Updates in colon and rectal cancer screening for 2024

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Faculty Disclosure

- I have no pertinent personal or financial disclosures related to this presentation.

Educational Need/Practice Gap

- Gap: National goal is >80% of eligible patient should be up to date on CRC screening and currently this is between 48% and 60%
- Need:
  - Identify WHO is eligible for CRC screening
  - Discuss HOW CRC screening can be completed
  - Counsel patients on HOW EASY this is
  - Follow-up on HOW OFTEN screening is recommended

Objectives

- Upon completion of this educational activity, you will be able to:
  - Identify appropriate patients for "average risk" colon and rectal cancer screening
  - Classify patients who are considered "high risk" for colon and rectal cancer
  - Identify reasons to stop colon and rectal cancer screening
  - Discuss currently available options for colon and rectal cancer screening
  - Review upcoming options for colon and rectal cancer screening
  - Describe the indications for technical differences between surgical resection, endoscopic mucosal resection (EMR), endoscopic submucosal resection (ESD) and full thickness resection (FTR)

Why screen for colon cancer???

Epidemiology

Estimated New Cases

Male			Female		
Prostate	299,010	29%	Breast	310,720	32%
Lung & bronchus	116,310	11%	Lung & bronchus	118,270	12%
Colon & rectum	81,540	8%	Colon & rectum	71,270	7%
Urinary bladder	63,070	6%	Uterine corpus	67,880	7%
Melanoma of the skin	59,170	6%	Melanoma of the skin	41,470	4%
Kidney & renal pelvis	52,380	5%	Non-Hodgkin lymphoma	36,030	4%
Non-Hodgkin lymphoma	44,590	4%	Pancreas	31,910	3%
Oral cavity & pharynx	41,510	4%	Thyroid	31,520	3%
Leukemia	36,450	4%	Kidney & renal pelvis	29,230	3%
Pancreas	34,530	3%	Leukemia	26,320	3%
All sites	**1,029,080**		**All sites**	**972,060**	

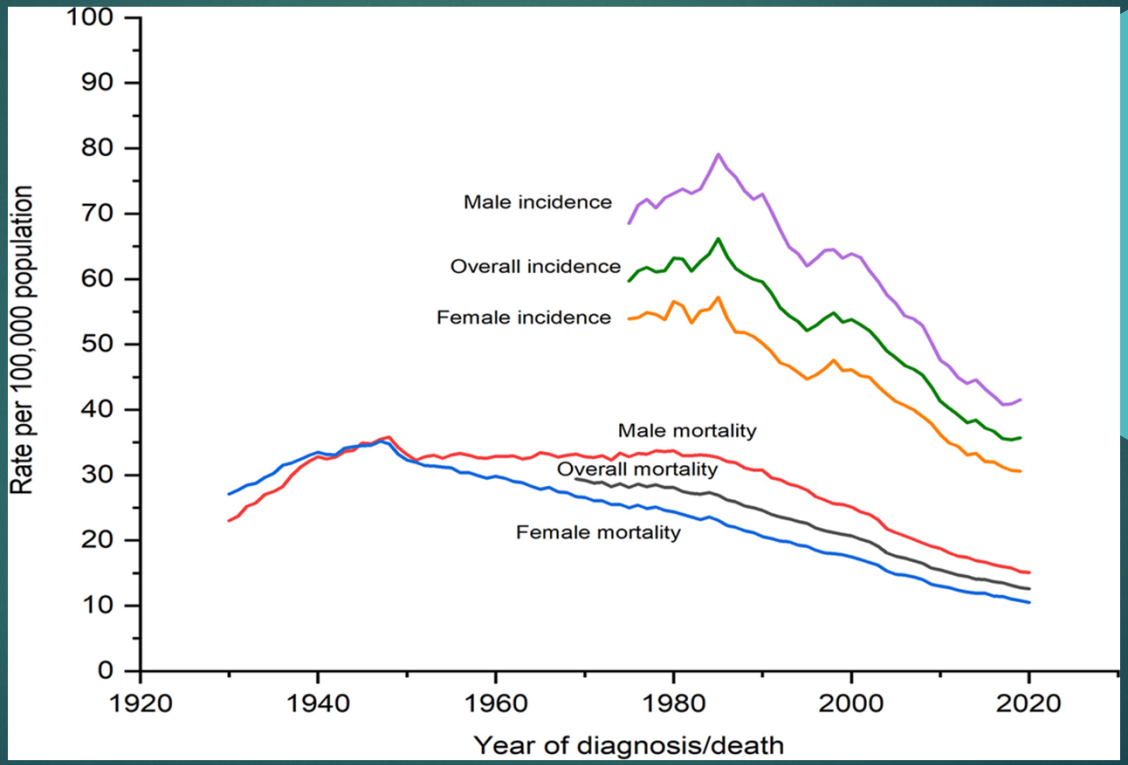
Estimated Deaths

Male			Female		
Lung & bronchus	65,790	20%	Lung & bronchus	59,280	21%
Prostate	35,250	11%	Breast	42,250	15%
Colon & rectum	28,700	9%	Pancreas	24,480	8%
Pancreas	27,270	8%	Colon & rectum	24,310	8%
Liver & intrahepatic bile duct	19,120	6%	Uterine corpus	13,250	5%
Leukemia	13,640	4%	Ovary	12,740	4%
Esophagus	12,880	4%	Liver & intrahepatic bile duct	10,720	4%
Urinary bladder	12,290	4%	Leukemia	10,030	3%
Non-Hodgkin lymphoma	11,780	4%	Non-Hodgkin lymphoma	8,360	3%
Brain & other nervous system	10,690	3%	Brain & other nervous system	8,070	3%
All sites	**322,800**		**All sites**	**288,920**	

Estimates are rounded to the nearest 10, and cases exclude basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder. Estimates do not include Puerto Rico or other US territories. Ranking is based on modeled projections and may differ from the most recent observed data.

CA A Cancer J Clinicians, Volume: 74, Issue: 1, Pages: 12-49, First published: 17 January 2024, DOI: (10.3322/caac.21820)

Screening works!



CA A Cancer J Clinicians, Volume: 73, Issue: 3, Pages: 233-254, First published: 01 March 2023, DOI: (10.3322/caac.21772)

Who should be screened for CRC?

CDR1

Average risk CRC screening

- Age 45 and…
  - No personal history of colon cancer or colon polyps
  - No family history of colon or rectal cancer *
  - No family history of advanced adenomas *^
  - No personal history of IBD
  - No confirmed or suspected hereditary CRC syndrome or polyposis syndrome
  - No personal history of abdominal or pelvic radiation

* One first-degree family member or two second-degree family members at age < 60 at diagnosis

^ Size > 10 mm, villous component, contains high-grade dysplasia

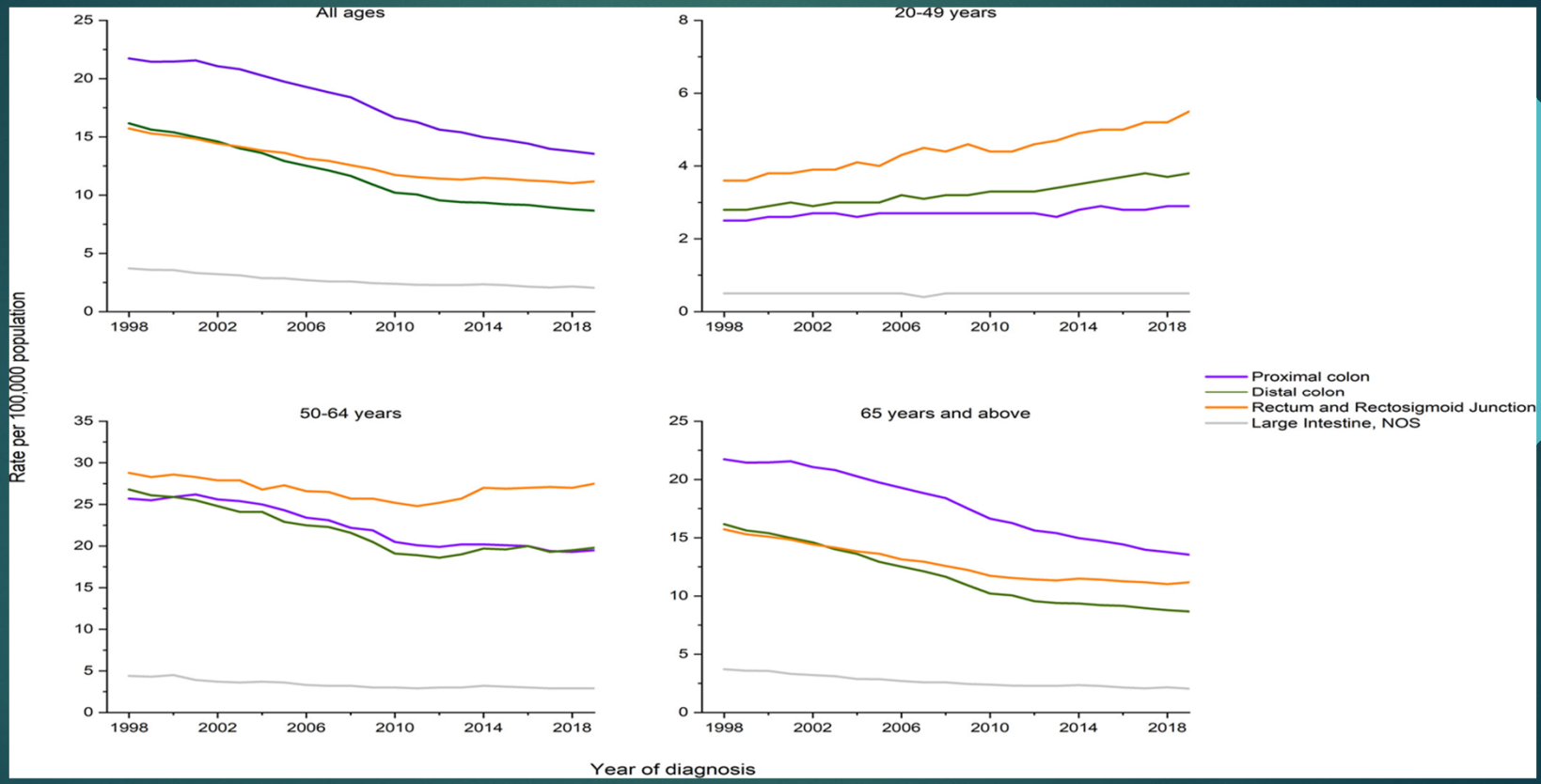
American Cancer Society via cancer.org and American Gastroenterological Association via gastro.org

