Role of surgery in the modern management of slow-transit constipation

Charles Knowles

Queen Mary University of London
Cleveland Clinic London
Barts Health NHS Trust, St Mark's Hospital

Barts and The London School of Medicine and Dentistry

Cleveland Clinic London

Disclosures

Company	Consultancy	Speaker fees	Research funding	Research collaboration	Share holder, director
Medtronic	x	x	x	x	
Amber Therapeutics			x	x	x
Saluda Medical	x		x	x	
Cook Myosite	x			x	
Enterika	x				x
Coloplast	x			x	
Uroplasty	x	x	x	x	
Congentix Med	x	x		x	
Firstkind Med			x	x	
Exero Med	x		x	x	
Ardmore HC, MMS				x	
Motilent				x	
Enteromed	x			x	
JEB Medical				x	
usMIMA	x				

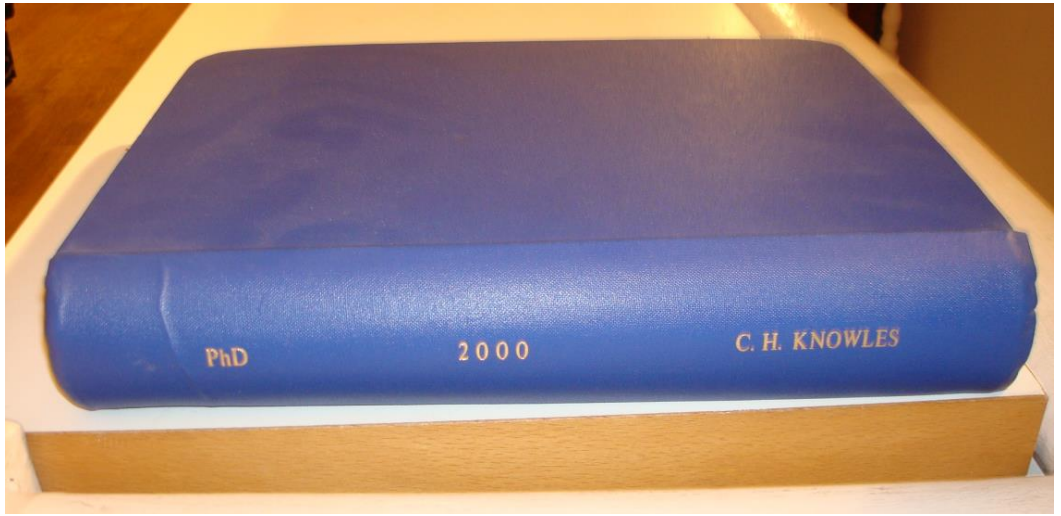
Overview

- Myth busting
- The modern role for colectomy
- Other options

Myth busting

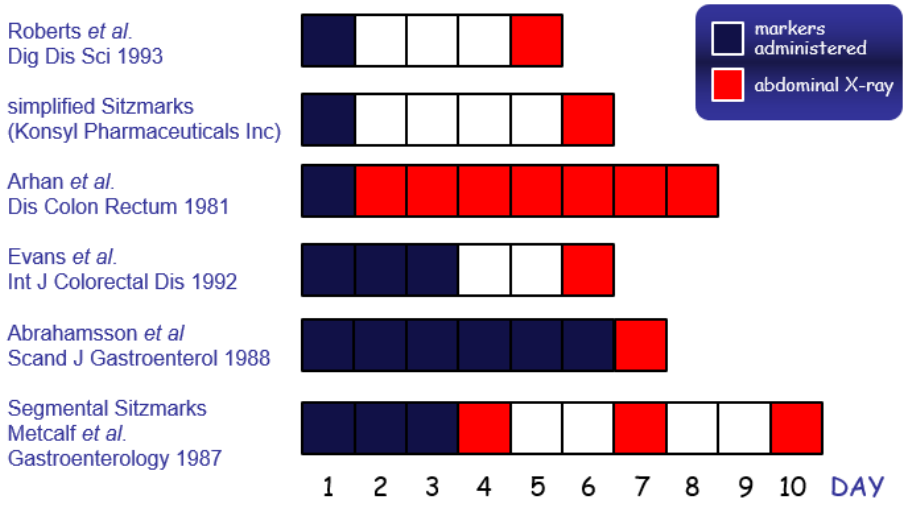
STC: myths

- STC is a disease
- STC is an inertial problem



STC is not a disease

- STC is only defined by a measurement
- Usually based on WGTT using single radio-opaque marker study
- Multiple methods with poorly defined cut-offs



STC is not a disease

Gut, 1986, **27**, 41–48

Severe chronic constipation of young women: 'idiopathic slow transit constipation'

D M PRESTON AND J E LENNARD-JONES

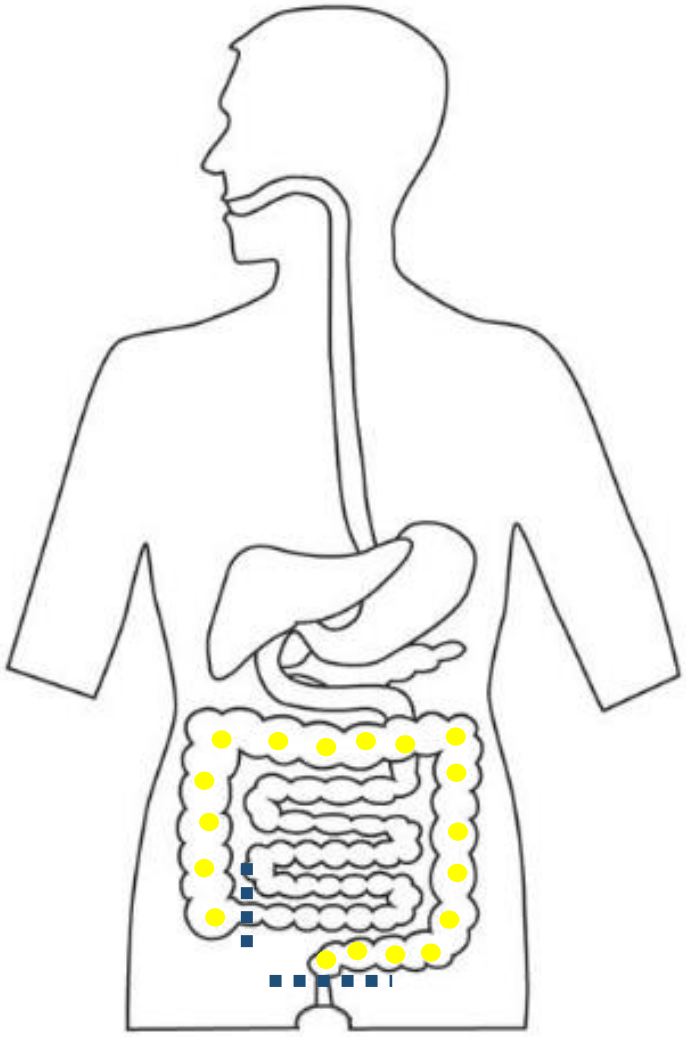
From St Mark's Hospital, London

Table 1 *Ages at which patients first experienced symptoms, consulted their doctor and were referred to hospital*

	Age (yr)							
	0–5	*6–10*	*11–15*	*16–20*	*21–25*	*26–30*	*31–40*	*>40*
Onset of symptoms	15	6	16	16	8	1	2	0
Consulted doctor	6	4	11	22	14	5	2	0
Referred to hospital	0	3	7	16	21	5	7	5

- N = 64 'white women': 1969-82
- 33 / 64 family history
- Distinct phenotype characterised by infantile or childhood onset and severe bowel infrequency

STC is not a disease



- Defined enteric neuropathology leading to reduced digestive motility ✖
- Heritability +/- genetic aetiology ✖

Defining neuropathology

GUT

The London Classification of gastrointestinal neuromuscular pathology: report on behalf of the Gastro 2009 International Working Group

Charles H Knowles, Roberto De Giorgio, Raj P Kapur, et al.

Gut 2010 59: 882-887
doi: 10.1136/gut.2009.200444

Acta Neuropathol (2009) 118:271–301
DOI 10.1007/s00401-009-0527-y

CONSENSUS PAPER

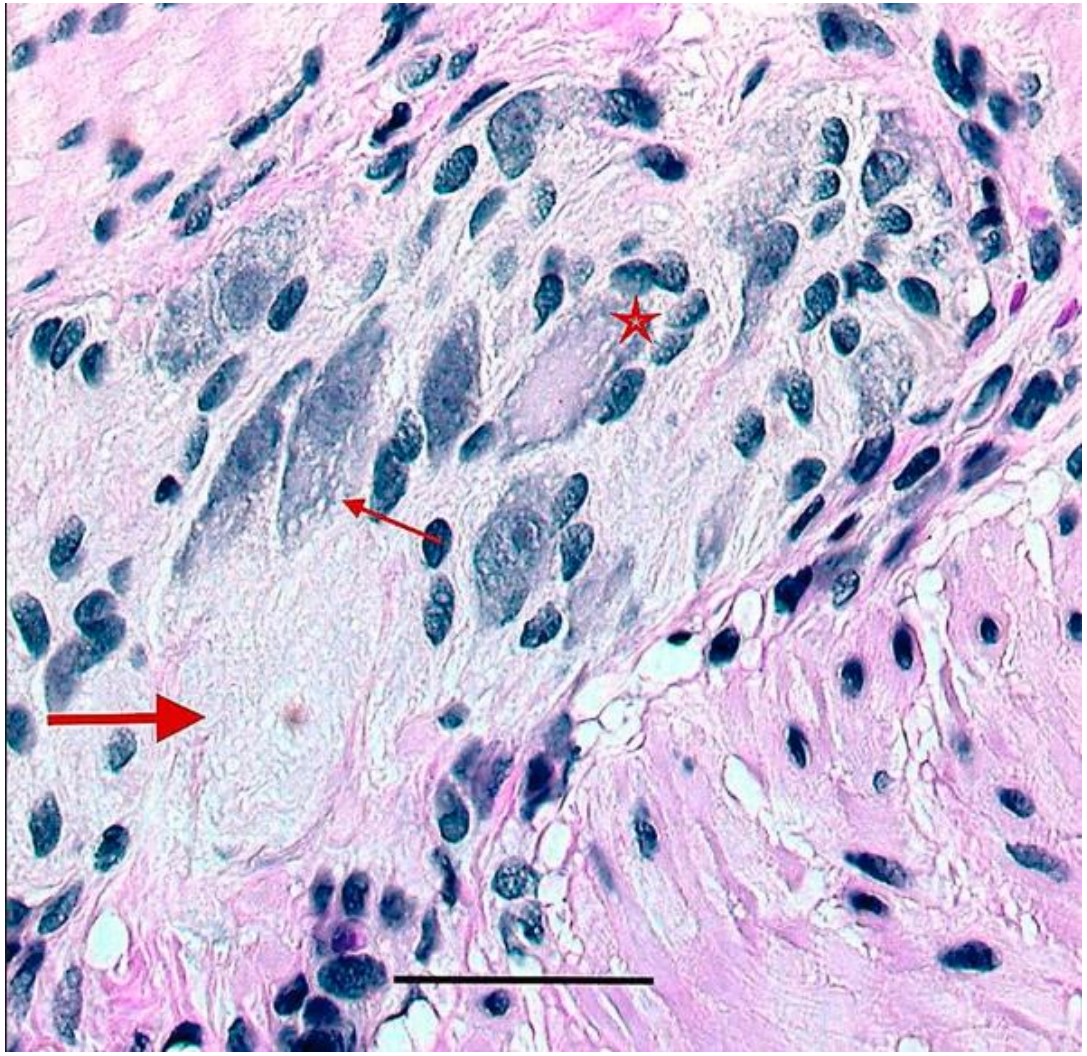
Gastrointestinal neuromuscular pathology: guidelines for histological techniques and reporting on behalf of the Gastro 2009 International Working Group

