

Screening for Colorectal Cancer: Optimizing Quality

Primary Care Version Part 3



PART 3:

THE ROLE OF PRIMARY CARE IN DELIVERING HIGH-QUALITY COLONOSCOPY

Dr. David Lieberman, M.D.

Pop Quiz

What do you need to know to assure that your patients are getting high quality colonoscopy?

Topics to Be Covered

1. Ensure colonoscopy is appropriate:
Pre-procedure risk assessment
2. Procedure preparation:
Bowel preparation
Safety precautions for special patients
3. Interpreting the endoscopy report
4. Evidence-based follow-up
5. Monitoring procedure quality

Step 1: Ensure Colonoscopy Is Appropriate: Pre-Procedure Risk Assessment

- ❑ Follow recommended screening intervals based on age and family history:
 - Average risk
 - Positive family history
- ❑ Follow recommended surveillance intervals for patients:
 - Post-polypectomy
 - Adenoma surveillance
 - Surveillance after first surveillance colonoscopy
 - Serrated polyp surveillance
 - Post-cancer resection

Document reasons if deviate from the recommended intervals

Step 1: Ensure Colonoscopy Is Appropriate: Pre-Procedure Risk Assessment

- **Identify patients who may be eligible for direct referral to colonoscopy without a pre-procedure visit.**
 - Direct referrals may increase patient adherence and decrease procedure costs.
 - Many endoscopists are eager to work with primary care teams to develop protocols to screen patients for high-risk conditions as part of the referral process.

Step 1: Ensure Colonoscopy Is Appropriate: Pre-Procedure Risk Assessment

- **Identify patients who may require consultation prior to colonoscopy:**
 - Age 75 or older
 - On anti-platelet or anticoagulation therapy and cannot safely stop for 1 week
 - History of recent diverticulitis
 - History of severe cardiac, renal, pulmonary, or hepatic disease
 - High risk for sedation or anesthesia-related complications (for example, oxygen-dependent)
 - History of difficult, incomplete, or poorly prepped colonoscopy
 - History of difficulty with sedation or anesthesia
 - History of sleep apnea
 - Pregnant or possibly pregnant

Step 2: Procedure Preparation – Bowel Prep

- ❑ **Why Is bowel preparation important?**
 - High-quality procedures require good bowel preps.
 - Bowel prep is inadequate in up to 25% of patients.
- ❑ **Consequences of inadequate bowel preparation:**
 - Increased difficulty of colonoscopy.
 - Prolonged procedure time.
 - Reduced cecal intubation rates.
 - Repeat procedures and shortened follow-up intervals.
 - Reduced ability to detect polyps and cancer.

[Impact of bowel preparation on efficiency and cost of colonoscopy](#)

[Impact of colonic cleansing on quality and diagnostic yield of colonoscopy: the European Panel of Appropriateness of Gastrointestinal Endoscopy European multicenter study](#)

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

Step 2: Procedure Preparation – Bowel Prep

□ Bowel Preparation

- May be a major barrier to test completion for many patients.
- Usually prescribed by the endoscopist.
- Work with endoscopy team on safe, effective, and acceptable bowel preparation protocols.
- Newer split-dose bowel preparations are more effective and may be more tolerable for many patients.

Additional information about [bowel preps](#) (8 slides)

Step 2: Procedure Preparation – Safety Issues

- ❑ Primary care can play an important role in identifying potential safety issues and working with endoscopists to assure a safe procedure.

- ❑ Common safety issues to be aware of and to report to the endoscopist:
 - Anticoagulants
 - Diabetes medications
 - Antibiotic prophylaxis
 - Iron / opioid analgesics
 - Cardiac devices (2 slides)

Propofol for Sedation

- ❑ Very rapid onset of action and recovery.
 - Patients are asleep throughout the procedure.
 - Patients awaken within a few minutes after test is done.
- ❑ Necessary for a small fraction of patients who cannot be sedated effectively with moderate sedation or are at increased risk.
- ❑ Major limitation: respiratory depression.
- ❑ In most states, requires anesthesia personnel, which can lead to a substantial increase in the cost of the procedure.
- ❑ Not covered by all insurers, and only for specific indications.

Indications for Propofol

- Dependence on opiates or sedatives.
- Neuropsychiatric disorder.
- Prior negative experience with conscious sedation or difficult procedure.
- Drug or alcohol abuse.
- Extremes of age.
- Pregnancy.
- Severe co-morbid disease or morbid obesity.
- Uncooperative patient or complex procedure.
- Increased risk for airway obstruction including previous problems with sedation, presence of sleep apnea, dysmorphic facial features, oral abnormalities (Mallampati > Class II), neck or jaw abnormalities.

Pop Quiz

Are you receiving an adequate report from the endoscopist?

Standardized Colonoscopy Reporting and Data System (CO-RADS)

SPECIAL REPORT

Standardized colonoscopy reporting and data system: report of the Quality Assurance Task Group of the National Colorectal Cancer Roundtable

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C. Daniel Johnson, MD, Theodore R. Levin, MD, John B. Pope, MD, Michael B. Potter, MD,
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Portland, Oregon, USA

[Standardized colonoscopy reporting and data system: report of the Quality Assurance Task Group of the National Colorectal Cancer Roundtable](#)

Step 3: Interpreting the Endoscopy Report

CO-RADS Recommendations:

Pre-, intra-, and post-procedure elements should be documented in the colonoscopy report to:

- Ensure that important elements are noted by the endoscopist.
- Facilitate communication and follow-up needs with referring physician and patient.
- Allow endoscopist to monitor performance compared to other practices and targets to improve quality.