Slide 9

CDR1 Campbell, Donald R., 10/22/2024

…but this may be changing

Incidence of Colorectal cancer by tumor site



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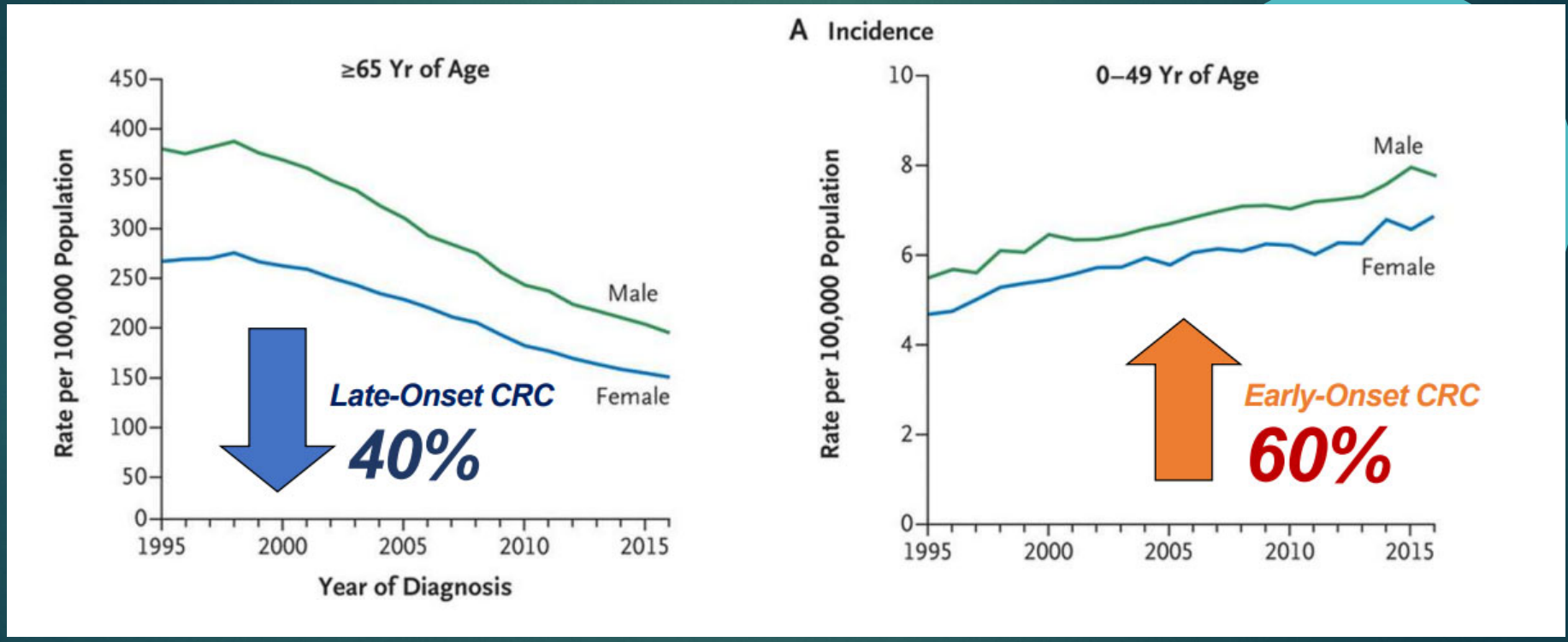
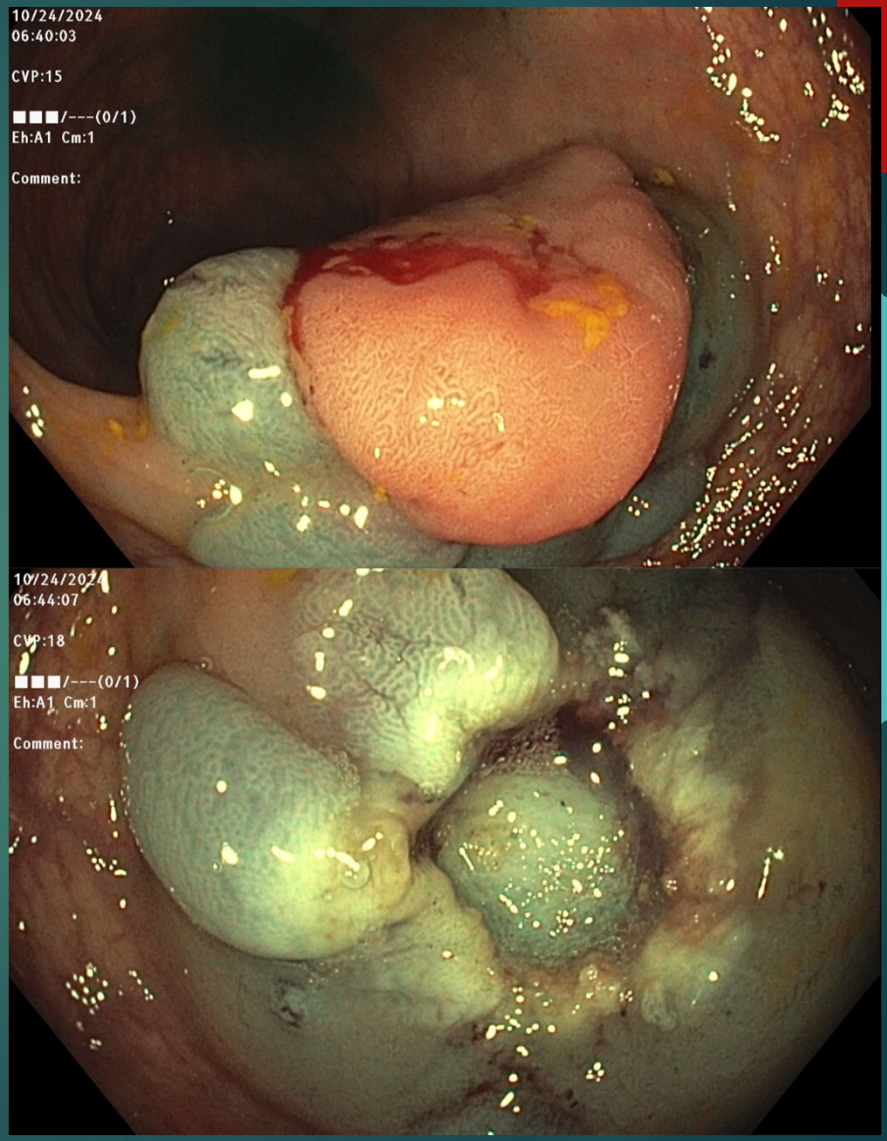
Increasing Burden of EoCRC



Sinicrope, F. A. (2022). Increasing Incidence of Early-Onset Colorectal Cancer. New England Journal of Medicine, 386(16), 1547–1558. Abualkhair, W. H., et al (2020). Trends in Incidence of Early-Onset Colorectal Cancer in the United States Among Those Approaching Screening Age. JAMA Network Open, 3(1), e1920407

