

Bowel Habits and Functional Constipation - A Longitudinal Birth Cohort Study of Children Born in Gothenburg

Akademisk avhandling

Som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentligens försvaras i hörsal Tallen, Drottning Silvias Barnsjukhus, Behandlingsvägen 7, Göteborg, fredagen den 9 juni 2023, klockan 09.00

av Cathrine Gatzinsky Leg Läkare

Fakultetsopponent:

Dr Marc A Benninga, Professor of Pediatrics
University of Amsterdam, Faculty of Medicine, Amsterdam

Avhandlingen baseras på följande delarbeten

- I. Gatzinsky C, Redfors S, Borg H, Linnér C, Sillén U, Sjöström S. **High-Resolution Anorectal Manometry – A Prospective Cohort Study in Healthy Infants.** J Pediatr Gastroenterol Nutr 2022 Mar 1;74(3): e57-e64.
- II. Gatzinsky C, Sillén U, Thornberg S, Sjöström S. **Bowel Habits in Healthy Infants and the Prevalence of Functional Constipation, Infant Colic and Infant Dyschezia.** Acta Paediatrica Feb 28, 2023, doi: 10.1111/apa.16736.
- III. Gatzinsky C, Sillén U, Borg H, Boström H, Abrahamsson K, Sjöström S. **Transabdominal Ultrasound of Rectal Diameter in Healthy Infants – a Prospective Cohort Study During the First Year of Life.** Revised manuscript re-submitted on 23-04-18.
- IV. Gatzinsky C, Sillén U, Bräutigam M, Kullberg-Lindh C, Thornberg S, Sjöström S. **Bowel Habits and Functional Constipation in Healthy Children – A Longitudinal Birth-Cohort Study.** In manuscript.

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Cathrine Gatzinsky

Department of Pediatrics, Institute of Clinical Sciences, Sahlgrenska Academy,
University of Gothenburg, Sweden

Background: Parents often visit health facilities with concerns regarding their child's bowel function. Data on bowel habits from healthy children is important in establishing what is normal and what is not. Functional gastrointestinal disorders (FGID) are common and while infant colic (IC) and infant dyschezia (ID) occur during the first year of life, functional constipation (FC) can occur at any age. Prevalence data is scarce and longitudinal studies are rare. In cases of severe FC an anorectal manometry is often carried out to exclude Hirschsprung's disease. Over the last few years high-resolution anorectal manometry (HRAM) has been introduced, but normative data in infants is still scarce. The use of transabdominal ultrasound to measure transverse rectal diameter (TRD) in order to diagnose and evaluate treatment of FC in children is increasing. However, its diagnostic value is unclear and normative age-related data for healthy children and children with FC, are lacking **Aim:** The aim is to describe bowel habits and the prevalence of IC, ID and FC in a cohort of healthy full-term infants, from birth and during the first years of life. Another aim is to identify risk factors for developing FC. Finally, we aim to present HRAM data on infants as well as data on the TRD of infants gathered using transabdominal ultrasound. **Material and method:** Infants from a maternity ward in Gothenburg were included in this prospective observational study. Questionnaires regarding bowel habits and the presence of IC, ID or FC were answered by parents on many occasions, when their children were at different ages. HRAM was undertaken at 2 and 6 months of age and transabdominal ultrasound was undertaken at 2 and 12 months. FC was treated if diagnosed and follow-ups were carried out. **Results and conclusion:** Between 2014 and 2019, 122 infants were included in the study. Bowel habits, changes during the first years of life and the prevalence of IC, ID and FC in the cohort are presented. Normative values in HRAM investigations are given at the ages of 2 and 6 months in children with and without an FGID. Normative data on rectal diameter for infants aged 2 and 12 months, with and without FC, were collected. Changes in bowel habits, from birth up to 2.5 years of age, as well as prevalence, risk factors and long-term outcome of childhood FC, are also presented.

Keywords: Bowel habits, functional gastrointestinal disorder, infant colic, infant dyschezia, functional constipation, high resolution anorectal manometry, trans abdominal ultrasound, transverse rectal diameter