



Mass General Brigham

Optimizing Bowel Preparation for Colonoscopy

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I have no disclosures



Let's start off with a case



You're cornered at a cocktail party by a 55-year-old woman who overheard you're a gastroenterologist



Image created with ChatGPT

She's having her second screening colonoscopy next week and did not particularly enjoy the bowel preparation the last time



Image created with ChatGPT

She asks: “Why, as a healthy person with normal bowel I a bit to to change my diet for a week and drink that gallon of salt water?!?!?”

Why indeed?



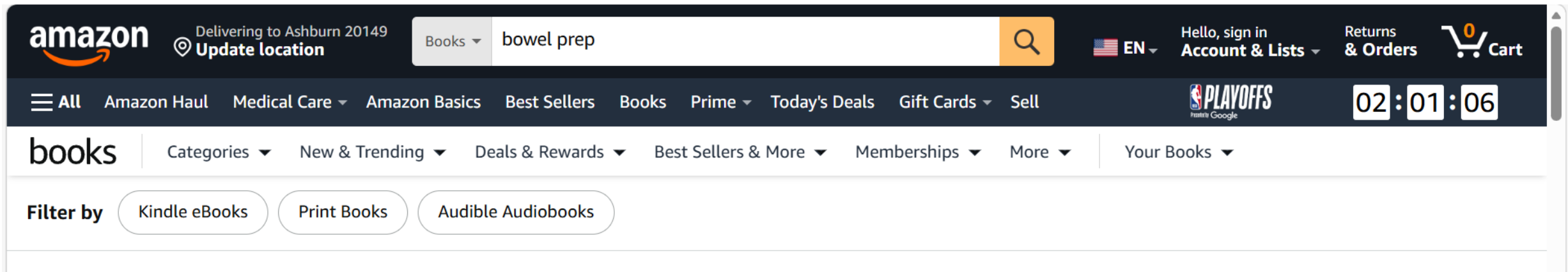
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There are 20 million colonoscopies
performed annually worldwide



I wondered, “*With that many colonoscopies, there must be some books out there in the lay literature to help this cocktail party guest understand her bowel preparation*”



The screenshot shows the Amazon website interface. At the top, the Amazon logo is on the left, followed by the delivery location "Delivering to Ashburn 20149" and an "Update location" link. The search bar contains the text "Books" and "bowel prep" with a magnifying glass icon. To the right of the search bar are links for "Hello, sign in Account & Lists", "Returns & Orders", and a shopping cart icon with a "0" inside. Below the search bar is a navigation bar with links: "All", "Amazon Haul", "Medical Care", "Amazon Basics", "Best Sellers", "Books", "Prime", "Today's Deals", "Gift Cards", and "Sell". On the right side of this bar are the "PLAYOFFS" logo and a timer showing "02:01:06". Below the navigation bar is a section for "books" with sub-links: "Categories", "New & Trending", "Deals & Rewards", "Best Sellers & More", "Memberships", "More", and "Your Books". At the bottom of this section is a "Filter by" section with three buttons: "Kindle eBooks", "Print Books", and "Audible Audiobooks".