See Appendix: [Standardized colonoscopy reporting and data system: report of the Quality Assurance Task Group of the National Colorectal Cancer Roundtable](#)

Step 3: Interpreting the Endoscopy Report

CO-RADS Report Elements:

Pre-procedure:

- Patient demographics and history
- Assessment of patient risk and comorbidity
- Procedure indications

Intra-procedure:

- Technical description
- Colonoscopic findings

Post-procedure:

- Assessment
- Interventions/unplanned events (complications)
- Follow-up plan
- Pathology



Step 3: Interpreting the Endoscopy Report

Key Element: Description of the Bowel Preparation

- Three Rating Scales:
 - Method #1 has 4 levels
 - Excellent – pristine
 - Good – clean, all surfaces visualized after cleaning
 - Fair – adequate to detect polyps >5mm after cleaning. Small polyps could be missed
 - Poor – inadequate – exam should be repeated
 - Method #2 has 2 levels
 - Adequate to detect lesions >5 mm
 - (excellent + good + fair)
 - Inadequate to detect lesions >5 mm

Step 3: Interpreting the Endoscopy Report

- Method #3 Bowel prep – Boston Score (after clearing)



0= unprepared colon;
solid stool



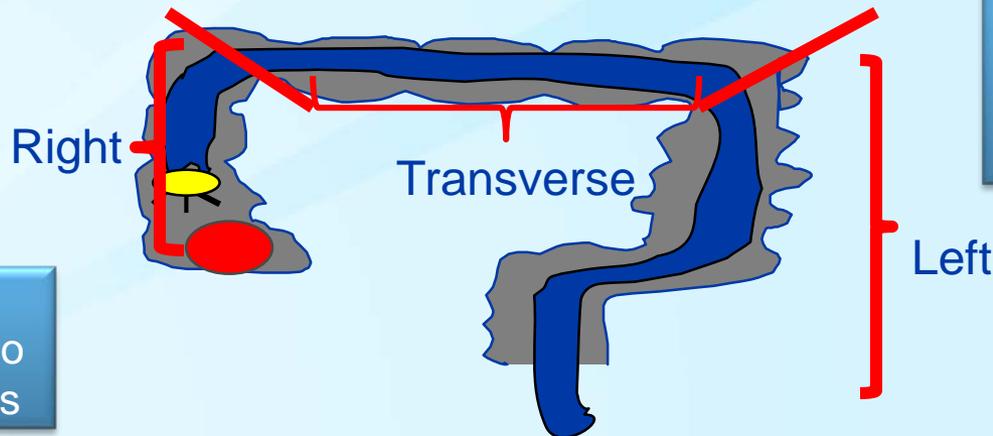
1 = portion seen but
some obscured
despite cleaning



2= minor residual
staining, liquid;
mucosa well seen



3 = clean



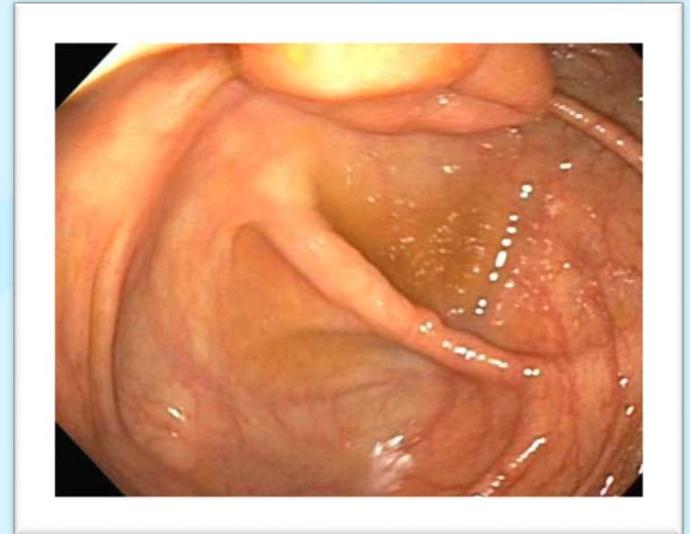
Score each
segment from 0 to
3: sum the scores

If the score is 0 or
1 for any segment,
the exam should
be repeated.

Step 3: Interpreting the Endoscopy Report

Key Element: Description of the Extent of Exam

- Photo documentation of cecum, preferably with appendiceal orifice and ileo-cecal valve.
- Anatomic segment reached, if not cecum.
- If cecum not reached or exam aborted, give reason.



Step 3: Interpreting the Endoscopy Report

Key Element: Detailed description of all findings, including polyps, masses, inflammation

Polyp Descriptors:

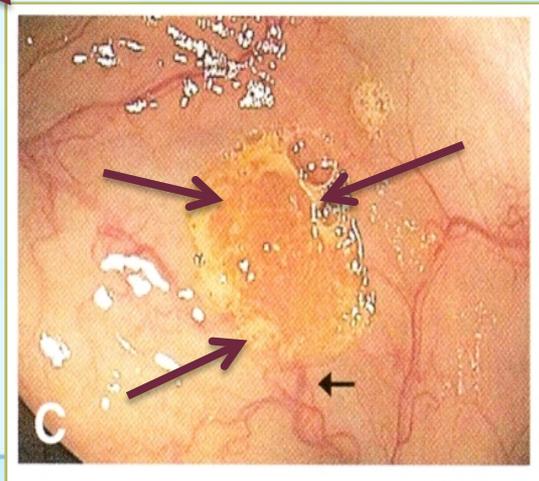
- Size estimate (in mm)
- Location – segment of colon (+/- cm on scope)
 - Important for follow-up procedures, if indicated
- Number of polyps

Step 3: Interpreting the Endoscopy Report

Report

Polyp Descriptors (continued)

- Morphology
 - Pedunculated
 - Sessile
 - Flat



Step 3: Interpreting the Endoscopy Report

Key Element: Polyp resection and retrieval

- Method of removal or biopsy of each polyp removed.
 - Hot or cold snare, biopsy, injection.
- Completeness of resection.
 - Note if piecemeal.



