Patient preparation for Colonoscopy: Role of Family Physicians

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Learning Objectives

At the end of this session the participants will be able to:

- Provide resources to support patients in understanding and preparing for colonoscopy
- Identify current recommendations regarding use of bowel preparation laxatives

Name: Dr. Harminder Singh

Financial Interest Disclosure

(over the past 24 months)

Commercial Interest	Relationship
Pendopharm, Ferring, Takeda, Guardant Health Inc, Merck	Advisory board, Research funding

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Case 1

- A 50 yr old female whom you know well.
- Past history of hypertension (ramipril 5 mg daily), DM2 (metformin 850 mg bid and gliclazide MR 60 mg daily) and anxiety (citalopram 20 mg daily).
- She has a positive fecal occult blood test and you recommend colonoscopy
  - booked directly by the WRHA endoscopy program
- Patient sees you interim for diabetes follow up and comments " I am definitely not looking forward to the colonoscopy!"

What is your experience?

- What proportion of people you see and recommend colonoscopy, ask you questions on colonoscopy?
  - A) 100% B) 80% C) 50% D) 25% E) 10% F) 5%
- What are the common questions?
- Any particular groups with more difficulty?

What is your experience?

- What proportion of people you see and recommend colonoscopy, ask you questions on colonoscopy bowel preparation?
  - A) 100% B) 80% C) 50% D) 25% E) 10% F) 5%

- What are the common questions?
- Any particular groups with more difficulty?

What is your experience?

- What additional resources do you need to inform people about colonoscopy? Colonoscopy prep?
  - A) Written B) Web C) Neither D) Both

- Do you have difficulty in the current process of arranging for colonoscopy in Manitoba?

Colonoscopy patients seeking information from FPs

- A self-administered survey distributed in 2016 in Winnipeg, before outpatient colonoscopy
- 1580 Respondents
- 25% perceived receiving the right amount from their family physician
  - However 90% felt that information from this source would be helpful or very helpful prior to a future colonoscopy

Common issues around performance of colonoscopy

- Reluctance to undergo the test
  - Bowel prep, invasive, privacy,
- Inadequate information after the test and follow-up after the test
  - Those with polyps, cancer or IBD need repeats

Bowel Preps: common issues

- Patient Compliance Factors
  - Unpleasant taste
  - Volume
  - Long fasting periods required pre procedure
- Effectiveness vs. Patient tolerance/acceptance
- Up to 20 – 40 % have an inadequate prep

Bowel Preps: Why's and What's of the Recommendations

Gastroenterology 2014;147:903–924

AGA SECTION

Optimizing Adequacy of Bowel Cleansing for Colonoscopy: Recommendations From the US Multi-Society Task Force on Colorectal Cancer

David A. Johnson,[1] Alan N. Barkun,[2] Larry B. Cohen,[3] Jason A. Dominitz,[4] Tonya Kaltenbach,[5] Myriam Martel,[2] Douglas J. Robertson,[6,7] C. Richard Boland,[8] Frances M. Giardello,[9] David A. Lieberman,[10] Theodore R. Levin,[11] and Douglas K. Rex[12]

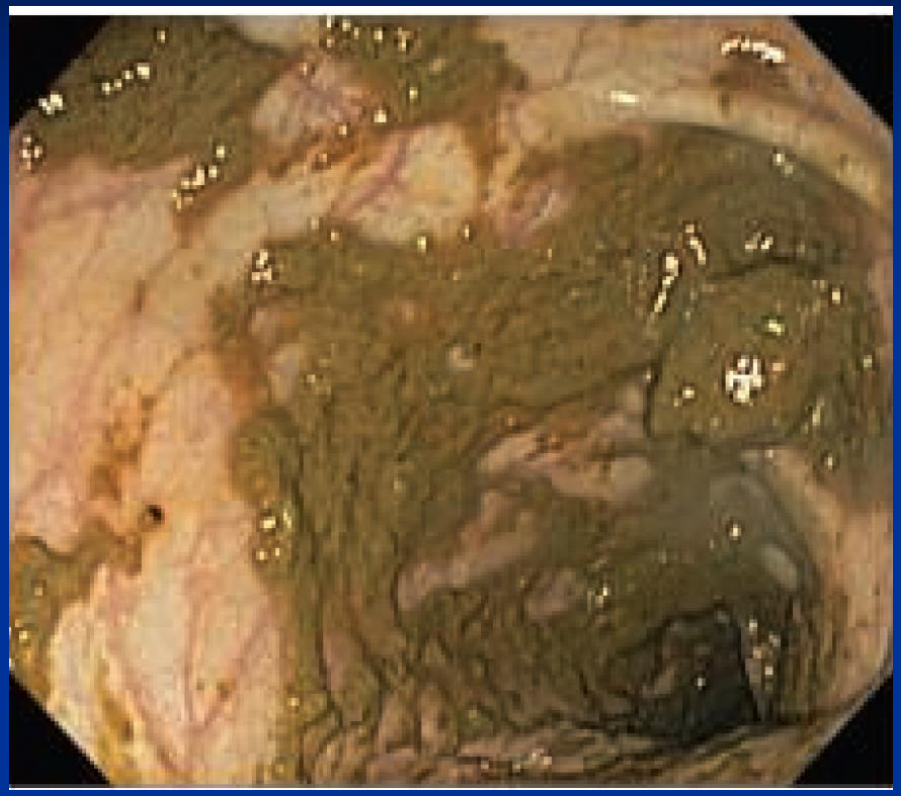
Bowel preparation for colonoscopy: European Society of Gastrointestinal Endoscopy (ESGE) Guideline

