Constipation and Encopresis in childhood

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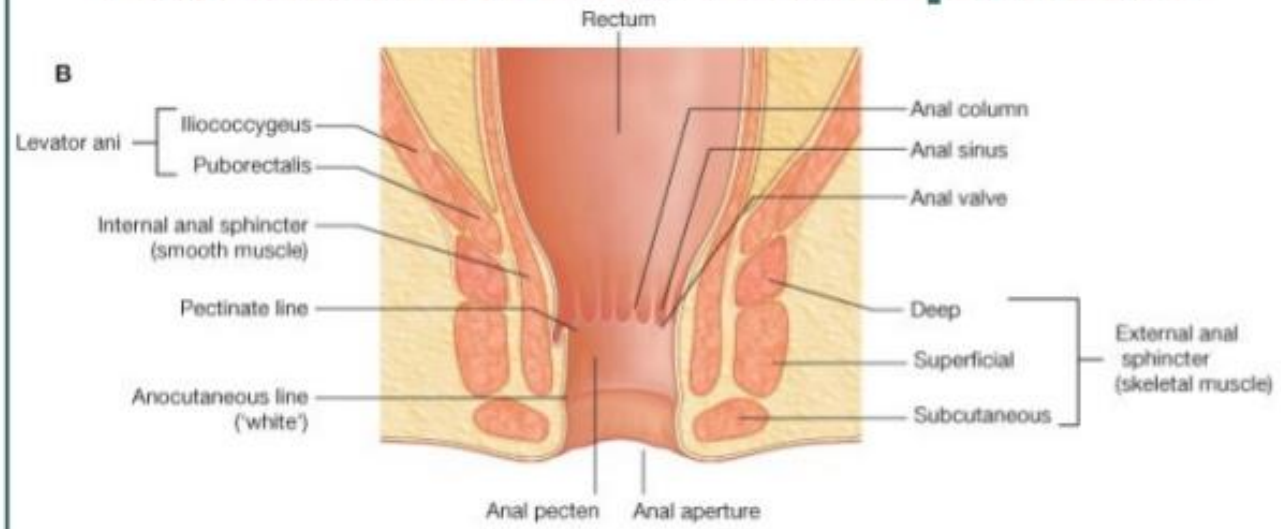
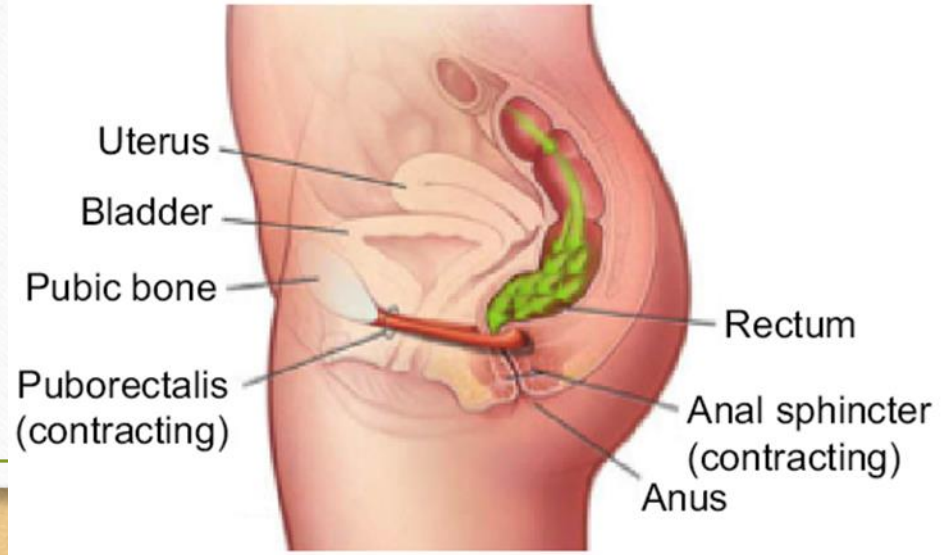
No disclosures to make