Charles H. Knowles · Roberto De Giorgio · Raj P. Kapur · Elisabeth Bruder · Gianrico Farrugia · Karel Geboes · Michael D. Gershon · John Hutson · Greger Lindberg · Joanne E. Martin · William A. Meier-Ruge · Peter J. Milla · Virpi V. Smith · Jean Marie Vandervinden · Béla Veress · Thilo Wedel

Myenteric ganglion: lap biopsy: 20F CIPO

Swelling, chromatolysis, vacuolation, marginalisation of Nissl granules

Ghost neuron (remnant nucleolus)



Best Practice & Research Clinical Gastroenterology 25 (2011) 43–57

Contents lists available at ScienceDirect

Best Practice & Research Clinical Gastroenterology

4

Gastrointestinal neuromuscular pathology in chronic constipation

Charles H. Knowles, PhD, FRCS, Clinical Senior Lecturer and Hon Consultant Surgeon [a,*], Gianrico Farrugia, MD, Professor [b,1]

Neurogastroenterology & Motility

Neurogastroenterol Motil (2011) **23**, 115–124 doi: 10.1111/j.1365-2982.2010.01657.x

REVIEW ARTICLE

Quantitation of cellular components of the enteric nervous system in the normal human gastrointestinal tract – report on behalf of the Gastro 2009 International Working Group

C. H. KNOWLES,* B. VERESS,† R. P. KAPUR,‡,§ T. WEDEL,¶ G. FARRUGIA,** J.-M. VANDERWINDEN,†† K. GEBOES,‡‡ V. V. SMITH,§§ J. E. MARTIN,¶¶ G. LINDBERG,*** P. J. MILLA††† & R. DE GIORGIO‡‡‡

Table 1
Controlled studies using immunostaining for neuronal associated antigens in the colon of patients with STC.

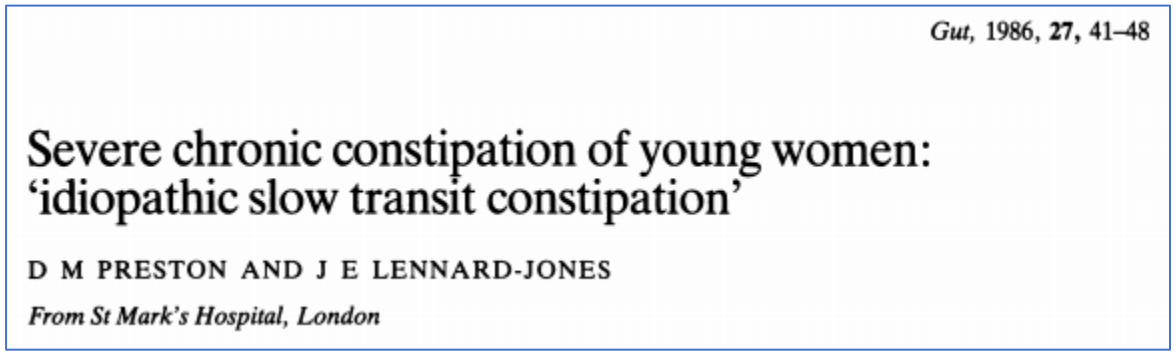
Author	Year	N	Immunostain	Number of neurons	Degeneration
Benson et al [48]	1992	12	S100/NSE/NF_2F_{11}	Normal	Not stated
Park et al [49]	1995	14	PGP9.5/S100	Normal	No
Porter et al [44]	1998	15	NSE	Normal	No
Schouten et al [50]	1993	39	NF_2F_{11}	Normal	No
Romanska et al [51]	1996	6	NCAM	Normal	No
F-Pellegrini et al [52]	1999	16	NSE/S100	↓ Neurons	No
Wedel et al [43]	2001	10	PGP9.5	↓ Neurons & ganglia	Not stated
Knowles et al [47]	2001	36	NSE, PGP9.5, S100	Normal	No
Wedel et al [42]	2002	11	PGP9.5[a]	↓ Neurons & ganglia	Not stated
Yu et al [53]	2002	14	NF2F11	↓ Neurons & ganglia	Not stated
Bassotti et al [54]	2006	26	NSE/S100	↓ Neurons	Apoptosis
Wattchow et al [45]	2008	4	Anti-Hu C/D	Normal[b]	No

KEY: PGP9.5 = protein gene product 9.5, NF = neurofilament, NSE = neuron-specific enolase.
[a] Included nine patients from earlier publication (REF 2001).
[b] Non-significant reductions noted in neurons and ganglia.

Enteric neuropathology

- Small N + selection bias (megacolon)
- Issues of technical validity (silver staining)
- Neuropathology not demonstrated by contemporary methods
- Normal variation too wide

STC is not a disease



Gut, 1986, **27**, 41–48

Severe chronic constipation of young women: 'idiopathic slow transit constipation'

D M PRESTON AND J E LENNARD-JONES

From St Mark's Hospital, London

Clinical Gastroenterology and Hepatology

Volume 5, Issue 2, February 2007, Pages 197-200

Original article

Influence of Positive Family History on Clinical Characteristics of Functional Constipation

Annie On On Chan *, Kwok Fai Lam ‡, Wai Mo Hui *, Gigi Leung *, Nina Y.H. Wong *, Shiu Kum Lam *, Benjamin C.Y. Wong *

- N = 64 'white women': 1969-82
- 33 / 64 family history
- vs. 23/ 64 matched community controls
- 2 MZ twins unaffected

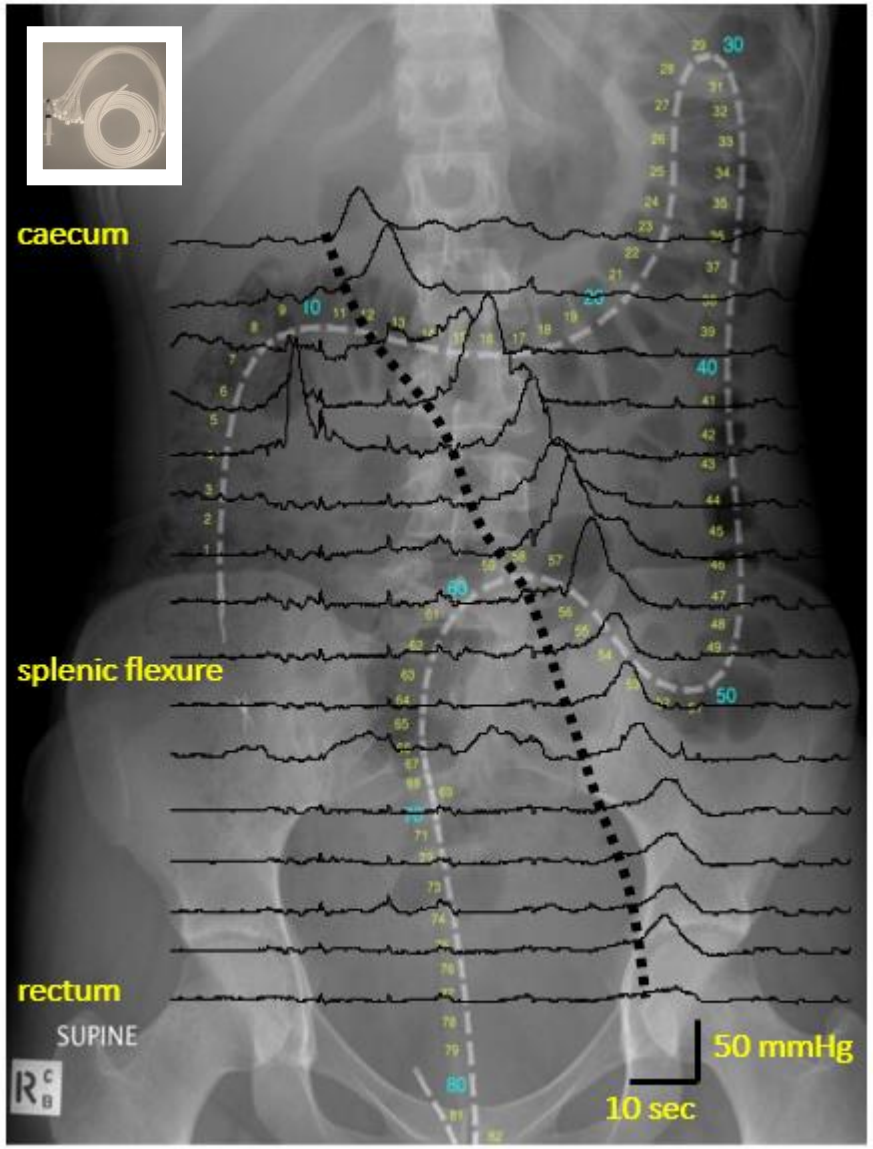
- N = 240 (120 +/- FDR)
- FHx^{+}: present younger due to detection bias (11-20 vs. 21-30 years), but otherwise phenotypically identical