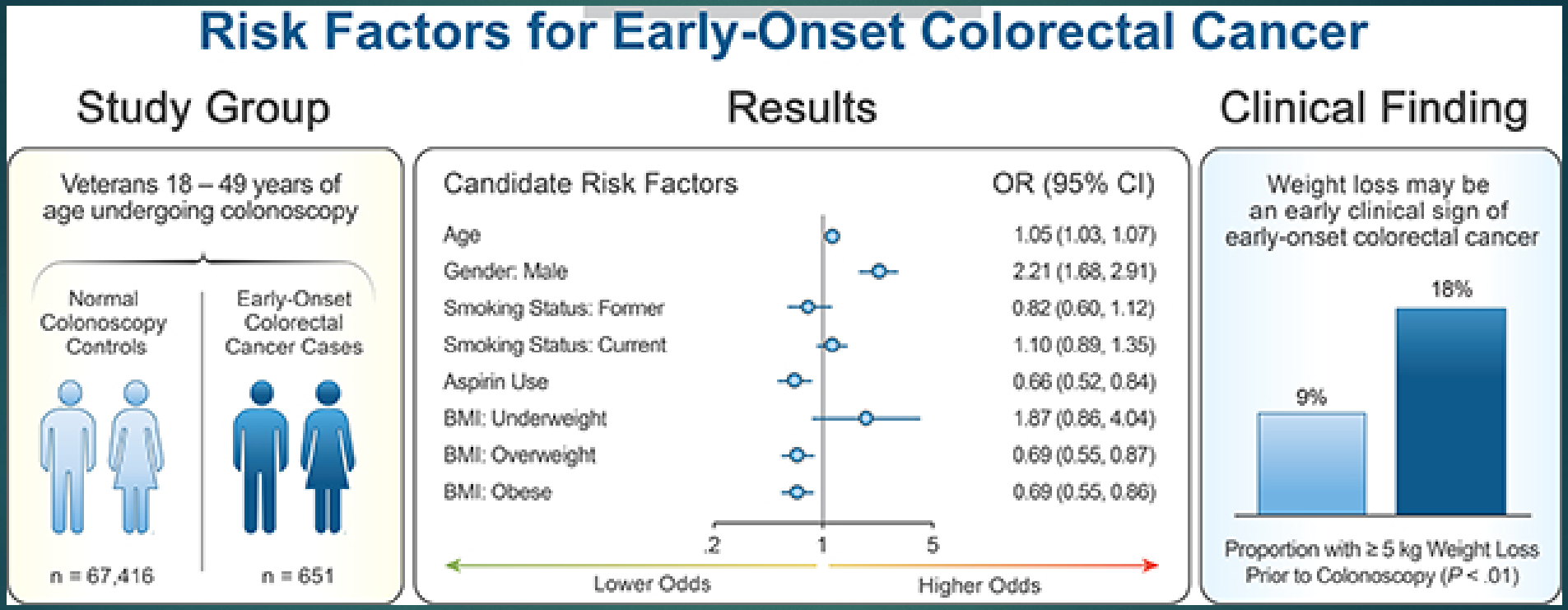
By 2030

- 10% of all colon cancers and 22% of all rectal cancers in the US are expected to be diagnosed in patients ≤ 50 years
- Colorectal cancer will be #1 cause of cancer related death in men and women <50

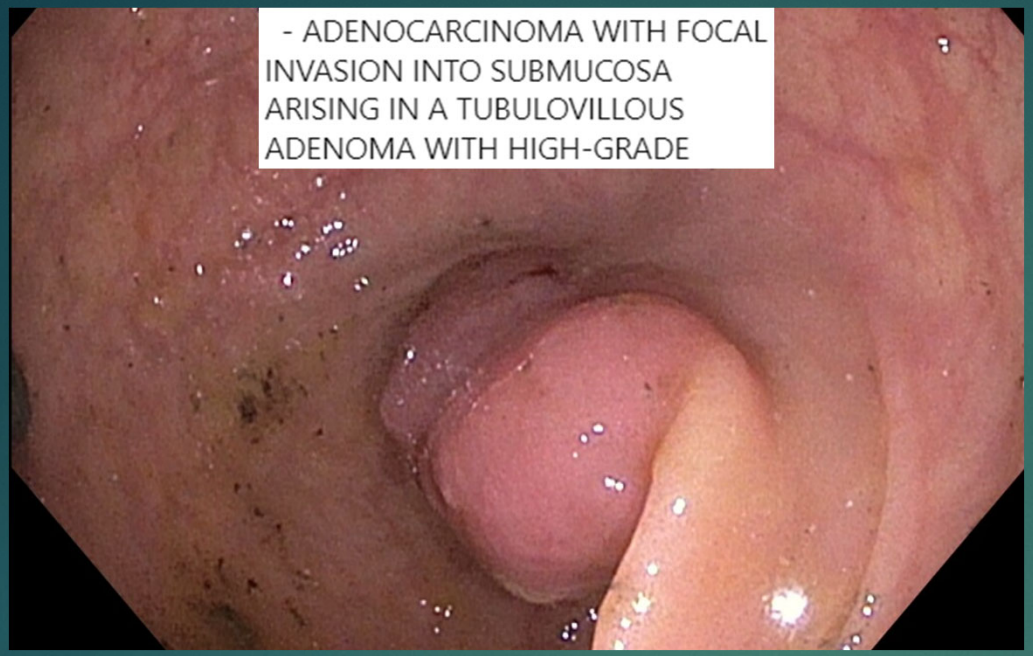


Clinical Phenotype

- 70% of EoCRC are left sided on presentation
- More prevalent in males
- Higher rates of poorly differentiated cancer
- More likely to display microsatellite instability (MSI-H)
- More advanced TNM stage of the disease (aggressive tumor biology or delayed diagnosis?)
- Symptoms
  - Hematochezia
  - Abdominal or pelvic pain
  - Change in bowel habits



Low, E. E. et al (2020). Risk Factors for Early-Onset Colorectal Cancer. Gastroenterology, 159(2), 492-501.e7



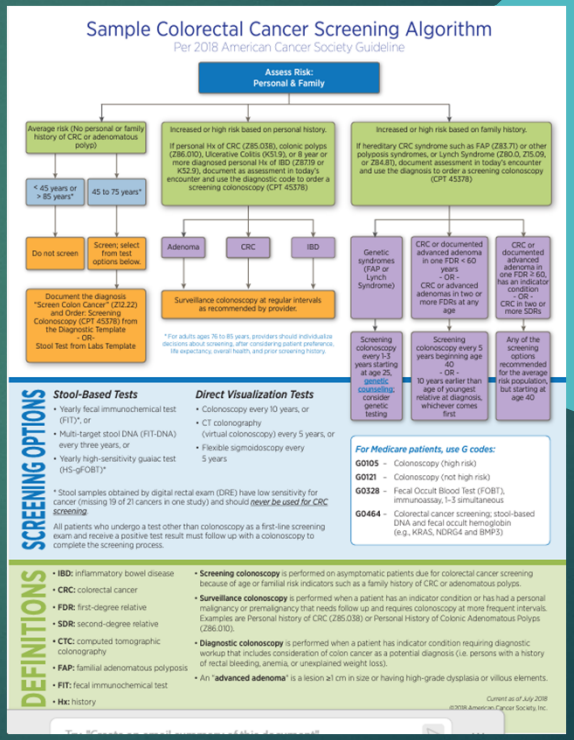
Take-home point

MORE INVESTIGATION IS NECESSARY, DON'T DISMISS SYMPTOMS BASED ON YOUNG AGE, AND EARLIER SCREENING GUIDELINES ARE LIKELY COMING

High risk CRC screening

- + personal history of colon cancer or colon polyps
- + family history of colon or rectal cancer
- + family history of advanced adenomas
- + personal history of IBD
- + confirmed or suspected hereditary CRC syndrome or polyposis syndrome (FAP, HNPCC, etc.)
- + personal history of abdominal or pelvic radiation

What to do with high risk patients?



Take home points

If personal history of CRC:

- Repeat colonoscopy 3-6 months after CRC surgery IF previously incomplete colonoscopy
- Repeat colonoscopy 1 year after CRC surgery IF complete colonoscopy
- IF first post-surgical colonoscopy is "negative"
  → Repeat colonoscopy in 3 years (4 years after CRC surgery)
- IF second post-surgical colonoscopy is "negative"
  → Repeat colonoscopy in 5 years (9 years after CRC surgery)
- Colonoscopy interval should never exceed 5 years

https://www.asge.org/docs/default-source/education/practice_guidelines/doc-colonoscopy_surveillance_after_crc_resection.pdf

GIE

SPECIAL ARTICLE

Colonoscopy surveillance after colorectal cancer resection: recommendations of the US multi-society task force on colorectal cancer

Charles J. Kahi,[1,2] C. Richard Boland,[3] Jason A. Dominitz,[4,5] Francis M. Giardiello,[6] David A. Johnson,[7] Tonya Kaltenbach,[8,9] David Lieberman,[10] Theodore R. Levin,[11] Douglas J. Robertson,[12,13] Douglas K. Rex[2]

This article is being published jointly in *Gastroenterology*, *American Journal of Gastroenterology*, and *Gastrointestinal Endoscopy*.

The US Multi-Society Task Force has developed updated recommendations to guide health care providers with the surveillance of patients after colorectal cancer (CRC) resection with curative intent. This document is based on a critical review of the literature regarding the role of colonoscopy, flexible sigmoidoscopy, endoscopic ultrasound, fecal testing and CT colonography in this setting. The document addresses the effect of surveillance, with focus on colonoscopy, on patient survival after CRC resection, the appropriate use and timing of colonoscopy for perioperative clearing and for postoperative prevention of metachronous CRC, specific considerations for the detection of local recurrence in the case of rectal cancer, as well as the place of CT colonography and fecal tests in post-CRC surveillance.

In the United States, colorectal cancer (CRC) is the second leading cause of cancer deaths for men and women combined.[1] Of the estimated 132,700 new cases expected to be diagnosed in 2015,[1] 70%–80% will undergo surgical resection with curative intent[2,3] and up to 40% of patients with locoregional disease will develop recurrent cancer, of which 90% will occur within 5 years.[4] The postoperative surveillance of patients treated for CRC is intended to prolong survival by diagnosing recurrent and metachronous cancers at a curable stage, and to prevent metachronous cancer by detection and removal of precancerous polyps.

Surveillance strategies employ a combination of modal-

strategy is still not clearly defined, the role of colonoscopy is primarily to clear the colon of synchronous cancers and polyps and prevent metachronous neoplasms.

