

SUPPLEMENTARY MATERIALS

Data Extraction Strategies

We used the electronic medical record (EMR), using a proprietary Mayo Clinical Notes Search Tool at Mayo Clinic, Rochester, MN to identify cases from the year 1994 until present. Patients evaluated by the senior investigator (MC) were identified by entering the search queries “pelvic floor dysfunction”, “pelvic floor dyssynergia”, “obstructive defecation”, “constipation”, “slow transit constipation”, “slow transit”, “outlet obstruction”, “constipation *not otherwise stated (nos)*” and “M. Camilleri”. This medical records study was approved by the Mayo Clinic Institutional Review Board. Each patient record was carefully reviewed (SN and TN, supervised by JI and MV-R) according to the primary and secondary diagnoses to corroborate the diagnosis of DD and STC based on pre-specified inclusion criteria (see section on study population). All studies available, particularly the high resolution anorectal manometry test, radioscintigraphy and MRI defecography or barium proctogram, were reviewed by the authors. Once inclusion criteria were satisfied, records were reviewed for clinical, demographic, body mass index, date of diagnosis, number of pregnancies, and abdominal surgeries including hysterectomy.

Supplementary Table A. Overall transit and regional colon transit characteristics in different study groups (data show mean \pm SD, unless otherwise indicated).

STUDY GROUP	HEALTHY VOLUNTEERS (n=211)	EVACUATION DISORDERS (n=390)	SLOW TRANSIT CONSTIPATION (n=61)
Ascending colon emptying median,(IQR) $t_{1/2}$ (h)	16.6 (8.8 – 19.1)	18.4 (14.9 – 24.0)	22.4 (16.9 – 33.2)
[10th – 90th percentile]	(n=188) [8.0 – 26.1]	(n=152) [4.0-27.8]	(n=40) [13.6-40.6]
Males	16.4(8.0-17.6) (n=63)	16.7(14.9-24.0) (n=34)	20.2 (17.5-22.9) (n=2)
Females	16.6 (11.0-20.3) (n=125)	19.2(14.8-24.0) (n=118)	22.5 (16.7-33.9) (n=38)
Geometric center at 24 hours \pm SD	2.4 \pm 0.9 (n = 209)	2.1 \pm 1.1 (n = 277)	1.5 \pm 0.4 (n = 60)
[10th – 90th percentile]	[1.47 – 3.87]	[1.10 – 3.80]	[1.10 – 2.00]
Males	2.7 \pm 0.9 (n = 72)	2.4 \pm 1.0 (n = 49)	1.4 \pm 0.2 (n = 5)
Females	2.3 \pm 0.9 (n = 137)	2.1 \pm 1.1 (n = 228)	1.5 \pm 0.4 (n = 55)
- Percentage in ascending colon \pm SD	20 \pm 20 (n = 190)	35 \pm 25 (n = 161)	45 \pm 27 (n = 40)
Males	14 \pm 15 (n = 65)	32 \pm 28 (n = 35)	37 \pm 15 (n = 2)
Females	23 \pm 22 (n = 125)	36 \pm 24 (n = 126)	45 \pm 27 (n = 38)
- Percentage in transverse colon \pm SD	43 \pm 24 (n = 190)	37 \pm 24 (n = 161)	46 \pm 25 (n = 40)
Males	34 \pm 20 (n = 65)	32 \pm 19 (n = 35)	60 \pm 20 (n = 2)
Females	47 \pm 25 (n = 125)	38 \pm 25 (n = 126)	45 \pm 25 (n = 38)
- Percentage in descending colon \pm SD	18 \pm 19 (n = 190)	11 \pm 14 (n = 161)	4 \pm 9 (n = 40)
Males	25 \pm 20 (n = 65)	18 \pm 19 (n = 35)	4 \pm 5 (n = 2)
Females	14 \pm 17 (n = 125)	9 \pm 12 (n = 126)	4 \pm 9 (n = 38)
- Percentage in rectosigmoid \pm SD	10 \pm 16 (n = 190)	4 \pm 9 (n = 161)	1 \pm 4 (n = 40)
Males	15 \pm 18 (n = 65)	6 \pm 9 (n = 35)	0 \pm 0 (n = 2)
Females	7 \pm 14 (n = 125)	4 \pm 9 (n = 126)	1 \pm 4 (n = 38)
- Percentage in stool \pm SD	8 \pm 22 (n = 190)	9 \pm 22 (n = 161)	1 \pm 3 (n = 40)
Males	11 \pm 25 (n = 65)	11 \pm 24 (n = 35)	0 \pm 0 (n = 2)
Females	7 \pm 21 (n = 125)	8 \pm 21 (n = 127)	1 \pm 3 (n = 41)
Geometric center at 48 hours \pm SD	3.6 \pm 1.1 (n = 191)	2.6 \pm 0.9 (n = 42)	2.1 \pm 0.5 (n = 42)
[10th – 90th percentile]	[2.13 – 5.00]	[1.80 – 3.80]	[1.6 – 2.7]
Males	4.1 \pm 1.0 (n = 61)	2.8 \pm 0.7 (n = 4)	2.3 \pm 0.3 (n = 2)
Females	3.4 \pm 1.0 (n = 130)	2.6 \pm 0.9 (n = 38)	2.1 \pm 0.5 (n = 40)
- Percentage in ascending colon \pm SD	3 \pm 7 (n = 172)	12 \pm 8 (n = 35)	20 \pm 18 (n = 31)
Males	2 \pm 7 (n = 54)	12 \pm 3 (n = 4)	10 (n = 1)
Females	3 \pm 7 (n = 118)	12 \pm 8 (n = 31)	21 \pm 18 (n = 30)
- Percentage in transverse colon \pm SD	25 \pm 28 (n = 172)	38 \pm 25 (n = 35)	54 \pm 20 (n = 31)
Males	13 \pm 21 (n = 54)	40 \pm 27 (n = 4)	39 (n = 1)
Females	30 \pm 30 (n = 118)	38 \pm 25 (n = 31)	55 \pm 21 (n = 30)
- Percentage in descending colon \pm SD	17 \pm 18 (n = 172)	22 \pm 15 (n = 35)	18 \pm 17 (n = 31)
Males	10 \pm 14 (n = 54)	24 \pm 15 (n = 4)	43 (n = 1)
Females	20 \pm 19 (n = 118)	22 \pm 16 (n = 31)	17 \pm 17 (n = 30)
- Percentage in rectosigmoid \pm SD	18 \pm 23 (n = 172)	12 \pm 17 (n = 35)	5 \pm 10 (n = 31)
Males	14 \pm 22 (n = 54)	10 \pm 6 (n = 4)	8 (n = 1)
Females	20 \pm 23 (n = 118)	12 \pm 18 (n = 31)	5 \pm 10 (n = 30)
- Percentage in stool \pm SD	37 \pm 40 (n = 172)	17 \pm 26 (n = 35)	2 \pm 6 (n = 31)
Males	61 \pm 39 (n = 54)	14 \pm 23 (n = 4)	0 (n = 1)
Females	27 \pm 36 (n = 118)	17 \pm 27 (n = 31)	2 \pm 6 (n = 30)