Yves Van Nieuwenhove - GIHK

ERAS

The Surgical point of view

UZ GENT

UNIVERSITEIT GENT

Disclosure

- Nothing to disclose

Fast-track??

- Enhanced Recovery After Surgery



FasTrack™ Complete Car Care - About Us

Welcome to **Fastrack Complete Car Care** , a new and exciting concept focusing on you, your vehicle, and your complete satisfaction. From the moment you enter the Customer Welcome Center, until your vehicle is ready to go, we strive to make your experience "Fast, Friendly and Fair".



Fast Track

A new approach termed "fast-track recovery" ws undertaken at both the Baystate Medical Center and Hartford Hospital. The fast-track protocol involves the following principles: (1) preoperative education; (2) early extubation; (3) methylprednisolone sodium succinate before bypass followed by dexamethasone for 24 hours postoperatively; (4) prophylactic digitalization, metoclopramide HCl, docusate sodium, and ranitidine HCl; (5) accelerated rehabilitation; (6) early discharge; (7) a dedicated fast-track coordinator to perform both daily telephone contact and a 1-week postoperative examination; and (8) a routine 1-month postoperative visit with a PA or MD. To

PMID: [illegible] DOI: [illegible]

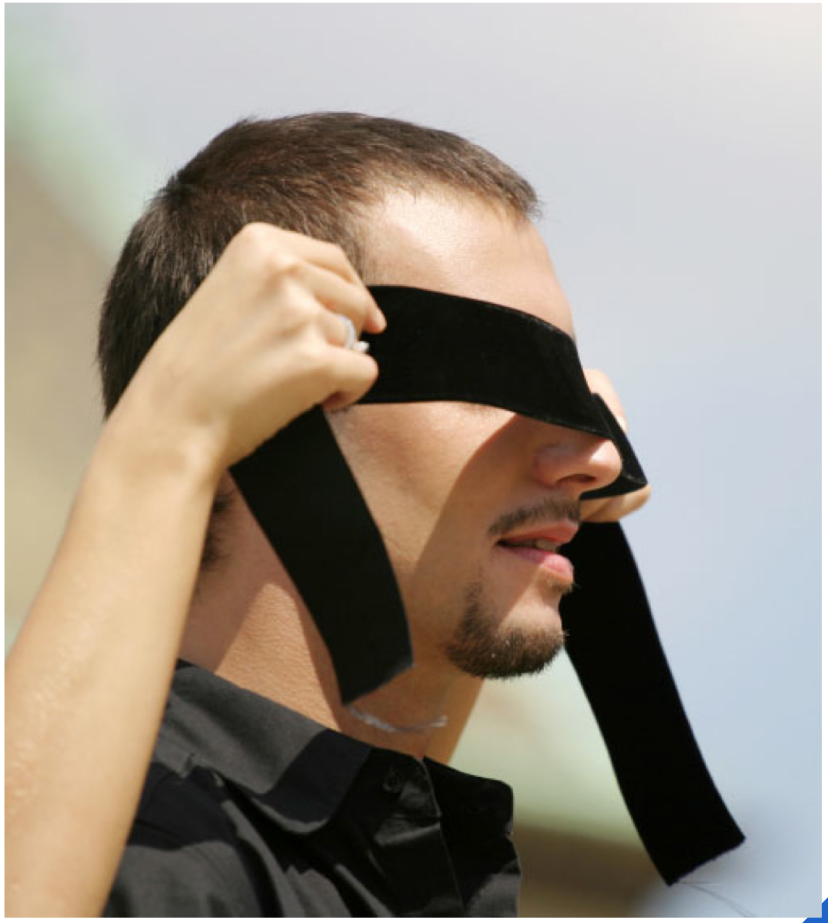
Henrik Kehlet from Danmark

- Lancet 1995: “stress-free” colon resection in 8 patients >70yrs
  - Laparoscopic approach
  - Pain control by epidural
  - Early (day 1) feeding
  - Early (day 1) mobilisation
  - Discharge from hospital day 2-3



Open-laparoscopic?