In 2006, the US Multi-Society Task Force (USMSTF) published a consensus guideline to address the use of endoscopy for patients after CRC resection.[5] This updated document focuses on the role of colonoscopy in patients after CRC resection. Additionally, based on a comprehensive literature review updated from the 2006 recommendations, we review the possible adjunctive roles of fecal testing (eg, fecal immunochemical testing for hemoglobin) and CTC. The use of CEA, CT scans of the liver, as well as chest radiographs are beyond the scope of this document and are not reviewed. The goal of this consensus document is to provide a critical review of the literature and recommendations regarding the role of colonoscopy, flexible sigmoidoscopy, EUS, fecal testing, and CTC in surveillance after surgical resection of CRC.

METHODOLOGY

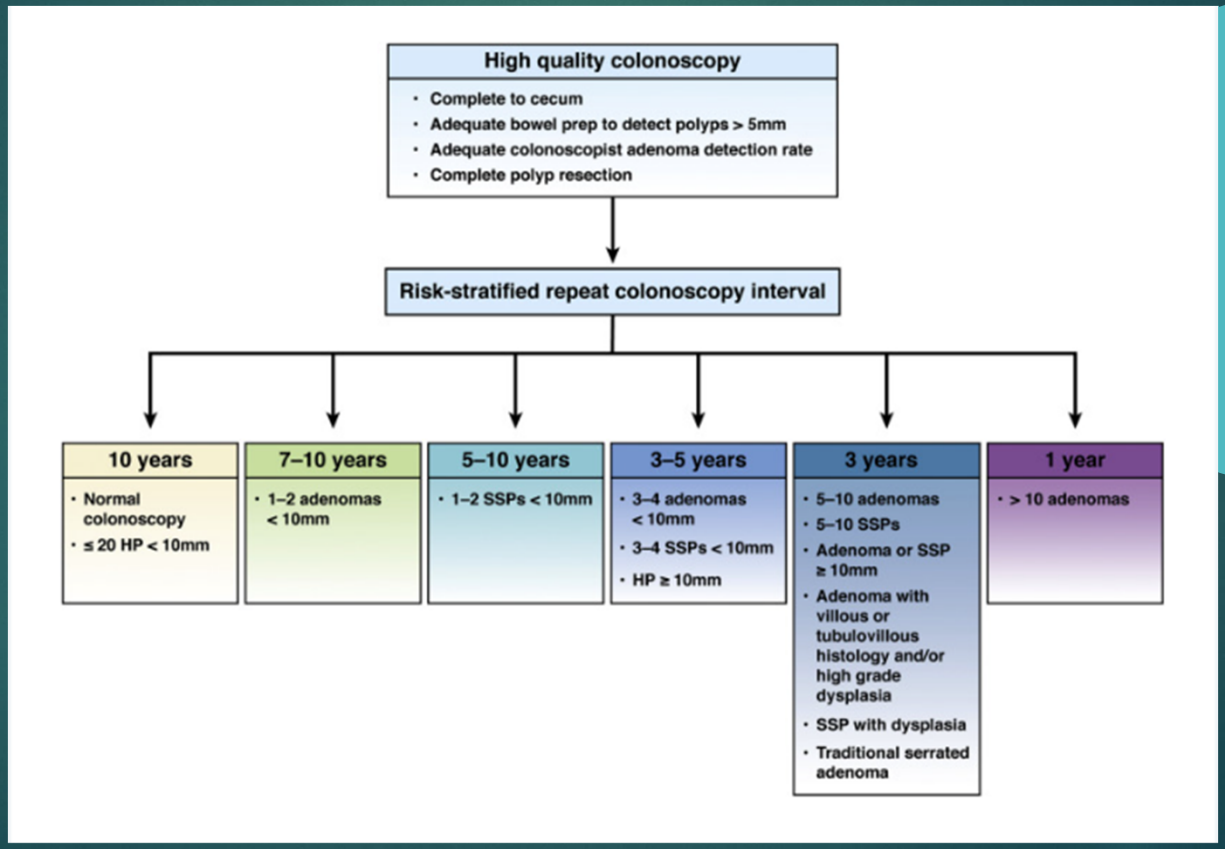
Literature review

The English-language medical literature was searched using MEDLINE (2005 to September 30, 2015), EMBASE (2005 to September 30, 2015), the Database of Abstracts of Reviews and Effects (2005 to October 7, 2015), and the Cochrane Database of Systematic Reviews (2005 to October

Take home points

If personal history of colon polyps:

https://gastro.org/clinical-guidance/follow-up-after-colonoscopy-and-polypectomy-a-consensus-update-by-the-u-s-multi-society-task-force-on-colorectal-cancer/



Take home points

+ family history of colon or rectal cancer < 60 yoa

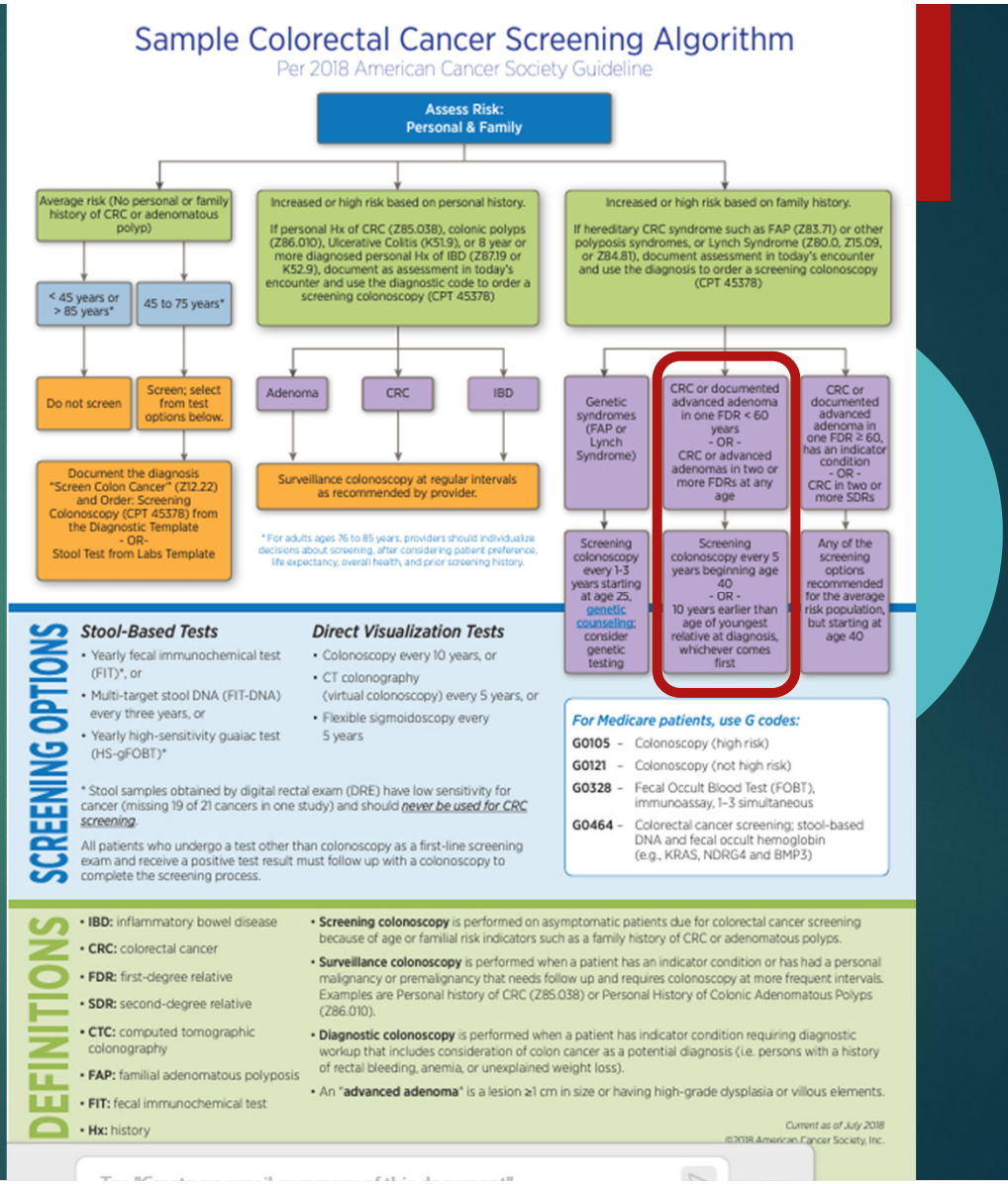
+ family history of advanced adenomas < 60 yoa

→ Screening colonoscopy at age 40 and every 5 years

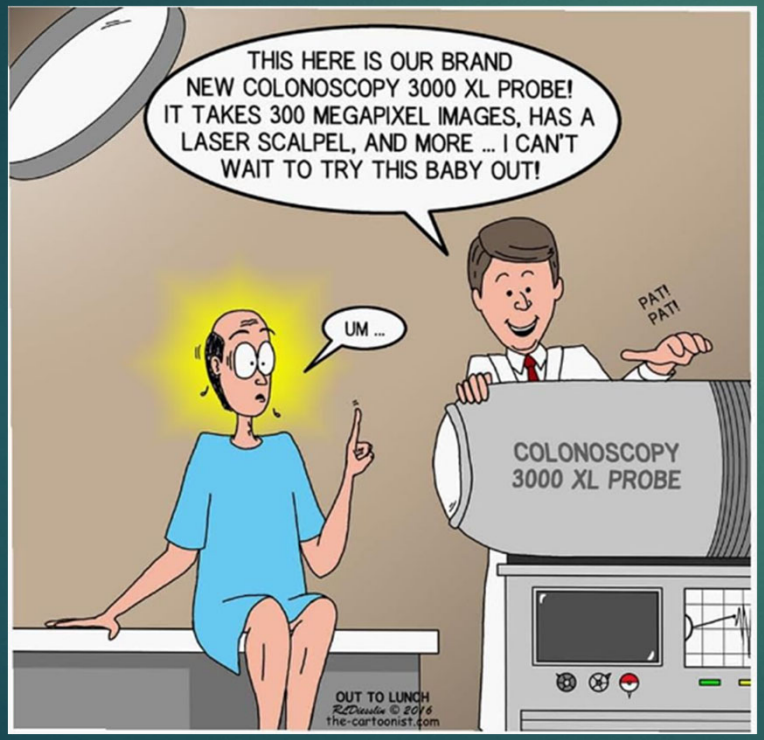
OR

→ Screening colonoscopy at 10 years earlier than age of diagnosis

WHICHEVER IS YOUNGER



Other High Risk Populations



- + personal history of IBD
- + confirmed or suspected hereditary CRC syndrome or polyposis syndrome (FAP, HNPCC, etc.)
- + personal history of abdominal or pelvic radiation
- INDIVIDUALIZED, JOINT DECISION-MAKING