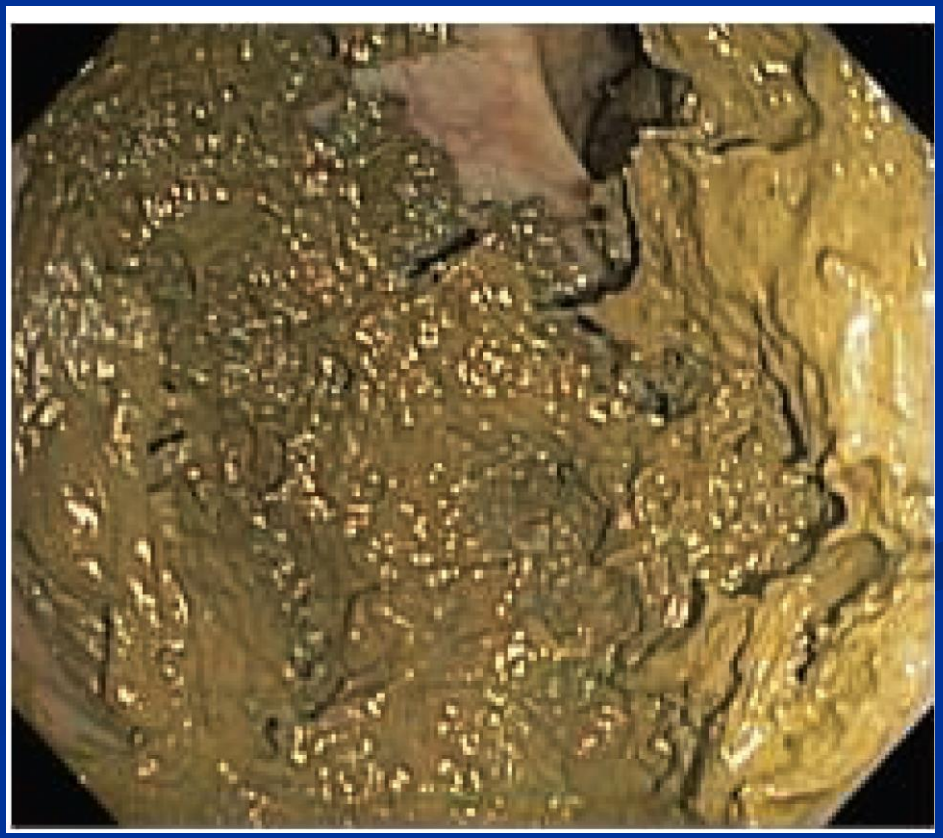
Gastroenterology 2015;149:79–88

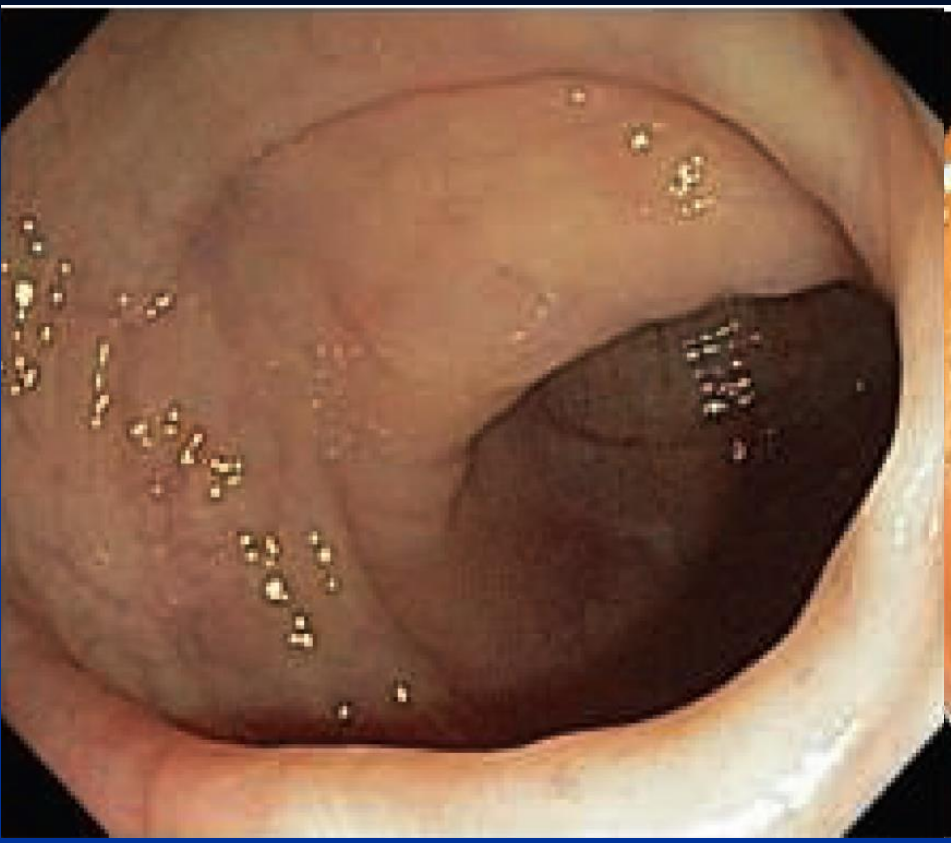
Split-Dose Preparations Are Superior to Day-Before Bowel Cleansing Regimens: A Meta-analysis