STC is not a disease

Hereditary +/- genetic

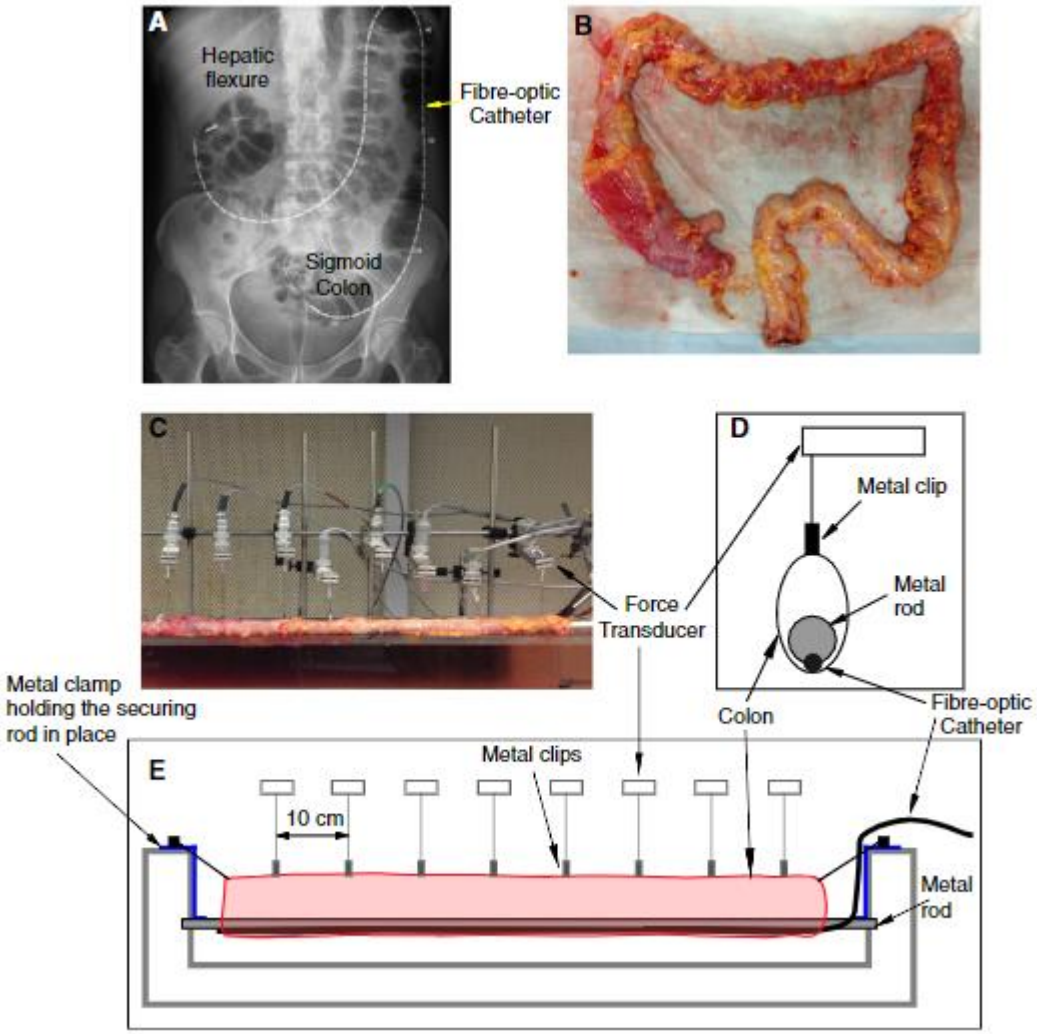
- No controlled data support
- No mendelian evidence
- No twin studies
- STC not studied by GWAS (but related phenotypes e.g. IBS show low genomic heritability and very low polygenic risk)
- All candidate gene approaches negative

STC is not an inertial problem



high-amplitude propagated contractions (HAPCs)

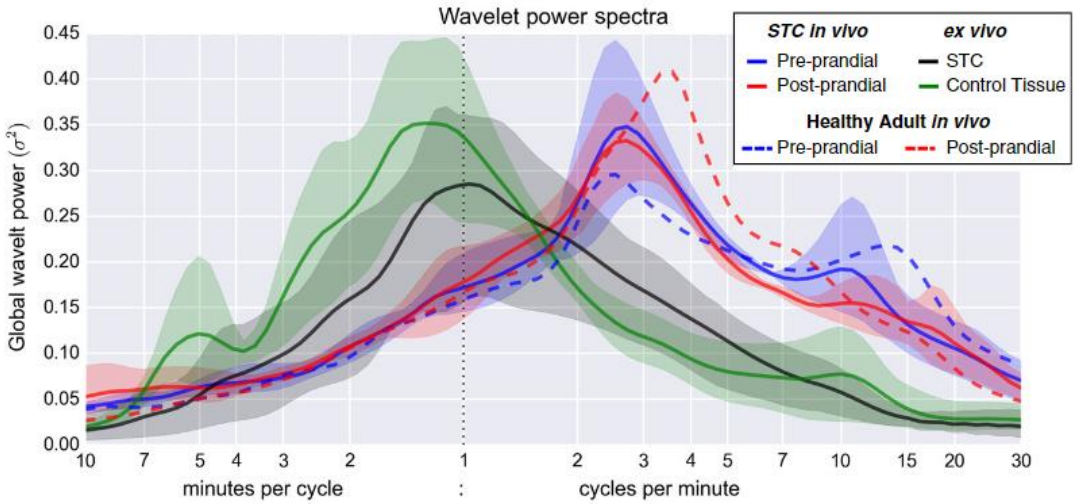
author	*year*	*n*	*HAPC frequency /24 h*
Bassotti	1988	14	↓
Bassotti	1994	25	↓
Leroi	2000	14	↓
Hagger	2003	8	↓
Herve	2004	40	↓
Ravi	2010	111	↓
Dinning	2010	16	↓



Neurogastroenterology & Motility
NGM
Neurogastroenterol Motil (2016) **28**, 1824–1835
doi: 10.1111/nmo.12884

High-resolution colonic motility recordings *in vivo* compared with *ex vivo* recordings after colectomy, in patients with slow transit constipation

P. G. DINNING,*,† T. C. SIA,*,† R. KUMAR,*,† R. MOHD ROSLI,*,† M. KYLOH,* D. A. WATTCHOW,*,† L. WIKLENDT,* S. J. H. BROOKES,* M. COSTA* & N. J. SPENCER*

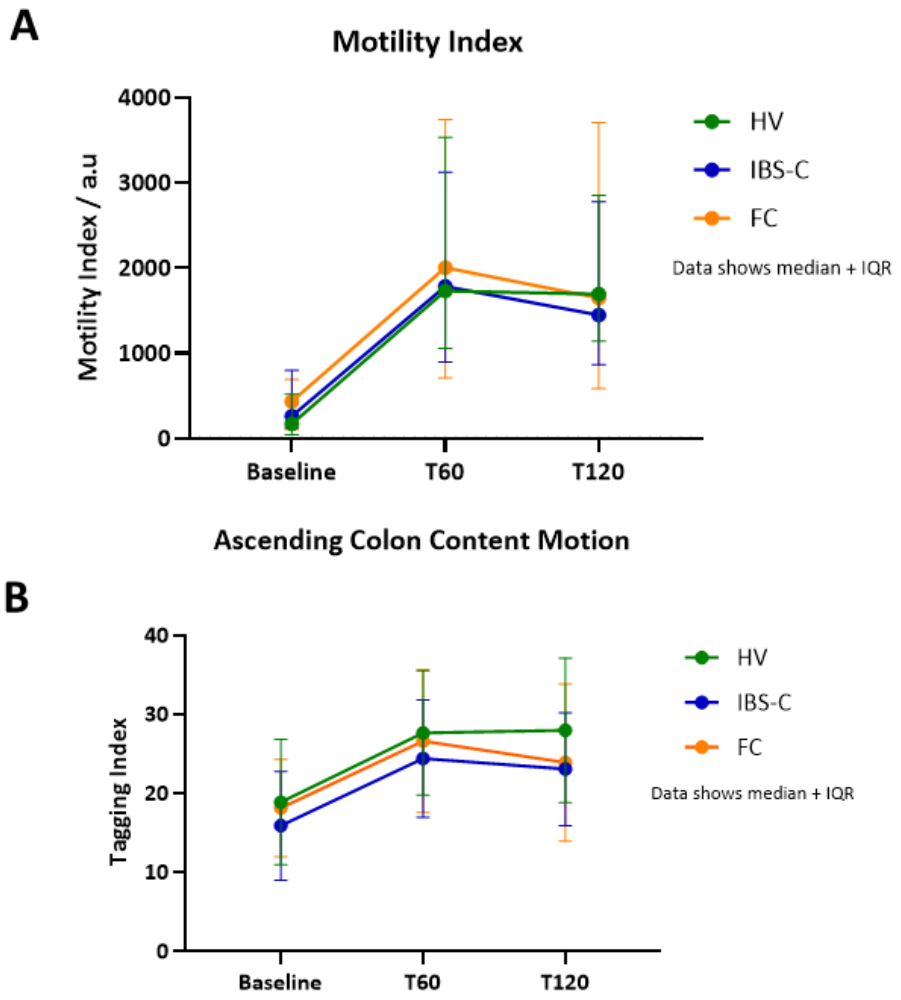


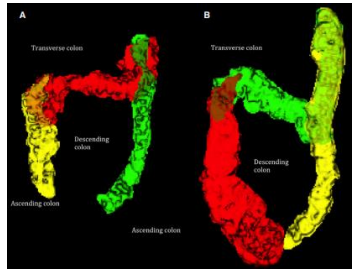
- Not inertia
- Some *in vivo* differences in propagating activity not evident *ex vivo*

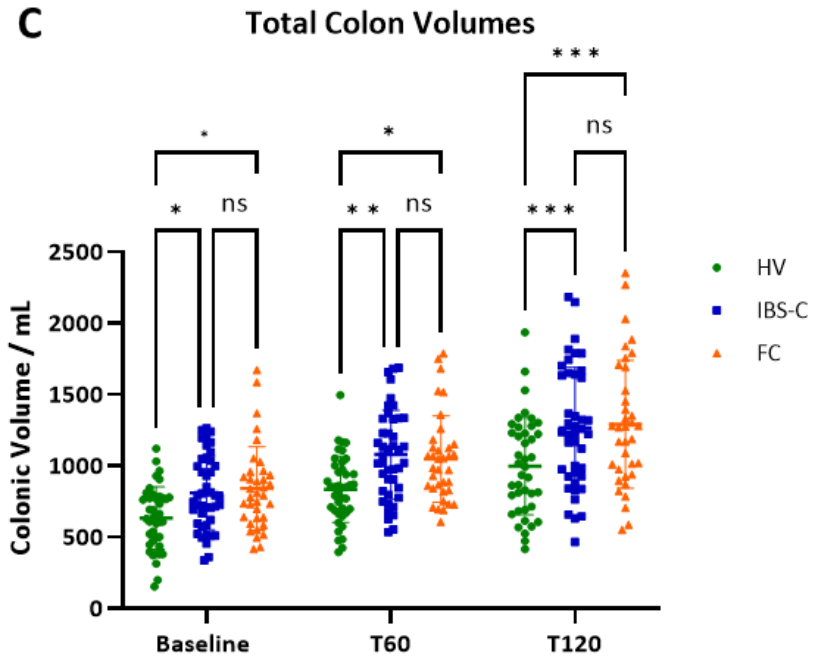
MRI Motility Index, ascending Colon Content Movement and Total Colonic Volumes after Moviprep challenge.