Step 4: Evidence-Based Follow-Up

The endoscopist should send a report to the patient and the referring clinician that includes:

- Contact information in case the patient or referring clinician has questions.
- A recommendation for follow-up interval based on patient history, age, colonoscopic findings, and pathology results:
 - Consistent with evidence-based guidelines, with an explanation if not consistent.

Step 4: Evidence-Based Follow-Up

Primary care team should work with the endoscopy team to assure that the patient knows:

- Any specific implications of the results:
 - For the patient.
 - For family members.
- Any next steps/treatments needed for:
 - Neoplastic findings.
 - Incomplete removal of lesions.
 - Poor bowel preparation.
 - Non-neoplastic findings (for example, hemorrhoids, diverticula, inflammatory bowel disease).
- The need to return earlier than the recall interval if symptoms or risk history changes.

Step 4: Evidence-Based Follow-Up

Appropriate follow-up depends on whether the colonoscopy was complete or incomplete:

- What was the quality of the bowel prep?
- Was the cecum reached?
- Were polypectomies complete?

Step 4: Evidence-Based Follow-Up

For complete exams:

- ❑ **Average-risk patients with negative colonoscopies:**
 - Screening in 10 years with any screening option.
- ❑ **Patients with family history with negative exams**
- ❑ **Patients with adenomas**
- ❑ **Patients with serrated / hyperplastic polyps**
- ❑ **Patients with colon or rectal cancer**

Individualize recommendations based on age and comorbidity.

There is no evidence to support performing an interim HS-gFOBT or FIT prior to the next colonoscopy.

Step 4: Evidence-Based Follow-Up

For incomplete exams:

- ❑ Repeat incomplete exams in 2–6 months.
- ❑ In average-risk patients where cecum was not reached or prep quality was poor, could recommend HS-gFOBt/FIT to complete screening rather than repeating colonoscopy. Such patients would be due for their next screening in one year.

Step 4: Evidence-Based Follow-Up

For incomplete exams:

- ❑ Other options for patients with adequate prep but where complete evaluation of the colon was not technically possible (for example, tortuous colon, previous surgery, various colon diseases).
 - PillCam COLON[®]* (www.givenimaging.com)
 - Approved by FDA in October 2014.
 - Patient swallows a disposable capsule containing a miniature camera that passes through the digestive system naturally.
 - CT Colonography
 - Diagnostic exams for incomplete colonoscopy are reimbursed by Medicare in most states.
- ❑ In patients with incomplete colonoscopy due to ineffective sedation (using moderate sedation), the exam can be repeated with deeper sedation using Propofol or other sedation medications.

*Use of trade names is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

Step 4: Evidence-Based Follow-Up

For Fair Bowel Preps:

- ❑ Little (no) published guidance / evidence base.
- ❑ Follow-up should be individualized based on the patient's age, comorbidity, goals, and risk.
- ❑ In selected cases, it may be appropriate to recommend that patients with fair prep return earlier than the interval recommended for good prep, because of risk of missed lesions.*

*Guidelines for Colonoscopy Surveillance After Screening and Polypectomy: A Consensus Update by the US Multi-Society Task Force on Colorectal Cancer

Step 4: Evidence-Based Follow-Up

Reminder systems are important!

Reminder systems for recalling patients for surveillance or screening colonoscopy are complex. Intervals are often as long as 10 years. Screening and surveillance recommendations and intervals may change over time.

- ❑ The patient needs to be aware of the recommended date for repeat colonoscopy and needs to contact his/her provider at that time to discuss the need for testing.
- ❑ The colonoscopist and the primary care provider could both have patient reminder systems to track appropriate screening intervals and recall patients when they are due for their next screen.

Pop Quiz

1. Are some endoscopists much better than others at finding adenomas?
2. What should you be asking the endoscopist to be sure he or she is providing high quality exams?

Referring Physicians Should Ask About Colonoscopy Quality

The Quality of Colonoscopy Services—Responsibilities of Referring Clinicians

A Consensus Statement of the Quality Assurance Task Group, National Colorectal Cancer Roundtable

Robert H. Fletcher, MD, MSc^{1,13}, Marion R. Nadel, PhD², John I. Allen, MD³, Jason A. Dominitz, MD, MHS⁴, Douglas O. Faigel, MD⁵, David A. Johnson, MD⁶, Dorothy S. Lane, MD⁷, David Lieberman, MD⁵, John B. Pope, MD⁸, Michael B. Potter, MD⁹, Deborah P. Robin, RN, MSN¹⁰, Paul C. Schroy III MD, MPH¹¹, and Robert A. Smith, PhD¹²

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Primary care clinicians initiate and oversee colorectal screening for their patients, but colonoscopy, a central component of screening programs, is usually performed by consultants. The accuracy and safety of colonoscopy varies among endoscopists, even those with main-

programs—for screening, for diagnostic evaluation of positive test results regardless of the initial screening test, and for surveillance of patients at increased risk. Most colonoscopies in the U.S. are performed by gastroenterologists and colorectal surgeons, although other specialists also do this procedure⁴.

Available [The Quality of Colonoscopy Services—Responsibilities of Referring Clinicians](#)

Step 5: Monitor Procedure Quality – Assessing the Endoscopist

There is wide variation among endoscopists in the quality of colonoscopy:

- Detection of polyps
- Ability to reach cecum
- Bowel prep quality
- Appropriateness of screening and surveillance recommendations
- Completeness of reporting

Step 5: Monitor Procedure Quality – Assessing the Endoscopist

Questions to Ask:

- ❑ **Is the report complete?**
 - For example, prep quality, extent of exam, polyp descriptors
- ❑ **Is the endoscopist measuring performance indicators and are targets being met?**
 - Adenoma detection rate
 - Cecal intubation rate
 - Bowel prep adequacy rate
- ❑ **Are recommendations for follow-up consistent with guidelines?**

Step 5: Monitor Procedure Quality – Assessing the Endoscopist

- **Every colonoscopy practice should have a continuous quality improvement (CQI) program to:**
 - Monitor performance.
 - Compare to targets.
 - Take steps to improve, when needed.