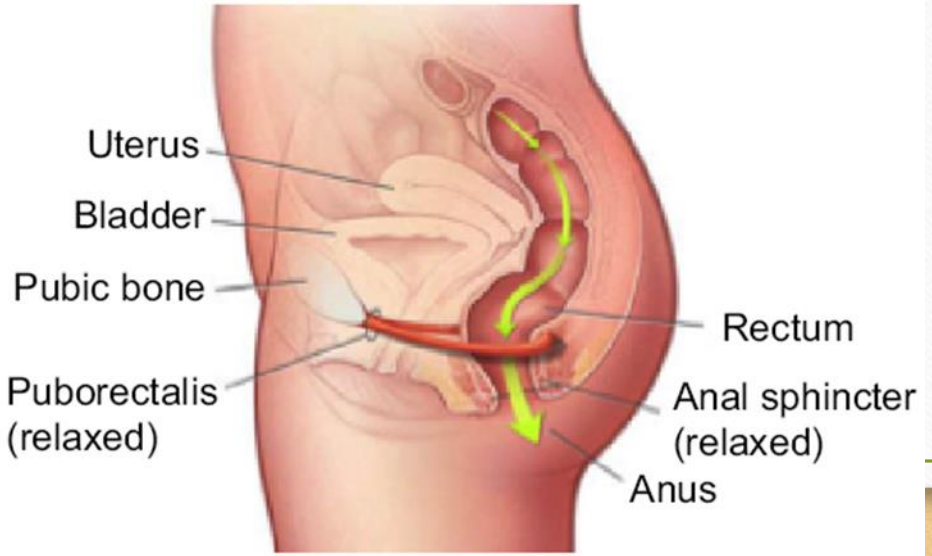
Objectives

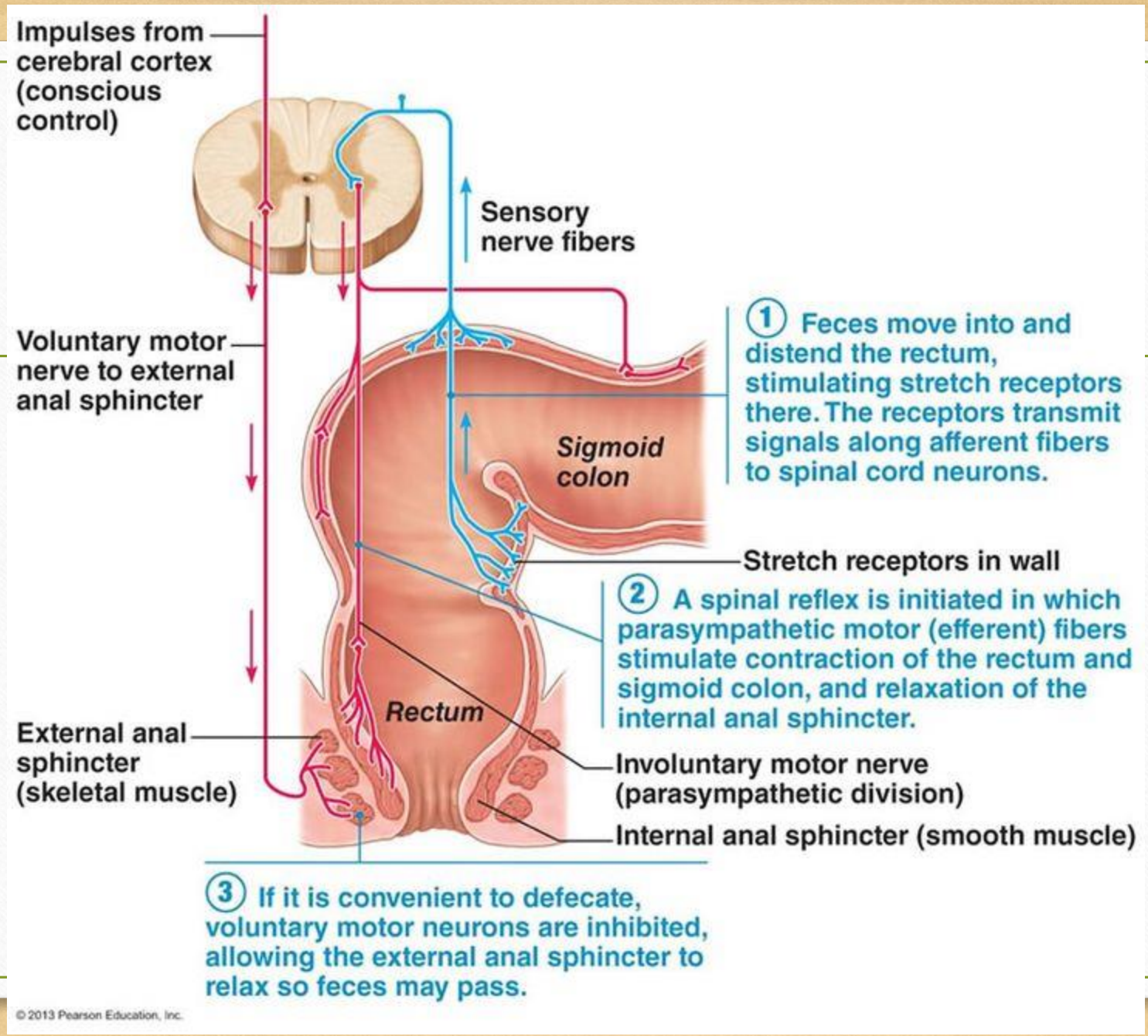
- Know that constipation is a common problem in childhood with a diverse clinical presentation.
- Understand that functional constipation is a symptom-based diagnosis that does not require extensive testing.
- Recognize that most children who present with faecal incontinence or encopresis have associated constipation.
- Describe the treatment of constipation and encopresis

