

École de médecine du Nord de l'Ontario

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# Let It Go, Let It Go: Constipation & Fecal Incontinence in Children

Northern Ontario Pediatrics Conference 2019



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بېنې ⊽ ∿∆، موليې ۷ ،وا⊿، ۲



# **Conflict of Interest Declaration: Nothing to Disclose**

Presenter: Dr. J. DellaVedova Title of Presentation: Constipation & Fecal Incontinence in Children

# I have no financial or personal relationships to disclose



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## **Objectives**

By the end of the presentation you will:

- Be able to distinguish functional from organic constipation
- Be able to distinguish retentive from non-retentive encopresis
- Develop a plan of evaluation and management of both



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- 4 year old boy
- 3 month history of hard stools with straining
- Large-caliber stool 1-2 times weekly that sometimes blocks the toilet
- Daily soiling of underwear with smaller-volume liquid stools and streaks
- Periumbilical pain and decreased appetite builds until defecation
- Toilet trained by 3<sup>rd</sup> birthday but now hides and cries when encouraged to sit on the toilet



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# What Else Would You Like to Know about JJ?

- No blood in stool
- No vomiting or other GI symptoms
- Picky eater: low on fruits and vegetables
- Drinks 20 oz of milk per day as well as water
- Parents have only tried prune juice so far
- ROS is negative for red flags
- Normal growth parameters and development
- Term baby with unremarkable perinatal course
- Meconium passed within 24h
- No family history of GI problems, thyroid problems
- Just started JK, no major social stressors at home



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# Constipation

- Difficulty or reduced frequency of defecation
- 3-5% of all pediatric visits
- Males and females equal
- Peak incidence:
  - Introduction of solid foods (4-6 months)
  - Transition to cow's milk (12 months)
  - Toilet training (2-4 years)
  - School entry (4 years)



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# **Etiology**





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# **Functional Constipation**

- Constipation without evidence of primary anatomic or biochemical cause
- Children consciously avoid defecation following negative experiences
  - Painful defecation
  - Problematic toilet training



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### **Functional Constipation**





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#### **Functional Constipation**





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#### **Functional Constipation**





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# **Functional Constipation**





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### **Functional Constipation**





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# **Functional Constipation**

Rome III Criteria:

- 2 of the following present for 1 month (infants and toddlers) or 2 months (children)
- Two or fewer defecations per week
- At least one episode of fecal incontinence after acquisition of toileting skills
- Retentive posturing or excessive volitional stool retention
- Painful or hard bowel movements
- Large fecal mass in rectum
- Large diameter stools that may obstruct the toilet



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# Complications

- Fecal incontinence
- Urinary tract infections
- Social stigmatization
- Failure to thrive
- Obstruction
- Megacolon
- Perforation



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## **Evaluation: Goals**

- Rule out organic causes of constipation
- Assess for psychosocial precipitants
- Assess the efficacy of prior therapies



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# **Evaluation: History**

- Frequency
- Consistency
- Caliber
- Presence of blood
- Straining, discomfort and pain
- Fecal incontinence
- Abdominal pain
- Appetite and weight
- Diet history
- Withholding behaviours
- Nature and efficacy of prior therapies



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# **Evaluation: History**

- Gestational age and birthweight
- Passage of meconium in first 24h
- Chronic medical conditions and medications
- Family history of GI problems, thyroid problems, CF
- Developmental history including toilet training
- Presence of psychosocial stressors (new sibling, family discord, school onset, bullying)



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# **Evaluation: History**

- ROS Red Flags
  - Fatigue, cold intolerance, linear growth failure, dry skin/hair, brittle nails, developmental delay
  - Meconium ileus, FTT, respiratory infections
  - Diarrhea, dermatitis herpetiformis, FTT, family history of celiac disease or autoimmunity
  - Lower limb weakness, gait disturbance, fecal incontinence, daytime enuresis
  - Congenital onset, delayed meconium, abdominal distension, thin caliber stools
  - GER, eczema, rhinitis, reactive airways, colitis



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# **Evaluation: Physical Exam**

- Growth parameters
- Abdominal examination
  - Distention
  - Tenderness
  - Palpable stool mass
  - Bowel sounds
  - Perianal inspection (position, fissure)
- Neurological examination
  - Lower limb tone/strength, reflexes
  - Inspect spine
- Dermatological examination



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## **Evaluation: Physical Exam**

• Should I do a DRE?