- **Recommended by the U.S. Multi-Society Task Force on Colorectal Cancer and the National Colorectal Cancer Roundtable:**
 - Quality Indicators for Colonoscopy 2014
 - Quality in the technical performance of colonoscopy and the continuous quality improvement process for colonoscopy: recommendations of the U.S. Multi-Society Task Force on Colorectal Cancer
 - Quality Indicators for Colonoscopy 2006
 - Standardized colonoscopy reporting and data system: report of the Quality Assurance Task Group of the National Colorectal Cancer Roundtable

Step 5: Monitor Procedure Quality - Assessing the Endoscopist

Indicators of endoscopist procedure quality:

- Adenoma detection rate (ADR)
- Cecal intubation rate
- Quality of bowel preparation
- Use of appropriate intervals for screening and surveillance

Step 5: Monitor Procedure Quality – Adenoma Detection Rates

- Definition: The percent of screening exams with at least one adenoma detected.

CURRENT TARGET*

ADR should be: $\geq 30\%$: male screening patients

$\geq 20\%$: female screening patients

- Probably the most important quality indicator.
 - Multiple studies** have demonstrated that the rate of subsequent development of CRC is inversely related to the endoscopist's ADR.

*[Quality Indicators for Colonoscopy](#)

**[Quality Indicators for Colonoscopy and the Risk of Interval Cancer](#)

**[Adenoma detection rate and risk of colorectal cancer and death](#)

Step 5: Monitor Procedure Quality – Cecal Intubation Rate

- ❑ Definition: percent of exams in which the cecum was reached.

TARGET

All exams: >90%

Screening and surveillance exams: >95%

- ❑ Important lesions can be missed if colonoscopy is not complete to the cecum.
- ❑ Failure to reach the cecum constitutes an incomplete exam.

Step 5: Monitor Procedure Quality – Bowel Prep Adequacy Rates

- Monitor the percent of patients with bowel prep quality adequate to detect lesions >5mm.

TARGET

≥ 90% good to excellent or adequate

- Poor bowel prep results in missed lesions and need to repeat exam sooner, increasing risk and cost.
- If <90% of exams are good, practice should be examined and remediated.

Standardized colonoscopy reporting and data system: report of the Quality Assurance Task Group of the National Colorectal Cancer Roundtable

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

Step 5: Monitor Procedure Quality – Adherence to Evidence-Based Recommendations

- ❑ Monitor the percent of exams with recommended interval in agreement with guidelines.
- ❑ Too frequent screening or surveillance is common.
 - Wastes scarce resources (personnel/financial).
 - Increases potential for harm.
- ❑ Longer than recommended follow-up is a risk to the patient.

Summary: Ensuring Patients Receive High-Quality Colonoscopy

- ❑ There is wide variation among endoscopists in the performance of colonoscopy.
- ❑ To ensure referral to endoscopists who provide high-quality exams, PCPs should:
 - Expect complete reports.
 - Ask about important indicators of quality such as
 - Adenoma detection rates.
 - Cecal intubation rates.
 - Bowel prep adequacy rates.
- ❑ PCPs could ensure that recommendations for follow-up are consistent with guidelines.

FINAL TAKE-HOME POINTS

Dr. Richard Wender, M.D.

Final Take-Home Points

- ❑ Colorectal cancer screening reduces colorectal cancer incidence and mortality and is an important function of primary care.
- ❑ PCPs ensure that each patient receives the appropriate test at the appropriate time, based on personal and family history and patient preferences.
- ❑ To maximize the number of patients who get screened, offer both stool blood testing and colonoscopy as options for screening.

Final Take-Home Points (continued)

□ Stool blood testing

- There is more to stool blood testing than handing out kits. Have a comprehensive system to ensure appropriate testing.
 - Use a test with sensitivity >50%.
 - Don't use specimen collected during a DRE.
 - Ensure follow-up of abnormal tests with colonoscopy.
 - Ensure annual test completion.

Final Take-Home Points (continued)

□ Colonoscopy

- Ensure referral to high-quality endoscopists.
- Encourage good bowel preparation.
- Ensure patients receive screening and surveillance exams at intervals consistent with guidelines.

Thanks for viewing Part 3

**The following slides are not part of this presentation,
but rather serve as links for users.**

Patients at Average Risk: Colorectal Cancer Screening Strategies

Stool-Based Tests

- ❑ Highly sensitive gFOBT every year
- ❑ FIT every year
- ❑ FIT-DNA every 1 or 3 years