Medical Research Council

RECLAIM study







Lam *et al.*, NGM 2016; 28: 861-70; Wilkinson Smith *et al.*, NGM 2020; 32: ee13942; Wilkinson Smith *et al.*, Gut (under revision)

The modern role for colectomy

1908……

"Civilization's curse can be conquered," says England's Great Surgeon

SIR W. ARBUTHNOT LANE, *Bart., C. B.*

Famous Guy's Hospital, London

Three years ago SIR W. ARBUTHNOT LANE *founded with the late Earl of Oxford and Asquith and other prominent Britons the now famous New Health Society, which is teaching millions how to lead healthier lives. Baronet, Companion of the Bath and Chevalier of the Legion of Honor, Sir Arbuthnot has won the following distinctions in his field: Fellow, Royal College of Surgeons; President, Fellowship of Medicine; Consulting Surgeon Guy's Hospital and Hospital for Sick Children; creator of modern methods of surgery copied throughout the world.*

"CONSTIPATION is the curse of civilization, the disease of diseases. There is no doubt that a shortage of the Vitamin B is responsible for and aggravates this complaint. Fresh yeast is particularly rich in Vitamin B. It stimulates intestinal action and has a most important effect on constipation and its related digestive troubles and diseases. The diet of our community suffers from a shortage of Vitamin B, which deficiency is most readily made up by the addition of a small quantity of fresh yeast."

WHEN Sir William Arbuthnot Lane speaks the world listens!

Long famous as a brilliant surgeon, Sir Arbuthnot is today recognized as one of the greatest exponents of preventive medicine, health education and dietetic reform that England has ever known. He has devoted his life to the study of the intestinal tract.

In a recent interview Sir Arbuthnot made the characteristically forceful statement that constipation is "civilization's greatest curse." In his opinion constipation can be overcome through the important corrective food—fresh yeast.

In this he reflects the view of enlightened medical opinion everywhere.

Fleischmann's Yeast is as fresh as any garden vegetable. Unlike dangerous cathartic drugs, which "scour out" only the lower intestine, yeast keeps the entire digestive tract naturally clean, active—healthy.

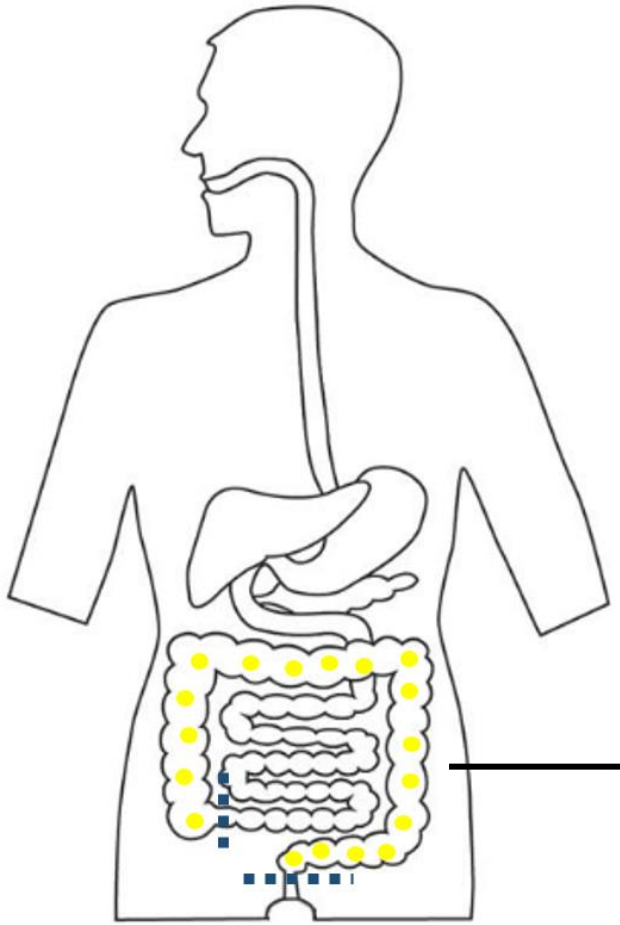
When constipation goes, digestion has a clear track ahead! Appetite picks up. Your skin clears. Your whole being awakens to new vigor and alertness!

In a recent survey covering every state in the United States half the doctors reporting said they prescribed this remarkable food for health.

Eat 3 cakes of Fleischmann's Yeast daily, a cake before each meal or between meals. To get full benefit eat it regularly and over a sufficient period of time. Sold wherever food is sold.

THROAT, stomach, intestines form one continuous tube. When the colon is clogged poisons spread quickly throughout the system. Colds, headaches, "nerves," skin and stomach disorders develop. To be radiantly well and happy keep the entire intestinal tract always *clean, active* and *healthy* with Fleischmann's Yeast. Start today.

FLEISCHMANN'S YEAST *for* HEALTH

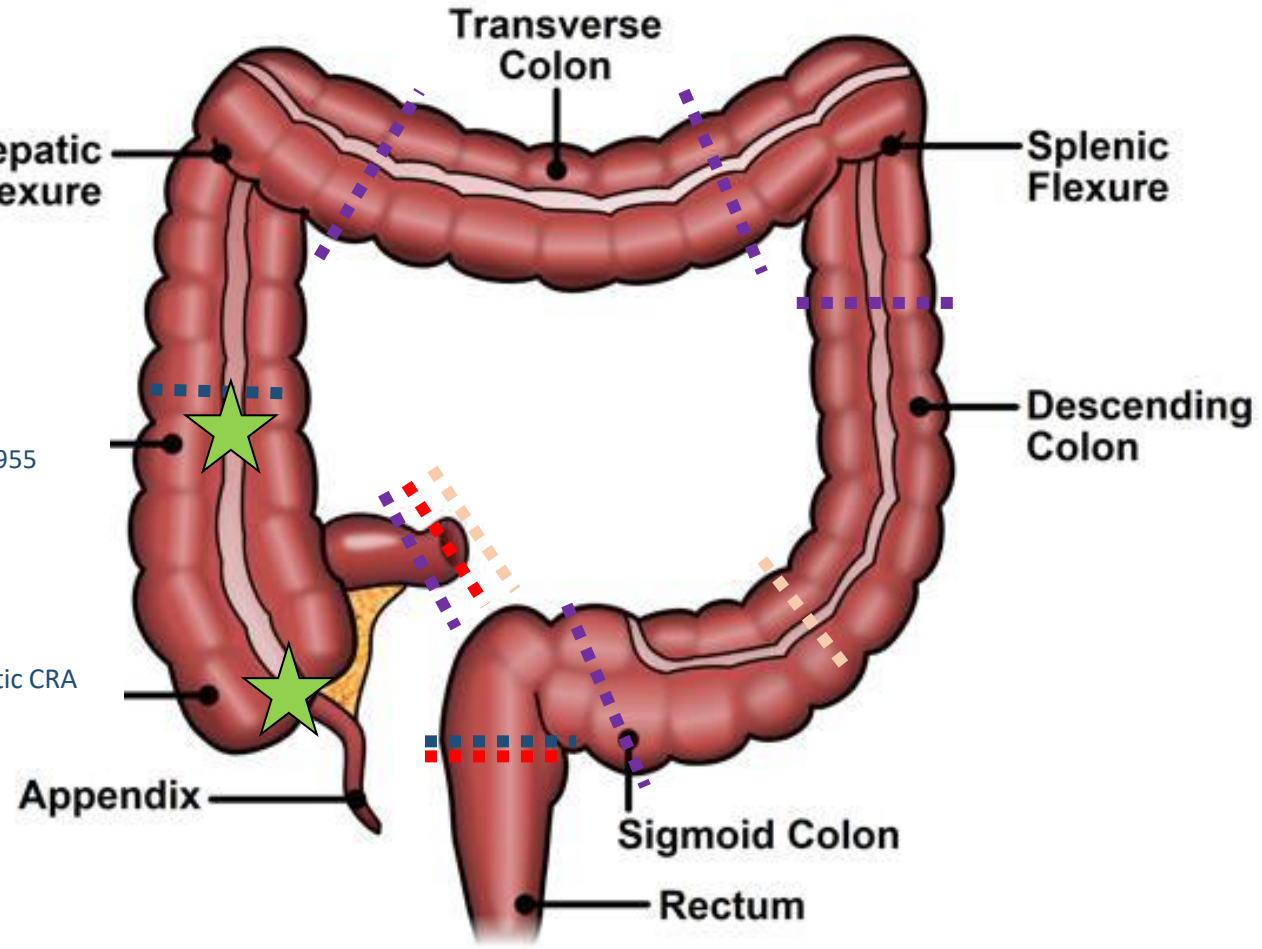


Based on a myth?

Arbuthnot-Lane W. BMJ 1908: I: 126-30
Arbuthnot-Lane W. BMJ 1909: I: 1408-11

Colectomy: procedural variation

- Colectomy and ileorectal anastomosis [INDEX]
- Subtotal colectomy and ileosigmoid anastomosis
- Subtotal colectomy and caecorectal anastomosis *
- Segmental colectomy: left, right and sigmoid



Iso-peristaltic CRA
- Ogilvie 1931
- Lillehei & Wangensteen 1955
- Deloyers 1963

Anti-peristaltic CRA
- Sarli 2011

Bharucha & Knowles: Surgery of the anus, rectum and colon: 4th edition
Knowles *et al*., Systematic review. Colorectal Dis 2017;19 Suppl 3:17-36

Colectomy: procedural variation

Table 1 | Types of colonic resection for chronic constipation and access*

Operation	Access and number of studies	
	Open	Laparoscopic
Colectomy and ileorectal anastomosis	55	7
Subtotal colectomy and ileosigmoid anastomosis	7	0
Subtotal colectomy and isoperistaltic caecorectal anastomosis	9	0
Subtotal colectomy and antiperistaltic caecorectal anastomosis	7	2
Segmental resections (right and left hemicolectomy)	6	0

*Studies report outcomes in >10 patients.