External/Internal Anal Sphincter








Impulses from cerebral cortex (conscious control)
Sensory nerve fibers
Voluntary motor nerve to external anal sphincter
Sigmoid colon
1 Feces move into and distend the rectum, stimulating stretch receptors there. The receptors transmit signals along afferent fibers to spinal cord neurons.
Stretch receptors in wall
2 A spinal reflex is initiated in which parasympathetic motor (efferent) fibers stimulate contraction of the rectum and sigmoid colon, and relaxation of the internal anal sphincter.
Rectum
External anal sphincter (skeletal muscle)
Involuntary motor nerve (parasympathetic division)
Internal anal sphincter (smooth muscle)
3 If it is convenient to defecate, voluntary motor neurons are inhibited, allowing the external anal sphincter to relax so feces may pass.
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What is the definition of constipation?

- Constipation can be roughly defined as infrequent passage of hard, uncomfortable stools that are distressing to the child.

- Constipation is a common paediatric problem and parental concern.

- In general, a complaint of constipation accounts for 5% of general paediatric office visits

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- Constipation rarely signifies a serious disease, but it has an unfavourable impact on patient quality of life, parental satisfaction

- Children with constipation often complain of abdominal pain, decreased appetite, and painful stooling, which can be distressing to both the child and the parents

Corazziari et al; Clin Gastroenterol Hepatol. 2005;3(11):1101–1106

Encopresis

- Encopresis is the repeated passage of faeces into inappropriate places (usually the underpants).