ANGEL FERNANDEZ

FROM BELOW



IT ALL COMES OUT IN THE END



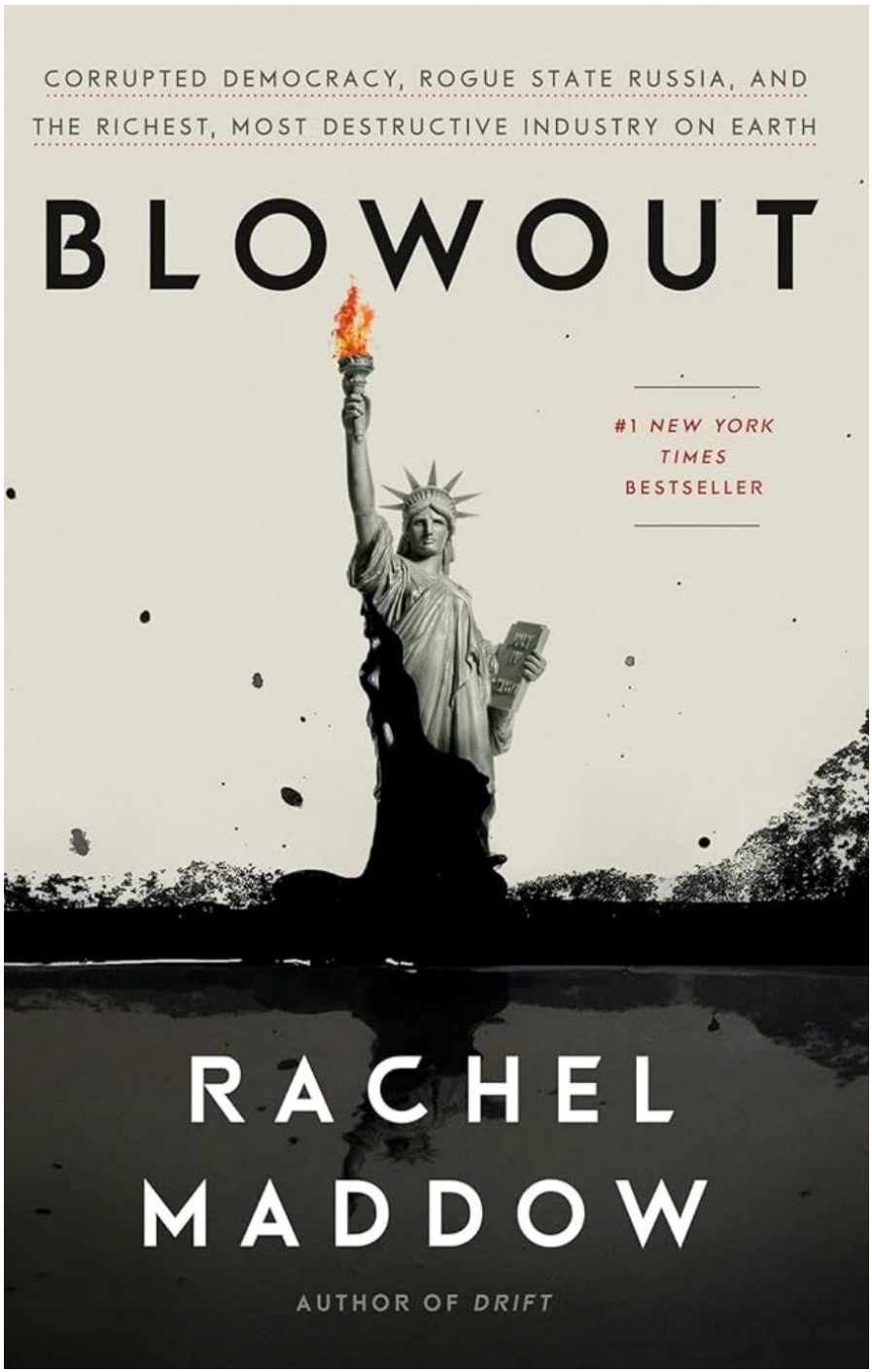
JENNIFER A. ZWIJACZ



CORRUPTED DEMOCRACY, ROGUE STATE RUSSIA, AND
THE RICHEST, MOST DESTRUCTIVE INDUSTRY ON EARTH

BLOWOUT

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BESTSELLER



RACHEL
MADDOW

AUTHOR OF *DRIFT*



EVERYONE POOPS

By Taro Gomi



Kane/Miller
BOOK PUBLISHERS

A MASSIVE SHIP

JUST HOW DOES IT FLOAT?



USS Carl Vinson, Aircraft Carrier
US Navy.

American Author

JOSEPH P. LALIBERTE



CME

Optimizing Bowel Preparation Quality for Colonoscopy: Consensus Recommendations by the US Multi-Society Task Force on Colorectal Cancer

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Reference: Am J Gastroenterol 2025;120:738-764.



A word about nomenclature: “Bowel Preparation” can mean...