- Basse, Ann Surg 2005
  - RCT: 30 pts lap / 30 open colectomy
  - Age 75 (57-90)!!
  - Pts blinded by abdominal dressing
  - Hospital stay: L 2 (2-20) vs O 2 (2-5)
  - 1/3 of patients did not feel type of surgery
- LAFA (Vlug et al, Ann Surg 2011)



ERAS

- Enhanced Recovery After Surgery
  - Multimodal program of perioperative care
  - Change old habits
  - Apply new insights
  - No need for expensive infrastructure
  - Efficient use of resources



Multimodal



- Surgeon, anaesthetist, nurse, patient, family,…
- Elective surgery
- to be planned in a clear program

Which patients?



All patients

More fragile => better effect



Elective surgery



No extra problems to be expected

Old habits…

- Gastric tubes <-> PONV prophylaxis
- Mobilization <-> Good pain control

- Mechanical bowel prep
- No drains - No tubes
- Prolonged fasting <-> Early feeding and mobilisation
- Clear discharge criteria

begelbrief eras.doc	7 dec. 2005 11:11	25 KB	Micros...t (.doc)
ERAS.doc	26 apr. 2006 21:53	207 KB	Micros...t (.doc)
Eraspatient.doc	11 jan. 2006 13:23	125 KB	Micros...t (.doc)
EraspatientFR.doc	22 feb. 2006 11:48	359 KB	Micros...t (.doc)
ERASUZGent.doc	15 jun. 2009 20:50	97 KB	Micros...t (.doc)
ProcedERAS.doc	7 feb. 2006 19:52	36 KB	Micros...t (.doc)
Snelherstel team.doc	18 nov. 2005 08:28	56 KB	Micros...t (.doc)

The Steps to take



Planning



- Inform patient
  - Adjust expectations
  - ERAS nurse
  - Social Nurse
- Fit for surgery
  - prehabilitation?
- Discharge plan
  - distinct criteria
  - Nursing @home

Bowel preparation



NO

Cochrane Database Syst Rev. 2011 Sep 7;(9):CD001544. doi: 10.1002/14651858.CD001544.pub4.

Mechanical bowel preparation for elective colorectal surgery.

Güenaga KF[1], Matos D, Wille-Jørgensen P.

AUTHORS' CONCLUSIONS: Despite the inclusion of more studies with a total of 5805 participants, there is no statistically significant evidence that patients benefit from mechanical bowel preparation, nor the use of rectal enemas. In colonic surgery the bowel cleansing can be safely omitted and induces no lower complication rate. The few studies focused in rectal surgery suggested that mechanical bowel preparation could be used selectively, even though no significant effect was found. Further research on patients submitted for elective rectal surgery, below the peritoneal verge, in whom bowel continuity is restored, and studies with patients submitted to laparoscopic surgeries are still warranted.

YES

In summary, M
length of stay
or omitted in p

CLINICAL PRACTICE GUIDELINES

The American Society of Colon and Rectal Surgeons Clinical Practice Guidelines for the Use of Bowel Preparation in Elective Colon and Rectal Surgery

k, readmission, and
should be modified
ction.

John Migaly, M.D.[1] • Andrea C. Bafford, M.D.[2] • Todd D. Francone, M.D., M.P.H.[3]
Wolfgang B. Gaertner, M.D., M.Sc.[4] • Cagla Eskicioglu, M.D., M.Sc., F.R.C.S.C.[5]
Liliana Bordeianou, M.D., M.P.H.[3] Daniel L. Feingold, M.D.[6] • Scott R. Steele, M.D., M.B.A.[7]

On behalf of the Clinical Practice Guidelines Committee of the American Society of Colon and Rectal Surgeons

1 Department of Surgery, Duke University School of Medicine, Durham, North Carolina
2 Department of Surgery, University of Maryland Medical Center, Baltimore, Maryland
3 Department of Surgery, Massachusetts General Hospital, Boston, Massachusetts
4 Division of Colorectal Surgery, University of Minnesota Health, Minneapolis, Minnesota
5 Department of Surgery, Michael G. DeGroote School of Medicine, McMaster University, Hamilton, Ontario, Canada
6 Department of Surgery, Columbia University Irving Medical Center, New York, New York
7 Department of Colorectal Surgery, Cleveland Clinic, Cleveland, Ohio

So we choose MBP and AB?