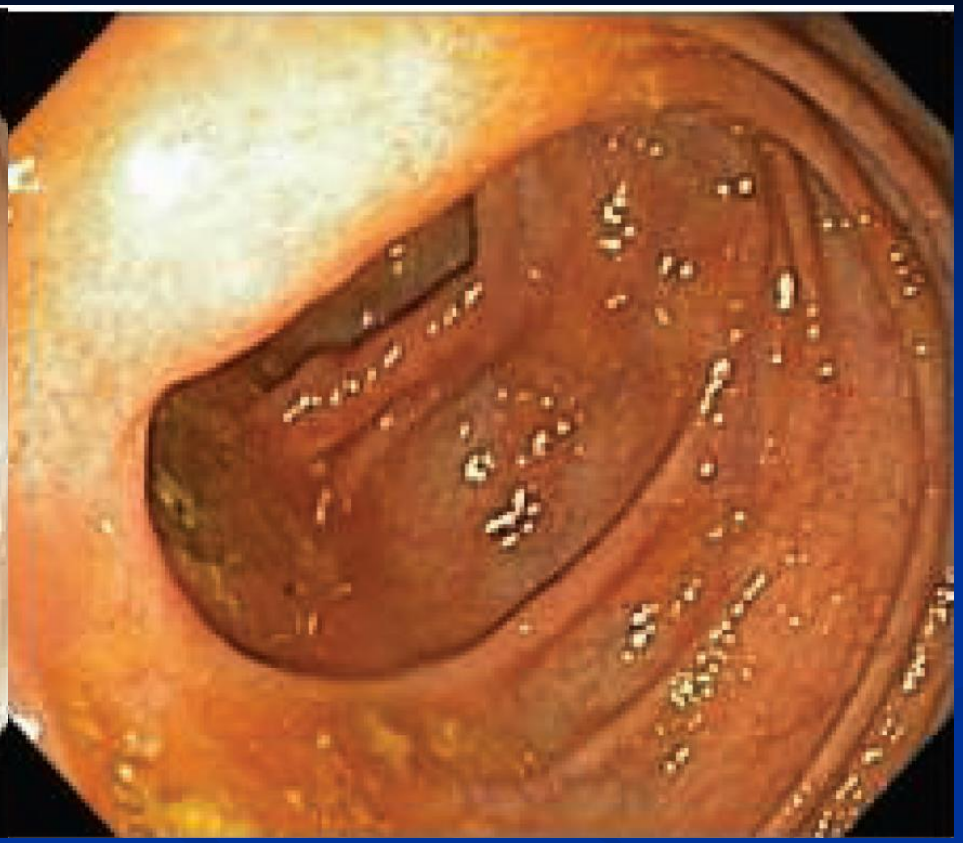
Myriam Martel,[1,2] Alan N. Barkun,[1,3] Charles Menard,[4] Sophie Restellini,[5] Omar Kherad,[6] and Alain Vanasse[2]

Background









Background

- Quality of bowel cleansing
  - Associated with cecal intubation rate, polyp/adenoma detection rate
  - Poor bowel preps associated with **missed advanced adenoma rates** of 30-50%
- Bowel preparation
  - **Affects colonoscopy uptake**
- Inadequate cleansing
  - Increases costs

Background

- 1 in 13 CRC have been reported to be interval CRC in Manitoba; 1 in 27 in a meta-analysis
- One of the most important reasons for interval CRC is likely missed lesions
  - Higher in right colon
  - Worse bowel preparation in right colon

Singh H et al 2010; Singh S etal AJG 2014

Colorectal Cancer

- CRC 2nd most common cause of cancer-related deaths
- CRC related deaths declined, believed that screening has greatly contributed to this
- CRC screening barriers include anxiety related to a colonoscopy

Guidelines strongly recommend Split-dosing

- Use of a split-dose bowel cleansing regimen is strongly recommended for elective colonoscopy
  (Strong recommendation, high-quality evidence)
- A same-day regimen is an acceptable alternative to split dosing, especially if afternoon exam
  (Strong recommendation, high-quality evidence)
- The 2nd dose of split preparation should start 4–6 hours before the colonoscopy (end 2hrs pre; no longer than 4 hours pre [ESGE])
  (Strong recommendation, moderate-quality evidence)

Split-Dose

Definition: Administration of product in two separate doses: the first the day prior to, and the second the day of the colonoscopy, in order to minimize the duration of interval between completion of bowel preparation and the colonoscopy

Table 1. Primary Outcome: Bowel Cleanliness

Bowel cleanliness	Numbers of trials[a]	ITT patients	OR (95% CI) or WMD (95% CI)	Heterogeneity *P* value	I^2	*P* value Eggers	*P* value Beggs
Split-dose vs day-before							
Split-dose of any product vs day-before of any product	32	8199	**2.51 (1.86–3.39)**	<.01	84.8%	.51	.33
PEG split-dose vs PEG day-before	10	2923	**2.60 (1.46–4.63)**	<.01	88.3%	.11	.27
NaP split-dose vs NaP day-before	4	1018	**9.34 (2.12–41.11)**	<.01	87.7%	.73	.32
PICO split-dose vs PICO day-before	1	250	**3.54 (1.95–6.45)**	-	-	-	-