Encopresis = Constipation + Overflow

Functional

- Infant dyschezia
- Functional constipation
- Nonretentive faecal soiling

Obstructive

- Anal stenosis
- Anterior displacement of the anus
- Small left colon syndrome
- Meconium ileus
- Colonic stricture

Medications

- Opioid narcotics
- Anticholinergic agents
- Tricyclic antidepressants

Other

- Sexual abuse
- Chronic intestinal pseudo-obstruction

Neurologic

- Hirschsprung disease
- Neuronal dysplasia
- Anal achalasia
- Disorders of the spinal cord

Endocrine/Metabolic

- Hypothyroidism
- Celiac disease
- Diabetes
- Cystic fibrosis

Dietary/Allergy

- Cow milk protein allergy
- Low-fiber diet
- Decreased fluid intake for age

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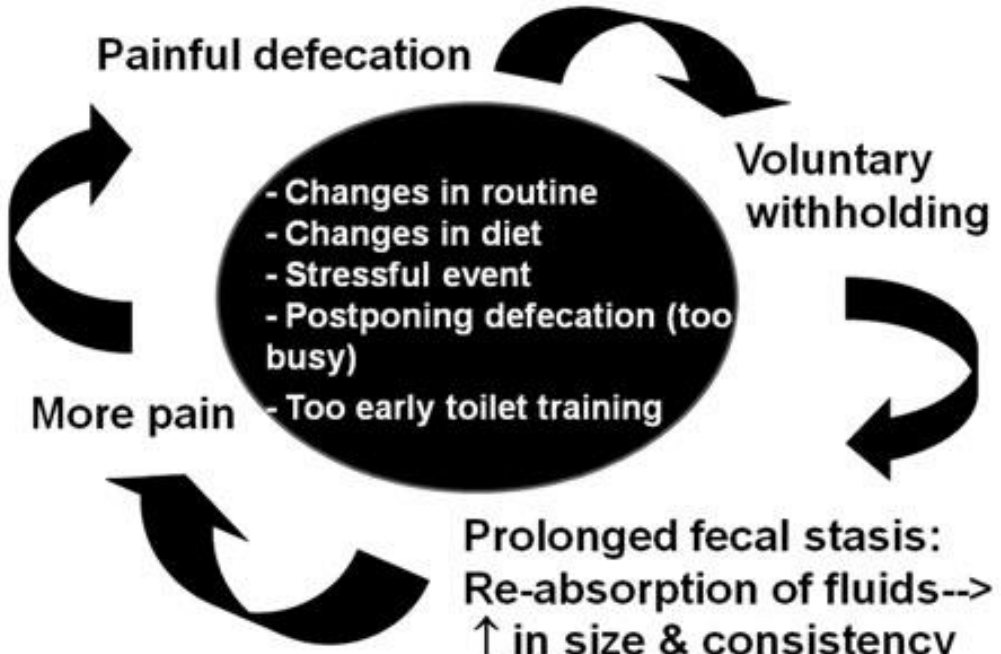
Functional constipation



Rome III criteria
Functional constipation

- ≤ 2 defecations 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 may obstruct the toilet.

Red flag symptoms

- Constipation starting extremely early in life (<1 mo)
- Passage of meconium >48 h
- Family history of HD
- Ribbon stools
- Blood in the stools in the absence of anal fissures
- Failure to thrive
- Fever
- Bilious vomiting

Red flag exam findings

- Overall exam
  - Failure to thrive
  - Fever
  - Abnormal thyroid gland
- Abdominal exam
  - Severe abdominal distention
- Examination of anus
  - Extreme fear during anal inspection
  - Anal scars
  - Anteriorly displaced anus
  - Patulous anus
  - Absent anal wink
  - Absent cremasteric reflex
  - Tight empty rectum in presence of palpable abdominal faecal mass
  - Gush of liquid stool and air from rectum on withdrawal of finger

Red flag exam findings: Neurological

- Lack of lumbo-sacral curve
- Pilonidal dimple covered by tuft of hair
- Midline pigmentary abnormalities of the lower spine
- Flat buttocks
- Decreased lower extremity tone and/or strength
- Abnormal deep tendon reflexes
- Gluteal cleft deviation

Investigations

- None needed!
  - Provided no red flags in detailed history or on careful physical examination

Management of constipation

1. Education
2. Disimpaction: "Push"
3. Maintenance: "Mush"
4. Behaviour modifications

Education

- Parents need to be educated that faecal incontinence is often involuntary.
- Counselling can be provided to parents to help them establish a positive and supportive attitude toward their child during treatment.
- Counselling can help remove blame from the child and encourage the parents and child to join the clinician in addressing the symptoms.