- Do an RCT

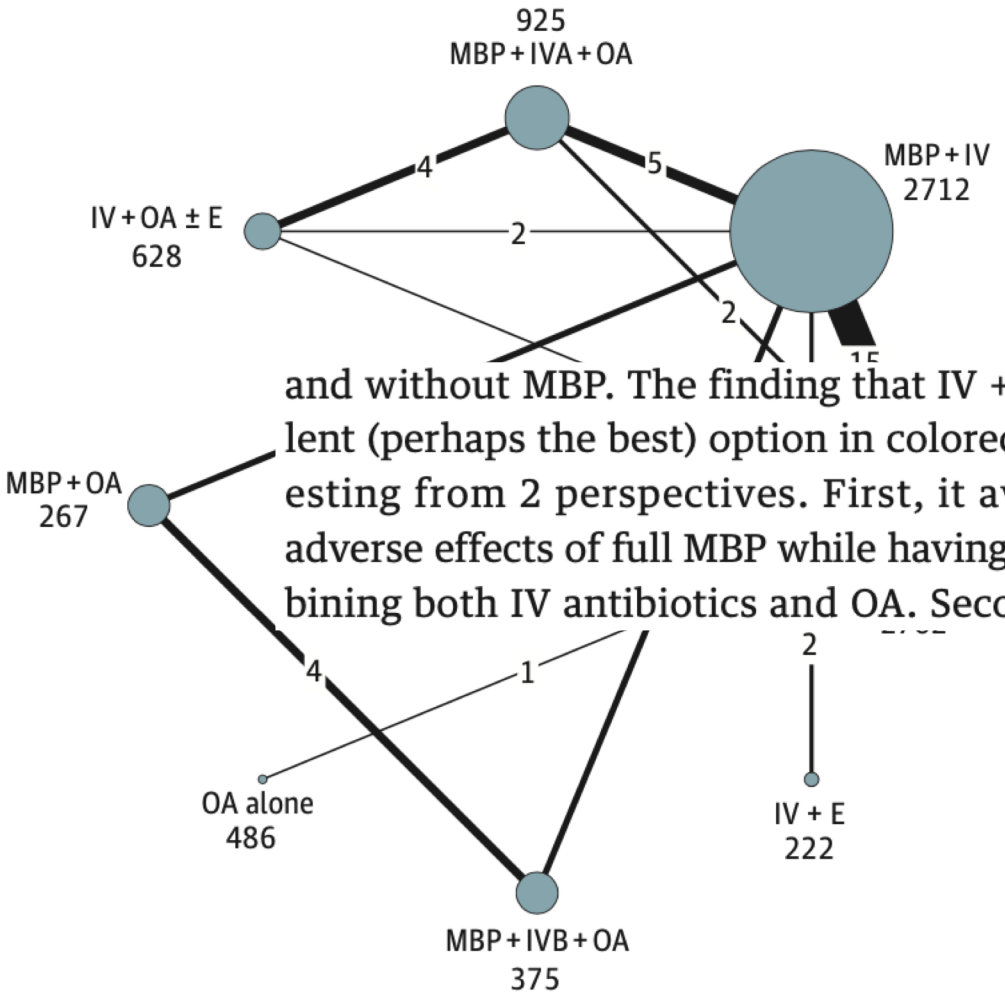
Mechanical and oral antibiotic bowel preparation versus no bowel preparation for elective colectomy (MOBILE): a multicentre, randomised, parallel, single-blinded trial

Laura Koskenvuo, Taru Lehtonen, Selja Koskensalo, Suvi Rasilainen, Kai Klintrup, Anu Ehrlich, Tarja Pinta, Tom Scheinin, Ville Sallinen

Interpretation MOABP does not reduce SSIs or the overall morbidity of colon surgery compared with NBP. We therefore propose that the current recommendations of using MOABP for colectomies to reduce SSIs or morbidity should be reconsidered.