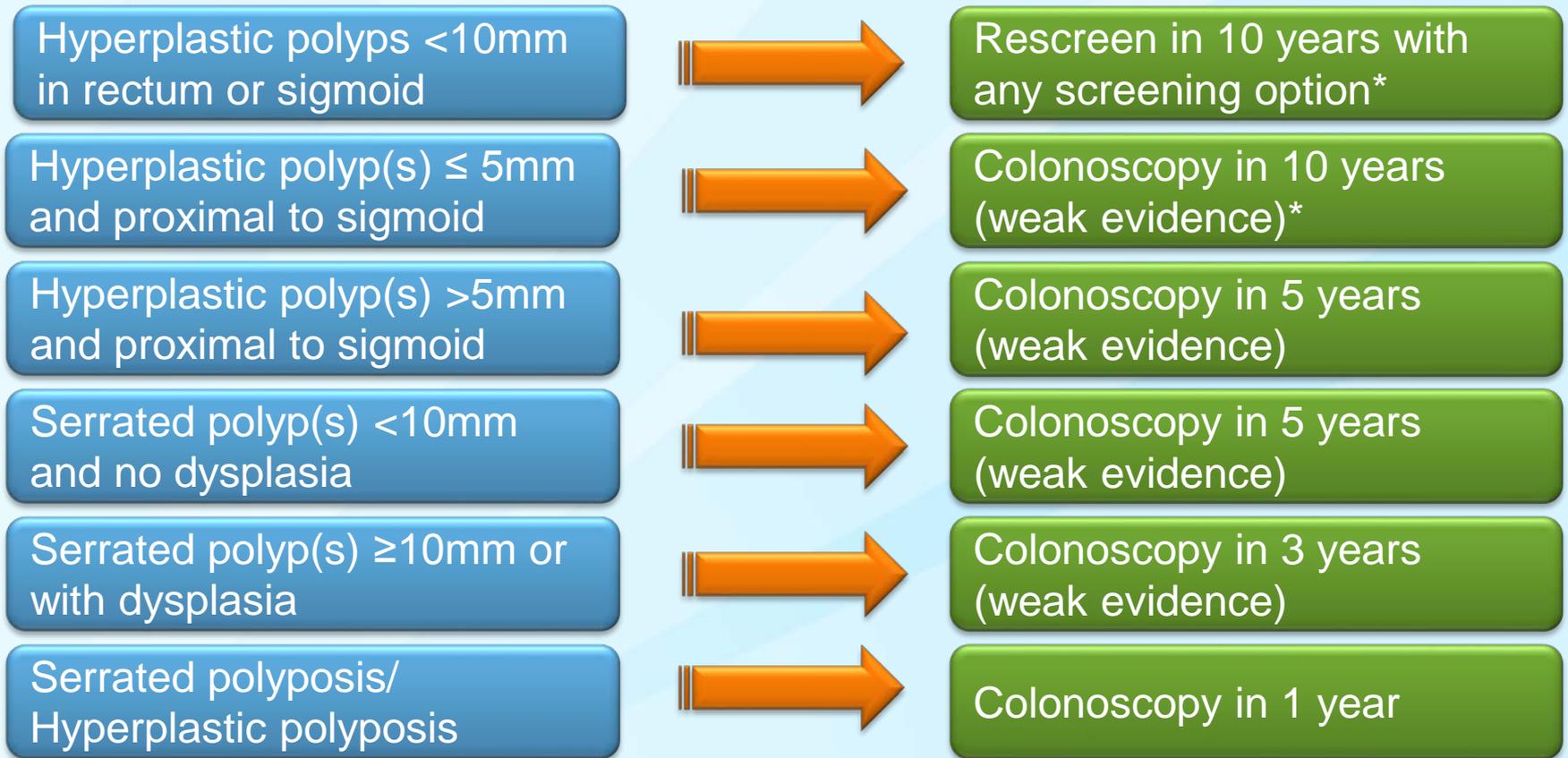
Visualization Tests

- ❑ Colonoscopy every 10 years
- ❑ CT colonography every 5 years
- ❑ Flex Sig every 5 years
- ❑ Flex Sig with FIT Flex sig every 10 years plus FIT every year

Abbreviations: gFOBT, guaiac-based fecal occult blood test; FIT, fecal immunochemical test; FIT-DNA, multi-targeted stool DNA test; Flex Sig, flexible sigmoidoscopy.

[Screening for Colorectal Cancer: US Preventive Services Task Force Recommendation Statement.](#)

Surveillance of Patients with Serrated Polyps at Prior Colonoscopy



*10 year recommendation is only for average-risk people

[Guidelines for Colonoscopy Surveillance After Screening and Polypectomy: A Consensus Update by the US Multi-Society Task Force on Colorectal Cancer](#)

[Serrated Lesions of the Colorectum: Review and Recommendations From an Expert Panel](#)

Screening Patients with a Family History

- If patient has either:
 - CRC or adenomas* in a first-degree relative diagnosed at **age ≥ 60** OR
 - Two second-degree relatives with CRC



Begin screening at age 40 with any test recommended for average risk; repeat at usual intervals based on type of test and findings.**

- If patient has either:
 - CRC or adenomas* in a first-degree relative diagnosed **before age 60** OR
 - Two or more first-degree relatives diagnosed at any age (with family history not suggestive of genetic syndrome)



Colonoscopy every 5 years starting at age 40, or 10 years before the youngest case in the family was diagnosed, whichever comes first.**

*Our expert opinion is that this applies to relatives with advanced adenomas (adenomas that are ≥ 1 cm, villous, or with high-grade dysplasia) only, recognizing that this information is often unavailable.

**The evidence base for these guidelines was not strong and some aspects are controversial.

Screening and Surveillance for the Early Detection of Colorectal Cancer and Adenomatous Polyps, 2008: A Joint Guideline from the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology

Surveillance of Patients with Adenomas at Prior Colonoscopy

□ Low-risk adenomas*

- 1–2 tubular adenomas <10mm



Colonoscopy in 5–10 years

□ High-risk adenomas*

- 3–10 adenomas <10mm OR
- ≥ 1 adenoma ≥ 10mm OR
- ≥ 1 adenoma with villous features OR
- ≥ 1 adenoma with high grade dysplasia



Colonoscopy in 3 years

- >10 adenomas



Colonoscopy in <3 years
(consider syndrome)

□ Any adenoma with piecemeal or possibly incomplete excision



Colonoscopy in 2–6 months

*These recommendations assume that the prior colonoscopy was complete and adequate. For serrated polyps, see Surveillance of Patients with Serrated Polyps at Prior Colonoscopy.

