloating, and aspiration, and administration may require nasogastric tube and hospitalization.
- Oral high-dose mineral oil has risk of aspiration and lipid pneumonia. Adherence during maintenance may be problematic. Too high a dose or fecal impaction may cause anal leakage.
- Senna has risk of abdominal cramping. Maintenance with senna has risk of idiosyncratic hepatitis, melanosis coli (improved by senna discontinuation), hypertrophic osteoarthropathy, analgesic nephropathy.
- Magnesium citrate has risk of hypermagnesemia.

- Lactulose may cause abdominal cramping, flatus.

QUALIFYING STATEMENTS

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- These guidelines should not be construed as including all proper methods of care or excluding other acceptable methods of care reasonably directed to obtaining the same results. The ultimate judgement regarding any specific clinical procedure or treatment must be made by the physician in light of the circumstances presented by the patient.
- Although the importance of dietary education has not been determined separately, most experts include this as a component of the maintenance phase of therapy.
- While there are no studies of adherence and outcome for pediatric constipation, it is the consensus of the guideline panel that adherence to behavioral, dietary, and medication strategies is important to achieving continued success.
- There are no studies to suggest the most effective method to withdraw medication support during follow-up. The guideline panel suggests that medication is weaned over several months.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Clinical Algorithm
Patient Resources

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

University of Michigan Health System. Functional constipation and soiling in children. Ann Arbor (MI): University of Michigan Health System; 2003 Feb. 10 p. [8 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1997 Sep (revised 2003 Feb)

GUIDELINE DEVELOPER(S)

University of Michigan Health System - Academic Institution

SOURCE(S) OF FUNDING

University of Michigan Health System

GUIDELINE COMMITTEE

Functional Constipation and Soiling in Children Guideline Team

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Neither the members of the guideline team nor the consultant have a relationship with commercial companies whose products are discussed in this guideline.

GUIDELINE STATUS

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This guideline updates a previous version: University of Michigan Medical Center. Idiopathic constipation and soiling in children. Ann Arbor (MI): University of Michigan Health System; 1997. 5 p.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the [University of Michigan Health System Web site](#).

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

The following is available:

- Functional constipation and soiling in children. Patient education handout. University of Michigan Health System; 2003. Various p.

Electronic copies: Available from the [University of Michigan Health System Web site](#).

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on May 20, 1999. The information was verified by the guideline developer on June 17, 1999. This NGC summary was updated by ECRI on January 19, 2004. The updated information was verified by the guideline developer on February 6, 2004.

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