The Lancet, august 2019

Woodfield et al, JAMA 2021



and without MBP. The finding that IV + OA ± E is an excellent (perhaps the best) option in colorectal surgery is interesting from 2 perspectives. First, it avoids the potential adverse effects of full MBP while having the benefit of combining both IV antibiotics and OA. Second, this option has

Laparoscopy or open surgery?

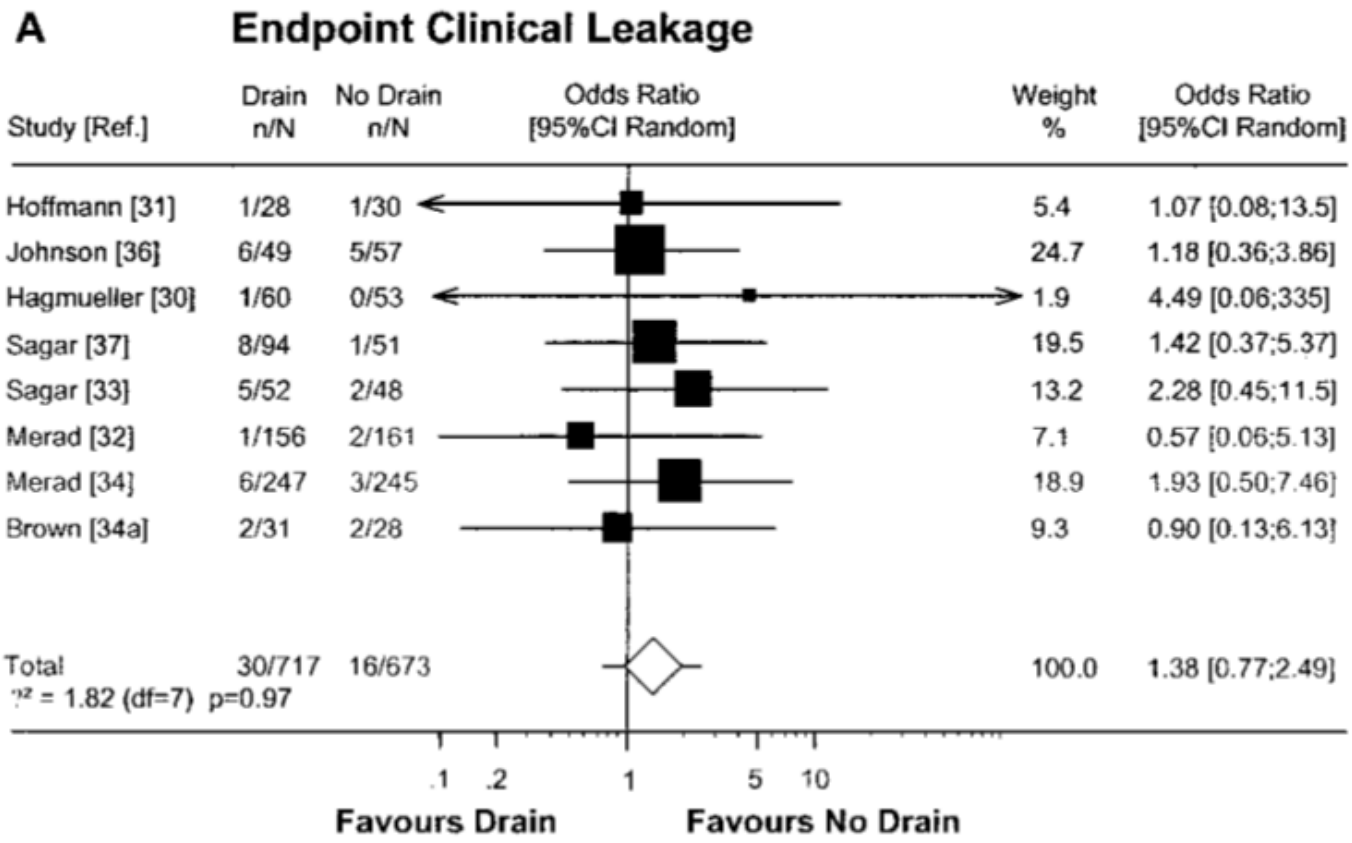
TABLE 3. Postoperative Data

	Laparoscopy and Fast Track (n = 100)	Open and Fast Track (n = 93)	Laparoscopy and Standard care (n = 109)	Open and Standard care (n = 98)	*P*
Total hospital stay, median (IQR), days	5 (4–8)	7 (5–11)	6 (4.5–9.5)	7 (6–13)	<0.001*†
Postoperative hospital stay, median (IQR), days	5 (4–7)	6 (4.5–10)	6 (4–8.5)	7 (6–10.5)	<0.001*‡
Days to fulfill discharge criteria, median (IQR)					
(1) Pain control with oral medication	2 (2–3)	2 (2–4)	3 (2–4)	3 (2–5)	
(2) Tolerate solid food	1 (1–2)	1 (1–3)	2 (1–3)	3 (2–5)	