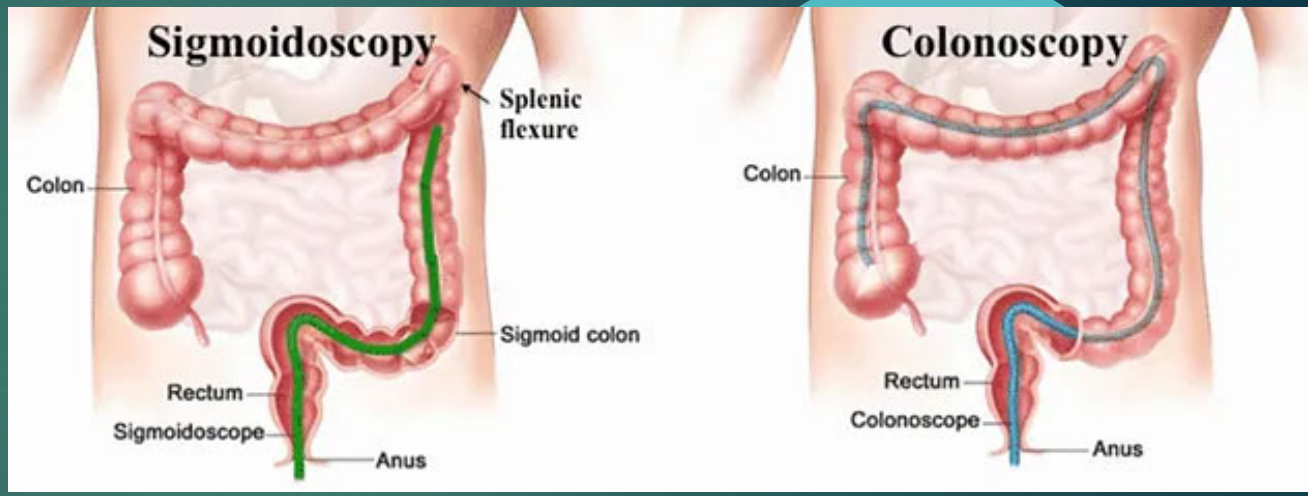
Stopping screening

- 75 y.o.a. "optional"
- 85 y.o.a. "do not screen" *
- Honest discussion or risks and benefits
- Objective evaluation of life expectancy
- These are hard discussions to have and the provider who knows the patient best can best have these discussions

Currently-available CRC screening tests

Direct visualization

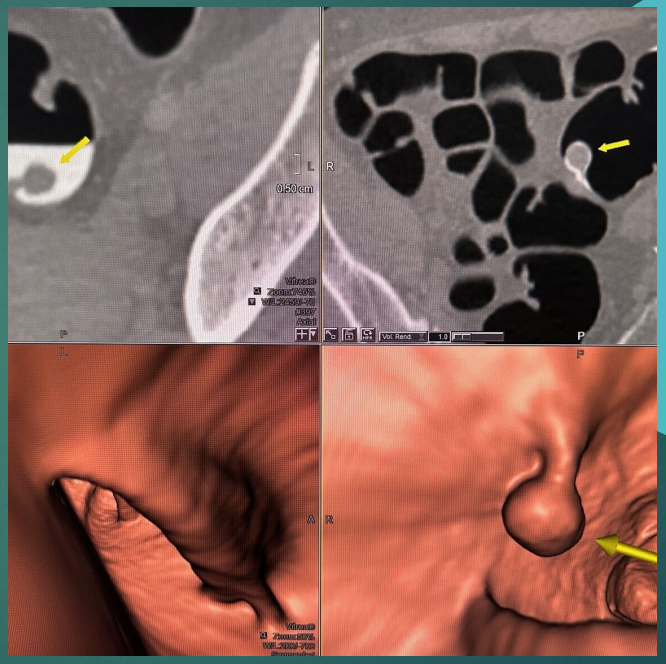
- Colonoscopy
- Flexible sigmoidoscopy



Currently-available CRC screening tests

Direct visualization

- Colonoscopy
- Flexible sigmoidoscopy
- CT Colonography

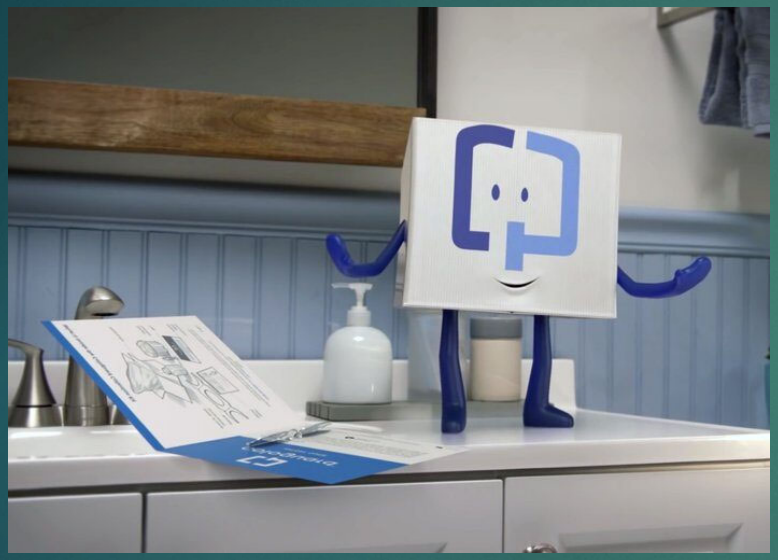


Currently-available CRC screening tests

Stool-based tests

- Fecal immunochemical testing (FIT)
- Multi-target stool DNA test (mtDNA)
- High-sensitivity guiac testing (HS-gFOBT)
- WHAT WILL YOU DO WITH A POSITIVE TEST?

Currently-available CRC screening tests



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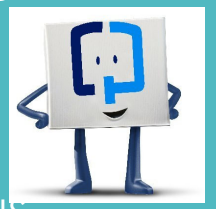
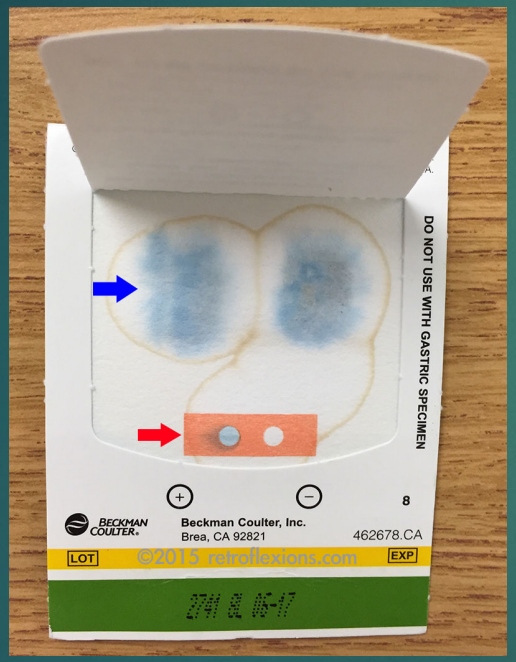


Currently-available CRC screening tests



Stool-based tests

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- WHAT WILL YOU DO WITH A POSITIVE TEST?