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# **Evaluation: Investigations**

- Children with a clinical diagnosis of functional constipation do not require investigations
- AXR is not a substitute for clinical assessment
- Specific investigations may be indicated based on clinical findings or failed therapy:
  - TSH, T4
  - Electrolytes
  - Celiac serology
  - Fecal occult blood
  - Barium enema
  - Rectal suction biopsy
  - MRI spine



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#### **Evaluation: Investigations**





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#### **Evaluation: Investigations**





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#### **Evaluation: Investigations**





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#### **Evaluation: Investigations**





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# **Management: Goals**

- Relieve impaction
- Disassociate defecation with negative experiences
  - Maintain soft stools
  - Appropriate toilet training
- Promote behaviours that reinforce normal bowel habits
- Long-term therapy to restore normal physiology ("bowel retraining")



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### **Management: Disimpaction**

• From above or below?





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# **Management: Disimpaction**

• From above:

- PEG 3350 0.8-1.5g/kg/day for three days
- Pico salax ¼ sachet (12 months 6 years) or ½ sachet (6-12 years)
- From below:
  - Pediatric sodium phosphate enema (5-11 years), <sup>1</sup>/<sub>2</sub> volume (2-4 years)
  - Avoid manual disimpaction



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## **Management: Dietary Interventions**

- No evidence that dietary interventions alone will treat severe chronic constipation
- Fibre:
  - 5g/day for infants
  - Age + 5-10g/day for children
  - No evidence to support supplementation with nonfood sources in children
- Water:
  - No evidence to support intake beyond daily fluid requirements unless child is dehydrated
  - Makes sense to increase water if giving an osmotic laxative



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## **Management: Dietary Interventions**

- Cow's milk:
  - Volumes exceeding 24oz/d diminish intake of fruits and vegetables that promote soft stools
  - In rare cases of CMPS, a trial off will relieve the constipation
- Sorbitol juices
  - Less effective than osmotic laxatives
  - Recommend as sole therapy only in absence of withholding, pain, fissure, blood in stool



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# **Management: Laxatives**

- Osmotic laxatives
  - PEG 3350
  - Lactulose
  - Magnesium hydroxide (milk of magnesia)
- Lubricant
  - Mineral oil
- Simulant laxatives
  - Bisacodyl (dulcolax)
  - Senna (senokot)
- Stool softener
  - Docusate (colace)



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# **Management: Laxatives**

• PEG 3350

- Advantages: tasteless, dissolves in water, inexpensive, favourable safety profile
- Start with maintenance dose of 0.4g/kg/day
- Titrate at 2-3 day intervals to target 1-2 soft bowel movements per day without pain or straining



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# **Management: Laxatives**

- Stimulant laxatives
  - Increased abdominal pain
  - Risk of tolerance?
  - Lack of pediatric trials
- Mineral oil
  - Bad taste
  - Contraindicated in severe neurodevelopmental delay
- Magnesium hydroxide and lactulose
  - Not superior to PEG
  - Bad taste



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# **Management: Education**

- Discuss mechanism of functional constipation Remove any negative attributions to parents and child
- Reassure if there is no evidence of organic cause
- Warn about possible transient worsening of incontinence
- Advise of safety profile of osmotic laxatives and lack of dependence
- Patient-friendly hand-out



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# Management: Behaviour Modification

- Disassociate negative experiences from toileting
- Reassess readiness for toilet training
- Proper physical environment for toileting
  - Appropriate height
  - Foot stool
- Routine dedicated time for toileting
  - 1-2 times daily for 3-10 minutes
  - Ideally within 1h from a meal
- Reward system for effort and successful stooling
- Encourage stool-at-school


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### **Management: Follow-up**

- Follow-up within 1 month of initial visit
- Advise parents to call if disimpaction or maintenance therapy is unsuccessful
- Once improved, follow-up at least every 3 months while on therapy
- Continue successful maintenance therapy for at least 6 months



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## **Fecal Incontinence**

- "Repetitive voluntary or involuntary passage of stool in inappropriate places by children 4 years and older, at which time a child may be reasonably expected to have completed toilet training"
- Males > females
- Present in 50-60% of children with constipation though constipation may be unrecognized
- Often mistaken for diarrhea
- Nearly all children give the impression they do not feel the urge to defecate