Knowles *et al*., *Nat Rev Gastroenterol* 2015; 12:
Bharucha & Knowles: Surgery of the anus, rectum and colon: 4th edition
Knowles *et al*., Systematic review. *Colorectal Dis* 2017;19 Suppl 3:17-36

Colectomy: evidence

CapaCiTY surgical interventions for chronic constipation: systematic review and practice recommendations

The Association of Coloproctology of Great Britain and Ireland

NHS England

CapaCiTY Chronic Constipation Treatment pathway

The Pelvic Floor Society Working to Improve Outcomes

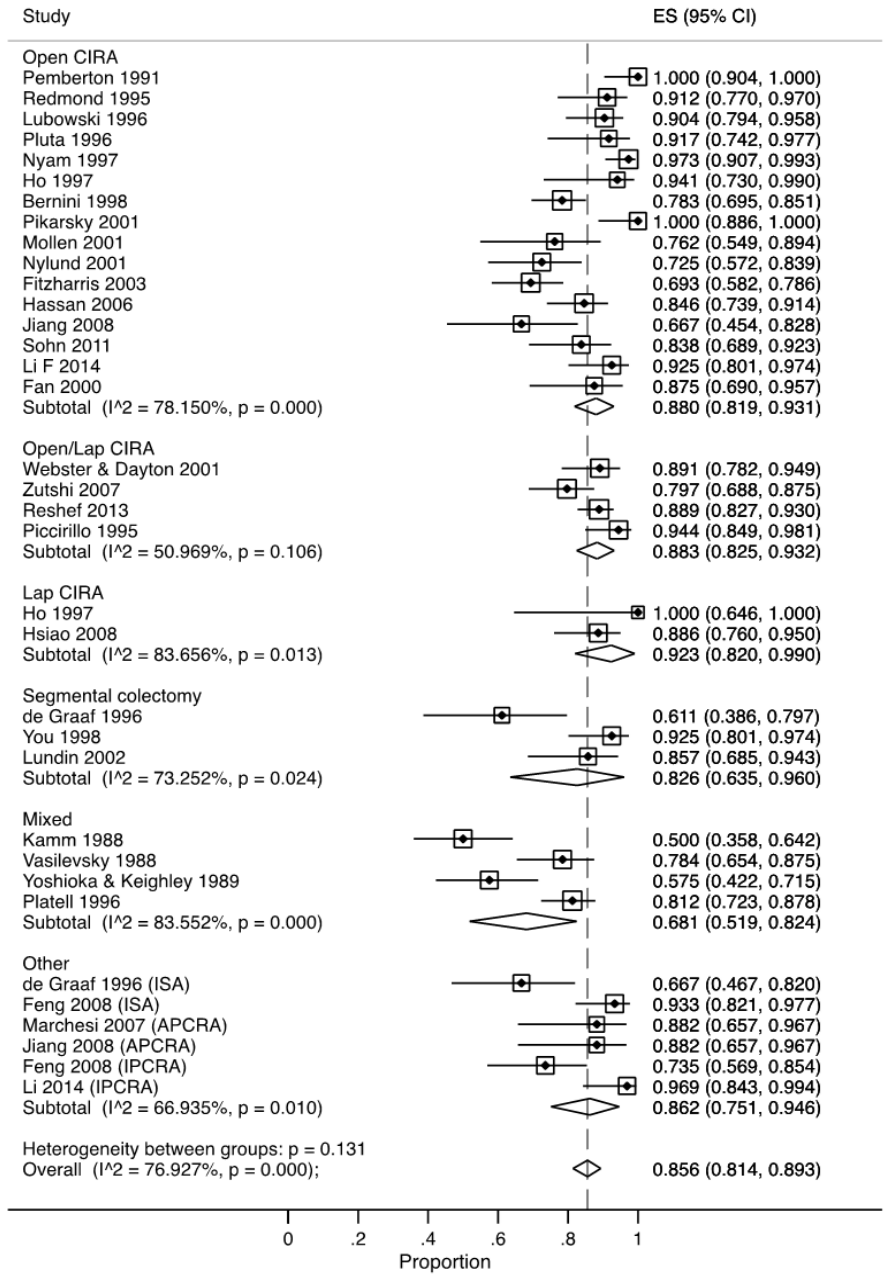
ESCP European Society of COLOPROCTOLOGY

Procedure	Number of reviewed studies by evidence level				
	1b	2b	3b	4	Total
Colonic resection	0	1	0	39	40
Suspension procedures	0	2	0	16	18
Excisional procedures	3	26	0	18	47
Reinforcement procedures	2	9	0	35	46
Sacral neuromodulation	0	0	0	8	8
ALL	5	38	0	115	148

7 reviews: open access: *Colorectal dis* 2017

Colectomy: benefits

- Based on colectomy and ileorectal anastomosis
- Global rating scales (benefit)
  - Median 89% satisfied / very satisfied
  - Range 60-100% (based on 1233 patients reported)
- Mean weekly bowel frequency: pre = 1; post = 19
- Symptom scores: Cleveland Clinic score: pre: 22/24 vs. post 2/24

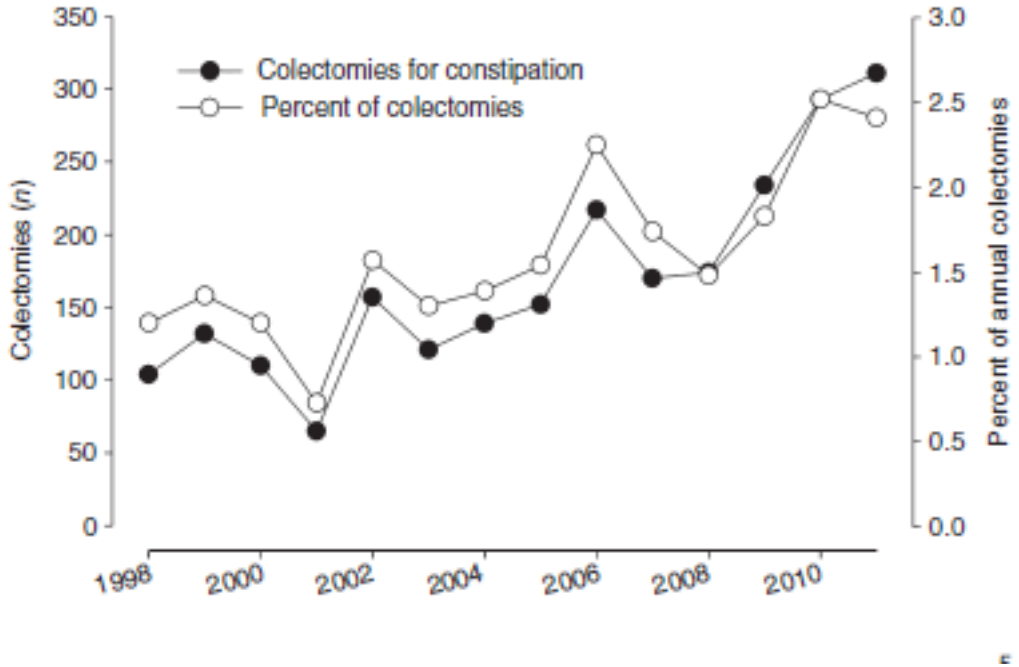


Knowles *et al.*, Systematic review. Colorectal Dis 2017;19 Suppl 3:17-36

AP&T Alimentary Pharmacology and Therapeutics

Colectomy for constipation: time trends and impact based on the Nationwide Inpatient Sample, 1998–2011

A. Dudekula*, S. Huftless‡ & K. Bielefeldt*,†



NEWS & VIEWS

DEFECATION

Colectomy for constipation —a time for renewed caution?

Charles H. Knowles

Refers to Dudekula, A. *et al.*. Colectomy for constipation: time trends and impact based on the nationwide inpatient sample. *Aliment. Pharmacol. Ther.* http://dx.doi.org/10.1111/apt.13415

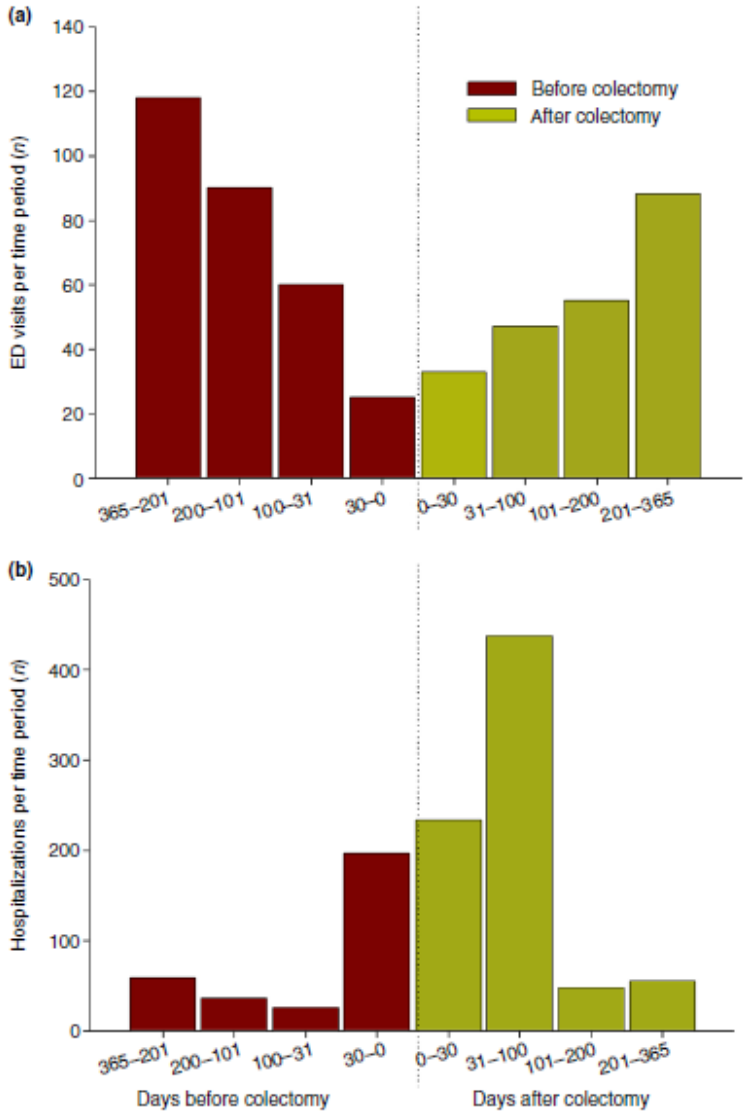
Colectomy is rightly viewed as a last resort in selected patients with slow-transit constipation. A new study presents US national data that raises new concerns regarding the outcome of this procedure and perhaps questions whether it should be offered at all.