- Bowel preparation process = all the steps taken by a patient prior to colonoscopy including arranging for transportation
- Bowel preparation regimen = the purgative consumed with or without additional adjuncts to clean the colon
- Bowel preparation quality = the quality of bowel cleanliness

Source: Jacobson and Calderwood. Measuring bowel preparation adequacy in colonoscopy-based research: review of key considerations. GIE 2020;91:248-26



A word about nomenclature: “Optimized Prep”

- Optimized prep = quality of bowel preparation is adequate
- So, what is adequate?
 - Standard screening or surveillance intervals can be assigned based on the findings of the colonoscopy
 - “Adequate for indication”

Source: US Multi-Society Task Force on Colorectal Cancer



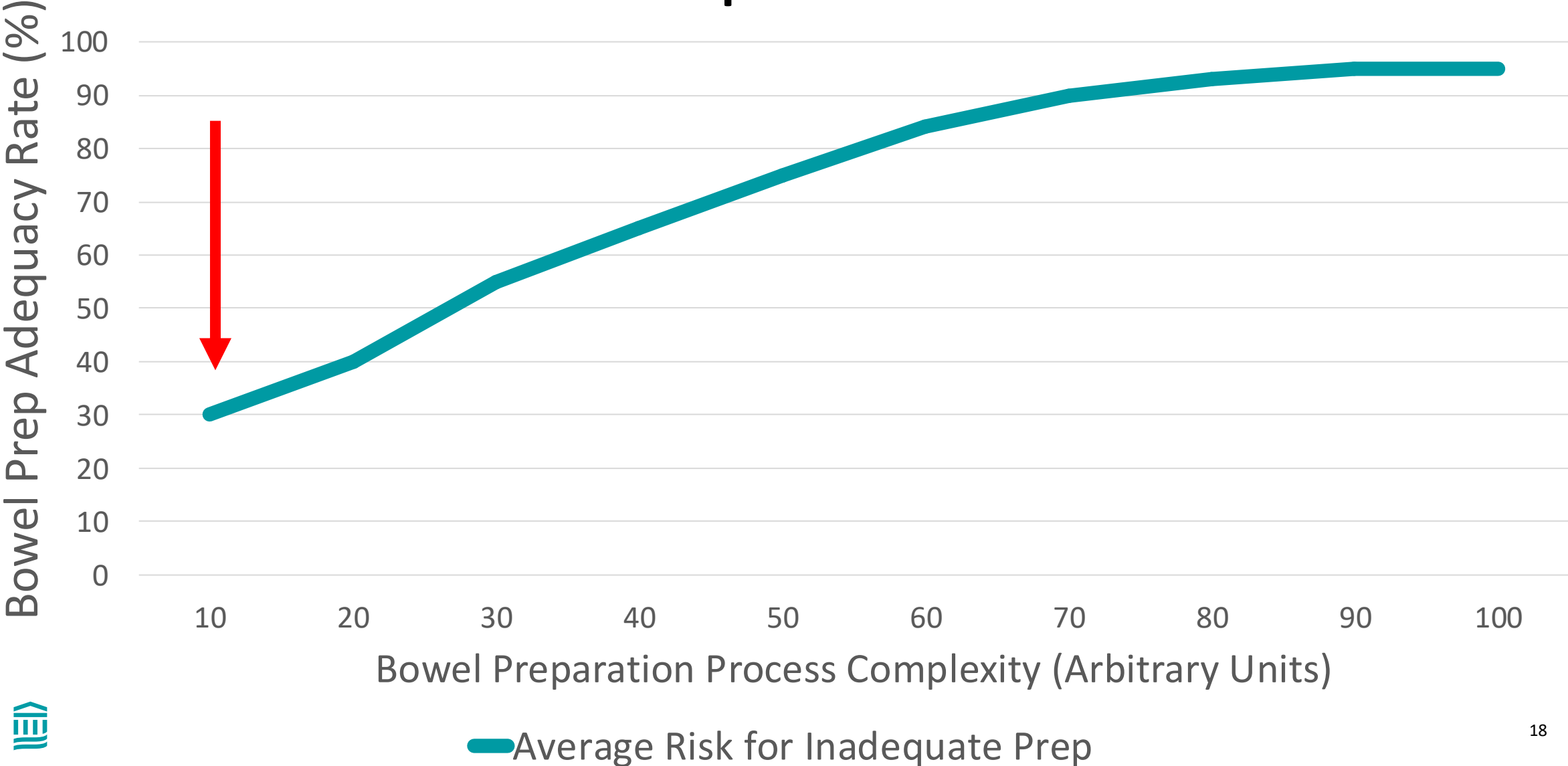
What is a “bowel preparation process”?