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#### **Fecal Incontinence**



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### **Non-Retentive Incontinence**

- Diagnostic criteria:
  - Defecation into places inappropriate to the social context
  - No underlying disease process that explains the symptoms
  - No evidence of fecal retention
  - Occurs for at least 2 months in a child with developmental age of 4 years or older



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### **Evaluation: Goals**

- Exclude organic causes (be particularly alert to neurologic dysfunction)
- Distinguish retentive from non-retentive fecal incontinence
- Assess for any contributing psychosocial precipitants
  - Relationship with parents, peers
  - Feelings towards home, school, other places
  - Disruptive life events



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### **Evaluation**

Retentive	Non-retentive
Small volumes or streaks	Complete stool
Liquid stool	Formed stool
Intermittent large caliber hard stools	No large hard stools
Withholding behaviour	No withholding behaviour
Abdominal mass	No abdominal mass
Stool in rectal vault	Empty rectal vault
Psychosocial stressors less frequent	Psychosocial stressors more frequent
AXR shows impacted stool	AXR shows empty bowel

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#### Management

- Retentive: manage constipation
- Non-retentive: no laxatives or enemas required
- Emphasis on behaviour management techniques
  - Reassess readiness for toilet training
  - Dedicated time for stooling
  - Remove negative attributions and punishment
  - Reward system for successful sitting and stooling
- Address psychosocial precipitants and sequelae
- Identify and treat any underlying organic cause



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## **Special Considerations for Infants**

- Greater variability of stool frequency if breastfed
- Be vigilant for anatomic or genetic causes in the setting of congenital onset
- Safety established for sorbitol, lactulose and PEG
- Mineral oil, stimulants, and enemas contraindicated
- Infant dyschezia
  - crying/straining in the absence of constipation in an otherwise healthy infant (no hard stool or fissure)
  - Self-resolving; no treatment is usually required



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#### Prevention

- Discuss healthy eating and bowel habits routinely at each visit
- Transition to solids should include fruits and vegetables
- Limit cow's milk intake for toddlers
- Start toilet training when developmentally ready and use positive rather than negative reinforcement
- Promote routine unhurried toilet use at home and at school
- Early treatment prevents long-term sequelae



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## What's New in Constipation?

• Probiotics

- Banaszkiewicz & Szajewska. J Pediatr. 2005
  - N= 84 children with constipation
  - RCT comparing lactulose + placebo with lactulose + lactobacillus
  - No differences in spontaneous stooling or incontinence between experimental or control group
- Saneian et al. J Res Med Sci. 2013
  - N = 60 children with functional constipation
  - RCT comparing mineral oil + placebo with mineral oil + lactobacillus
  - Stool frequency increased to greater degree in probiotic group, decreased straining and soiling
- Insufficient evidence to recommend probiotic



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# What's New in Constipation?

- Prucalopride (Resotran)
  - High-affinity 5-HT4 receptor agonist with prokinetic properties
  - Winter et al. J Pediatr Gastroenterol Nutr. 2013.
    - N = 38 children with functional constipation
    - Pharmacokinetics, safety, efficacy study
    - Treatment for 8 weeks resulted in mean stool frequency of 6.8/week, reduced incontinence, no discontinuation due to adverse effects
- Lubipristone (Amitizia)
  - Chloride channel agonist (secretory laxative)
  - Approved for treatment of constipation in adults
  - Phase 3 pediatric studies underway



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## What's New in Constipation?

ADHD

- McKeown et al. Pediatrics. 2013
  - Restrospective cohort study of > 700,000 children
  - 4.1% prevalence of constipation in ADHD compared to 1.5% without ADHD
  - 0.9% prevalence of fecal incotinence in ADHD compared to 0.15% without ADHD
- Autism
  - Peeters et al. J Pediatr. 2013
    - Prospective study of 242 children presenting to tertiary centre with functional constipation
    - 29% had SRS and/or SCQ-L scores above cutoffs for ASD



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#### Summary

- Most constipation is functional and most fecal incontinence is a consequence of constipation
- A thorough clinical evaluation is required to rule out potentially serious organic disease
- Investigations are seldom required
- Treatment options are safe and effective when implemented early along with patient education and behaviour management strategies



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### **Time for Questions**



EVEN WITH THE AID OF PERFORMANCE-ENHANCING LAXATIVES, CARL WAS UNABLE TO PASS HIS STOOL.

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