Table 2 | Post-operative complications after colectomy for constipation

Complication type	National
Hospitalisations (*n*)	1017
Any complication (%)	42.7
Wound complications (%)	
Post-operative haematoma	1
Post-operative seroma and wound dehiscence	0.6
Persistent post-operative fistula	1.5
Post-operative infection (%)	
Post-operative wound infection or abscess	2.8
Urinary tract (%)	
Urinary retention	2
Urinary tract infection	5.8
Acute renal failure	0.8
Pulmonary (%)	
Post-operative pneumonia, atelectasis or aspiration	3.2
Respiratory failure	2.5
ARDS, pneumothorax	1
Gastrointestinal tract (%)	
Intestinal obstruction, ileus, nausea/vomiting/ haemorrhage	27
Cardiovascular (%)	
Cardiac arrest, phlebitis, deep venous thrombosis	0.6
Systemic (%)	
Post-operative fever, electrolyte abnormality	17.5
Mechanical (%)	
Accidental perforation	3.3
Bile duct injury	15
Intraoperative bleeding	2.3
Reopening of the surgical site	0.7

Incidence and type of perioperative complications based on diagnostic codes included in the discharge record associated with the index hospitalisation for colectomy.

Florida & California



Dudekula *et al.*, APT 2015; 42: 1281-93

Colectomy harms

- Peri-operative morbidity (risk)
  - Small bowel obstruction: 14% (range 0-50%) ↓ by lap approach ?
  - Re-operation (30 days): 10% (range 0-50%)
  - Anastomotic leak rate: 0% (range 0-11%)
  - Mortality rate: 0% (range 0-6%)
  - Eventual ileostomy: 5% (range 0-25%)
- Post-operative function
  - Diarrhoea: 14% (0-35%) ↓ by subtotal colectomy
  - Incontinence: 11% (0-47%)
  - Abdominal pain: 37% (5-86%)
  - Bloating: 26% (8-90%)
  - Recurrent constipation: 14% (0-76%) ↑ by subtotal colectomy
  - Ongoing laxative use: 17% (0-62%)

→ Adhesions
Opioids
New diagnostic uncertainty

Bharucha & Knowles: Surgery of the anus, rectum and colon: 4th edition

Systematic review

doi:10.1111/codi.13775

Surgery for constipation: systematic review and practice recommendations

Graded practice and future research recommendations

C. H. Knowles*, U. Grossi*, E. J. Horrocks*, D. Pares†, P. F. Vollebregt*, M. Chapman‡, S. Brown§, M. Mercer-Jones¶, A. B. Williams, Y. Yiannakou††, R. J. Hooper‡‡, N. Stevens‡‡ and J. Mason§§, on behalf of the NIHR CapaCiTY working group¶¶, The Pelvic floor Society*** and European Society of Coloproctology†††**

The Association of Coloproctology of Great Britain and Ireland

NHS England

CapaCiTY

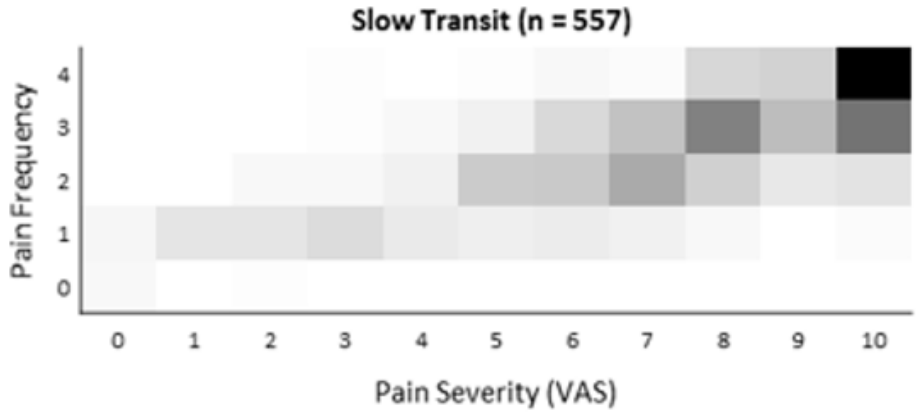
The Pelvic Floor Society

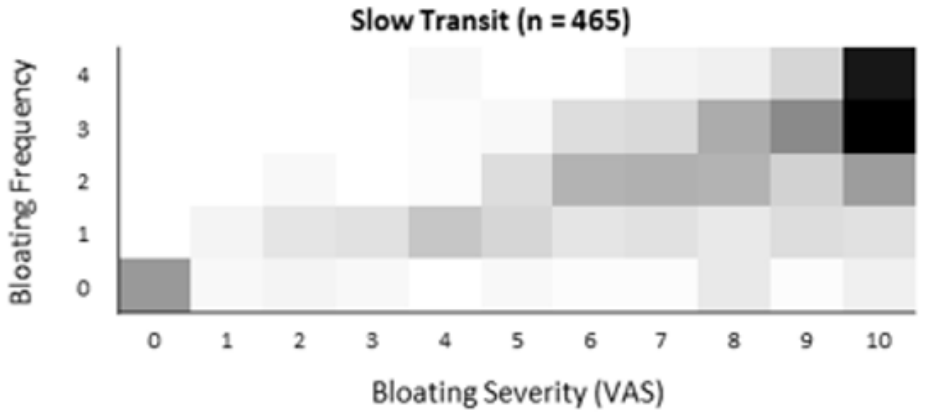
Working to Improve Outcomes

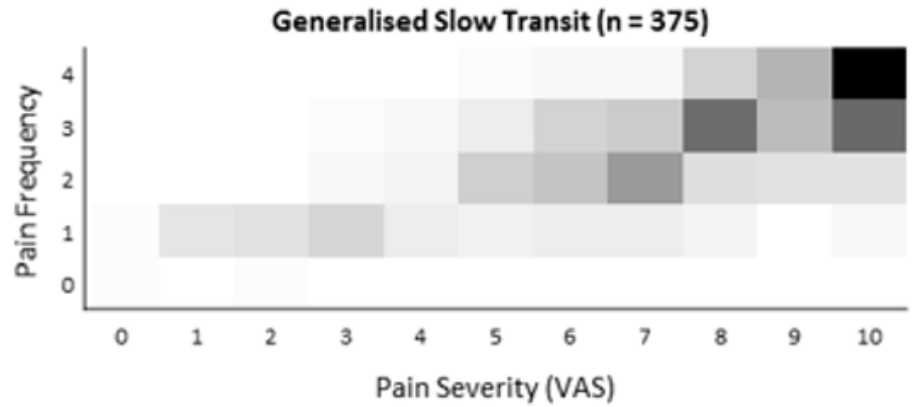
ESCP | European Society of COLOPROCTOLOGY

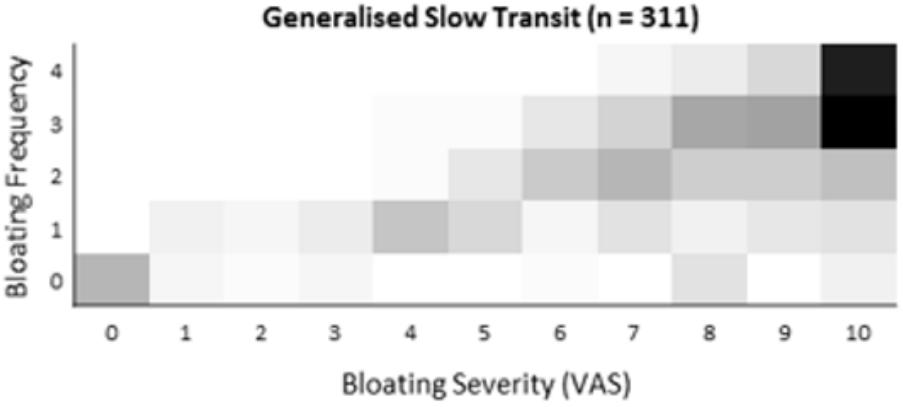
Colonic resection			
Patient selection			
1.	Given uncertainty of outcome and potential for harm, colectomy should only be offered to patients when all other relevant treatments have failed	IV	C
2.	Given concerns regarding outcome, the following represent absolute or relative contra-indications to colectomy		
a	Concomitant upper GI symptoms (relative)	V	N
b	Proven upper GI dysmotility (absolute)	IV	C
c	Unproven generalised delay in colon transit (absolute)	IV	C
d	Concomitant defecation disorder (relative)	IV	D
e	Significant symptoms of abdominal pain and bloating, including diagnosis of IBS (relative)	IV	D
f	Faecal incontinence and/or functionally impaired anal sphincter	V	N
3.	As a consequence of the above, colectomy should not be considered without precision phenotyping (clinical and radio-physiological)	IV	C
4.	Given concerns regarding outcome, magnitude and irreversibility of colectomy, patients with concomitant defecation disorder should have this treated first including surgery for structural causes where relevant	IV	D
5.	All patients considered for colectomy should have specialist multidisciplinary discussion	V	N
6.	Formal psychological evaluation should be undertaken in all patients considered for colectomy for constipation	V	N
7.	In view of need for specialist investigations and review, patients should only undergo colectomy for constipation in centres with access to appropriate specialist services	V	N

STC: symptoms overlap with other phenotypes









Chaichanavichkij *et al*., In press B J Surg

RESEARCH ARTICLE Open Access

The impact of laxative use upon symptoms in patients with proven slow transit constipation

Phil G Dinning[1,2*], Linda Hunt[2], David Z Lubowski[3], Jamshid S Kalantar[4], Ian J Cook[5] and Mike P Jones[6]

Laxatives modify stool form and frequency but not pain and bloating

Characteristics	Odds ratio	95% CI	*P - value*
Stool form	1.64	1.13, 2.40	0.009
Stool frequency	2.23	1.57, 3.17	<0.001
FOCE	2.01	0.95, 4.22	0.06
Straining	1.10	0.50, 2.45	0.8
Abdominal pain	1.00	0.77, 1.30	>0.9
Abdominal bloating	1.04	0.78, 1.38	0.8