- Diet changes
- Medication considerations (e.g. stopping iron)
- Mental/physical preparation (i.e. what to expect, use of petroleum jelly)
- The purgative (both solution AND timing)

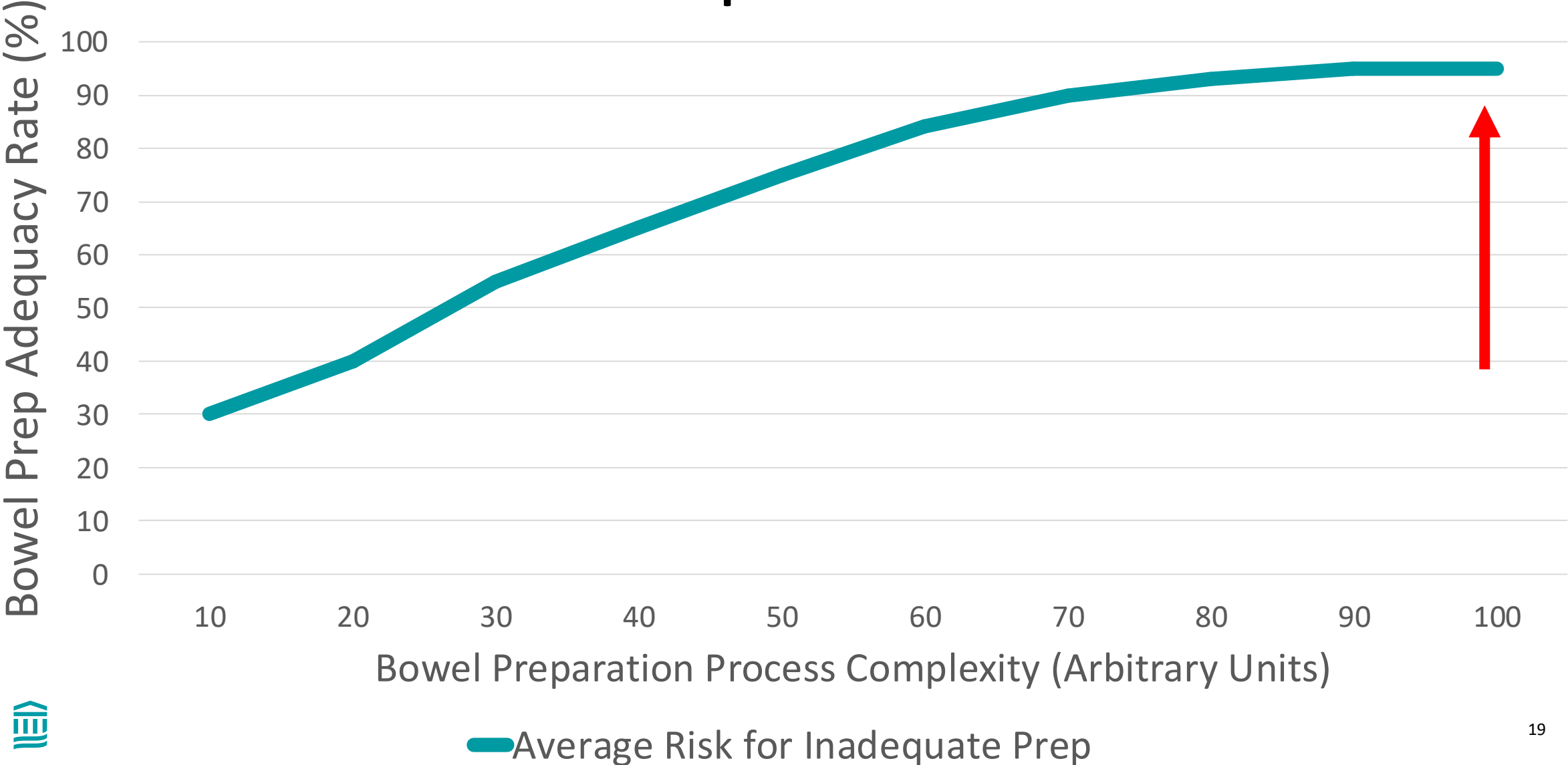
If any of these breakdown, the bowel prep quality may not be adequate