(3) Absence of nausea	1 (1–3)	2 (1–5)	1 (1–3)	1 (1–4)	
(4a) Passage of first flatus	1 (1–2)	1 (1–3)	2 (1–3)	2 (1–3)	
(4b) Passage of first stool	2 (1–4)	3 (2–4)	3 (2–4)	4 (3–6)	
(5) Mobilization as preoperative	3 (2–5)	4 (3–7)	5 (4–7)	6 (5–8)	
(6) Acceptance of discharge	4 (3–6)	5.5 (4–9)	5.5 (4–8)	7 (5–12)	
In-hospital costs					
University hospitals, median (IQR, €)	10,594 (5461–16,763)	12,805 (6847–20,658)	11,967 (6222–17,039)	10,479 (6608–16,875)	0.56*
Teaching hospitals, median (IQR, €)	5768 (4873–8917)	5497 (4506–6513)	6228 (5280–6604)	5650 (4836–8003)	0.41*

*Kruskal–Wallis test/Groups individually tested by mann–whitney *u* test.
†Significant difference between Lap/FT and Open/FT (0.008)/Lap/FT and Lap/Standard (0.026)/Lap/FT and Open/Standard (0.000)/Lap/Standard and Open/Standard (0.010).
‡Significant difference between Lap/FT and Open/FT (0.005)/Lap/FT and Lap/Standard (0.020)/Lap/FT and Open/Standard (0.000)/Open/FT and Open/Standard (0.032)/Lap/Standard and Open/Standard (0.004).