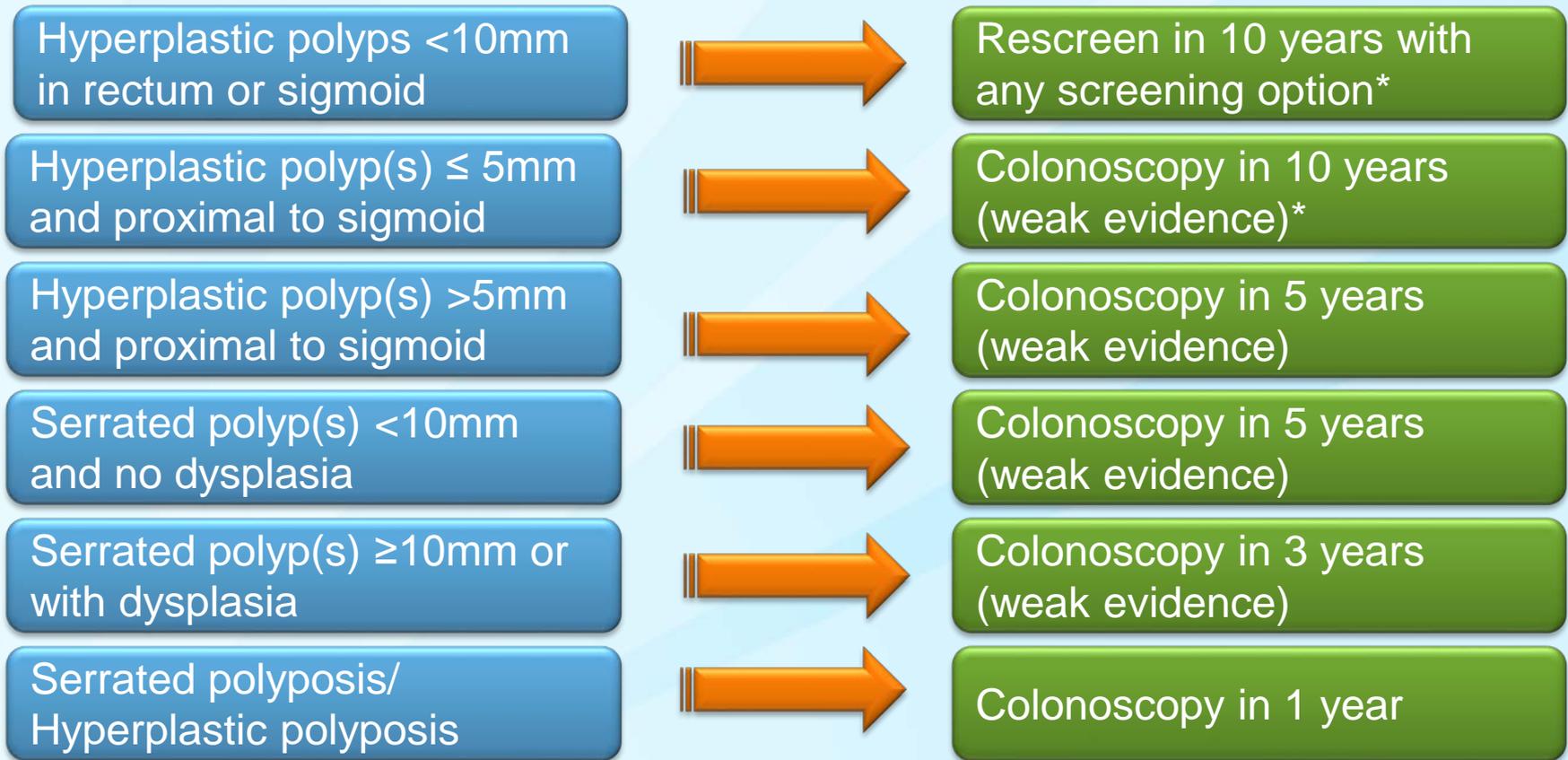
Guidelines for Colonoscopy Surveillance After Screening and Polypectomy: A Consensus Update by the US Multi-Society Task Force on Colorectal Cancer

Recommendations for Adenoma Surveillance After First Surveillance Colonoscopy

Baseline Colonoscopy Finding	First Surveillance Colonoscopy Finding	Interval for Second Surveillance (years)
Low-risk adenoma (LRA)	<ul style="list-style-type: none"> • HRA • LRA • No adenoma 	<ul style="list-style-type: none"> • 3 • 5 • 10
High-risk adenoma (HRA)	<ul style="list-style-type: none"> • HRA • LRA • No adenoma 	<ul style="list-style-type: none"> • 3 • 5 • 5

Guidelines for Colonoscopy Surveillance After Screening and Polypectomy: A Consensus Update by the US Multi-Society Task Force on Colorectal Cancer

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Surveillance of Patients Post-Cancer Resection

Category	Next Examination
Colon or rectal cancer	Within 6 months if not completed preoperatively*; otherwise 1 year after curative resection; if the 1 year exam is negative, the interval to next colonoscopy is 3 years, and then at 5-year intervals.
Rectal cancer (optional)	For purpose of identifying local recurrence, flexible sigmoidoscopy, rigid proctoscopy, or rectal ultrasound every 3–6 months for first 2–3 years may also be considered in addition to colonoscopic surveillance noted above.