Association Between Bowel Preparation Adequacy and the Preparation Process



Association Between Bowel Preparation Adequacy and the Preparation Process



The bowel preparation process is therefore a balance between patients' comfort and endoscopists' needs



Bowel preparation process for those at **average** risk for inadequate bowel preparation quality

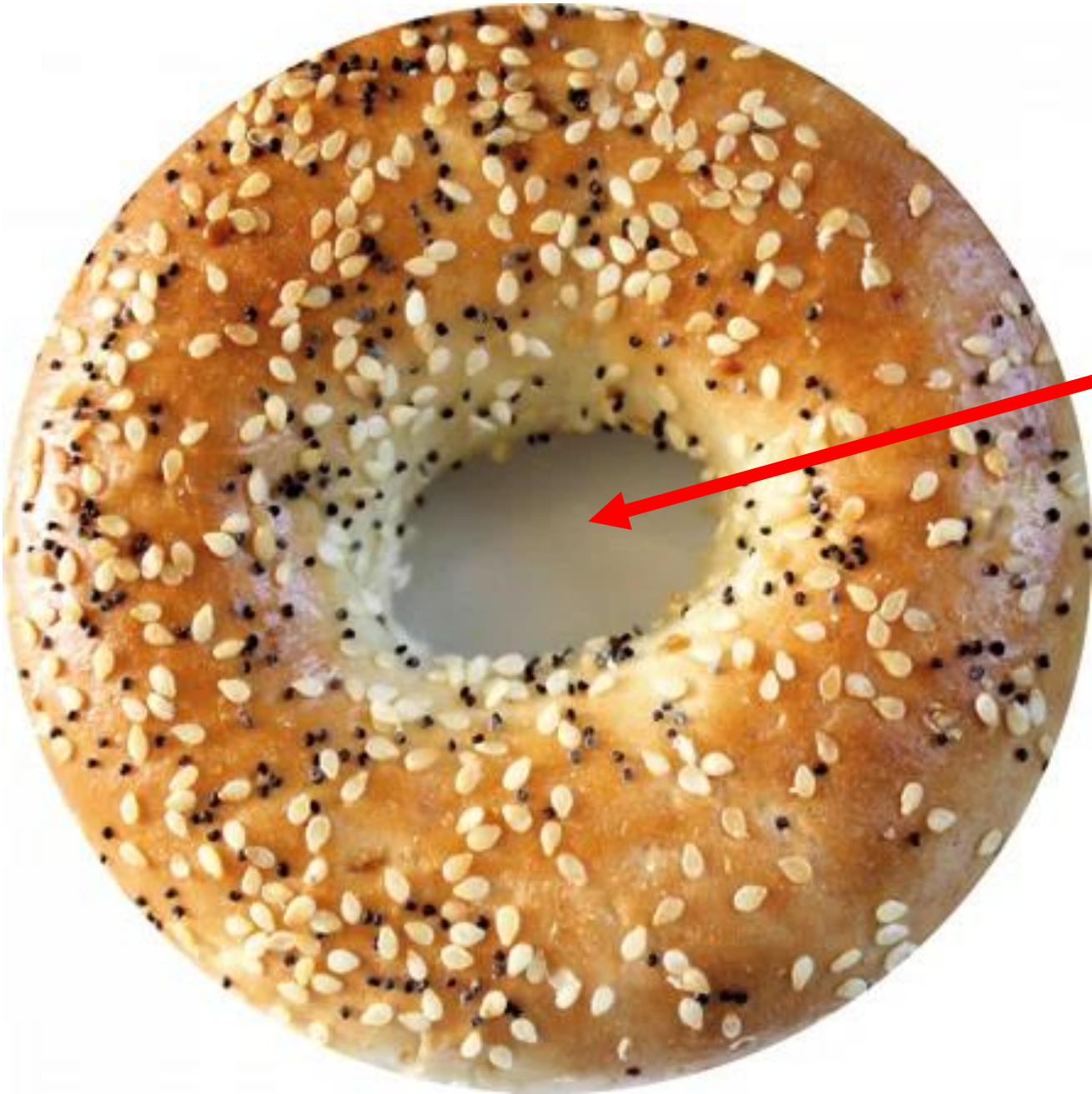


Source: US Multi-Society Task Force on Colorectal Cancer

Bowel preparation process for those at **average** risk for inadequate bowel preparation quality

