Colorectal Cancer Screening and Advances in Colorectal Cancer Treatment

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Regional Medical Director and Cancer Committee Chairman
Huntington Cancer Center, an Affiliate of Cedars-Sinai Cancer
Medical Director, Surgical Growth Strategy, Huntington Health
State Chair, Zone S, American College of Surgeons Commission on Cancer

June 22, 2024 L.A. Care Cancer Screenings Conference In Collaboration with American Cancer Society
Hilton San Gabriel, CA

Disclosures

The following CME Planners do not have relevant financial relationships with ineligible companies in the past 24 months:

- Leilanie Mercurio, L.A. Care Provider Continuing Education (PCE) Program Manager, CME Planner.
- Bridget Freeley, Associate Director, State Partnerships, American Cancer Society, CME Planner.

The following ineligible companies have relevant financial relationships with Presenter Howard Kaufman, MD, MBA, FACS, Regional Medical Director of the Huntington Cancer Center, an affiliate of Cedars-Sinai Cancer; and Medical Director of Surgery Services Growth, Huntington Health.

- Medtronic – Advisory Board; ROMTech – Investor; and Pacira Biosciences – Consultant.

Dr. Howard Kaufman is on the Advisory Board of Medtronic; an investor of ROMTech and a consultant for Pacira Biosciences.

All relevant financial relationships of Dr. Howard Kaufman, CME Faculty, with ineligible companies have been mitigated.

An ineligible company is any entity whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.

Commercial support was not received for this CME/CE activity.

Learning Objectives

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1. Summarize options for colorectal cancer screening.
2. Identify differences in colorectal cancer incidence and mortality by sex, race, and ethnicity.
3. Specify American Cancer Society screening recommendations for individuals considered to be at average risk for colorectal cancer.
4. List at least two strategies to eliminate disparities in colorectal cancer screening outcomes.

Agenda

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- Colorectal cancer burden
- Age, ethnic, and racial disparities
- Screening – recommendations and options
- Reducing disparities in colorectal cancer screening and outcomes
- Prevention

- What's new in treatment
  - Opioid reducing strategies
  - Immunotherapy - checkpoint inhibitors
  - Watch and wait for rectal cancer

Colorectal Cancer Statistics

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- 3rd most common cancer in US
- 2nd leading cause of cancer death
- Incidence - 2024
  - Colon cancer – 106,590
  - Rectal cancer – 46,220
- Deaths – 53,010
- Adults born ~1990 have 2X risk of colon cancer and 4X risk of rectal cancer than those born in 1950

Colorectal Cancer Statistics - 2023

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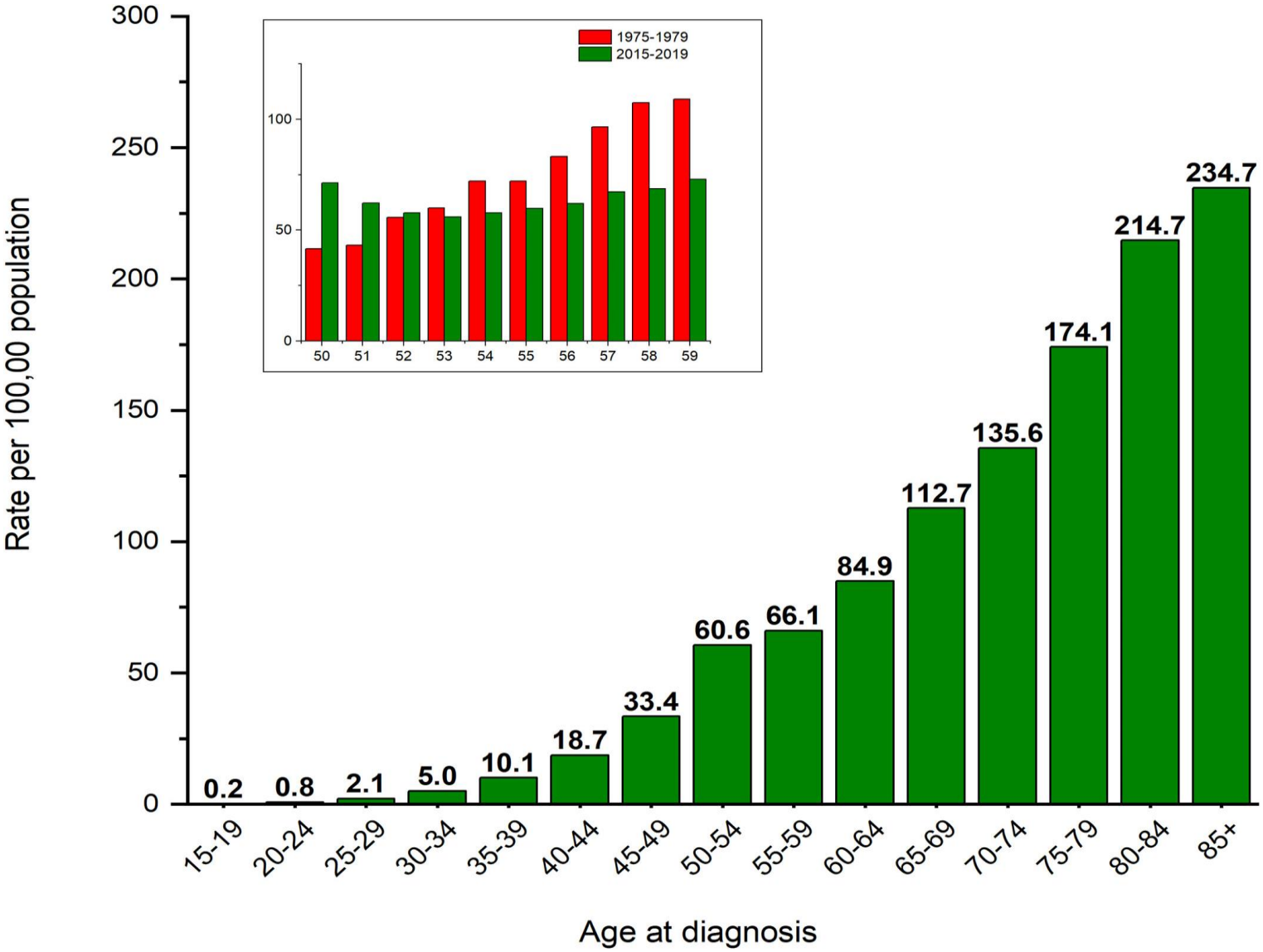

CA: A Cancer Journal for Clinicians, Volume: 73, Issue: 3, Pages: 233-254, First published: 01 March 2023, DOI: (10.3322/caac.21772

