

The effect of laxative use in length of hospital stay and complication rate in patients undergoing elective colorectal surgery within an ERAS setting.

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Enhanced Recovery: the evidence

ERAS versus
Traditional Care in
Colorectal Surgery

	ERAS vs Traditional
Hospital stay	-2.39 days
Total complications	0.71 RR

13 Studies, 1910 patients

Readmission rate
Mortality

↓
No difference

ERAS – The Evidence

Increasing compliance with an ERAS program and the use of laparoscopic surgery independently improve outcome (ERAS Compliance Group, Ann Surg. 2015 Jun;261(6):1153-9.

Accelerated discharge within 72 hours of elective colorectal resection for cancer is safely achievable for the majority of patients without compromising short-term outcome (Emmanuel et al, Ann R Coll Surg Engl. 2017)

In this large, multi-institutional North American data registry, high adherence to ERPs was associated with earlier recovery, decreased complications, and shorter LOS. ERPs can improve outcomes; however, benefits correlate with adherence.

⌘ **Adherence to Enhanced Recovery Protocols in NSQIP and Association With Colectomy Outcomes**
(Berian et al, *Annals of Surgery* 23 October, 2017)

⌘ 8139 elective colectomies at 113 hospitals

{ LOS 4.3 days (high adherence)
vs
7.8 days low adherence;
P < 0.0001).
High-adherence patients achieved recovery milestones earlier (with return of bowel function at 1.9 (vs 3.7) days, tolerance of diet at 2.4 (vs 5.4) days, and oral pain control at 2.7 (vs 5.0) days (P < 0.0001)

Prolonged Postoperative Ileus (PPOI)

- ⌘ PPOI remains a significant clinical problem in patients undergoing advanced pelvic cancer surgery (about 30%), despite the increased awareness and implementation of enhanced recovery protocols. New regimens for better prophylaxis are needed, and further research on POI treatment is important. (Funder et al, J Surg Res. 2017 Oct;218:167-173)
- ⌘ Prolonged ileus is a common condition following colon resection, with an incidence of 12.7% and its worst in right sided colectomies- NSQIP databases total of 27,560 patients (Moghadamyeghaneh et al, Surg Endosc. 2016 Feb;30(2):603-9)

Methods to reduce POI

⌘ Methods to prevent-reduce POI are needed

(ERAS Society World J Surg (2013) 37:259–284,
SAGES-ASCRS Diseases of Colon and Rectum Volume 60: 8 (2017))

- ⌘ Intraoperative optimization and reduce opioids
- ⌘ regular diet immediately
- ⌘ Alvimopan
- ⌘ Chewing gum
- ⌘ Laxatives

Laxatives

- ⌘ Bulking agents
- ⌘ Stimulant agents
- ⌘ Osmotic agents
- ⌘ Stool softeners
- ⌘ Used for stimulate gut motility and reduce constipation(1)
- ⌘ Use in chronic constipation and in opioid induced constipation(2)
- ⌘ Use in eras protocols to stimulate gut motility and reduce LOS

1(MedGenMed. 2007; 9(2): 25, **Review of the Treatment Options for Chronic Constipation**, [John F. Johanson](#))

2. (BMJ Clin Evid. 2010 Apr 6;2010. pii: 2407, **Constipation in people prescribed opioids**, [Ahmedzai SH](#), [Boland J](#))

Laxatives can reduce the length of hospital stay
in colorectal surgery as and in non colorectal surgery

Gianpiero Gravante and Muhammad Elmussareh

World J Gastroenterol. 2012 Jan 21; 18(3): 205–211.

Int J Colorectal Dis
DOI 10.1007/s00384-008-0536-7

ORIGINAL ARTICLE

Effect of bisacodyl on postoperative bowel motility in elective colorectal surgery: a prospective, randomized trial

U. Zingg • D. Miskovic • I. Pasternak • P. Meyer •
C. T. Hamel • U. Metzger

Medicine (Baltimore). 2017 Aug; 96(31): e7628.

PMCID: PMC5626132

Published online 2017 Aug 4. doi: [10.1097/MD.00000000000007628](https://doi.org/10.1097/MD.00000000000007628)

Enhanced recovery after surgery program reduces length of hospital stay and complications in liver resection

A PRISMA-compliant systematic review and meta-analysis of randomized controlled trials

[Yiyang Zhao, MD,^a](#) [Han Qin, MD,^b](#) [Yang Wu, MD,^a](#) and [Bo Xiang, MD, PhD^{a,*}](#)

Laxatives and LOS- The evidence

* **Management of postoperative constipation in anorectal surgery.**
(Dis Colon Rectum. 1979 Apr;22(3):149-51, [Corman ML](#) et al.
-> Laxatives help with post-op constipation

* **Bowel function after minimally invasive urogynecologic surgery (improves with docusate sodium) : a prospective randomized controlled trial.**