- Recommend: Verbal and written patient education instructions for all components of the colonoscopy preparation
- Suggest: Some form of patient navigation, including telephonic or virtual navigation employing automated electronic messaging





“Well Doc, you told me I could only eat things I could see through”

Bowel preparation diet for those at **average** risk for inadequate bowel preparation quality

- Recommend: Adjust diet only for the day prior to colonoscopy
- Recommend: Low-residue/low-fiber or full liquids the day prior to colonoscopy for breakfast and lunch



Reference: Jacobson et al. Optimizing Bowel Preparation Quality for Colonoscopy: Consensus Recommendations by the US Multi-Society Task Force on Colorectal Cancer. *Gastroenterology* 2025; 168:798–829.

Dietary restrictions: What can they eat?

- Several meta-analyses and RCTs confirm bowel preparation adequacy is not inferior when comparing low residue diets to clear liquid diets prior to colonoscopy
- One meta-analysis included 20 randomized controlled trials with 4,323 patients

Low residue foods on the day prior don't seem to worsen prep
– OR 0.96; 95% CI 0.72-1.29



Zhang X, et al. Low-Residual Diet versus Clear-Liquid Diet for Bowel Preparation before Colonoscopy: Meta-Analysis and Trial Sequential Analysis of Randomized Controlled Trials. GIE 2020;92:508-518.e3

Dietary restrictions: What can they eat?

- Analysis of secondary endpoints found low residue diet:
 - Made no difference in adenoma and advanced adenoma detection
 - Patients more willing to repeat the preparation (71% versus 62%; $p = 0.005$)
 - Easier to comply with (52% versus 39%; $p = .01$)
 - Less hunger (25% versus 44%; $p < 0.001$) and less nausea (18% versus 23%; $p = 0.02$)



Breakfast options

- 2 eggs (fried, over easy, scrambled, or boiled) with or without condiments
- 2 white bread slices or 1 plain bagel with butter, jelly, or cream cheese
- 2/3 cup yogurt (no seeds, berries, nuts), 1 banana
- Chicken burrito: ½ portion of shredded chicken breast (40g), divided into two wheat tortillas. A glass of yogurt or a cup of milk.



Reference: Jacobson et al. Optimizing Bowel Preparation Quality for Colonoscopy: Consensus Recommendations by the US Multi-Society Task Force on Colorectal Cancer. *Gastroenterology* 2025; 168:798–829.

Lunch options

- 1 plain chicken or turkey sandwich on white bread with condiments only: no lettuce or tomato
- 1 chicken breast (skinless) – pan fried or baked
- 1 cup macaroni and cheese
- 1 baked potato (no skin) with butter or sour cream



Reference: Jacobson et al. Optimizing Bowel Preparation Quality for Colonoscopy: Consensus Recommendations by the US Multi-Society Task Force on Colorectal Cancer. *Gastroenterology* 2025; 168:798–829.

Large volume preps may not be necessary



We suggest 2 L bowel preparation regimens instead of 4 L regimens for ambulatory patients **at low risk for inadequate bowel preparation** (weak recommendation, moderate-quality evidence).



Reference: Jacobson et al. Optimizing Bowel Preparation Quality for Colonoscopy: Consensus Recommendations by the US Multi-Society Task Force on Colorectal Cancer. *Gastroenterology* 2025; 168:798–829.

So many options, so many studies...



Food and Drug Administration-approved low-volume preparation purgatives

- 2L PEG-ELS (Golytely, CoLyte, NuLytely, TriLyte)
- 2L PEG-ELS + ascorbate (MoviPrep)
- Oral sodium sulfate (Tablets: SUTAB; Liquid: SUPREP)
- Sodium picosulfate, magnesium oxide, anhydrous citric acid (CLENPIQ)
- 1L PEG + ascorbate (PLENVU)



Meta-analysis of 17 studies comparing 2L vs 4L split-dose regimens

- Both low and high volume regimens were similar in efficacy of cleaning
- Tolerability was superior for the low volume groups
- Findings were similar for the PEG and non-PEG based regimens
- The investigators excluded non-FDA approved regimens like PEG-3350 with sports drink

Source: Spadaccini M, Frazzoni L, Vanella G, et al. Efficacy and Tolerability of High- vs Low-Volume Split-Dose Bowel Cleansing Regimens for Colonoscopy: A Systematic Review and Meta-analysis. Clin Gastroenterol Hepatol 2020;18:1454-1465.