Trends in Incidence and Mortality

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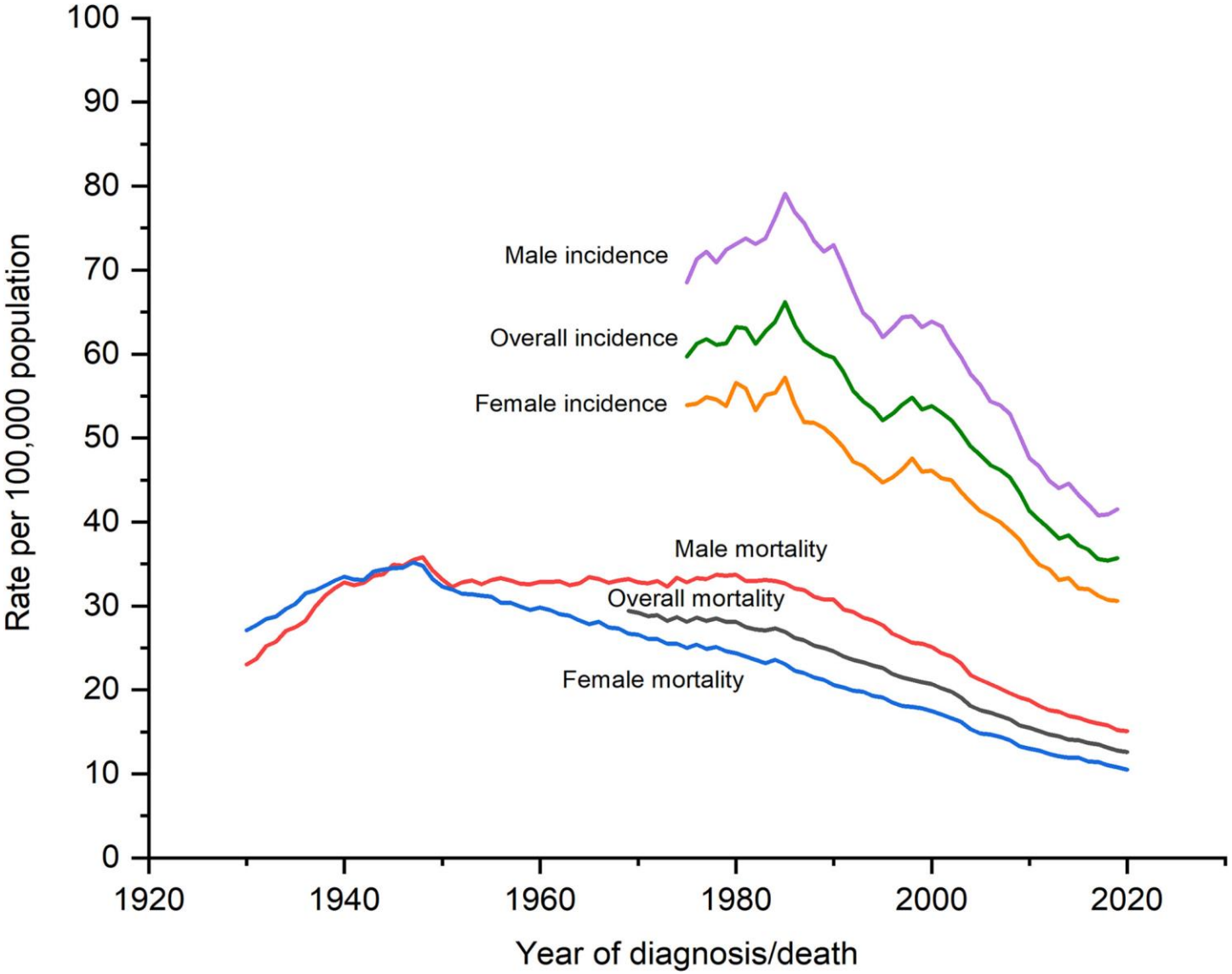

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Trends in CRC by Age and Stage

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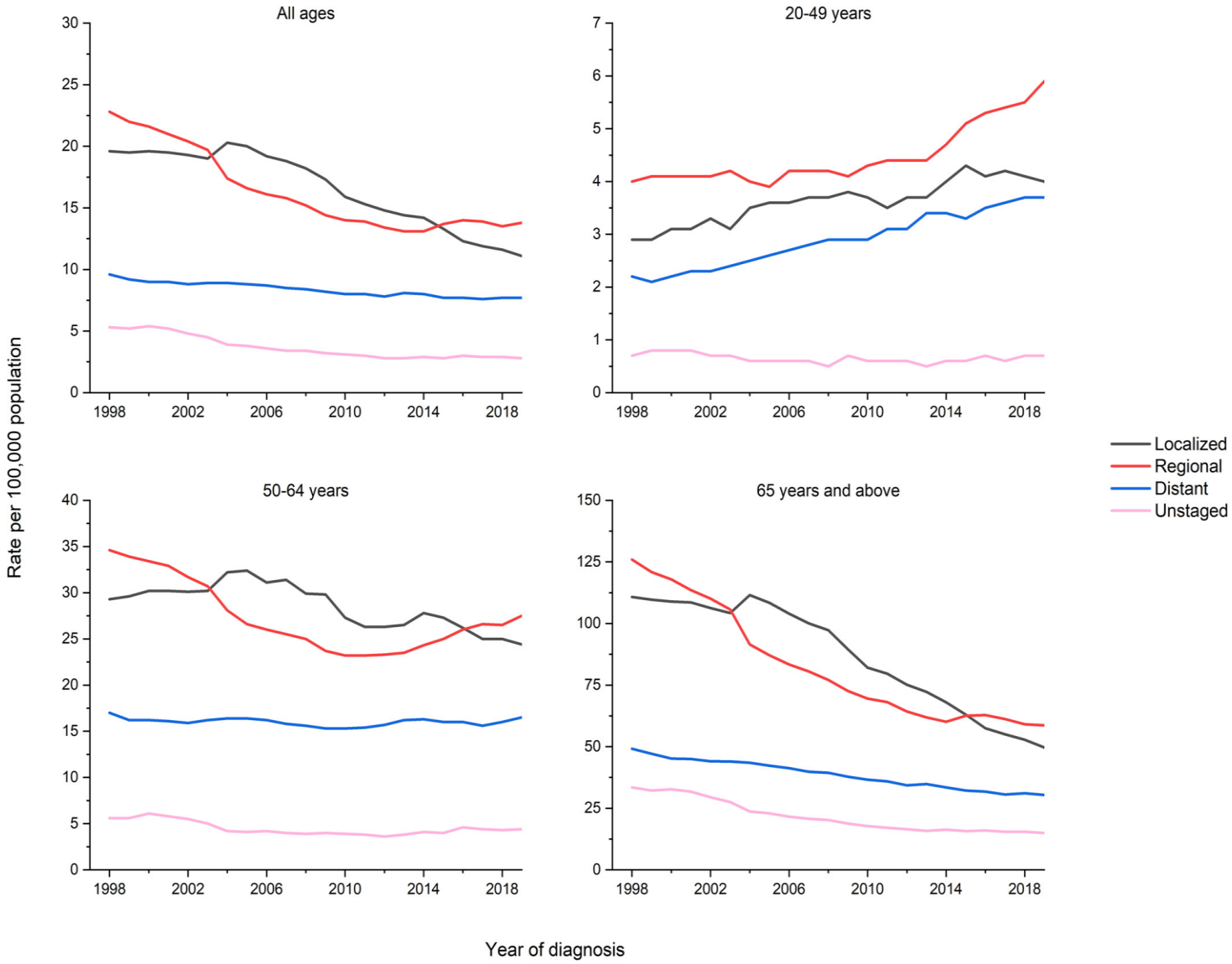