Disimpaction: "Push!"

- Removal of the faecal impaction.
- Decompression of the rectum
- Allows for the normal passage of stool
- Prevents liquid stool from leaking around the faecal mass.

Medical Therapy for Disimpaction

Oral (preferred)
▪ PEG solution 1–1.5 g/kg/day x 3–6 consecutive days
▪ Magnesium citrate 4 mL/kg/day x 2 consecutive days
Rectal
▪ Normal saline enema 10 mL/kg x 3 consecutive days
▪ Sodium phosphate enema x 3 consecutive days
· 2–4 years: one-half contents of a 2.25-oz pediatric enema
· 5–11 years: 2.25-oz pediatric enema
· >12 years: 4.5-oz enema
▪ Mineral oil enema x 3 consecutive days
· 2–11 years: one-half contents of a 4.5-oz bottle
· >12 years: 4.5-oz bottle
Nasogastric (requires hospital admission)
▪ PEG solution 25–40 mL/kg/h until rectal effluent is clear (24–48 h)

Maintenance: "Mush!"

- Maintenance laxative therapy to ensure regular passage of soft, appropriate-sized stools.
- Eliminate painful defecation and prevent recurrence of impaction: reduce anxiety.
- May last many months to years and requires ongoing close follow-up evaluation

Maintenance Therapy for Constipation

Osmotic laxatives

- Polyethylene glycol 1 g/kg/day
- Lactulose 1–3 mL/kg/day divided into 2 doses
- Magnesium hydroxide
  - <2 years: 0.5 mL/kg/dose
  - 2–5 years: 5–15 mL/day once before bedtime or in divided doses
  - 6–11 years: 15–30 mL/day once before bedtime or in divided doses
  - ≥12 years: 30–60 mL/day once before bedtime or in divided doses

Stool Softeners/Lubricants

- Docusate 5 mg/kg/day (up to 400 mg/day)
- Mineral oil 1–3 mL/kg/day divided into 2 doses

Stimulant Laxatives (can be used for rescue therapy)

- Senna
  - 1 month-2 years: 2.2–4.4 mg/day at bedtime or in 2 divided doses
  - 2–6 years: 4.4–6.6 mg/day at bedtime or in 2 divided doses
  - 6–12 years: 8.8–13.2 mg/day at bedtime or in 2 divided doses
  - >12 years: 17.6–26.4 mg/day at bedtime or in 2 divided doses
- Bisacodyl
  - 3–12 years: 5–10 mg/day
  - >12 years: 5–15 mg/day

Polyethylene glycol 3350

- Ease of use
- Titratable
- Low adverse effect profile
- Effective

Increasing fluid intake and dietary fibre?

- Unclear efficacy in children
- Probably safe to recommend
- May not make a difference to symptoms

How long to continue maintenance therapy?

- Consistent full evacuation of the rectum with stooling for 1 to 2 months
  - No hard stools
  - No withholding behaviour
- Then may titrate therapy
- STRICT monitoring for relapse

Behaviour modification

- Improve daily toileting habits and routines
- Start at once
- Incentive/reward systems: target specific goals, e.g. sitting on toilet, admitting an accident

Bowel programme

1. Ensure soft/easy stools in diaper or pull up
2. Visit the bathroom to look at/ stand near the toilet**
3. Encourage stools in pamper sitting on toilet
4. Ultimate goal of stools in the open toilet

Bowel programme

5. Scheduled toilet sits can occur 20 to 30 minutes after meals
6. Pair toilet sitting with meals
7. The time on the toilet should be unrushed and positive.
8. It may include special activities that are only available while on the toilet (special books, toys, or handheld electronics