Bowel preparation process for those at average risk for inadequate bowel preparation quality

- Drink second half of split-dose 4-6 hours before the time of colonoscopy finishing at least 2 hours before the procedure start
- Only adjunct to consider is simethicone: 320mg PO taken at some point during the consumption of the purgative



Just remember, every additional item
with out-of-pocket expense
is a barrier to those with
limited financial means



A same-day, low-dose bowel preparation regimen is an acceptable option for *afternoon* colonoscopies



Source: Jacobson et al. Optimizing Bowel Preparation Quality for Colonoscopy: Consensus Recommendations by the US Multi-Society Task Force on Colorectal Cancer. Gastroenterology 2025; 168:798–829.

Power wash!



What about those at higher risk
of an inadequate bowel
preparation quality?



Risk Factors for Inadequate Prep with Odds Ratio ≤ 1.5

- Age >65
- Male sex
- Body mass index >30kg/m²
- Lower level of education
- Inpatient status
- Medicare or Medicaid vs private insurance
- Hypertension
- Tobacco use
- Constipation

Sources: Clin Gastroenterol Hepatol 2013;11:1478-1485; Clin Gastroenterol Hepatol 2009;7:670-675; J Hosp Med 2019;14:278-283; Clin Gastroenterol Hepatol 2012;10:501-506; Clin Gastroenterol Hepatol 2018;16:357-369.e10.



Risk Factors for Inadequate Prep with Odds Ratio >1.5

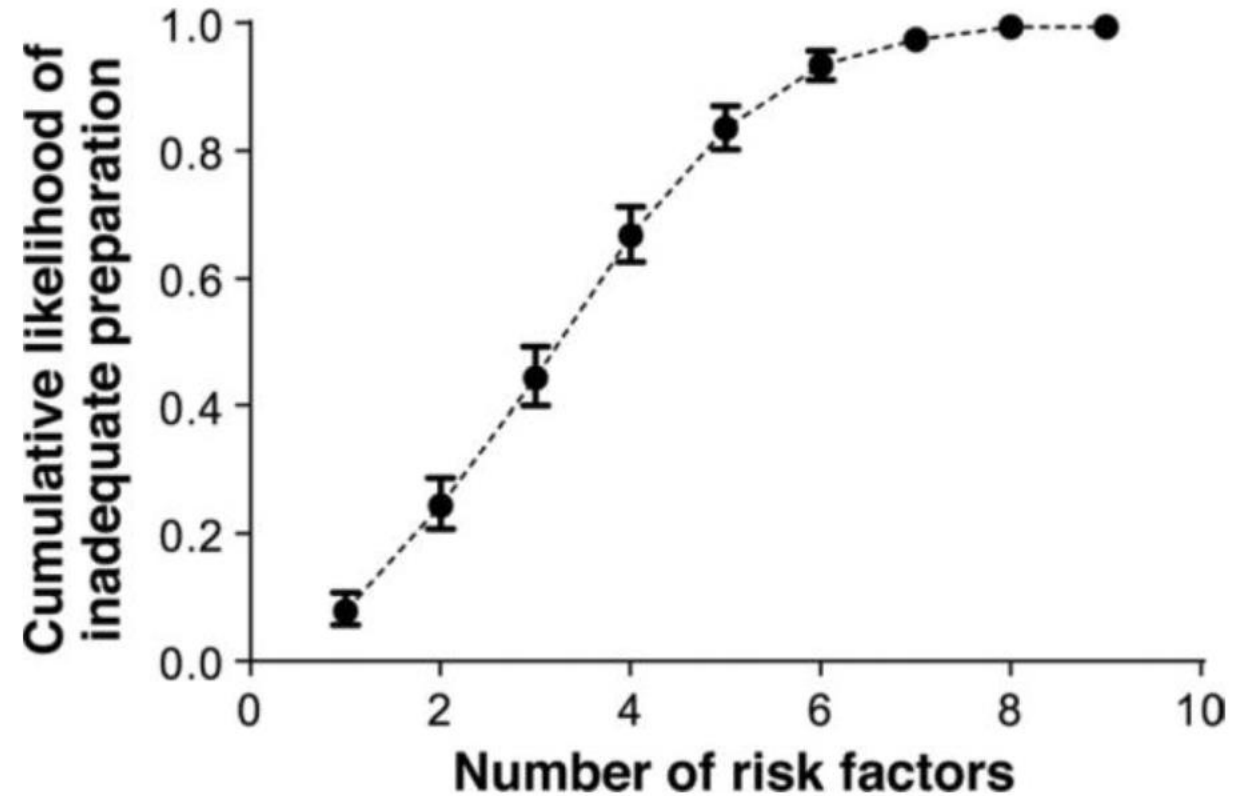
- Cirrhosis: OR 3.4 (1.5–7.9)
- Parkinson's: OR 3.2 (1.2–9.3)
- Dementia: OR 3.0 (1.2–7.5)
- Tricyclics: OR 2.0 (1.4–2.9)
- Diabetes OR 1.8 (1.5–2.1)
- Opioid use: OR 1.7 (1.4–2.1)
- Gastroparesis: OR 1.6 (1.2–2.3)
- Colorectal surgery: 1.6 (1.2–2.2)