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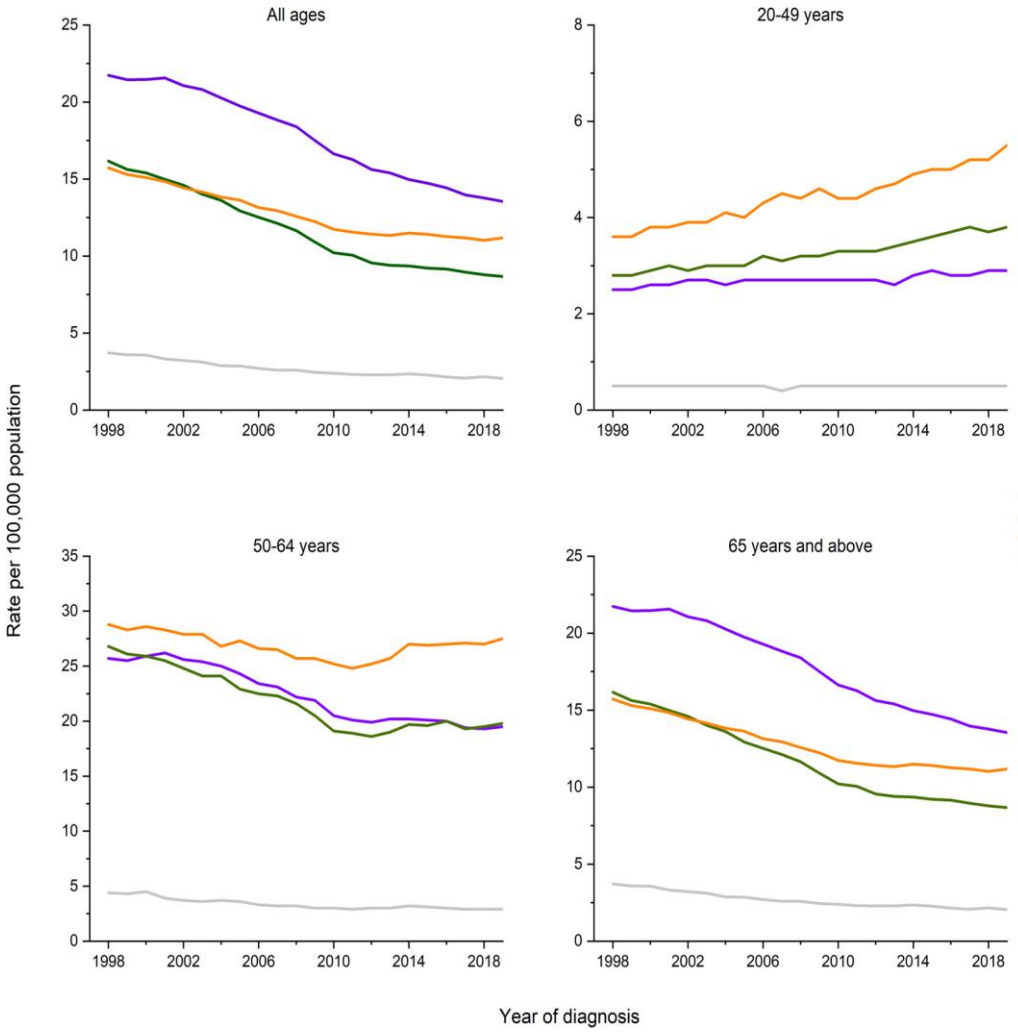
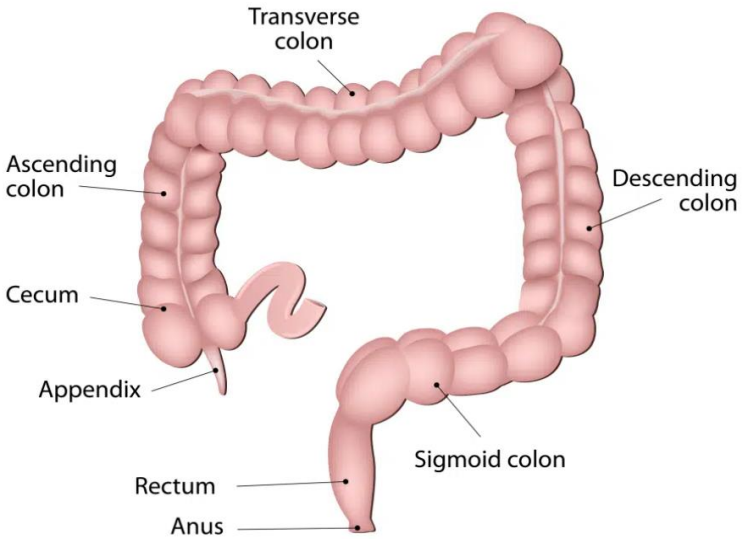
Trends in CRC by Age and Subsite





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CRC Incidence and Mortality by Sex, Race, Ethnicity

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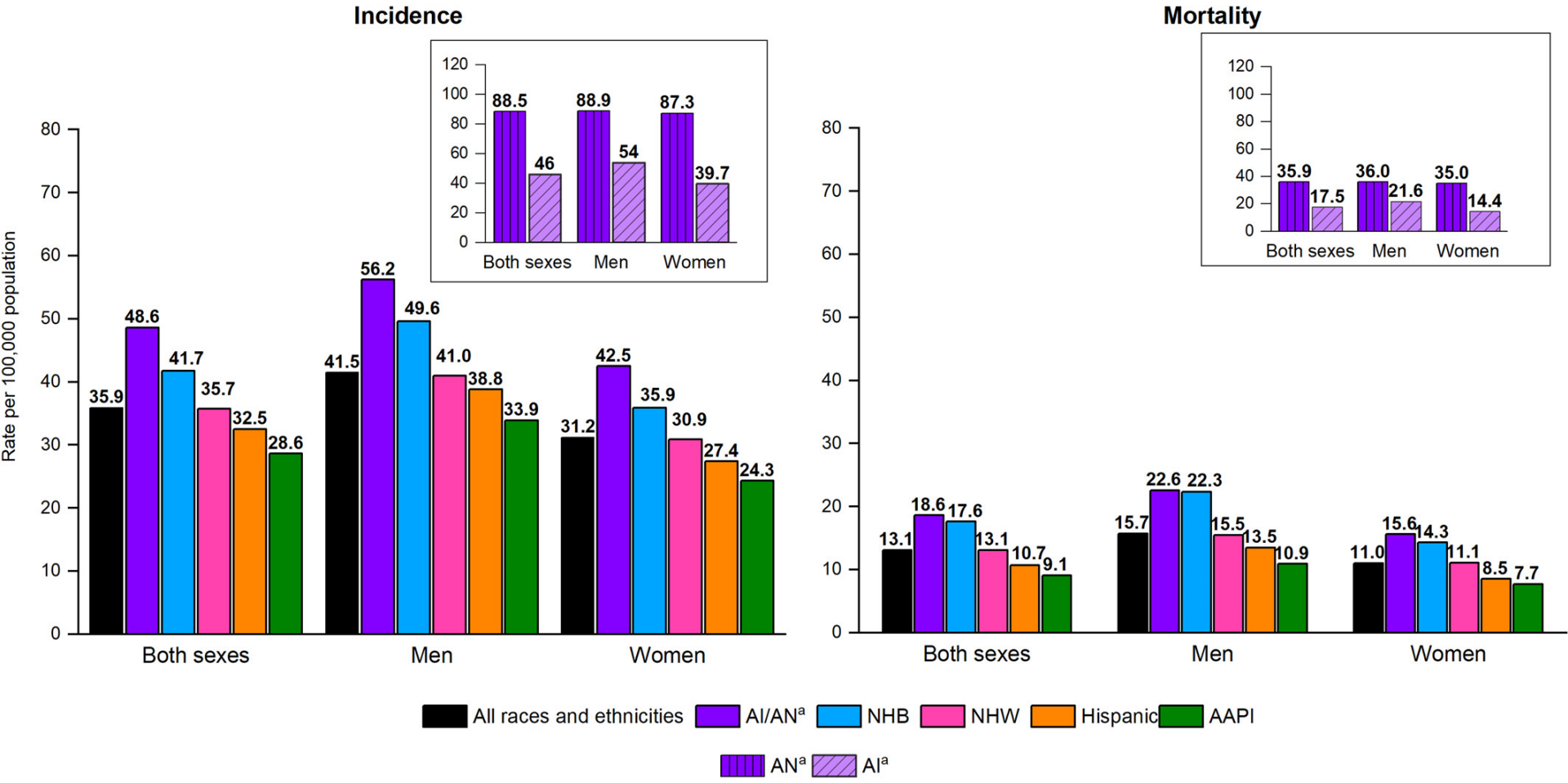

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CRC Stage Distribution by Age, Race, and Ethnicity (2015-2019)