***Every effort should be made to clear the colon of synchronous lesions preoperatively using colonoscopy for non-obstructing tumors and, for obstructing tumors, CT colonography, or if not available, CT or gastrograffin enema.**

Colonoscopy Surveillance After Colorectal Cancer Resection: Recommendations of the US Multi-Society Task Force on Colorectal Cancer

Pre-procedure: Anticoagulation

Medication	Risk of Thromboembolism	
	High	Low
Anticoagulant agents- warfarin (See Barron et al. for newer antithrombotic agents)	Discontinue warfarin 5 days; Consider bridging therapy with heparin or low-molecular-weight heparin	Discontinue warfarin 5 days; Re-institute warfarin after procedure
Antiplatelet therapy (for example, ticlodipine, clopidrogel)	Consider discontinuing for 7-10 days prior	Discontinue 7-10 days prior
Aspirin/NSAIDs	Continue	Consider discontinuing 5-7 days prior

Management of antithrombotic therapy in patients undergoing invasive procedures

Guideline on the management of anticoagulation and antiplatelet therapy for endoscopic procedures

Diabetes Medications

From the start of the bowel preparation and until the first meal after colonoscopy:

- ❑ Instruct the patient to discontinue oral hypoglycemic agents.
- ❑ Patients on long- or intermediate-acting insulin or combination insulin products should administer them on their usual schedule, but only at half the usual dose.
- ❑ Patients on short-acting insulin may use a sliding scale, and administer short-acting insulin sparingly as needed to keep their blood glucose between 100 and 250.

The primary goal is to avoid dangerous levels of hypoglycemia during the bowel prep and procedure. This advice may need to be tailored based on individual characteristics.

Pre-Procedure: Antibiotic Prophylaxis

- ❑ Colonoscopy ± polypectomy = low-risk procedure
- ❑ Risk of bacteremia < routine daily activities
- ❑ Revised AHA guideline ([Prevention of Infective Endocarditis](#)).
“Antibiotic prophylaxis to solely prevent infective endocarditis is not recommended for GU or GI procedures”
- ❑ Not recommended for synthetic vascular grafts or orthopedic prostheses ([Antibiotic prophylaxis for GI endoscopy](#))

Pre-procedure: Miscellaneous Medications

Medication	Indication
Iron	Discontinue 7-10 days prior
Opioid analgesics	Continue Increase fluid consumption for 1-2 days prior

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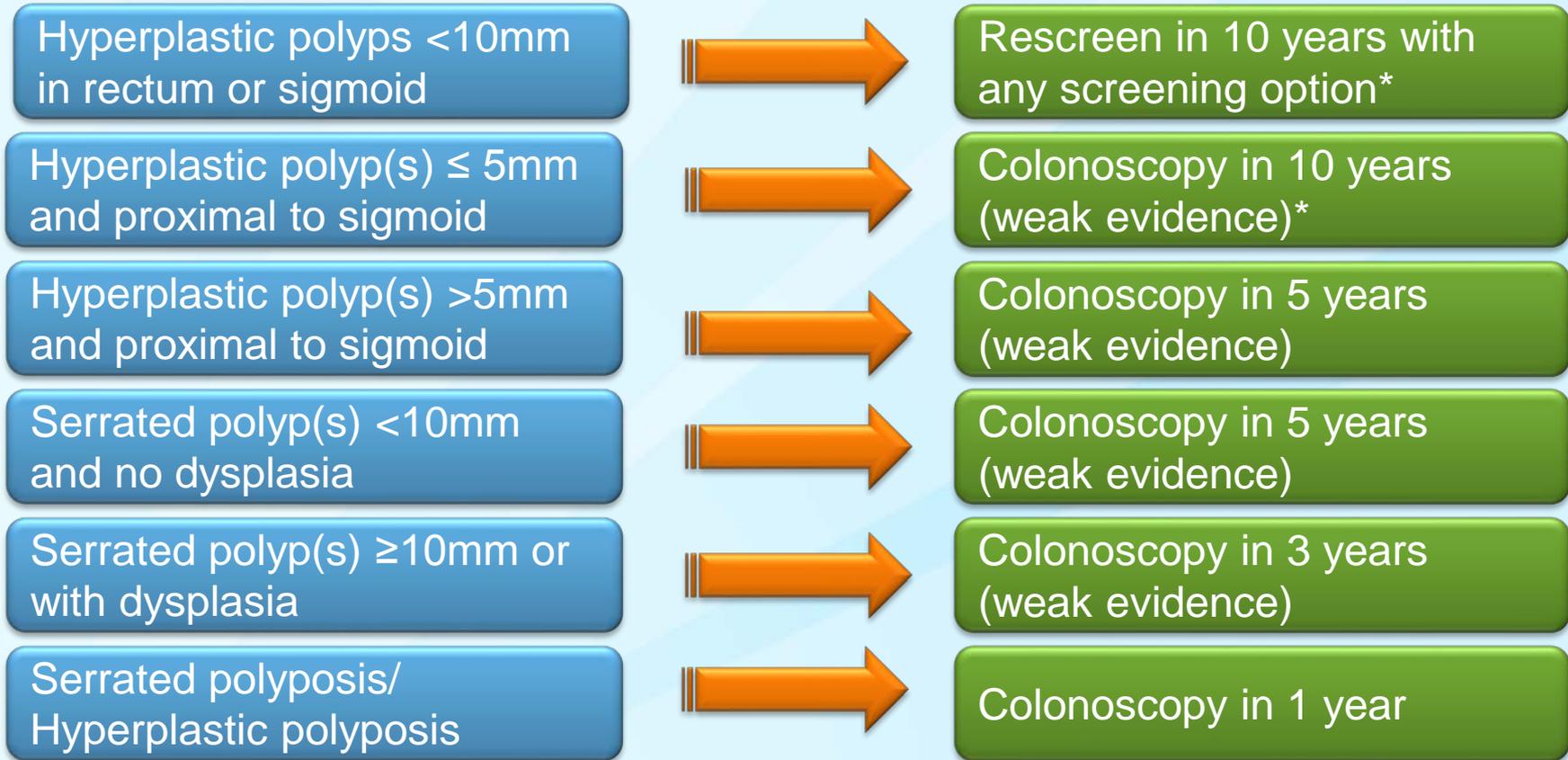