Martel, Barkun etal, Gastro 2015

Timing of end of last dose intake

TABLE 4. Relationship between the time elapsed from the last dose of bowel purgative intake to colonoscopy session and the degree of colon cleansing

Time elapsed, h	Split-dose arm, no.	Non-split–dose arm, no.	RD	*P*	95% CI
≤3	1799	2044	0.23	.00	0.143-0.321
4-5	860	1031	0.18	.00	0.112-0.243
>5	52	55	0.03	.56	-0.078–0.142

RD, Rate difference; *CI*, confidence interval.

Bucci et al GIE 2014

Split Prep and Polyp detection

Outcome	N trials	Patients	RR (95% CI)	I^2
ADR	4	1239	1.27 (1.11-1.46)	0%
AADR	3	1148	1.33 (1.03-1.72)	0%
SSPDR	2	1031	2.49 (1.23-5.04)	32%

Zawaly et al , SR and MA, AJG 2019

Use of Split Prep in Practice

- Winnipeg Survey 2015-2016
  - An anonymous survey was distributed to patients immediately prior to their outpatient colonoscopy in Winnipeg's 6 hospitals and 2 ambulatory care centers. Participants were invited to participate if there was enough time before the colonoscopy to complete a survey.

Winnipeg Survey 2015-2016

- The survey included items on: demographic characteristics, reason for colonoscopy, previous experience with colonoscopy, preparation procedures used, and anxiety about the colonoscopy

Results: Winnipeg Survey

- 1580 respondents, 52% female, median age 56 years
- 41% came "direct to colonoscopy"
- 33% had used split dose bowel preparation
- Overall 13.5% did not complete the entire recommended laxative intake

Arguments against Split Prep

- Patient Acceptance
- Winnipeg Survey:
  - 49% of survey respondents described themselves as willing or very willing to do early morning bowel preparation, 24% were neutral and 27% reluctant or very reluctant

Walker et al DDW 2017

Predictors of reluctance for early morning laxative intake

Variable	Category	ORs	95% CI
Sex	Female	1.65	1.19-2.29
Previous colonoscopy	Change for each additional (5 max)	1.20	1.07-1.35
Prep instructions	Confusing	1.86	1.21-2.85
Anxiety about prep	High	2.02	1.35-3.02

Predictors of reluctance for early morning laxative intake

Variable	Category	ORs	95% CI
Indication for colonoscopy	Symptoms	1.40	1.0-1.97
Laxative	4 litres PEG	1.45	1.02-2.06
Split prep	No Split prep	1.96	1.31-2.93
Did not finish laxative		1.66	1.01-2.73

Variables not associated with reluctance

- Age, education, marital status
- Time of day for colonoscopy: before 10 AM compared to 10-12, and afternoon
- Direct to colonoscopy pathway
- Anxiety about other aspects of colonoscopy
  - Results, Procedure

Willingness-to-repeat

	Number of trials	ITT patients	OR (95% CI) or WMD (95% CI)
Split-dose of any vs. day-before of any product	14	4377	1.90 (1.05-3.46)
PEG split-dose vs PEG day-before	7	1146	0.97 (0.40-2.37)

Martel, Barkun etal, Gastro 2015

Other factors affecting acceptance of split-dose

- Pharmacist advise: half as likely to use SDBP than when follow advise from GIs
  - 1447 patient Italian study
  - 4 L PEG; only written information
  - Patient allowed to choice SDBP or day before

Radaelli et al Gut 2016

Compliance in Practice

- University of Michigan 2 out patient facilities
- 462 participants
- 15% non-compliant with Split Prep
  - Less likely to follow other laxative instructions
  - 21% of those with appointment before 10.30 AM

Menees et al. GIE 2014

Arguments against split prep

- Fecal Soiling
- No significant difference (5-16% overall)
  - 2 prospective studies; 589 patients
- Stopping while en route for procedure : 5%

Unger et al DDS 2010
Horton et al AJG 2016

Arguments against split prep

- **Sleep Disturbance**
- More patients in the day before arm than the split-dose arm woke up for bowel movements (66 vs. 49%, P <0.001),
  - Trend toward more nocturnal bowel movements in day before dosing vs. split dose (P =0.087).