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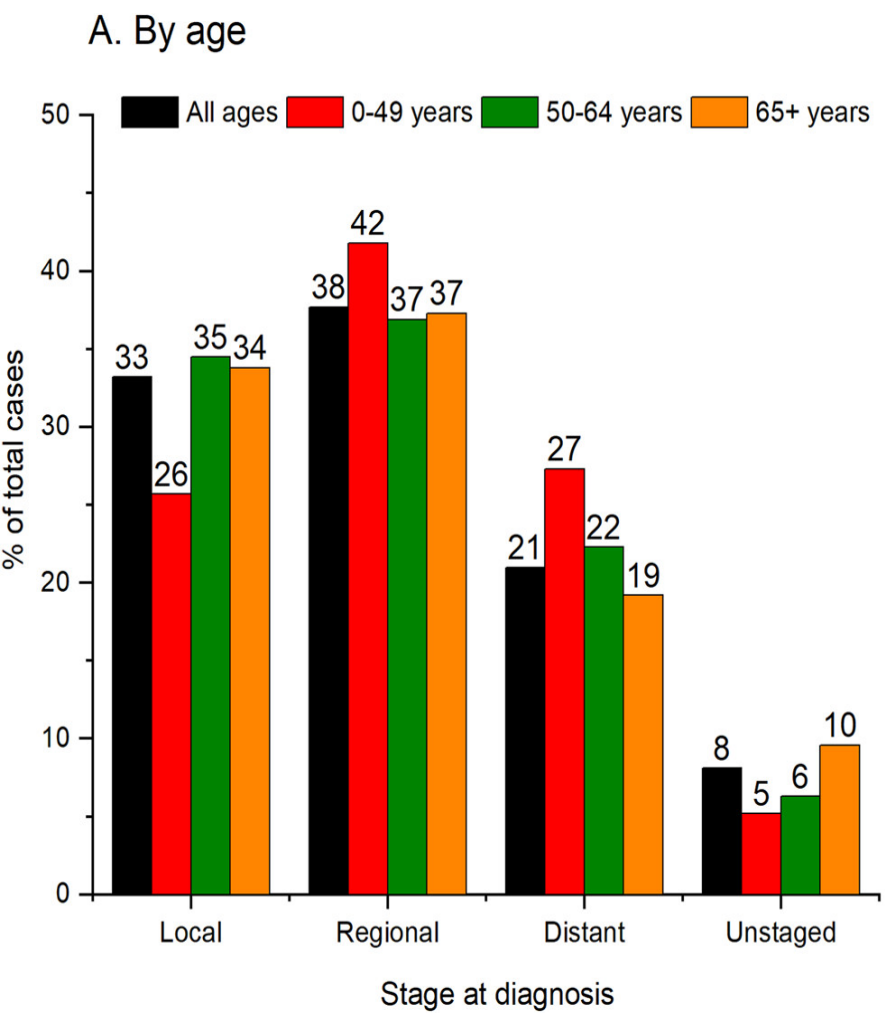

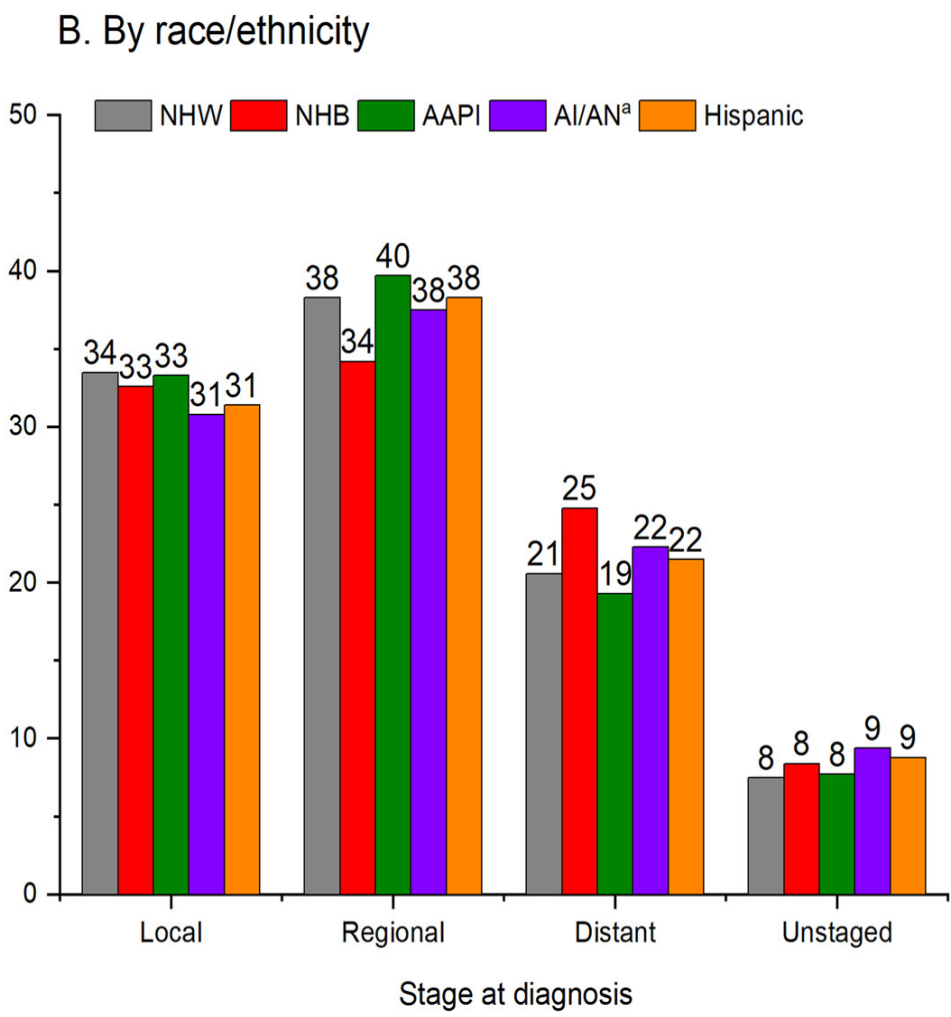

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Increasing Age Disparities in CRC

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Original Investigation

Increasing Disparities in the Age-Related Incidences of Colon and Rectal Cancers in the United States, 1975-2010

Christina E. Bailey, MD, MSCI; Chung-Yuan Hu, MPH, PhD; Y. Nancy You, MD, MHSc; Brian K. Bednarski, MD; Miguel A. Rodriguez-Bigas, MD; John M. Skibber, MD; Scott B. Cantor, PhD; George J. Chang, MD, MS

Baily CE et al. JAMA Surg. 2015;150(1):17-22. doi:10.1001/jamasurg.2014.1756

Increasing Age Disparities in CRC

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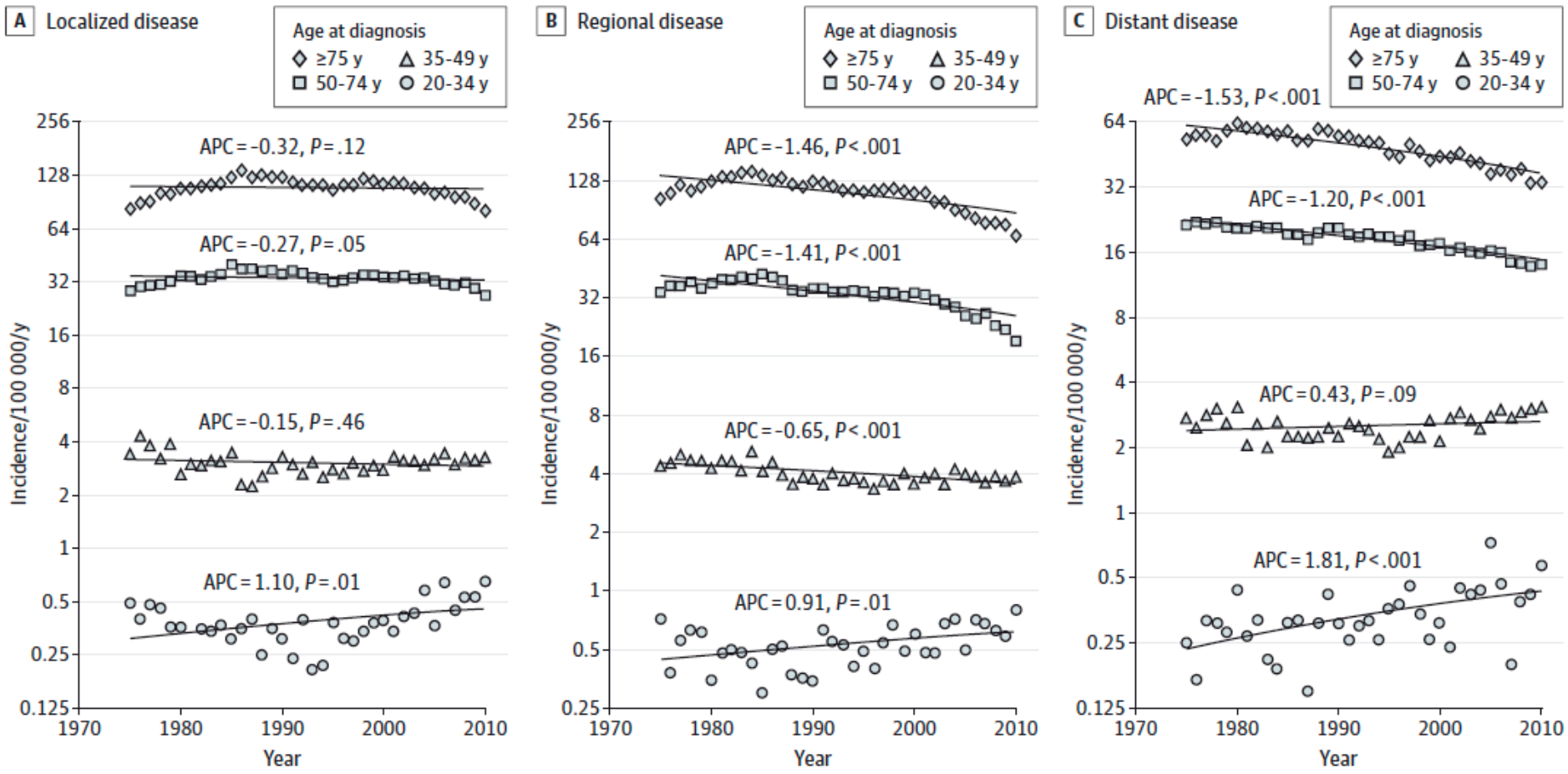
Figure 1. Annual Incidence Rates of Colon Cancer From 1975 to 2010