Sources: Clin Gastroenterol Hepatol 2013;11:1478-1485; Clin Gastroenterol Hepatol 2009;7:670-675; J Hosp Med 2019;14:278-283; Clin Gastroenterol Hepatol 2012;10:501-506; Clin Gastroenterol Hepatol 2018;16:357-369.e10.



Risks are cumulative

In a study of 1,588 ambulatory colonoscopies, the risk of inadequate bowel preparation increased linearly with the number of risk factors present, plateauing at 98% likelihood once 7 risk factors were present.



Bowel preparation process for those at increased risk for inadequate bowel preparation quality: Modify any/all:

- Increased communication of bowel preparation regimen instructions
- Increased use of patient navigation
- Restricting intake of vegetables and legumes 2-3 days prior to colonoscopy
- Allowing only clear liquids the day prior to colonoscopy
- Addition of pro motility agents (e.g. bisacodyl)
- Treatment of underlying constipation
- Temporary cessation of constipating meds (e.g. anticholinergics, opioids)
- Use of high-volume bowel preparation regimens



Bowel preparation process for those at increased risk for inadequate bowel preparation quality

- Manage those with a prior inadequate bowel preparation like those at increased risk
- USMSTF suggests the following bowel preparation regimen:
 - Split dose 4L PEG-ELS + 15mg bisacodyl the afternoon prior to the colonoscopy
 - Low residue diet 3 and 2 days prior to colonoscopy, changing to clear liquid diet the day prior to colonoscopy

Sources: US Multi-Society Task Force on Colorectal Cancer; Gimeno-García, et al. Am J Gastroenterol 2017;112:951-958; Source: Sey et al. Clin Gastroenterol Hepatol 2022;20:e1283-e1291.



What didn't we cover?

- When and how to measure adequacy
 - After scope insertion
 - After all washing and suctioning
 - Excellent/Good (don't use fair), adequate/inadequate, BBPS
- Quality metrics – **90% benchmark**

See the reference for more:

Optimizing Bowel Preparation Quality for Colonoscopy: Consensus Recommendations by the US Multi-Society Task Force on Colorectal Cancer. Gastroenterology 2025; 168:798–829.



Take Home Points for those at average risk for inadequate prep quality

- Dietary changes can be liberalized
 - Limited to day-prior
 - Low residue/full liquids for breakfast and lunch
- 2L prep regimens can be used in a split-dose fashion
- Same day preps can be used for afternoon colonoscopies
- Consider oral simethicone as an adjunct



Take Home Points for those at **increased** risk for inadequate prep quality

- Dietary changes should start 3 or 2 days prior with limiting vegetables and legumes and then CLD day prior
- Large volume prep regimens should be used in a split-dose fashion
- Consider motility agents as an adjunct





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Mom Won't Stop Talking About How Doctor Praised Her Colonoscopy Preparation



Thank you

Questions?

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