Horton et al AJG 2016

Intensity of Bowel Movements

Subjective global assessment: abdominal discomfort, number of bowel movements, and urgency of bowel activities

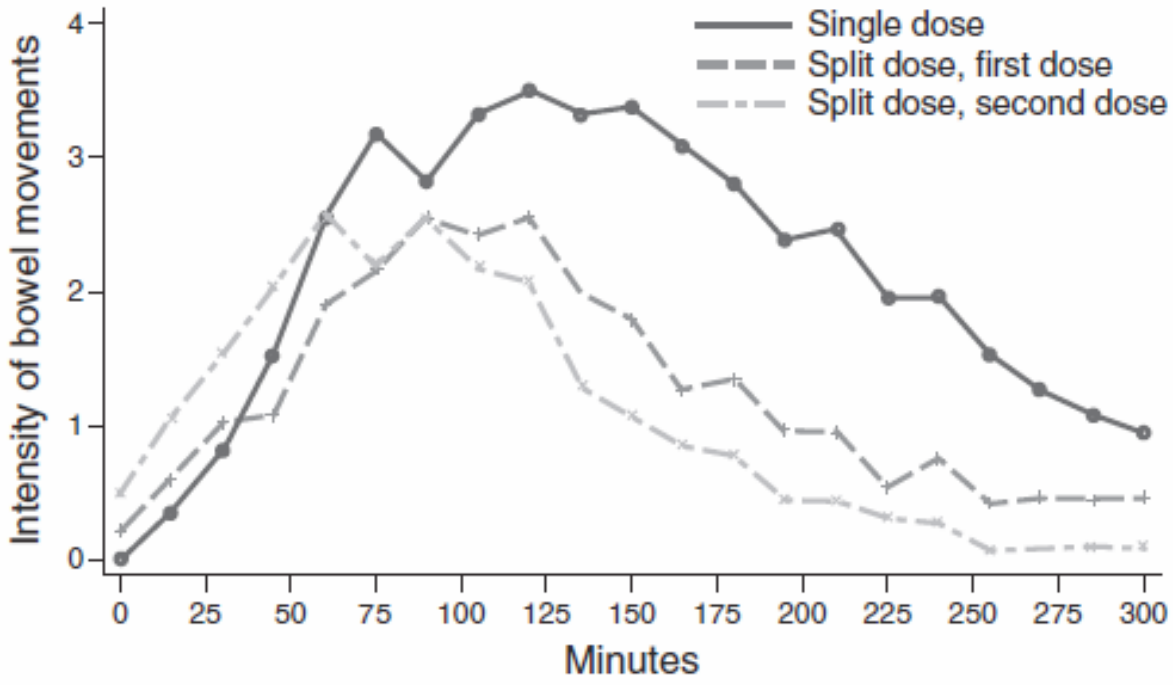


Figure 2. Bowel movement intensity.Average bowel movement intensity was significantly higher in the single dose compared with both the first and second dose of the split-dose regimen ($P<0.001$).

Diet During Bowel Cleansing

- When using a split-dose bowel cleansing regimen, diet recommendations can include either low-residue or full liquids until the evening on the day before colonoscopy *(Weak recommendation, moderate-quality evidence)*
  - Better tolerance
  - Better or comparable bowel cleaning
    - Diet in studies heterogeneous including regular diet to 6 PM
  - Consider in those without predictors of poor prep

Diet During Bowel Cleansing

- **The ESGE recommends a low-fiber diet on the day preceding colonoscopy** ***(weak recommendation, moderate quality evidence).***

Commonly used Bowel Preparation Regimens

PEG solution (with electrolytes) – Large volume (4L)

- (COLYTE®, GoLYTELY®, PEGLYTE®, KLEAN-PREP®)

PEG solution (with electrolytes) – Low volume (2L)

- (BI-PEGLYTE®, MOVIPREP®)

Sodium picosulfate/Mg Citrate - Low volume

- (Pico-Salax®)

Choice of bowel preparation agent

Bowel cleanliness	Number of trials	ITT patients	OR (95% CI)
PEG high dose (≥3L) vs. low dose (<3L)	28	7208	1.03 (0.80-1.32)
PICO vs. PEG	11	3097	0.92 (0.63-1.36)

Johnson, Gastroenterology 2014

Split dose vs. Another split dose

Bowel cleanliness	Number of trials	ITT patients	OR (95% CI) or WMD (95% CI)
PEG high dose (≥3L) vs. low dose (<3L)	6	1305	1.89 (1.01-3.46)
PEG split vs PICO split	1	89	6.32 (1.30-30.81)
PEG split vs NaP split	1	218	0.35 (-0.15 to 0.85)

Split dose vs. Another split dose

Willingness-to-repeat	Number of trials	ITT patients	OR (95% CI) or WMD (95% CI)
PEG high dose (≥3L) vs. low dose (<3L)	3	661	0.20 (0.09-0.45)
PEG split vs PICO split	1	89	1.91 (0.63-5.81)
PEG split vs NaP split	1	212	0.64 (0.37-1.12)

Predictors of poor preps

- Older age and male sex
- Higher BMI
- Inpatient status
- Neurologic conditions w poor mobility such as stroke and Parkinson's disease, neurogenic bowel dysfunction
- Diabetes mellitus
- TCAs and narcotics

Patient Education

- Health care professionals should provide **both oral and written** patient education instructions for all components of the colonoscopy preparation and emphasize the importance of compliance

  (Strong recommendation, moderate-quality evidence)

  - **Delivery of both oral and written instructions for bowel preparation, vs sole written is an independent predictor of adequate level of cleansing**
  - Dedicated booklets or visual aids have also been associated with improved bowel preparation quality