Rates are per 100 000 and age adjusted to the 2000 US standard population for localized disease (A), regional disease (B), and distant disease (C). The trend lines are logarithmic. APC indicates annual percentage change.

Baily CE et al. JAMA Surg. 2015;150(1):17-22. doi:10.1001/jamasurg.2014.1756

Increasing Age Disparities in CRC

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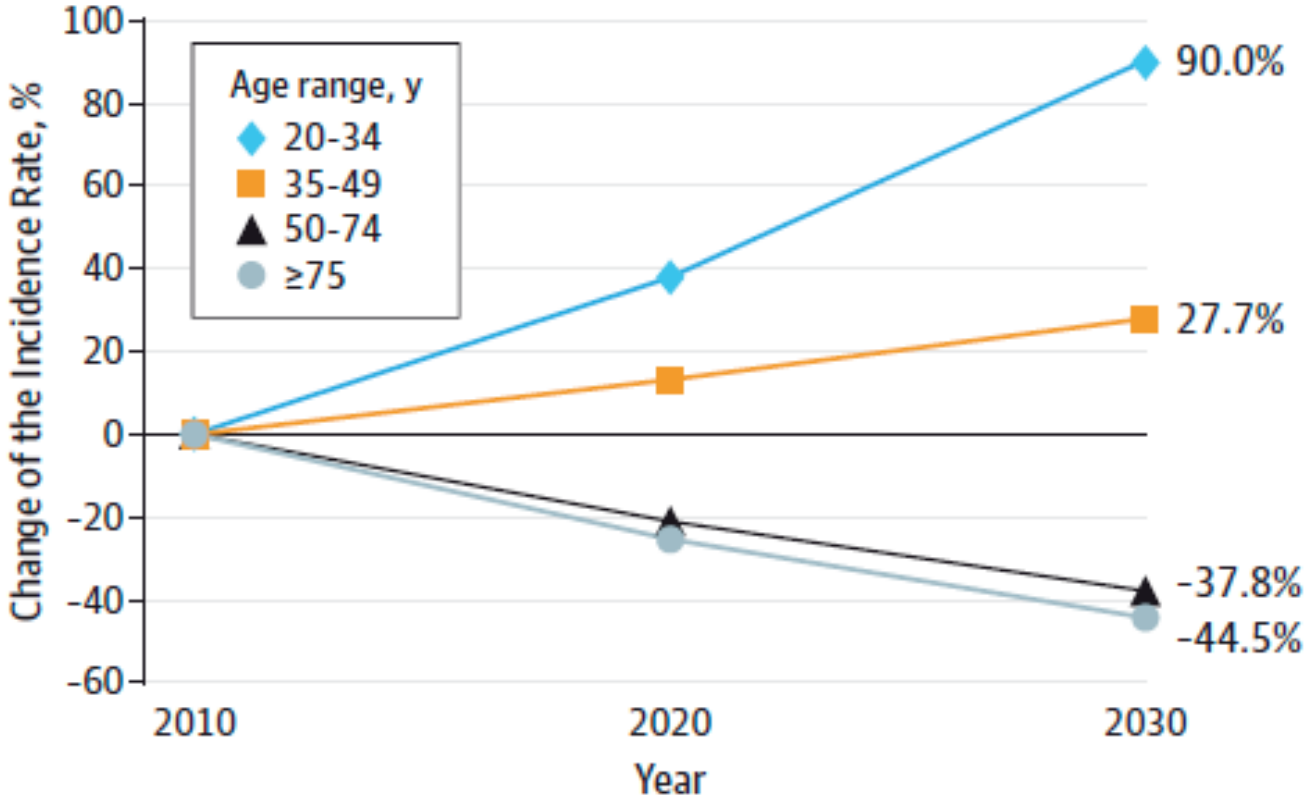
Figure 2. Annual Percentage Change–Based Predicted Incidence Rates of Colon Cancer by Age Compared With Incidence Rate in 2010



Baily CE et al. JAMA Surg. 2015;150(1):17-22. doi:10.1001/jamasurg.2014.1756

Increasing Age Disparities in CRC

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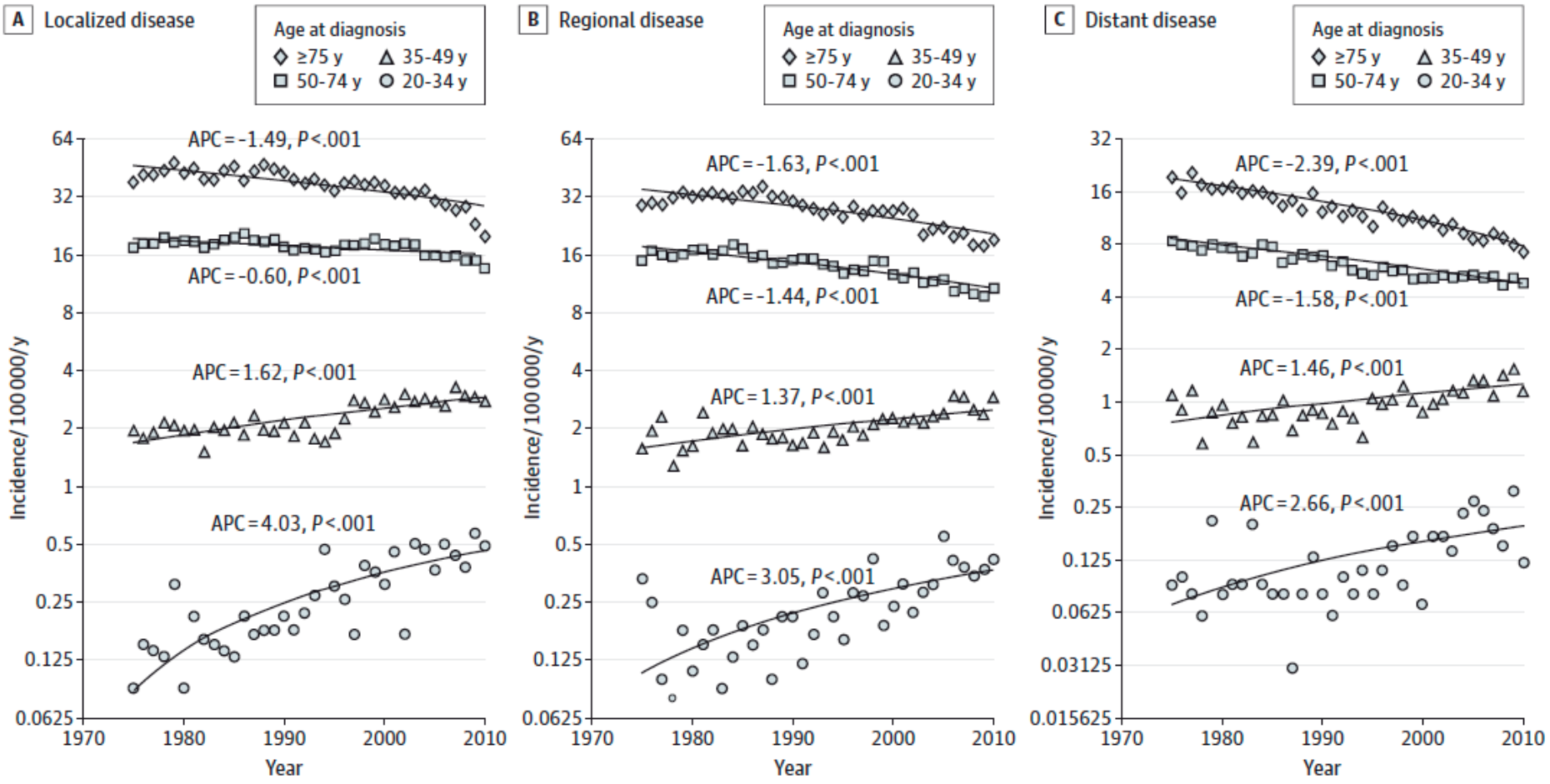
Figure 3. Annual Incidence Rates of Rectosigmoid and Rectal Cancers From 1975 to 2010