(Female Pelvic Med Reconstr Surg 2012, Mar-Apr;18(2)82-85
[McNanley A1](#), [Perevich M](#), [Glantz C](#), [Duecy EE](#), [Flynn MK](#),
[Buchsbaum G](#))

Laxatives and effect on LOS

- ⌘ Bisacodyl in radical hysterectomy can reduce LOS of 1day (Ramiraz et al, World J Surg 2013, 37:285-305)
- ⌘ Role of magnesium salts in early normalisation of gut motility after hepatic resection-> 1 day reduction of LOS (Basse L et al, BJS 2001, 88: 1498-1500)

Laxatives and stimulation of gut motility- The evidence

- Reduce of constipation with lactulose, docusate and senna, without increasing side effects

(Can Oncol Nurs J. 2013 Autumn;23(4):236-46)

Efficacy and side-effect profiles of lactulose, docusate sodium, and sennosides compared to PEG in opioid-induced constipation: a systematic review.

[Ruston T](#), [Hunter K](#), [Cummings G](#), [Lazarescu A](#)

Laxatives and stimulation of gut motility- The evidence

*Guidelines for Perioperative Care in Elective Colonic Surgery: Enhanced Recovery After Surgery (ERAS) Society Recommendations (World J Surg (2013) 37:259–284)

- ⌘ Prevention of postoperative ileus (including use of postoperative laxatives)
- ⌘ Evidence level (chewing gum, alvimopan, laxatives (magnesium): Medium/ Low
- ⌘ Recommendation grade: Weak

*Clinical Practice Guidelines for Enhanced Recovery After Colon and Rectal Surgery From the American Society of Colon and Rectal Surgeons and Society of American Gastrointestinal and Endoscopic Surgeons (DISEASES OF THE COLON & RECTUM VOLUME 60: 8 (2017)

- Alvimopan and chewing gum: Recommendation 1A

Our Study

⌘ Prospective observational study

Includes all patients undergoing elective uncomplicated, colorectal resections, without stoma formation between 08/15 to 08/17.

Hypothesis: use of laxatives could reduce the LOS without increasing complications

2 groups. 100 pts in group A, 120 patients in Group B

Pre and intraoperative management was the same for both groups

Postoperative, in group A we added the use of laxatives (docusate 100 mg BD) from post day 1.

No laxatives in group B Primary end point was the LoS in each group. Secondary end point was the post-operative complication rate. Pt with complications excluded from the analysis of LoS

The protocol

Intra-op

- Antibiotics prophylaxis
- No premedication
- Anesthesia protocols
- Laparoscopic surgery
- Active warming
- Perioperative fluid management
- Control blood glucose
- PONV prophylaxis
- Thromboprophylaxis

Pre-op

- Education and counselling
- Nutritional assessment and support
- Cardiopulmonary function evaluation
- No bowel preparation
- Drink clear fluids till 2 hrs pre op
- Carbohydrate drinks

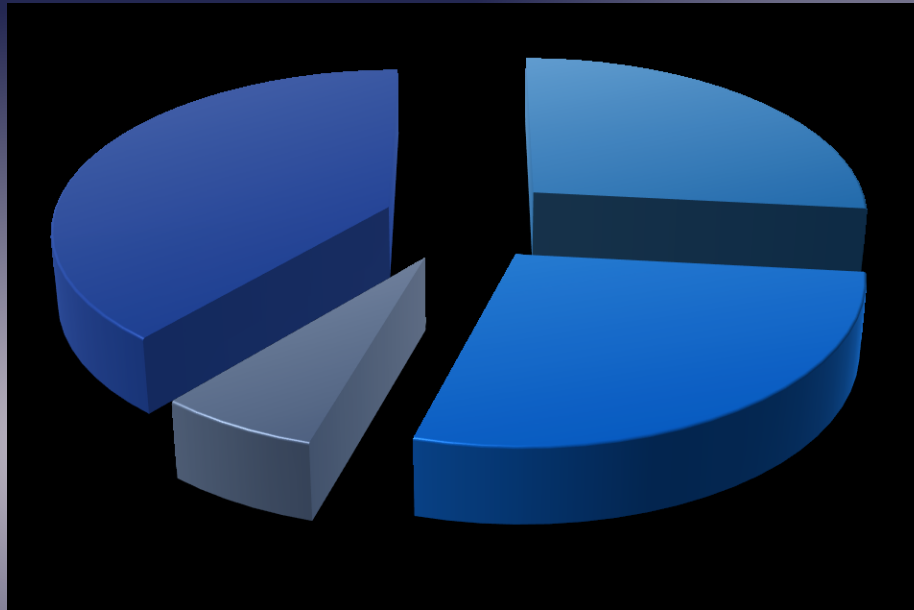
- No nasogastric tube UNLESS NECESSARY
- Prevention of stress ulcer Omeprazole 20 mg
- Multimodal analgesic approaches Paracetamol 1 gr TDS
- Ivuprofen 400 mg TDS, 200 mg PRN (max 2400 mg)
- Tramadol 100 mg PRN
- PCA (Yes/No) **OUT ON DAY 1-2 IN LAP OR 3 IN OPEN**
- Epidurall (Yes/No) **OUT ON DAY 1-2 IN LAP OR 3 IN OPEN**
- Early oral intake Oral Fluid (mls in 24 hours)
- Nutritional support Two high protein/ calorie drinks on operation day
- Three high protein/ calorie drinks per day *from post-op days 1 to 3*
- Early Mobilisation/Time out of Bed (hrs in 24 hrs)
- Prevent of PONV cyclizine
- ondacetrone
- Stimulate of gut motility Laxido (Yes/No) **COMMENCE ON DAY 1**