Johnson, GIE, 2014

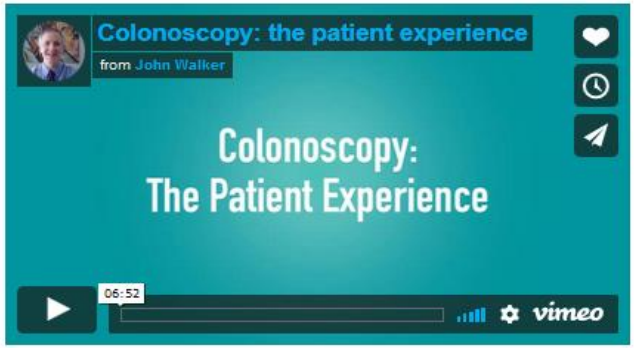
INFORMED CHOICES ABOUT

COLONOSCOPY

About colonoscopy
Preparation video
Your medications
Diabetes and colonoscopy
Personal stories video
Questions

My Colonoscopy

Welcome to the My Colonoscopy website. Our purpose is to provide up-to-date information for the public about this common medical test. Many people will have a colonoscopy over the years and we think it is important for people to be well informed. See the About Us section for more information about the development team.

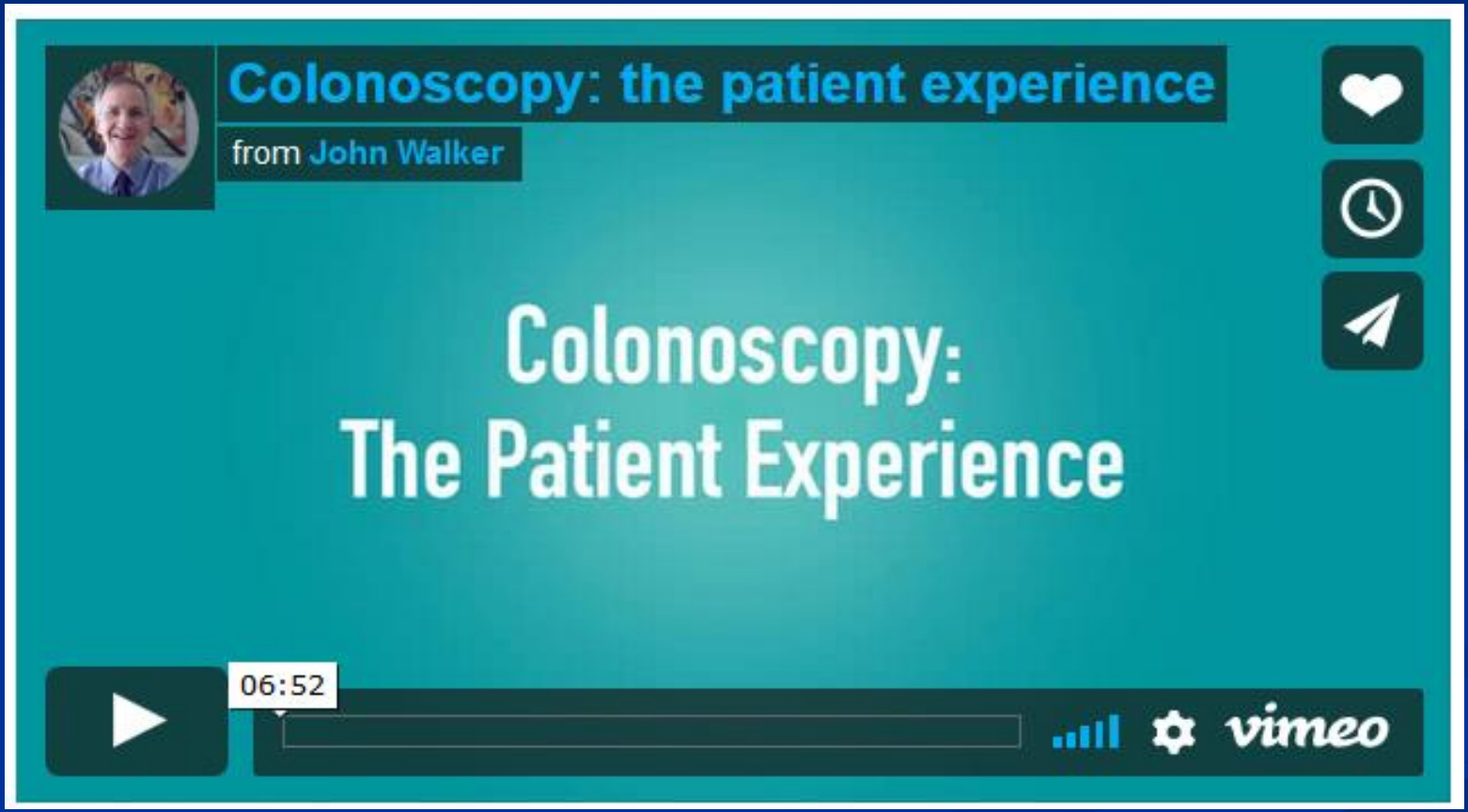


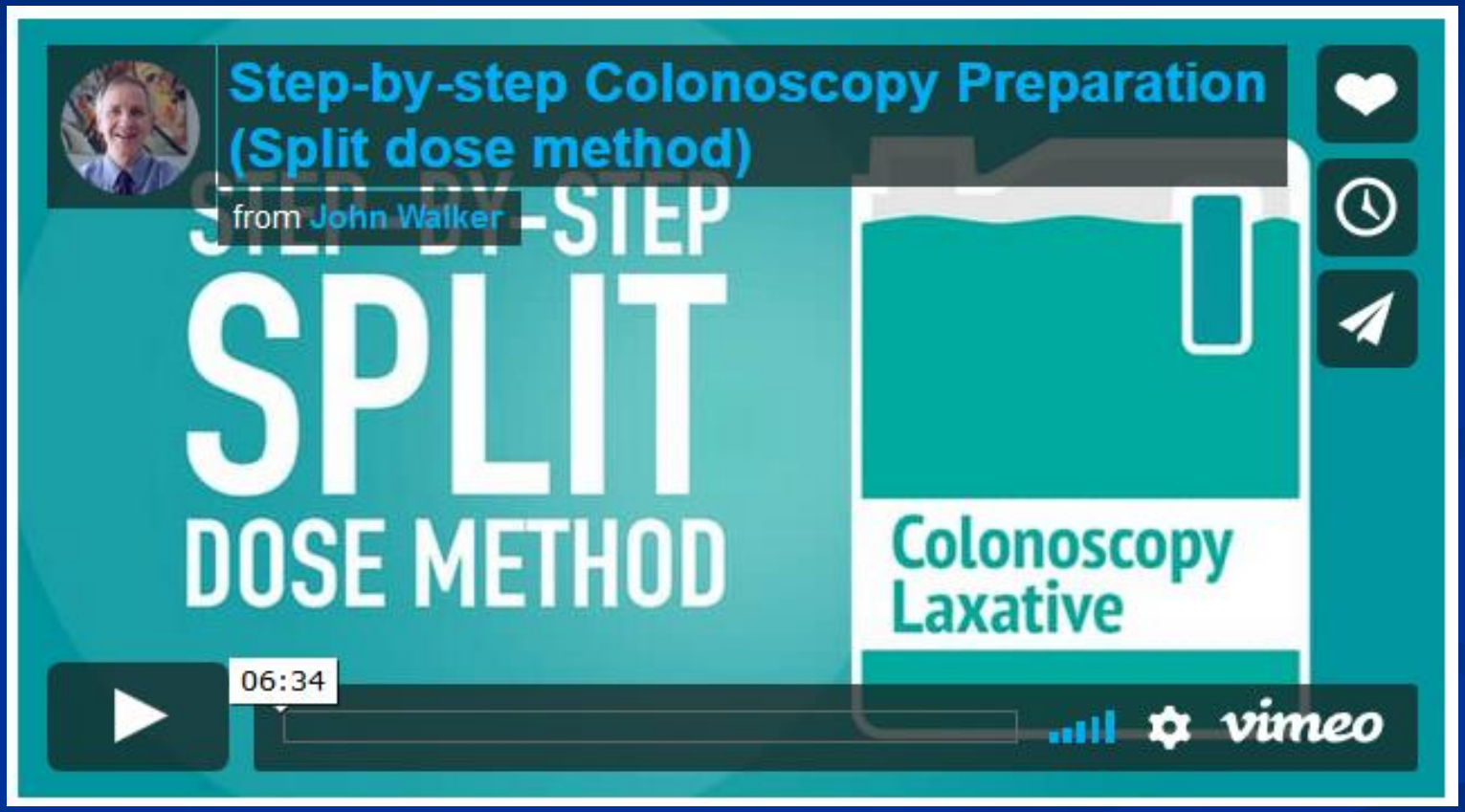
Background for the materials

- Focus groups, Individual interviews, survey
  - With physicians who provide colonoscopy, family physicians,
  - With patients who have undergone colonoscopy
- Reviewed literature and previous educational resources

- Developed written materials, videos
  - Instructional, patient experience
- Developed Website
  - www.Mycolonoscopy.ca
- French translation
- Other translations
  -

http://www.mycolonoscopy.ca/




Step-by-step Colonoscopy Preparation
(Split dose method)
from John Walker
STEP-BY-STEP
SPLIT
DOSE METHOD
Colonoscopy
Laxative
06:34
vimeo

Anxiety

- Magnitude of preprocedure anxiety
  - Some studies > 50% pts with mod – severe anxiety
- Types of concerns
  - Bowel prep: 15-37% pts anxious about the prep when asked weeks – months prior to procedure,
  - Procedure – overall (53%): pain (28 - 95 %), embarrassment (22-44%)
  - Possible diagnosis - esp. cancer: (22 – 55%)

Chegyue Yang M. Submitted for Publication. 2018

Anxiety

- In a recent MB study, patient stated anxiety that scored to a high level (> 70 on VAS) reported as:
  - To the bowel prep (18%)
  - To the procedure (29%)
  - To the results of the procedure (28%)