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Increasing Age Disparities in CRC

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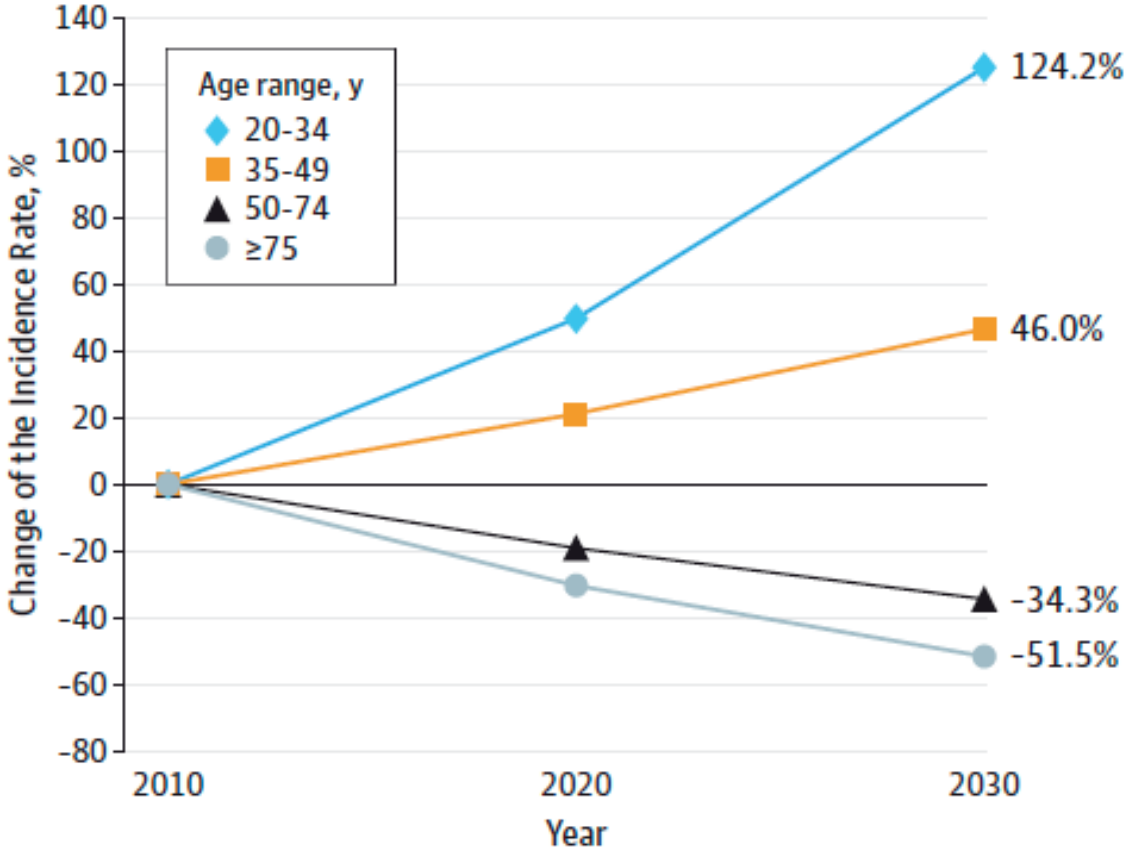
Figure 4. Annual Percentage Change–Based Predicted Incidence Rates of Rectosigmoid and Rectal Cancers by Age Compared With Incidence Rate in 2010



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Increasing Age Disparities in CRC

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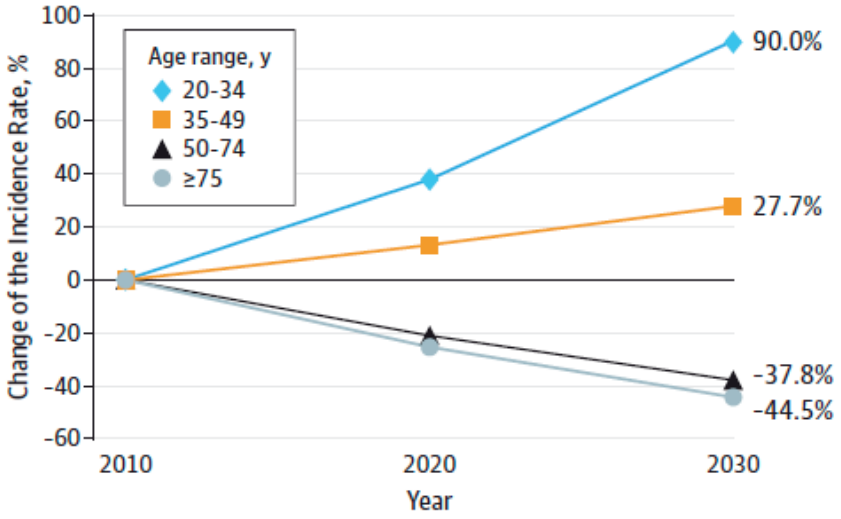

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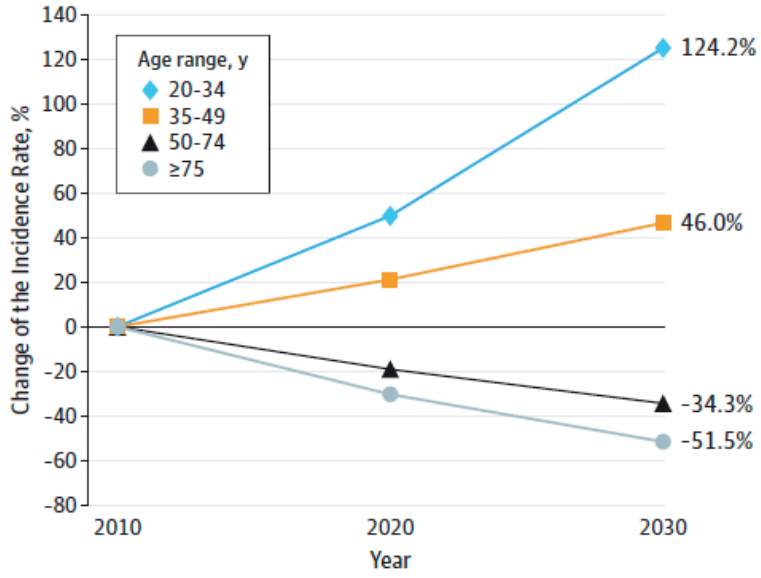

