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Innovative approaches in constipation – what's new?

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Disclosures:

Advisory board and research collaboration – Ferring Pharmaceuticals

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OUTLINE

- Introduction
 - ✓ Childhood functional constipation
- Life impact of constipation/faecal incontinence
 - ✓ School performance
 - ✓ Psychiatric comorbidity
- Health care transition treatment at home
 - ✓ Trans-sector efforts
 - ✓ Patient schools
- When it becomes difficult new solutions
 - ✓ Diagnostics
 - ✓ Treatment

Rome IV: Childhood functional constipation

Rome IV criteria: two or more of the following criteria during a period of at least **4** weeks

- ≤ 2 bowel movements per week
- ≥ 1 episode of fecal incontinence per week
- Large fecal mass in the rectum (digital rectal examination or ultrasound)
- History of large diameter stools (difficult to flush)
- History of retentive behavior ("withholding")
- History of painful or hard bowel movements

< 20% of GP has knowledge about Rome IV criteria





Hyames et al. Gastroenterol 2016 midt regionmidtjylland



"Bladder and Bowel Dysfunction, BBD" - constipation and LUT symptoms



- More than 50% of children with LUTS evaluated at a tertiary referral center fulfilled Rome III (IV) criteria for functional defecation disorders.
- "We recommend thorough evaluation of bowel habits as an integral part of the initial assessment of a child who presents with voiding symptoms."

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"Bladder and Bowel Dysfunction, BBD" - effect of initial bowel management



incontinence, age at onset of symptoms, treatment, including duration and response. All children went through the same treatment protocol. Faecal disorders were treated primarily and once relieved, the daytime incontinence was managed and followed by intervention for acctural enurses.



Treating bowel symptoms resulted in:

Among 66 children with daytime incontinence:

- 68% had > 50% reduction in daytime incontinence
- 27% became dry

Among 58 children with enuresis:

• 9 (16%) > 50% reduction in wet nights



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New aspects of etiology

Danish School Study (Mass Experiment) (N=19,577)



How happy are you with the toilet facilities ? Do you hold because you don't want to use





ODDS RATIOS for children that avoid school toilets:

daytime incontinence	1.72 (1.44-2.07)
fecal incontinence	1.95 (1.56-2.45)
Constipation	1.55 (1.41-1.69)

Jørgensen et al, Eur J Pediatr; 2021 Nov;180(11):3317-3324 midt regionmidtjylland

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Childhood incontinence and school performance



Britt Borg, MD



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Borg et al; J Urol 2025; In Press

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National school test



Borg et al; J Urol 2025; In Press

School performance

	NE		Reference		Fully adjusted test		Nocturnal enuresis	
School grade	Children	Mean	Children	Mean	score difference (95% CI)	P value		
2nd gr - Danish	22,150	55.5	154,870	56.1	-0.4 (-0.7 to -0.1)	*	⊢∎	
4th gr - Danish	30,950	53.7	202,410	54.8	-0.8 (-1.1 to -0.5)	*		
6th gr - Danish	33,190	54.3	212,140	55.8	-1.3 (-1.5 to -1.0)	*	H∎→I	
8th gr - Danish	24,060	56.7	144,490	57.9	-1.0 (-1.3 to -0.7)	*	H -	
3rd gr - Math	28,070	55.8	189,990	56.4	-0.6 (-0.9 to -0.3)	*	+∎	
6th gr - Math	33,130	57.8	211,450	58.9	-1.1 (-1.4 to -0.8)	*	⊢ ∎→	
8th gr - Math	3,110	50.4	15,230	53.6	-2.5 (-3.4 to -1.6)	*		

-3.5 -3 -2.5 -2 -1.5 -1 -0.5 0 0.5 1 1.5 2 2.5 Adjusted test score difference (95% CI)

	DUI		Reference		Fully adjusted test		Davtime urinany incontinence	
School grade	Children	Mean	Children	Mean	score difference (95% CI)	P value	Daytime unnary incontinence	
2nd gr – Danish	3,470	56.0	29,760	56.6	0.1 (-0.9 to 0.7)	NS	⊢	
4th gr - Danish	3,950	54.1	32,710	55.1	-0.3 (-1.1 to 0.5)	NS		
6th gr - Danish	3,370	54.7	27,590	56.0	-0.5 (-1.3 to 0.3)	NS		
8th gr – Danish	2,170	55.4	16,710	58.1	-1.8 (-2.8 to -0.8)	*		
3rd gr - Math	4,150	57.0	34,820	57.2	0.3 (-0.5 to 1.0)	NS		
6th gr - Math	3,380	59.2	27,580	59.3	0.6 (-0.2 to 1.4)	NS		
8th gr - Math	460	50.9	2,740	53.6	-0.2 (-2.6 to 2.2)	NS		
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Adjusted test score difference (95% CI)

Borg et al; J Urol 2025; In Press

Performance trajectory – age at enuresis treatment onset





Borg et al; J Urol 2025; In Press

Faecal incontinence, school performance, and mental disorders

Mean test scores in 3,413 children with faecal incontinence were lower that test scores in 34,130 matched reference children. There was a high prevalence of mental disorders in children with fecal incontinence, and this was associated with even lower test scores.