Currently-available CRC screening tests

Direct visualization

- Colonoscopy
- Flexible sigmoidoscopy
- CT Colonography

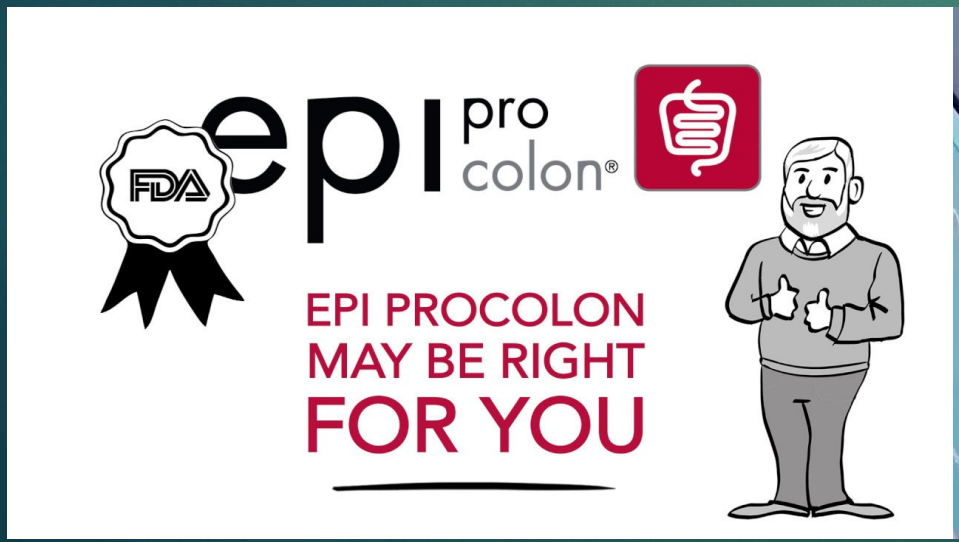
Stool-based tests

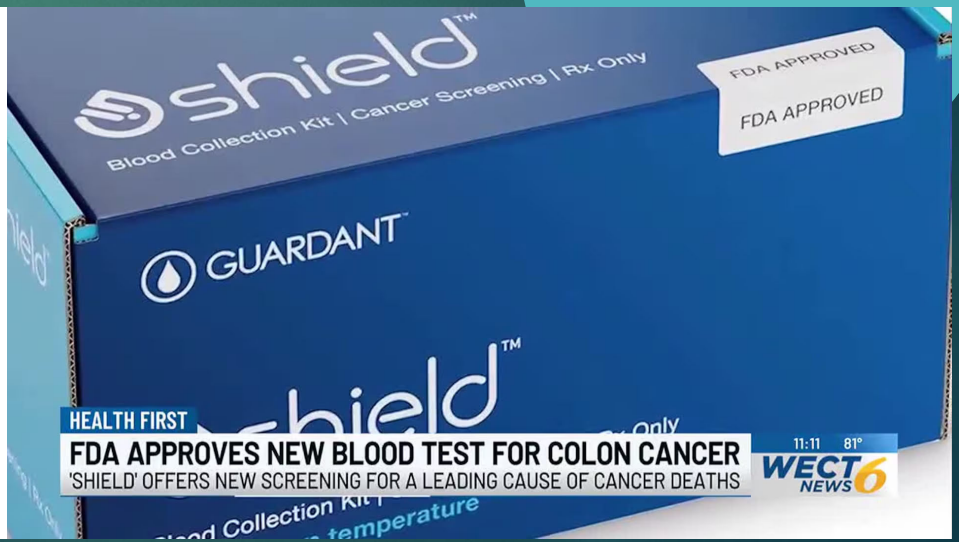
- Fecal immunochemical testing (FIT)
- Multi-target stool DNA test (mtDNA)
- High-sensitivity guiac testing (HS-gFOBT)
- WHAT WILL YOU DO WITH A POSITIVE TEST?
- Know what you'll do before you order the test…

Currently-available CRC screening tests

Blood-based rests

- Shield ® (7/29/2024)
- Epi proColon ® (4/2016)



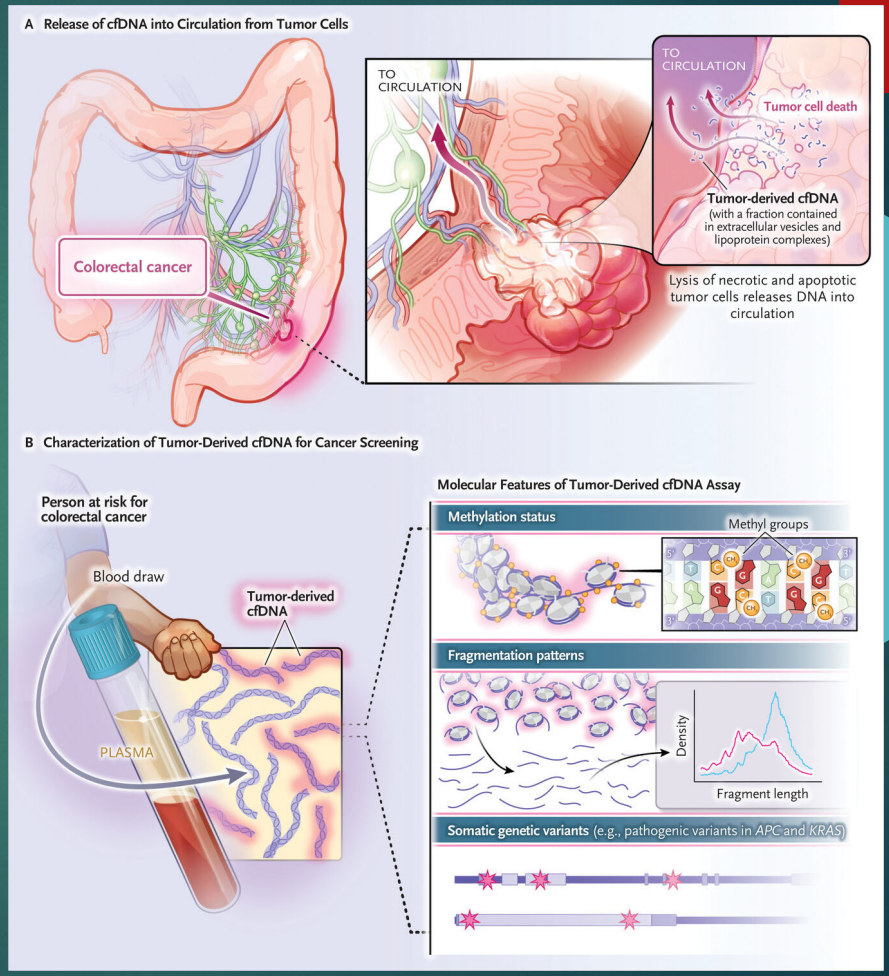


Novel and Emerging CRC Screening Test

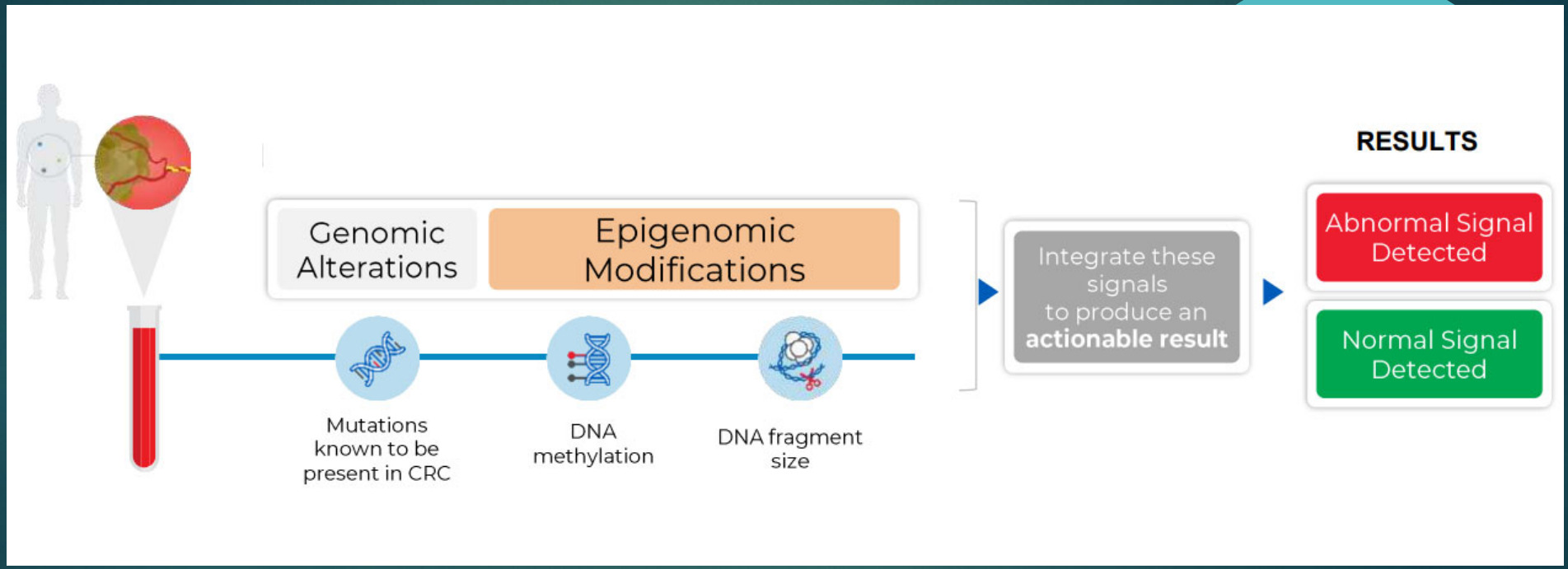
- ctDNA test (Shield test, Guardant Health)
- ctDNA and protein test (Freenome)

- MT-sRNA test (Colosense, Geneoscopy
- MT-sDNA test (Cologuard, Exact Sciences)