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Early Onset CRC

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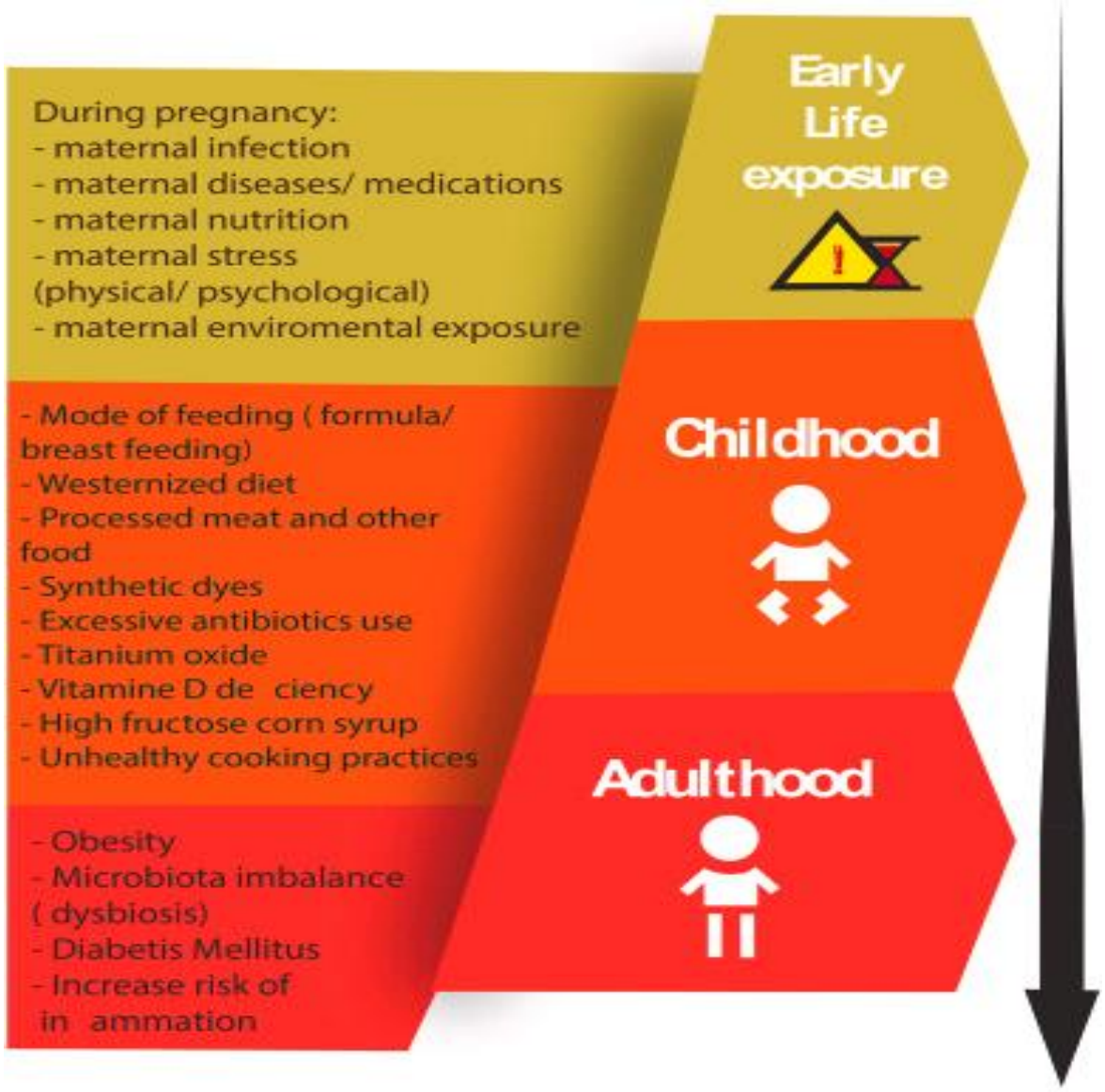

Accumulative risk factors for EOCRC

Early Onset CRC

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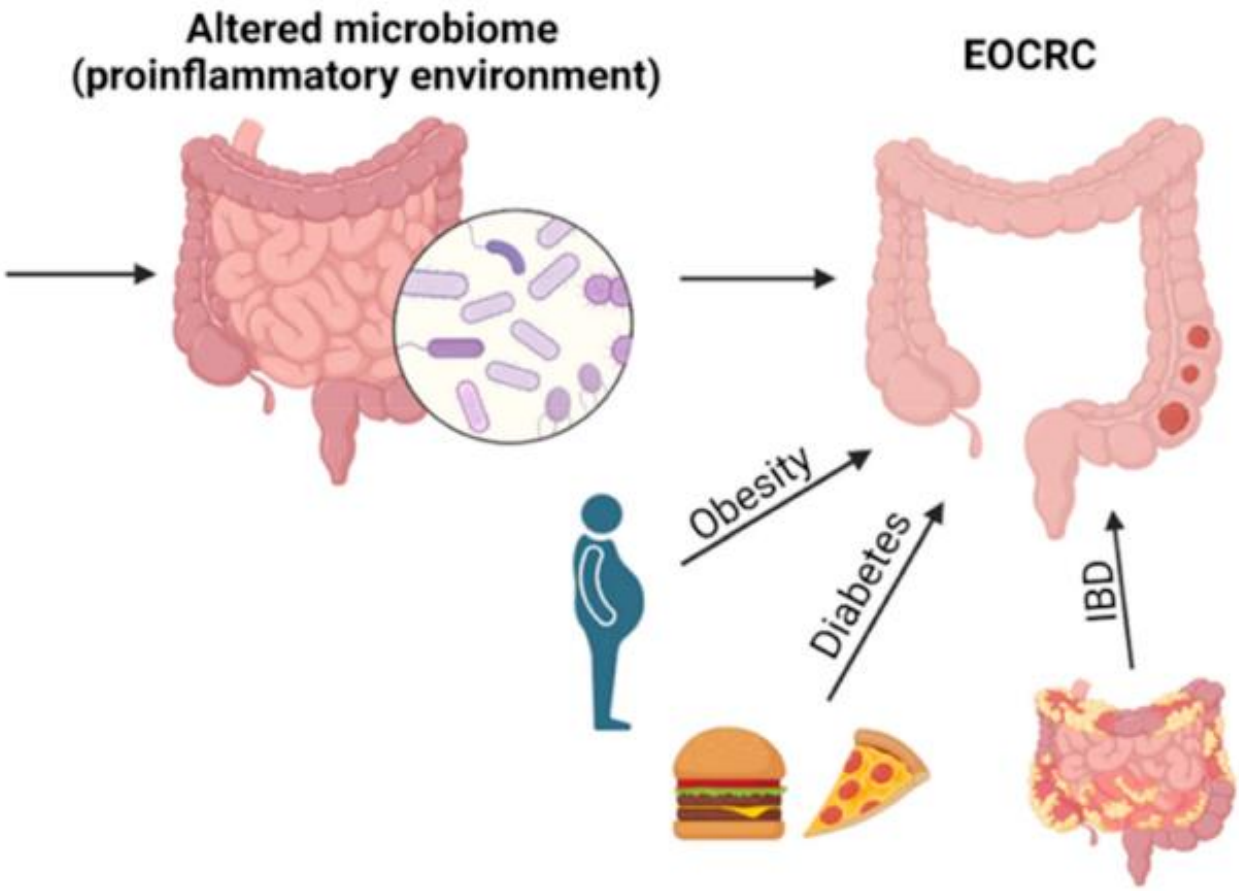
Risk Factors for EOCRC

- Western diet
- Red and processed meats
- Synthetic dyes
- High-fructose corn syrup
- Smoking & alcohol
- Physical inactivity
- Antibiotic exposure
- Genetic (hereditary cancer syndromes)