Dinning *et al.* BMC Gastroenterology 2011, 11:121

Formal psychological examination

- Eating disorders
- Abuse: post-traumatic symptoms
- Opioid use / misuse
- Psychiatric disease
- Understanding of surgery and irreversibility

Slow-transit constipation and criteria for colectomy: a cross-sectional study of 1568 patients

BJS Open, 2021, zrab049
DOI: 10.1093/bjsopen/zrab049
Original Article

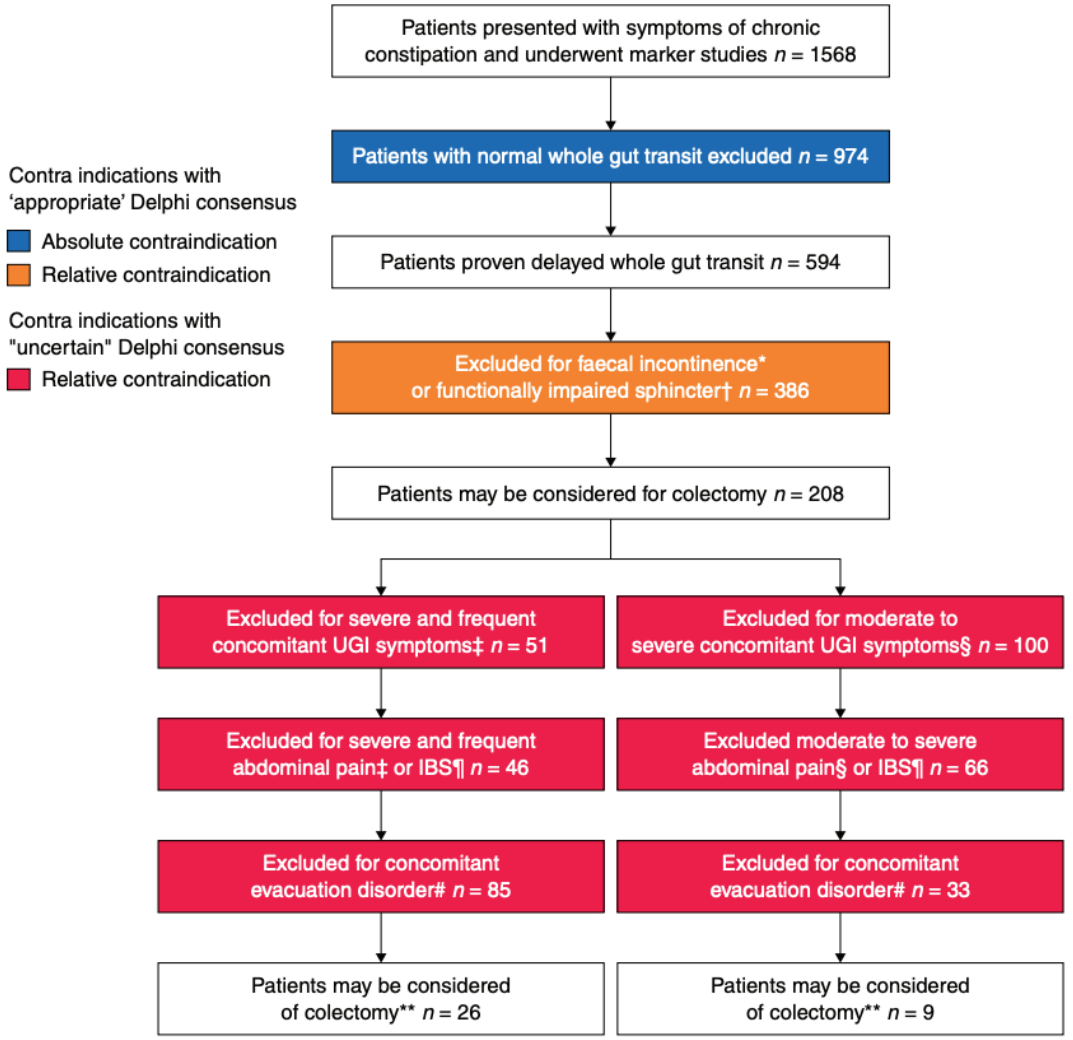
P. Chaichanavichkij [1,*], P. F. Vollebregt [1], S. Z. Y. Tee[2], S. M. Scott[1] and C. H. Knowles[1]

[1]National Bowel Research Centre and GI Physiology Unit, Blizard Institute, Centre for Neuroscience, Surgery & Trauma, Queen Mary University of London, London, UK
[2]Barts and The London School of Medicine and Dentistry, Queen Mary University of London, London, UK

Correspondence to: 1st Floor, Abernathy Building, 2 Newark Street, London E1 2AT, UK (e-mail: p.chaichanavichkij@qmul.ac.uk)

1.7%

Meet selection criteria for colectomy



If you do decide to do a colectomy

- MDT ratification [always]
- Consent in great detail
- Colectomy and IRA is the standard (removes rectosigmoid brake)
- Pre-test loop ileostomy advised for effect on symptoms (form high enough to use for second procedure)
- Covering ileostomy for colectomy (reverse after 3 months)
- Laparoscopic probably benefits [surgical skill]

Other options

REVIEW

Neurogastroenterology & Motility NGM WILEY

Chronic constipation in adults: Contemporary perspectives and clinical challenges. 2: Conservative, behavioural, medical and surgical treatment

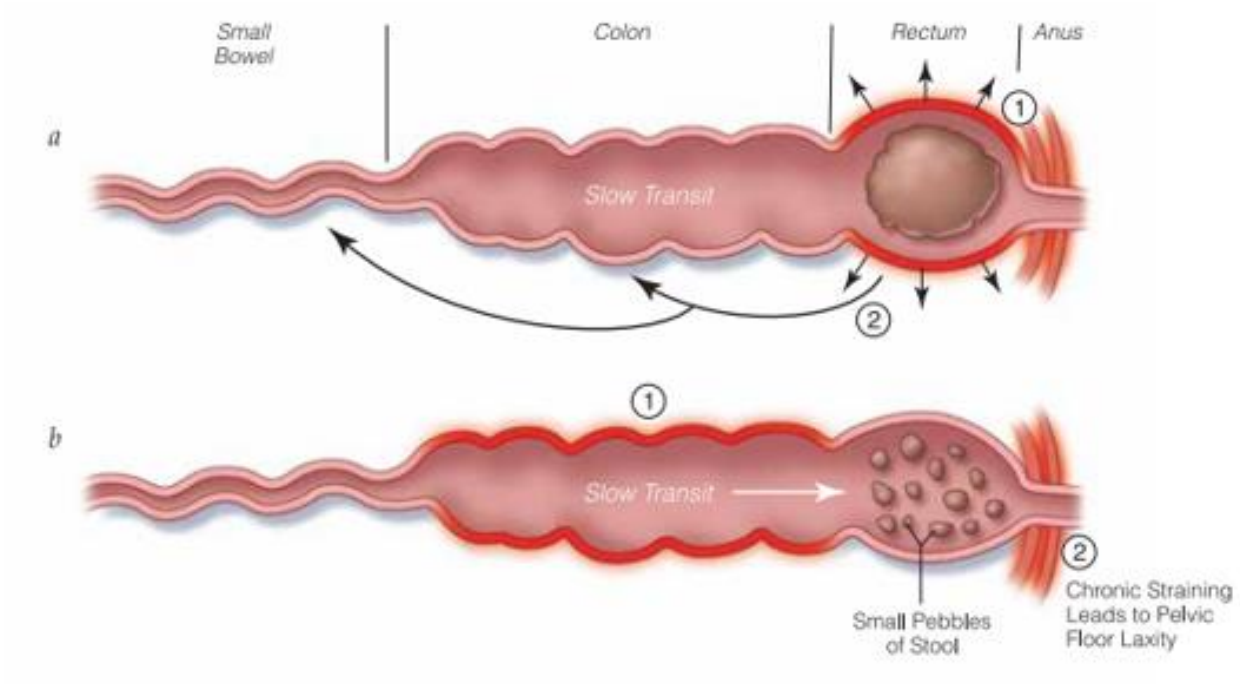
Maura Corsetti[1,2] | Steven Brown[3] | Giuseppe Chiarioni[4,5] | Eirini Dimidi[6] | Thomas Dudding[7] | Anton Emmanuel[8] | Mark Fox[9,10] | Alexander C. Ford[11,12] | Pasquale Giordano[13] | Ugo Grossi[14] | Michelle Henderson[15] | Charles H. Knowles[16] | P. Ronan O'Connell[17] | Eamonn M. M. Quigley[18] | Magnus Simren[5,19] | Robin Spiller[1,2] | Kevin Whelan[6] | William E. Whitehead[5] | Andrew B. Williams[20] | S. Mark Scott[16]

Neurogastroenterology & Motility. 2021;33:e14070.
https://doi.org/10.1111/nmo.14070