	Reference group		Fecal incontinence (FI)		
Total 8th grade	20,820		2,420		
Late test	2,150	17.5	440	28.2	
No mental disorder	20,250	94.1	2,080	76.3	
Any mental disorder	720	5.9	370	23.7	
Intellectual disability ^d	70	0.8	50	4.0	

	FI		Reference		Basic adjusted		Fully adjusted test	
School grade	Children	Mean	Children	Mean	score difference (95% CI)	P value	score difference (95% CI)	P value
2nd gr – Danish	2,420	50.3	20,820	56.2	-5.7 (-6.7 to -4.7)	*	-3.5 (-4.4 to -2.5)	*
4th gr – Danish	2,870	47.7	23,760	54.9	-7.1 (-8.1 to -6.2)	*	-4.2 (-5.1 to -3.3)	*
6th gr – Danish	2,540	46.8	21,080	55.6	-8.5 (-9.6 to -7.6)	•	-5.3 (-6.2 to -4.3)	•
8th gr – Danish	1,590	48.5	12,330	57.3	-8.6 (-9.9 to -7.4)	•	-5.0 (-6.2 to -3.8)	·
3rd gr – Math	2,850	51.7	23,990	57.5	-5.8 (-6.7 to -4.8)	*	-2.8 (-3.7 to -1.9)	•
6th gr – Math	2,530	50.3	20,890	59.6	-9.3 (-10.4 to -8.3)	•	-4.9 (-5.9 to -4.0)	·
8th gr – Math	280	45.5	1,520	52.2	-5.1 (-8.5 to -1.8)	•	-1.8 (-5.0 to 1.3)	NS

Conclusions - impact



- Normal school performance in NE and DUI.
- Faecal incontinence is associated with lower school test scores and MD comorbidity.
- Late enuresis treatment onset (11+ yrs) is associated with lower school test scores.

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Health care transition - Trans-sector efforts

- The "Tight and Dry" initiative
 - Home page
 - For family and HCP
 - Contains diary templates, action cards, guidelines, etc.
 - Education of school nurses
 - Contact info for local guidance (HCP)
 - Started in one region now becoming national











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When it becomes difficult - New aspects

Diagnostics – Ultrasound





Iben M Jonsson, MD



Normal



Rectal impaction (>30 mm)

- A possible substitute for digital rectal examination (one Rome IV criteria)
- The exact role of US in diagnosis and follow-up not yet established
- Abdominal X-ray not recommended



When it becomes difficult

- Other diagnostic tools



- The 3D-Transit system is well-tolerated and without any side-effects in healthy children.
- The 3D-Transit system enables assessment of regional gastrointestinal transit times in healthy children ages 7 to 17 years.

From: Colorectal dimensions in the general population: impact of age and gender



Measurements of colorectal dimensions: a Diameter and cross-sectional areas (CSA) of ascending colon; b diameter and CSA of descending colon; and c diameter and CSA of rectum

- Large interindividual variability
- Larger CSA in females.
- No correlation in CSA with age (15-70 yrs)

Mark EB et al, Surg Radiol Anatomy: Vol 43, 1431–1435, (2021)



Treatment aspects

Transanal colonic irrigation

- N = 72
- 25 (35%) girls
- Mean age 9.2±2.2 years
- Avg FI: 13 episodes/week
- All children refractory to laxative treatment

- Cone system
- Irr vol: 20 ml/kg bw
- Irr frequency: 3/week
- Titrated according to response





Time (months)



Jorgensen et al, Eur J Pediatr. 2017;176(6):731-736. **midt** regionmidtjylland

Low-Volume Transanal Irrigation (TAI)

- Volume of 50 200 ml compared to 300 to 1000 ml in traditional TAI.
- Less invasive.
- Cheaper (< 10 €)
- Less time consuming and easier to administer without thorough teaching.
- ~37°C tap water.
- Remain seated for 10-15 minutes to allow evacuation of stools and water.

International Journal of Colorectal Disease (2025) 40:29 https://doi.org/10.1007/s00384-025-04813-0

RESEARCH

Low-volume transanal irrigation (TAI) in the treatment of functional faecal incontinence in children: a cohort study







International Journal of Colorectal Disease (2025) 40:29 https://doi.org/10.1007/s00384-025-04813-0

RESEARCH

Check for

Low-volume transanal irrigation (TAI) in the treatment of functional faecal incontinence in children: a cohort study

Nicklas B. Hougaard^{1,2} · Rene F. Andersen¹ · Konstantinos Kamperis^{1,2} · Cecilie S. Jørgensen^{1,2}

- 47 children (mean age 8.06 ± 2.08 years) refractory to standard treatment
- 35 (74%) children met the Rome-IV criteria for FC and had FI
- 20 (42%) children gained full faecal continence after a median treatment duration of 6.75 ± 0.3 months. Of these, thirteen (28%) children experienced a full response already after the first outpatient follow-up visit (1.87 ± 0.65 months).

	Full response	Partial or none response	Terminated use	Time to outpatient visit, months
First outpatient visit after commence- ment	13 (28%)	27 (57%)	7 (15%)	1.87 (0.65)
Outpatient visit after 6 months	20 (42%)	13 (28%)	14 (30%)	6.75 (0.30)

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RCT: L-TAI as add-on to PGE treatment

- Treatment resistance to 8-w PGE (N=50)
- Randomized to PGE vs. PGE+L-TAI (MiniGo[©])
- PGE+L-TAI showed higher response in FI

	Control group (n = 20)	Intervention group (n = 21)	P values
Response to treatment, n (%)	7 (33.33%)	15 (75%)	0.007 RR=2.25 [1.17, 4.33]
Full response to treatment, n (%)	1 (4.8%)	7 (35%)	0.020 RR=7.35 [0.99, 54.5]







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Conclusions



Diagnosing constipation in children is still a challenge



A large proportion of constipated children can be treated in primary care



Research innovation – development of new diagnostic tools



The interplay between somatics and psychiatrics should be prioritized



Thank you for your attention!

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