Bowel programme

- Parents can model and coach during toilet sitting.
- Toilet sits should generally last 5 minutes
- Involving the preschool, kindergarten, or school in scheduled and rewarded toilet sitting is important

Prognosis

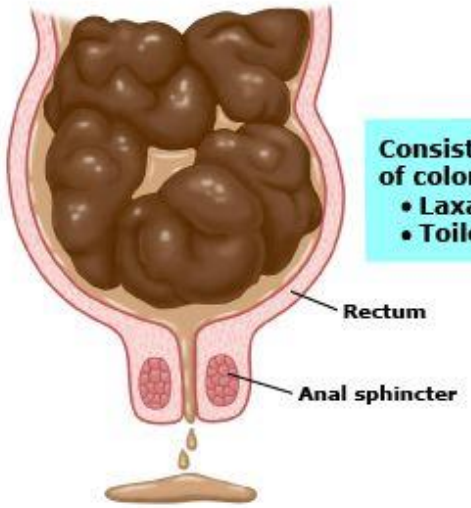
- At 6-12 months
  - 60% symptom free
- 25% have symptoms into adulthood


Thank you

References

1. Evaluation and Treatment of Functional Constipation in Infants and Children: Evidence-Based Recommendations From ESPGHAN and NASPGHAN M.M. Tabbers, C. DiLorenzo, M.Y. Berger, C. Faure, M.W. Langendam, S. Nurko, A. Staiano, Y. Vandenplas, and M.A. Benninga
2. Pediatrics in Review September 2015, VOLUME 36 / ISSUE 9 Constipation and Encopresis in Childhood. Jennifer M. Colombo, Matthew C. Wassom, John M. Rose
3. Management of Functional Constipation. Clinical Practice Guideline Hospital for Sick Kids. Approved on 2015-09-08
4. Corazziari et al; Clin Gastroenterol Hepatol. 2005;3(11):1101–1106

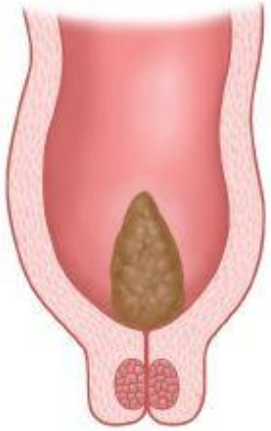
Constipation



- Child holds in stool because of pain
- Stretched out nerves and muscle that don't work well
- Buildup of hard stool
- Soft stool may move around hard stool and leak out