Remove urinary catheter

OUT ON DAY 1 UNLESS RECTAL SURGERY (day 2)

- Remove drain tubes
- Stop IVT Day 1

Group A



■ Lap Right

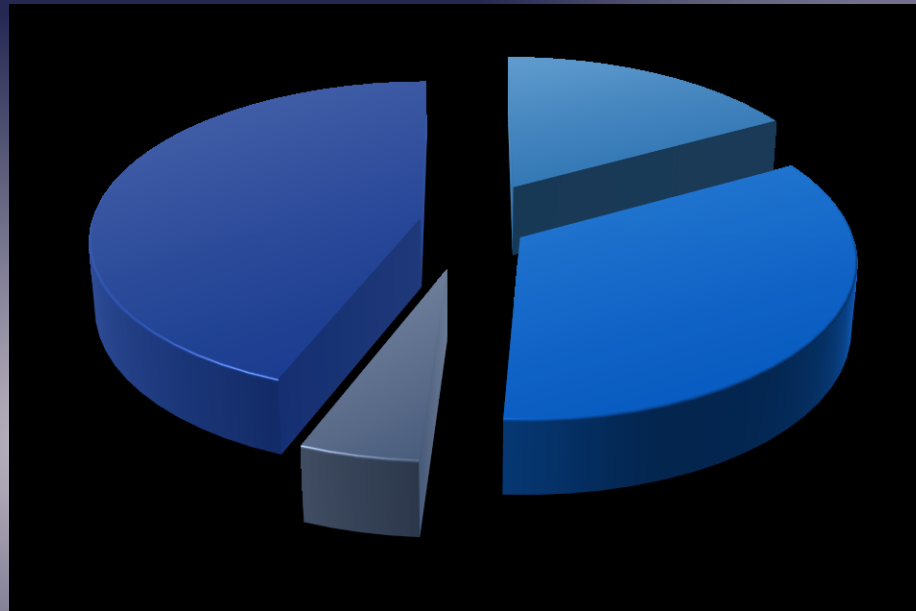
■ Lap Left

■ Open

■ Stoma



Group B



■ Lap Right

■ Lap left

■ Open

■ Stoma

{ Group A

- ⌘ 100 patients
- ⌘ overall median LOS was 4 days (range 2-6)
- ⌘ lap right resections 3 days
- ⌘ lap left sided resections 4 days
- ⌘ open/complicated resections, 6 days

{ Group B

- ⌘ 120 patients
- ⌘ overall median LOS was 5 days (range 2-7)
- ⌘ lap right resections 5 days
- ⌘ lap left sided resections 5 days
- ⌘ open/complicated resections, 6 days

Statistically significant difference in LoS was found in all subgroup analysis ($p < 0,001$), except the open/complicated resections ($p = .931$)

Results

The complication rate was 16% for the first group and 18,3% for the second group, but this was not significantly different between groups ($p = .64$)

Type of surgery	Group A (100 pts) LOSH (Days-Mediam)	Group B (120 pts) LOSH (Days-Mediam)	P- Value (Mann-Whitney U test)
Lap Left Sided Colectomies	4	5	<0.014
Lap Right Sided Colectomies	3	5	<0.001
Open/ Complicated Resections	6	6	<0.931
All Resections	4	5	<0.001
Complication Rate (%)	16	18.3	0.64 (x -square test)

Results

- ⌘ 8 pts from Group A went home on post-op day 2
- ⌘ No one from Group B went home on post-op day 2
- ⌘ No pts from Group A, went home on day 7
- ⌘ 6% PPOI in Group A VS 15% in Group B

Conclusions

- * Use of laxatives from the first post-operative day, may be a safe and effective measure to reduce LoS in patients undergoing uncomplicated elective colorectal surgery, without stoma formation
 - The reduce in LOS is greater in pts undergoing right sided resections
 - No evidence to suggest that their use can affect anastomotic dehiscence
 - * Further studies and RCT's are necessary in order to establish their use and gain the benefits

& Thank you