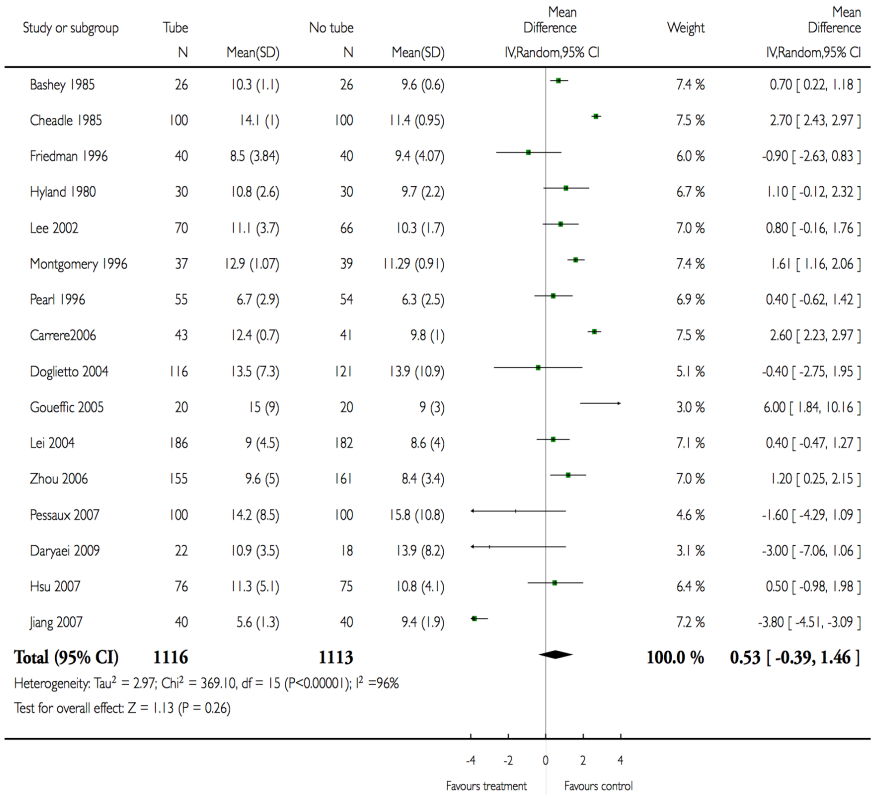
LAFA study, Vlug et al, Ann Surg 2011

Drain-no drain



Petrowsky et al,

Gastric tube and length of stay?



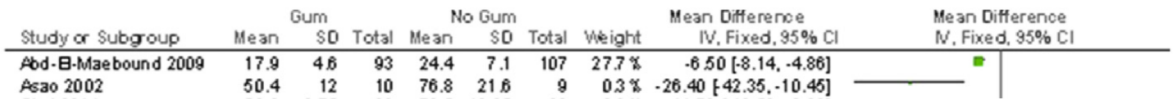
Study or subgroup	Tube N	Mean(SD)	No tube N	Mean(SD)	Mean Difference IV,Random,95% CI	Weight	Mean Difference IV,Random,95% CI
Bashey 1985	26	10.3 (1.1)	26	9.6 (0.6)		7.4 %	0.70 [0.22, 1.18]
Cheadle 1985	100	14.1 (1)	100	11.4 (0.95)		7.5 %	2.70 [2.43, 2.97]
Friedman 1996	40	8.5 (3.84)	40	9.4 (4.07)		6.0 %	-0.90 [-2.63, 0.83]
Hyland 1980	30	10.8 (2.6)	30	9.7 (2.2)		6.7 %	1.10 [-0.12, 2.32]
Lee 2002	70	11.1 (3.7)	66	10.3 (1.7)		7.0 %	0.80 [-0.16, 1.76]
Montgomery 1996	37	12.9 (1.07)	39	11.29 (0.91)		7.4 %	1.61 [1.16, 2.06]
Pearl 1996	55	6.7 (2.9)	54	6.3 (2.5)		6.9 %	0.40 [-0.62, 1.42]
Carrere2006	43	12.4 (0.7)	41	9.8 (1)		7.5 %	2.60 [2.23, 2.97]
Doglietto 2004	116	13.5 (7.3)	121	13.9 (10.9)		5.1 %	-0.40 [-2.75, 1.95]
Goueffic 2005	20	15 (9)	20	9 (3)		3.0 %	6.00 [1.84, 10.16]
Lei 2004	186	9 (4.5)	182	8.6 (4)		7.1 %	0.40 [-0.47, 1.27]
Zhou 2006	155	9.6 (5)	161	8.4 (3.4)		7.0 %	1.20 [0.25, 2.15]
Pessaux 2007	100	14.2 (8.5)	100	15.8 (10.8)		4.6 %	-1.60 [-4.29, 1.09]
Daryaei 2009	22	10.9 (3.5)	18	13.9 (8.2)		3.1 %	-3.00 [-7.06, 1.06]
Hsu 2007	76	11.3 (5.1)	75	10.8 (4.1)		6.4 %	0.50 [-0.98, 1.98]
Jiang 2007	40	5.6 (1.3)	40	9.4 (1.9)		7.2 %	-3.80 [-4.51, -3.09]
Total (95% CI)	**1116**		**1113**			**100.0 %**	**0.53 [-0.39, 1.46]**

Heterogeneity: $Tau^2 = 2.97$; $Chi^2 = 369.10$, df = 15 (P<0.00001); $I^2 = 96\%$

Test for overall effect: Z = 1.13 (P = 0.26)

Verma et al, Cochrane DB 2010

Chewing gum



Randomized clinical trial

Multicentre randomized clinical trial of the effect of chewing gum after abdominal surgery

E. M. de Leede ✉, N. J. van Leersum, H. M. Kroon, V. van Weel, J. R. M. van der Sijp, B. A. Bonsing, the Kauwgomstudie Consortium

No Gum

Conclusion

The addition of chewing gum to an ERAS postoperative care pathway after elective abdominal surgery does not reduce the LOS, time to bowel recovery or the rate of postoperative complications. Registration number: NTR2594 (Netherlands Trial Register).