Concomitant obstructed defaecation

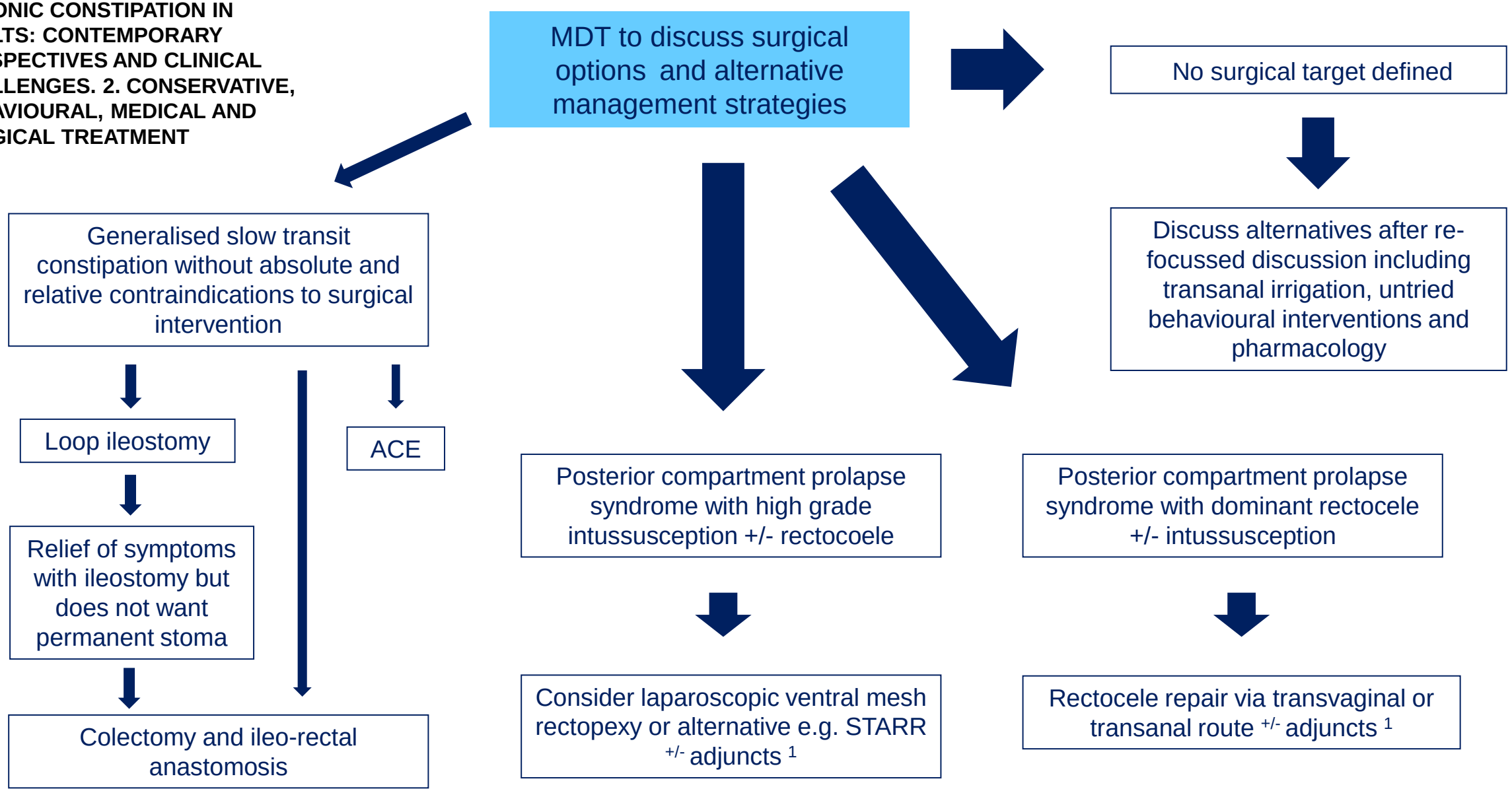
Bottom up

Top down



Knowles CH. ACS Surgery principles & Practice, 7th Edition.

CHRONIC CONSTIPATION IN ADULTS: CONTEMPORARY PERSPECTIVES AND CLINICAL CHALLENGES. 2. CONSERVATIVE, BEHAVIOURAL, MEDICAL AND SURGICAL TREATMENT

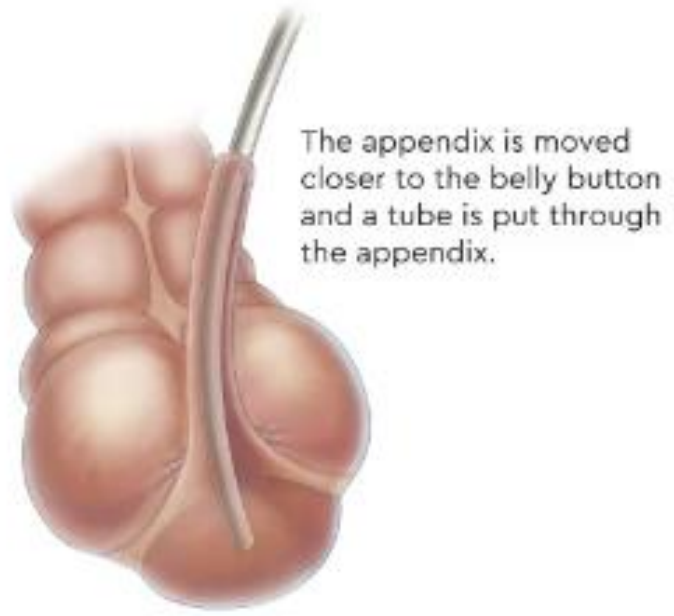


Neurogastroenterology & Motility. 2021;33:e14070.
https://doi.org/10.1111/nmo.14070

Notes: 1. Common adjuncts include sacrocolpopexy, hysterectomy, transvaginal tape, cystocele repair

Knowles CH. Bailey & Love. Chapter 73

Anterograde colonic enema



KEY:

- Thin
- Native appendix present

- Alternative to stoma
- Well established in paediatric practice
- Several variations
  - Appendicostomy (best)
  - Tunnel
    - Caecal button
    - Chait tube
  - Left colonic
    - Various inc. percutaneous endoscopic colostomy
- Outcomes variable in adults
  - 50% at 3 years
  - Stenosis / leakage / failure to work
  - Caecal volvulus (1%)

Sacral neuromodulation

SNM: Observational data 2010

Neurogastroenterology

EDITOR'S CHOICE

Sacral nerve stimulation for intractable constipation

Michael A Kamm,[1,2] Thomas C Dudding,[2] Jarno Melenhorst,[3] Michael Jarrett,[2] Zengri Wang,[4] Steen Buntzen,[5] Claes Johansson,[6] Søren Laurberg,[5] Harald Rosen,[7] Carolynne J Vaizey,[2] Klaus Matzel,[8] Cor Baeten[3]

Conclusion SNS is effective in the treatment of idiopathic slow and normal transit constipation resistant to conservative treatment.
Clinical Trial Number NCT00200005.

Gut 2010;**59**:333–340. doi:10.1136/gut.2009.187989

A randomized double-blinded sham-controlled cross-over trial of tined-lead sacral nerve stimulation testing for chronic constipation

Yan Yiannakou[a], Kevin Etherson[d], Helen Close[e], Adetayo Kasim[c], Mark Mercer-Jones[h], Stefan Plusa[g], Rebecca Maier[f], Susan Green[b], Jeremy Cundall[b], Charles Knowles[i] and James Mason[j]

European Journal of Gastroenterology & Hepatology June 2019 • Volume 31 • Number 6

→ RCTs 2015 & 2017

Treatment Efficacy of Sacral Nerve Stimulation in Slow Transit Constipation: A Two-Phase, Double-Blind Randomized Controlled Crossover Study

Phil G. Dinning, PhD[1,2], Linda Hunt, BSc[1], Vicki Patton, RN, MN[1,3], Teng Zhang, BMedSc[4], Michal Szczesniak, PhD[1], Val Gebski, BA, MStat[5], Mike Jones, PhD[6], Peter Stewart, MBBS, FRACS[7], David Z. Lubowski, FRACS[1,3] and Ian J. Cook, MBBS, MD(Syd), FRACP[1,4]

Am J Gastroenterol 2015; 110:733–740;

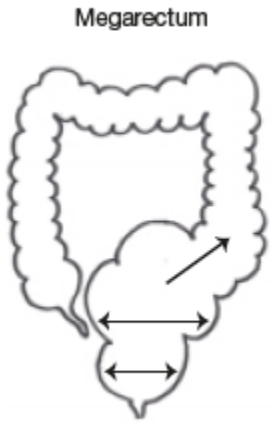
Randomized clinical trial

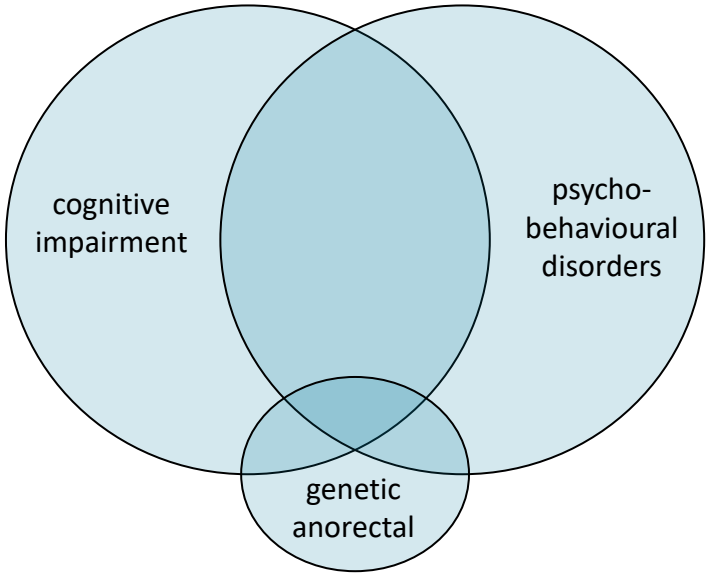
Randomized clinical trial of sacral nerve stimulation for refractory constipation

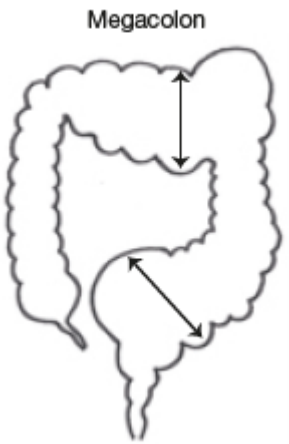
F. Zerbib[1], L. Siproudhis[2], P.-A. Lehur[3], C. Germain[4], F. Mion[5], A.-M. Leroi[6], B. Coffin[7], A. Le Sidaner[8], V. Vitton[9], C. Bouyssou-Cellier[1] and G. Chene[4], on behalf of the CONSTIMOD Study Investigators

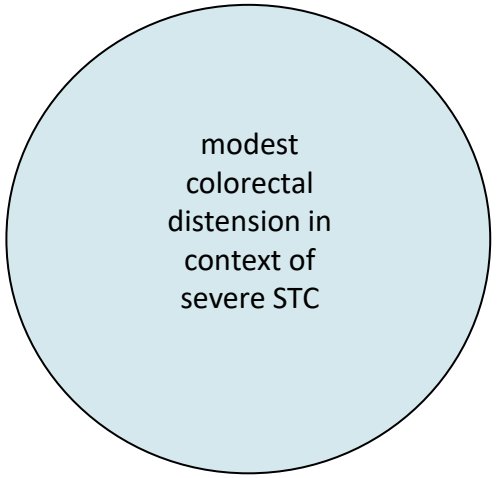
BJS 2017; **104**: 205–213

A slide on megarectum & megacolon









- Full bowel prep
- Loop ileostomy (6 months)
- Low anterior resection
- Reverse ileostomy

- Manage as STC
- Usually require colectomy or ileostomy

Summary

- STC is a non-specific measurement not a disease
- The concept of removing a “diseased” colon is flawed
- Colectomy has few indications in modern era and should be used with caution
- Of other options, ileostomy and ACE have a role