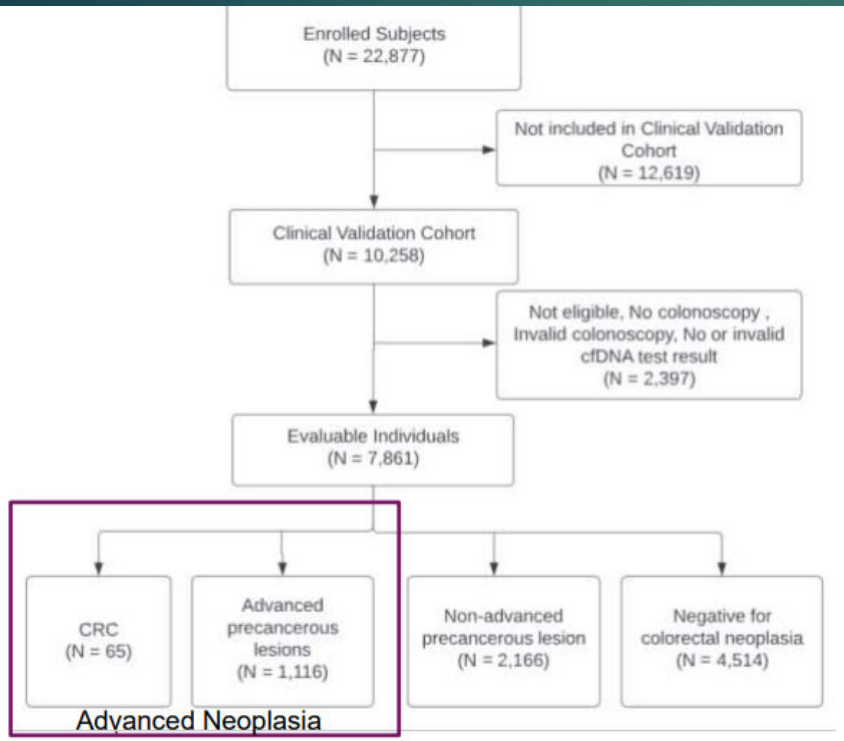
ECLIPSE Trial



ECLIPSE Trial
cfDNA Blood – based CRC screening test



ECLIPSE Trial: Enrolled Participants



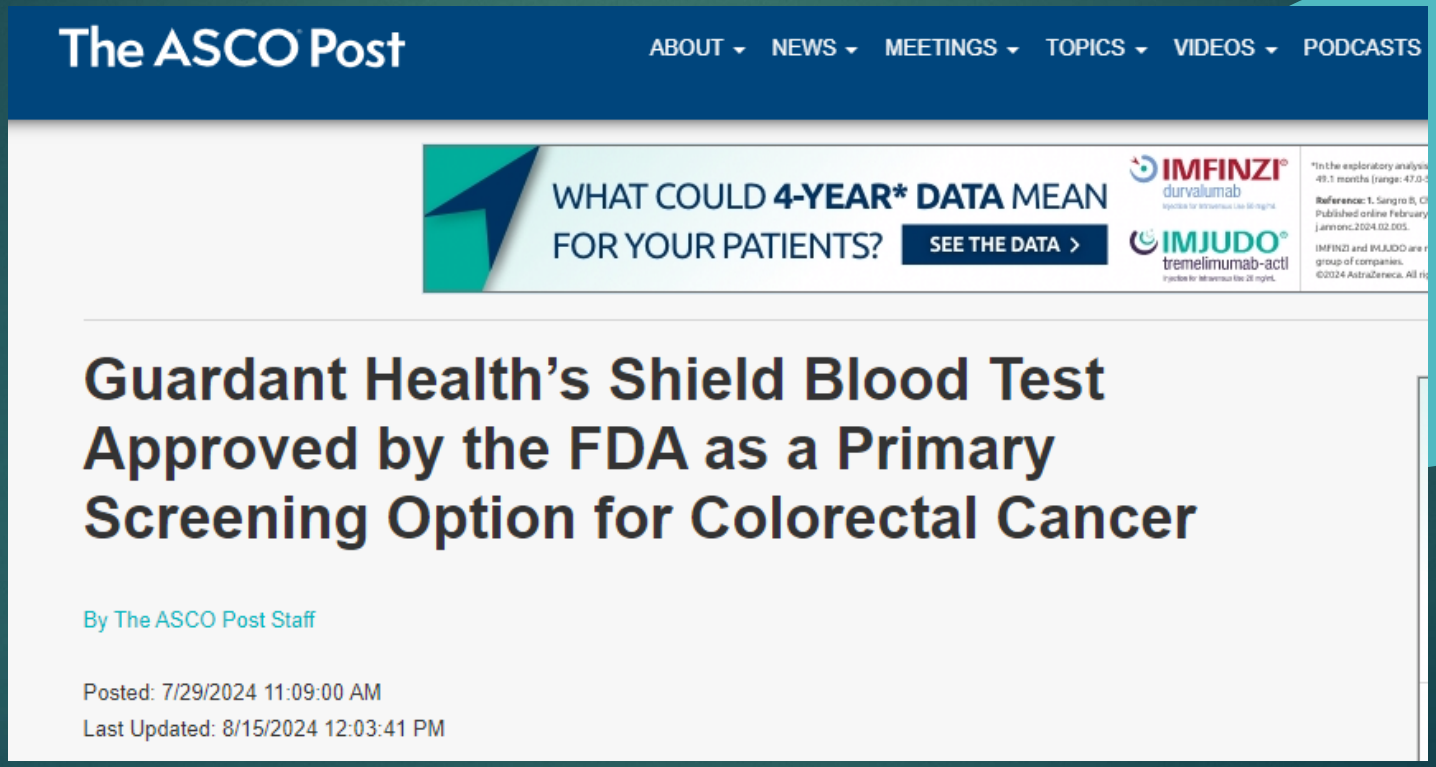
Colonoscopy Outcome	Histopathology Definition
CRC	CRC
Advanced Precancerous Lesion	Carcinoma in situ High Grade Dysplasia Villous architecture >25% Tubular Adenoma > 10mm Sessile Serrated Lesion > 10mm
Non-advanced precancerous lesion	Adenoma and sessile serrated lesion < 10mm
Negative for colorectal neoplasia	Negative colonoscopy Hyperplastic polyps

Test Performance

Table 2. Sensitivity and Specificity of the Cell-free DNA (cfDNA) Blood-Based Test for the Most Advanced Findings on Colonoscopy.*

Variable	Most Advanced Finding on Colonoscopy	cfDNA Blood-Based Test	
		Positive Test	Sensitivity (95% CI)
	no.	*no.*	%
Colorectal cancer			
Any	65	54	83.1 (72.2–90.3)
Stage I, II, or III*	48	42	87.5 (75.3–94.1)
Advanced precancerous lesions†	1116	147	13.2 (11.3–15.3)
			Specificity (95% CI)
Nonadvanced adenomas, nonneoplastic findings, and negative colonoscopy	6680	698	89.6 (88.8–90.3)
Nonneoplastic findings and negative colonoscopy	4514	457	89.9 (89.0–90.7)

* Excluded were 10 stage IV and 7 pathologically confirmed, incompletely staged colorectal cancers.
† Advanced precancerous lesions include advanced adenomas and sessile serrated lesions at least 10 mm in the largest dimension.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IMJUDO
tremelimumab-actl
Guardant Health's Shield Blood Test Approved by the FDA as a Primary Screening Option for Colorectal Cancer
By The ASCO Post Staff
Posted: 7/29/2024 11:09:00 AM
Last Updated: 8/15/2024 12:03:41 PM

Next generation Multi target Stool DNA test

Table 1. Sensitivity and Specificity of the Next-Generation Multitarget Stool DNA Test and the Commercial FIT.*

Variable	Colonoscopy (N=20,176)	Next-Generation Multitarget Stool DNA Test (N=20,176)		FIT (N=20,176)	
	No. of Participants	No. of Results	Assessment (95% CI)	No. of Results	Assessment (95% CI)
			%		%
Sensitivity					
Colorectal cancer					
Any	98	92	93.9 (87.1–97.7)†	66	67.3 (57.1–76.5)
Stage I, II, or III‡	82	76	92.7 (84.8–97.3)	53	64.6 (53.3–74.9)
Advanced precancerous lesions	2,144	931	43.4 (41.3–45.6)†	500	23.3 (21.5–25.2)
High-grade dysplasia	114	85	74.6 (65.6–82.3)	54	47.4 (37.9–56.9)
Specificity					
Advanced neoplasia§	17,934	16,245	90.6 (90.1–91.0)	16,997	94.8 (94.4–95.1)¶
Nonneoplastic findings or negative colonoscopy‖	10,961	10,156	92.7 (92.2–93.1)	10,492	95.7 (95.3–96.1)
Negative colonoscopy**	7,510	7,012	93.4 (92.8–93.9)	7,207	96.0 (95.5–96.4)

Positive testing…what it really means

- Discuss these are SCREENING tests
- Discuss the risk of false positives
- Discuss follow-up plan and follow-up interval
- This is probably not a MyChart message…
- In nearly all cases, the next step is going to be a colonoscopy
- Where you send them matters!

NOT ALL COLONOSCOPIES ARE EQUAL

Quality Indicators for Colonoscopy

Douglas K. Rex, MD, MACG[1], Joseph C. Anderson, MD, FACG[2,3,4], Lynn F. Butterly, MD, FACG[5,6,7], Lukejohn W. Day, MD, FACG[8,9], Jason A. Dominitz, MD, MHS, FACG[10,11], Tonya Kaltenbach, MD, MS, FACG[12,13], Uri Ladabaum, MD[14], Theodore R. Levin, MD, FACG[15], Aasma Shaukat, MD, MPH, FACG[16], Jean-Paul Achkar, MD, FACG[17], Francis A. Farraye, MD, MSc, MACG[18], Sunanda V. Kane, MD, MSPH, FACG[19] and Nicholas J. Shaheen, MD, MPH, MACG[20]

Am J Gastroenterol 2024;00:1–27. https://doi.org/10.14309/ajg.0000000000002972

What makes a quality colonoscopy?