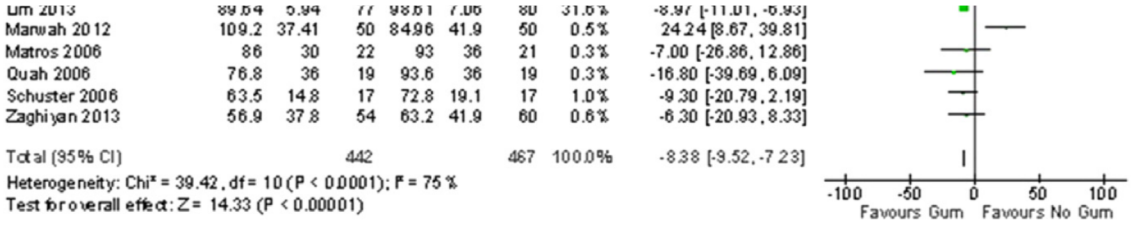


Fig. 4. Time to first bowel motion.

Su'a B et al, Int J Surg 2015

Early feeding

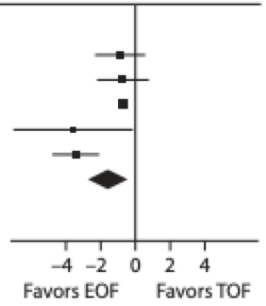


Early versus Traditional Postoperative Oral Feeding in Patients Undergoing Elective Colorectal Surgery: A Meta-Analysis of Randomized Clinical Trials

Cheng-Le Zhuang[a] Xing-Zhao Ye[a] Chang-Jing Zhang[a] Qian-Tong Dong[a]
Bi-Cheng Chen[b] Zhen Yu[a]

Study or subgroup	Early mean	Early SD	Early total	Traditional mean	Traditional SD	Traditional total	Weight %	Mean difference IV, random (95% CI)	Year
Hartsell et al. [16]	7.2	3.3	29	8.1	2.3	29	20.4	−0.90 (−2.36 to 0.56)	1997
Stewart et al. [17]	9.36	4.11	40	10.08	2.55	40	20.1	−0.72 (−2.22 to 0.78)	1998
El Nakeeb et al. [19]	6.2	0.2	60	6.9	0.5	60	29.6	−0.70 (−0.84 to −0.56)	2009
da Fonseca et al. [21]	4	3.7	24	7.6	8.1	26	8.5	−3.60 (−7.05 to −0.15)	2011
Dag et al. [22]	5.55	2.35	99	9	6.5	100	21.4	−3.45 (−4.81 to −2.09)	2011
Subtotal (95% CI)			252			255	100.0	−1.58 (−2.77 to −0.39)	

Heterogeneity: $\tau^2 = 1.24$; $\chi^2 = 18.37$, d.f. = 4 ($p = 0.001$); $I^2 = 78\%$
Test for overall effect: $Z = 2.61$ ($p = 0.009$)



Dig Surg 2013

Discharge when…

- Oral feeding is possible
- Oral pain control is possible
- No signs of septic complications
- Patient can walk around
- Patient is willing to go

Ultra fast track (B. Gignoux, Lyon)

Ultra fast track (Gignoux et al. Ann Surg 2018)

- 157 colectomies (age 25-82)
  - 30% of all colectomies
  - 73% uneventful
    - 7% admission
    - 20% extra visit
    - 6% readmission
    - 4% reoperation
- Aldrete score PAC discharge
- Chung score DCS discharge
- outpatient nursing
  - surveillance app (MAELA)
  - 5 days 2x/d
  - 5 days 1x/d

Take home message

- ERAS ≠ fast surgery
- Breaks with tradition (hardest part)
- Better for most patients, not for all!
- Multimodal approach
- Cost reducing, efficient use of resources