Consistent emptying of colon (for months)
- Laxatives
- Toilet-sitting

Recovery

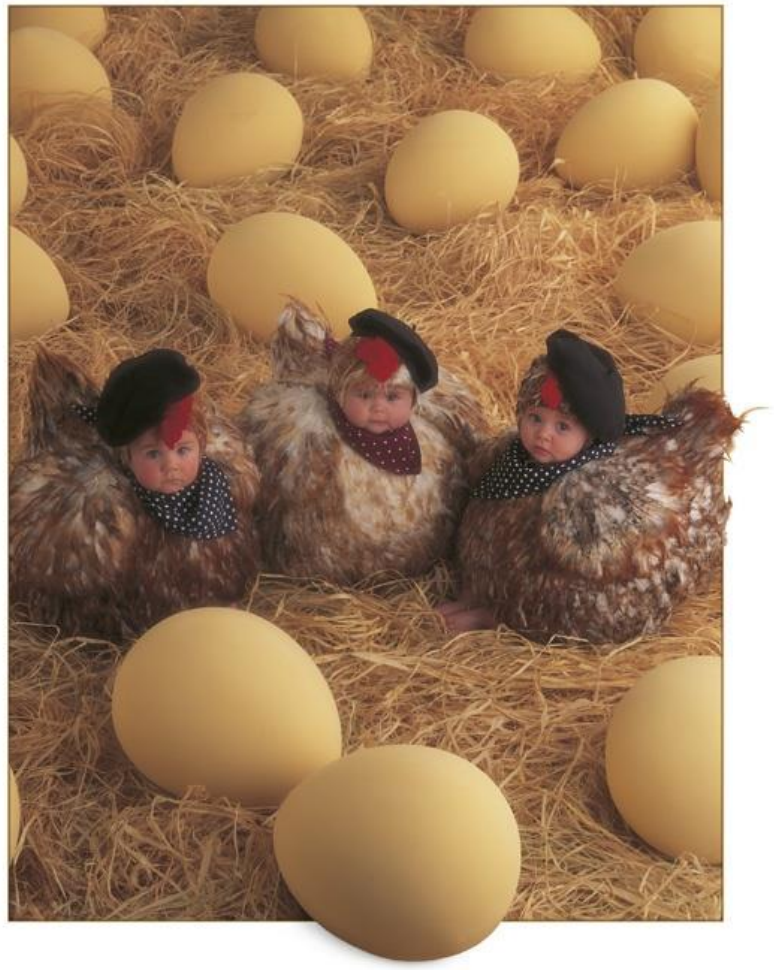


- Thicker, stronger muscle that works well
- Nerves able to sense need to go
- Sphincters able to prevent leaking


HOW IS POTTY-TRAINING
AN IMPROVEMENT ON OUR CURRENT ARRANGEMENT?

Pre and Probiotics

- Growing evidence supports probiotic and prebiotic use as treatment in adult constipation. These agents may reduce whole-gut transit time, increase stool frequency, and reduce constipation-associated symptoms. However, evidence in pediatrics demonstrates mixed efficacy

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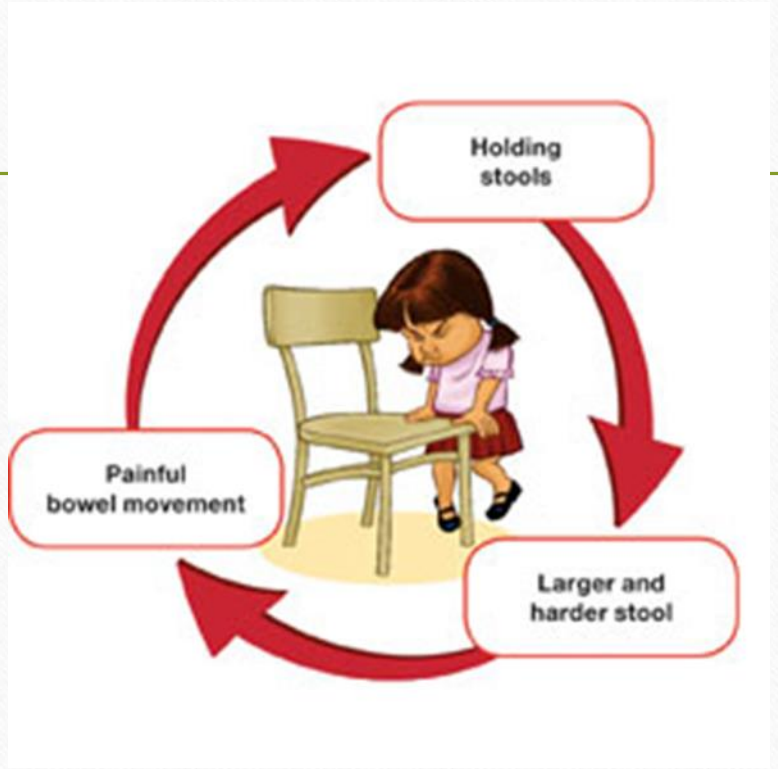
What is a normal bowel pattern for children

- Bowel continence is expected to occur by the age of 4 years. Encopresis is not a developmental variation after the age of 4 to 5 years.


Holding stools
Larger and harder stool
Painful bowel movement