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months

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***Every effort should be made to clear the colon of synchronous lesions preoperatively using colonoscopy for non-obstructing tumors and, for obstructing tumors, CT colonography, or if not available, CT or gastrograffin enema.**

Colonoscopy Surveillance After Colorectal Cancer Resection: Recommendations of the US Multi-Society Task Force on Colorectal Cancer

Pre-Procedure: Cardiac Devices

- ❑ Determine the type of cardiac device, indication for the device, the patient's underlying cardiac rhythm, and degree of pacemaker dependence before endoscopy.
- ❑ Use continuous electrocardiographic rhythm monitoring in addition to pulse oximetry during the procedure.
- ❑ Some patients with cardiac pacemakers may undergo routine uses of electrocautery (for example, polypectomy, hemostasis) with no alterations in management.

Pre-Procedure: Cardiac Devices

- ❑ For patients in whom prolonged electrocautery is anticipated, consider reprogramming the pacemaker to an asynchronous mode via application of a magnet over the pulse generator during the use of electrocautery.
- ❑ If a magnet is used, the device should be interrogated before the patient leaves the unit.
- ❑ For patients with an implantable cardioverter-defibrillator (ICD) in whom the use of any electrocautery may be anticipated, consultation with a cardiologist or a heart-rhythm specialist is recommended. Deactivation of the ICD function by qualified personnel should be considered, unless a specific protocol has been developed and accepted.

How to Predict a Bad Prep: Patient Characteristics

- ❑ Inpatient
- ❑ Elderly
- ❑ Obese
- ❑ Lower education
- ❑ History of constipation
- ❑ Use of antidepressants
- ❑ Chronic narcotic use
- ❑ Noncompliance with medications

Patient navigators can help address some of these issues.

How to Improve Prep for Patients with Prior Poor Prep

- ❑ No studies to provide evidence-based guidance.
- ❑ Navigator and patient education.
- ❑ Increase total volume of PEG (2 to 4 L or 4 to 6L).
- ❑ Split dosing.
- ❑ Adequate hydration.
- ❑ Add Mg citrate or Miralax[®]* evening before beginning prep.
- ❑ Add oral bisacodyl or senna.
- ❑ Extend period of diet modification from 24 to 48 hours.

*Use of trade names is for identification only and does not imply endorsement by the US Department of Health and Human Services.

Provide Clear Prep Instructions to Patients

- ❑ Written instructions need to be at appropriate literacy level.
- ❑ Innovative approaches, including the use of patient navigators and videos, increase the likelihood of successful prep.
 - For a video on preparing for colonoscopy, see [Preparing for a Colonoscopy](#).
 - For more on bowel prep, see [Example 1 of Preparation Instructions for Your Colonoscopy](#) and [Example 2 of Preparation Instructions for Your Colonoscopy](#).

Split-Dose Preps

- ❑ Recommended in ACG guidelines for CRC screening as a key measure for improving the quality of screening.*
- ❑ Part (usually ½) of laxative taken the evening prior, and *remainder taken a.m. of procedure.*
- ❑ Colonoscopy should be performed 2–4 hours after the last dosing.
- ❑ More effective and better tolerated than full dose p.m.
- ❑ Demonstrated superiority.
 - PEG
 - High volume (3L/1L or 2L/2L)
 - Low volume (1L/1L)
 - Osmotics-NaP, Mg citrate, Na sulfate

*[American College of Gastroenterology Guidelines for Colorectal Cancer Screening 2009](#)

PEG Split-Dosing: Meta-analysis

Split-dose PEG is superior to full-dose PEG with respect to:

- Satisfactory colon cleansing (OR 3.70; 95% CI, 2.79–4.91;p<0.01)
- Likelihood of discontinuing prep (OR 0.53; 95% CI, 0.28–0.98;p=0.04)
- Willingness to repeat same prep (OR 1.76; 95% CI,1.06–2.91;p=0.03)
- Side effects, for example, nausea (OR 0.55; 95% CI, 0.38–0.79;p<0.01)

[Bowel preparation with split-dose polyethylene glycol before colonoscopy: a meta-analysis of randomized controlled trials](#)

Alleged Barriers to Split Dosing: Not a Real Concern

- Patient acceptance of sleep disturbance*
 - 85% surveyed willing to get up in middle of night to take 2nd dose
 - 78% complied

- Bowel activity requiring bathroom stops during transit to procedure**
 - No difference taken PM or split dose PM/AM (5%–15%)

- Increased risk of aspiration during sedation because patients may have more liquid in their stomach
 - ASA guideline: allows ingestion of clear liquids until 2 hours before sedation***

*Willingness to undergo split-dose bowel preparation for colonoscopy and compliance with split-dose instructions

**The timing of bowel preparation before colonoscopy determines the quality of cleansing, and is a significant factor contributing to the detection of flat lesions: A randomized study

**Patient Acceptance, Convenience and Efficacy of One-Day Versus Two-Day Colonoscopy Bowel Preparation

***Practice guidelines for preoperative fasting and the use of pharmacologic agents to reduce the risk of pulmonary aspiration: application to healthy patients undergoing elective procedures. An updated report by the American Society of Anesthesiologists Committee on Standards and Practice Parameters

Bowel Preps for Afternoon Exams: Timing Is Everything

Split dosing (PM/AM) or AM only is superior to PM only.

- End: >2 hours prior to colonoscopy.

Pre-Procedure Diet

- ❑ Optimal pre-procedure diet with split-dose regimen is not well-defined.
- ❑ Most would consider a clear liquid diet for 24 hours prior to the exam or light low-fiber breakfast followed by clear liquids for full day before procedure as standard of care.