- Frequency with which colonoscopy is performed for an appropriate indication and the indication is documented.
  Performance target: ≥95%
- Percentage of patients undergoing colonoscopy with adequate bowel preparation, preferably defined as Boston Bowel Preparation Scale score ≥2 in each of 3 colon segments or by description of the preparation as excellent, good, or adequate. The recommended screening or surveillance interval should be consistent with US MSTF recommendations.
  Performance target: ≥90%
- Percentage of patients undergoing colonoscopy with intact colons who have full intubation of the cecum with photo documentation of cecal landmarks.
  Performance target: ≥95%

What makes a quality colonoscopy?

- Percentage of patients aged ≥45 years undergoing colonoscopy for screening, surveillance, or diagnostic indications other than positive noncolonoscopy screening tests (e.g., fecal tests or CT colonography) who have 1 or more conventional adenomas detected and verified by pathology. Patients with positive noncolonoscopy screening tests, genetic cancer syndromes (e.g., polyposis), IBD, or undergoing colonoscopy for therapy of known neoplasms are excluded from the calculation. Performance target: ≥35%
- Percentage of patients with positive fecal screening tests (fecal blood or mt-sDNA) with 1 or more conventional adenomas resected and documented by pathology.
  Performance target: ≥50%

What makes a quality colonoscopy?

- Number of conventional adenomas detected per colonoscopy in patients aged ≥45 years with indications of screening, surveillance, or diagnosis of symptoms. Patients with positive noncolonoscopy screening tests, genetic cancer syndromes (e.g., polyposis), IBD, or undergoing colonoscopy for therapy of known neoplasms are excluded from the calculation.
  Performance target: ≥0.6
- Percentage of patients ages ≥45 years undergoing screening, surveillance, or diagnostic colonoscopy for symptoms with 1 or more sessile serrated lesions (SSLs) removed and documented by pathology. Patients with positive noncolonoscopy screening tests, genetic cancer syndromes (e.g., polyposis), IBD, or undergoing colonoscopy for therapy of known neoplasms are excluded from the calculation.
  Performance target: ≥6%

What makes a quality colonoscopy?

- Average withdrawal time in normal colonoscopies without biopsy sampling or polypectomies in persons aged ≥45 years undergoing screening, surveillance, or diagnostic colonoscopy. Patients with positive non colonoscopy screening tests, genetic cancer syndromes (e.g., polyposis), IBD, or undergoing colonoscopy for therapy of known neoplasms are excluded from the calculation.
  Performance target: ≥8 minutes

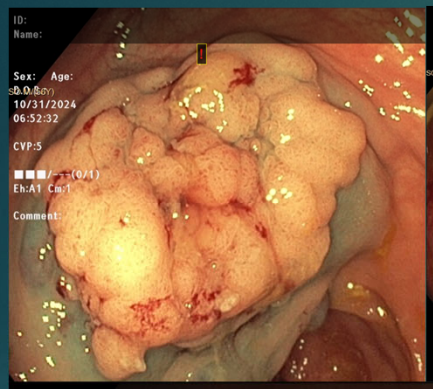
What makes a quality colonoscopy?

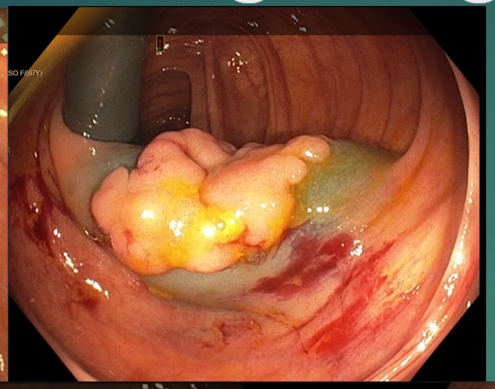
- Percentage of polyp resections for which the report documents the lesion size, shape, location, and method of resection.
  Performance target: ≥98%
- Percentage of 4- to 9-mm lesions that are resected using a cold snare.
  Performance target: ≥90%

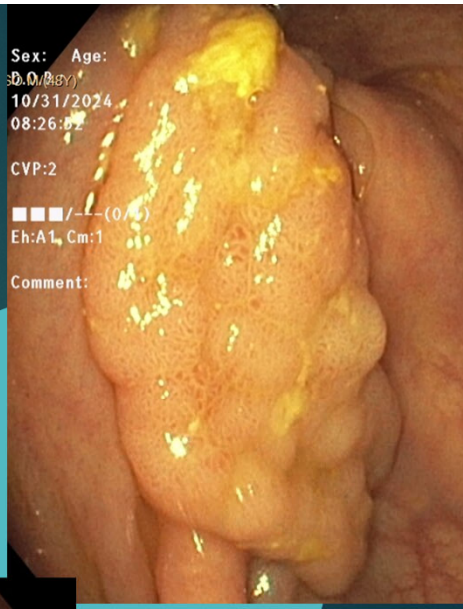
What makes a quality colonoscopy?

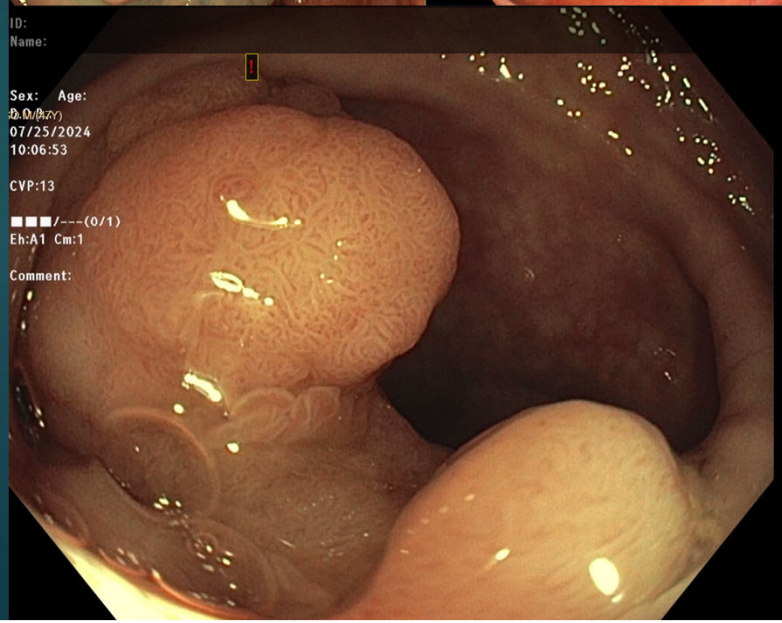
- Frequency with which colonoscopies follow recommended postpolypectomy and post–cancer resection surveillance intervals and frequency of 10-year intervals between screening colonoscopies in average-risk patients who have negative examination results and adequate bowel cleansing.
  Performance target: ≥90%.
- Proportion of serious adverse events (SAEs; perforation, postpolypectomy bleeding, and mortality) associated with colonoscopy that are tracked, documented, and reviewed by a quality improvement committee to assess for system and clinical areas of improvement.
  Performance target: ≥95%

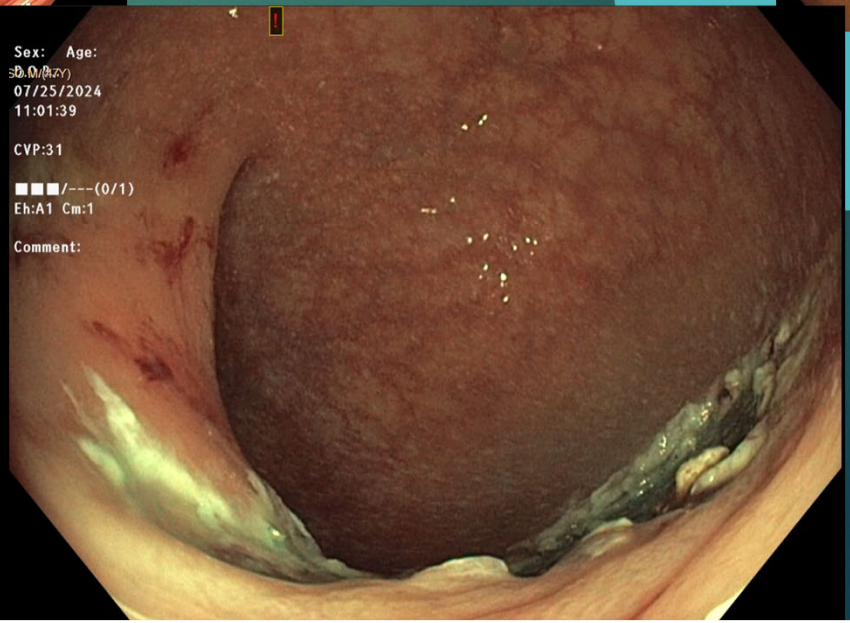
How to manage big polyps











Considerations for management of advanced polyps

- Financial
- Patient preferences
- Geography
- Need for follow-up
- Health trajectory/life expectancy

Management of Advanced Polyps

- Surgical resection
- Endoscopic Mucosal Resection
- Endoscopic Submucosal Dissection
- Endoscopic Full-thickness Resection

Objectives

- Upon completion of this educational activity, you will be able to:
  - Identify appropriate patients for "average risk" colon and rectal cancer screening
  - Classify patients who are considered "high risk" for colon and rectal cancer
  - Identify reasons to stop colon and rectal cancer screening
  - Discuss currently available options for colon and rectal cancer screening
  - Review upcoming options for colon and rectal cancer screening
  - Describe the indications for technical differences between surgical resection, endoscopic mucosal resection (EMR), endoscopic submucosal resection (ESD) and full thickness resection (FTR)