Shafer LA . Dig Dis Sci 2018

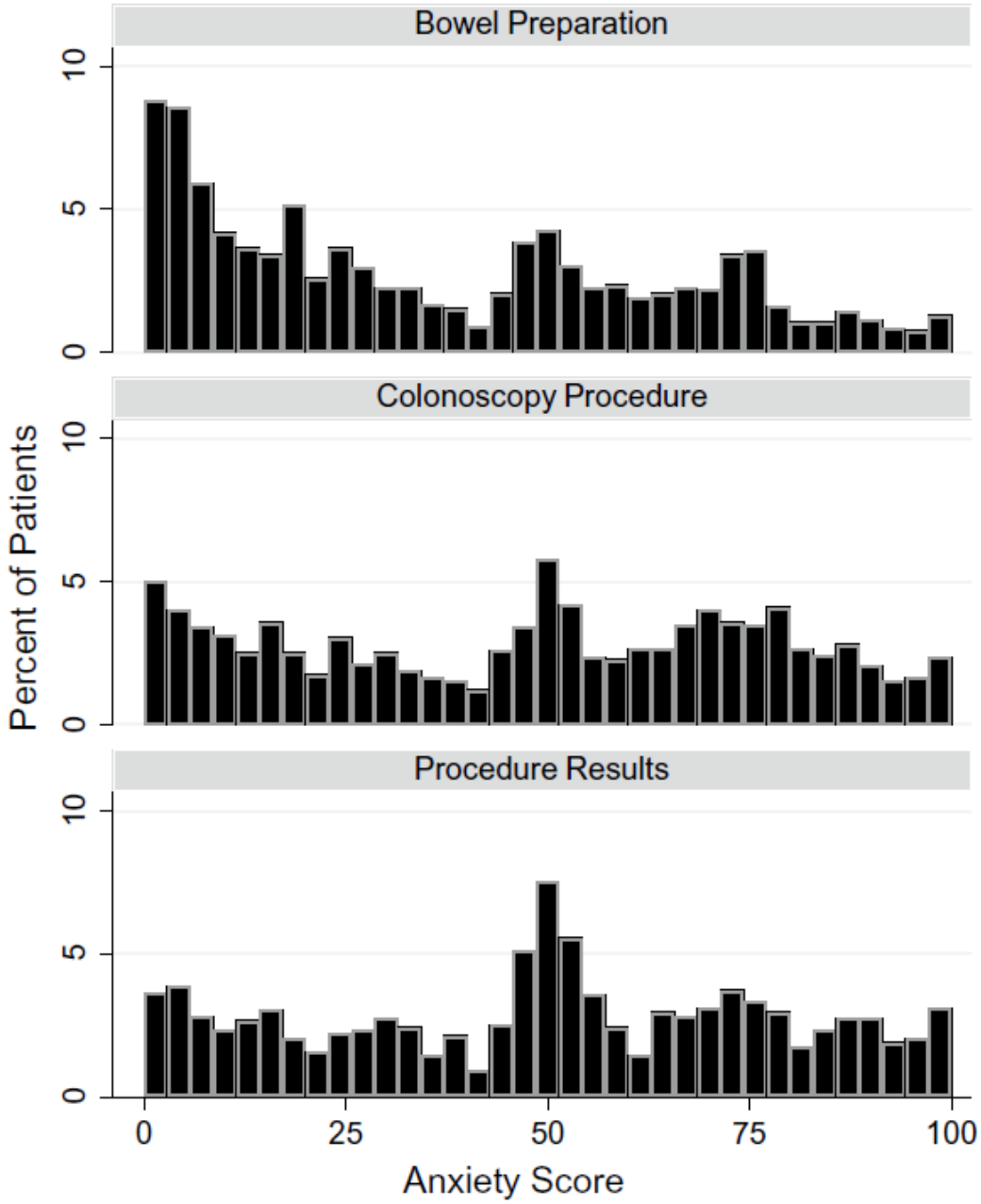


Fig. 1 Distribution of anxiety scores about colonoscopy

Shafer LA .
Dig Dis Sci 2018

Anxiety

- As one would expect those who found the bowel prep instructions clear were less anxious about the bowel prep than those who found them confusing.
  - Scores of high anxiety were 15 % vs 30% between the two groups ($p = 0.03$)
- Odds of high anxiety appeared similar across all age groups

Shafer LA . Dig Dis Sci 2018

Anxiety

- Predictors of anxiety
  - Female, baseline anxiety, functional abd pain, lower education, lower income, no prior abdominal surgery
  - Other predictors: no previous colonoscopy or one that that was not well tolerated, family history of cancer, poor physcian-pt relationship, undergoing procedure for symptoms rather than just for screening, use of "maladaptive coping strategies"

Chegyue Yang M. AJG. 2019

Anxiety

- Anxiety prior to the procedure is a predictor of pain during the procedure
- Effectiveness of anxiety lowering interventions
  - Providing higher quality information before the procedure (esp with video) is a way to reduce this anxiety

Chegyue Yang M. AJG 2019

Follow up after colonoscopy

- We are pilot testing an electronic algorithm
- http://colonoscopy.thelizardlab.net/

- How often would you use this? What proportion of your patients?

- A) 100% B) 80% C) 50% D) 25% E) 10% F) 5%

Conclusions

- Split-dose bowel preparation is the standard of care as per multiple guidelines
  - Last dose end within 4 hours
- Patient education/information is paramount
  - Combined written and oral instructions
  - Family Physicians key role
  - Recognition of sources of anxiety and intervention to prevent poor prep and/or poor pt experience

Conclusions

- Website: www.mycolonoscopy.ca
- www.macoloscopie.ca
- Improved materials for informing patients about colonoscopy
- Patient friendly information about colonoscopy, bowel preparation and how they will hear about findings
- Videos about the patient experience of colonoscopy and preparing for colonoscopy

Acknowledgments

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- WRHA Endoscopy Program
- Co-investigators: Gayle Restall, Jason Park, Charles Bernstein, Jeff Sisler, Patrick Faucher, Kristy Wittmeier, Celeste Waldman

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Questions