Cancers **2023**, *15*(12), 3202; https://doi.org/10.3390/cancers15123202

Molecular Subtypes in CRC

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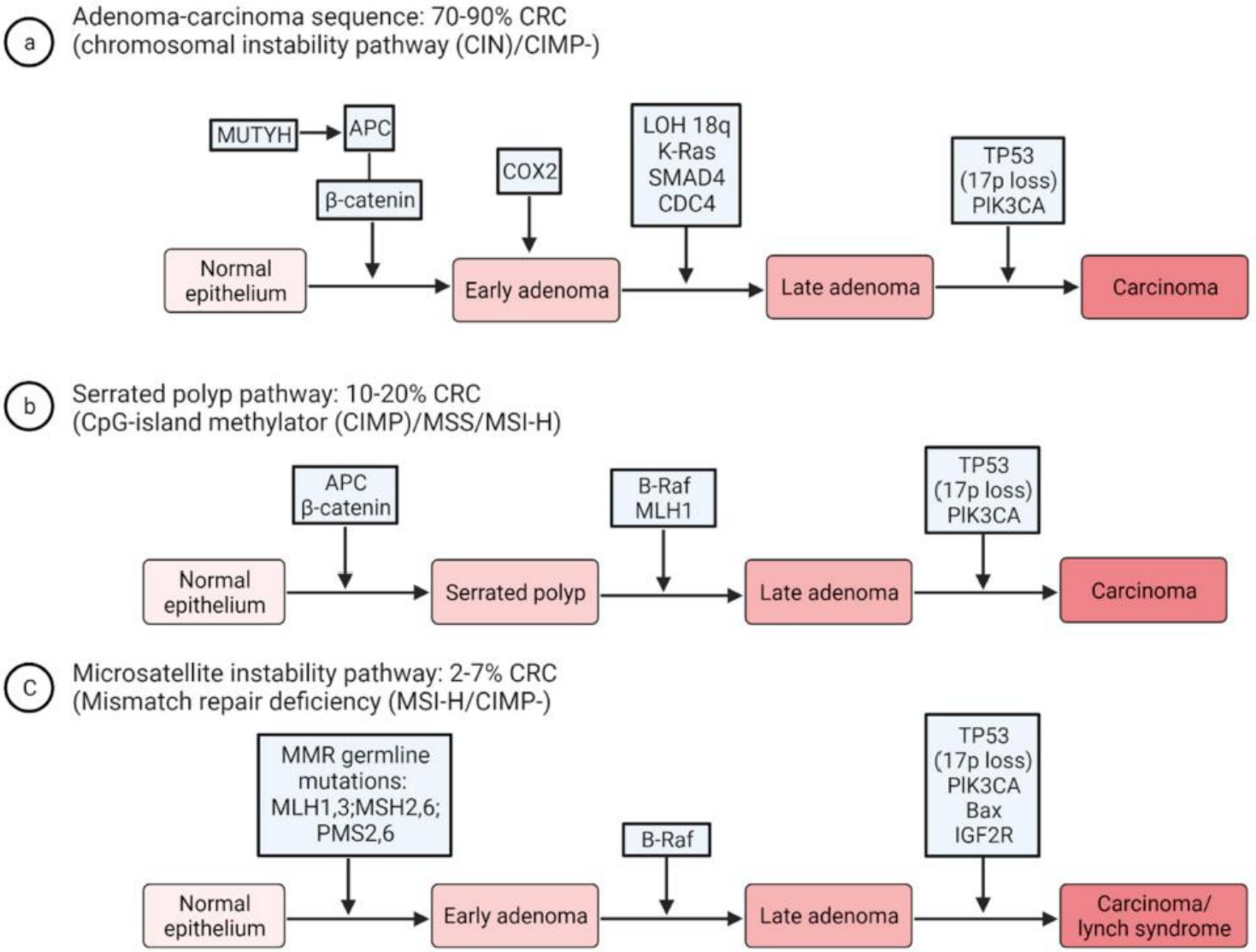

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Colorectal Cancer Statistics - 2023

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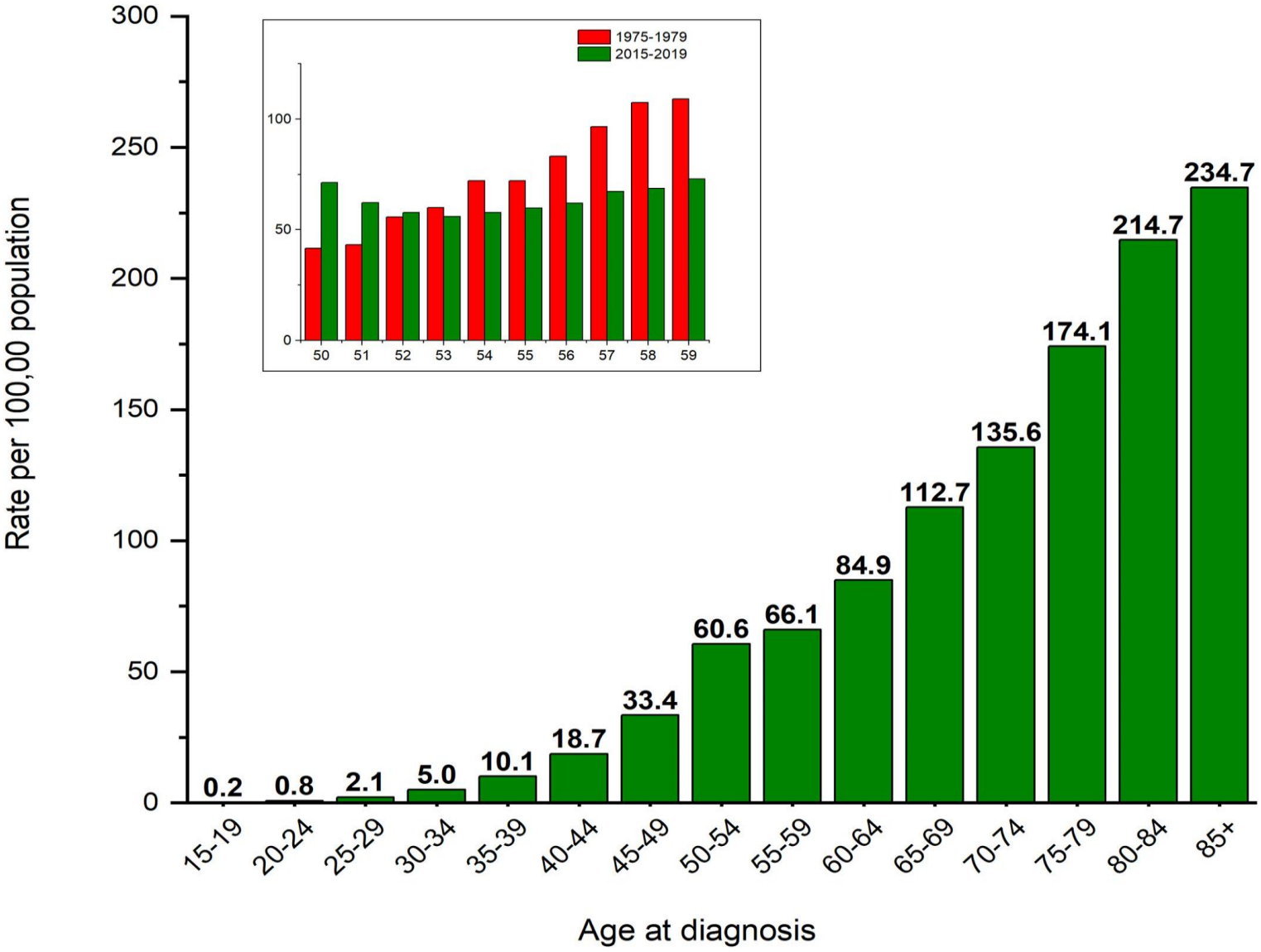

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CA CANCER J CLIN 2018;00:00–00

Colorectal Cancer Screening for Average-Risk Adults: 2018 Guideline Update From the American Cancer Society

Andrew M. D. Wolf, MD[1]; Elizabeth T. H. Fontham, MPH, DrPH[2]; Timothy R. Church, PhD[3]; Christopher R. Flowers, MD, MS[4]; Carmen E. Guerra, MD[5]; Samuel J. LaMonte, MD[6]; Ruth Etzioni, PhD[7]; Matthew T. McKenna, MD[8]; Kevin C. Oeffinger, MD[9]; Ya-Chen Tina Shih, PhD[10]; Louise C. Walter, MD[11]; Kimberly S. Andrews, BA[12]; Otis W. Brawley, MD[13]; Durado Brooks, MD, MPH[14]; Stacey A. Fedewa, PhD, MPH[15]; Deana Manassaram-Baptiste, PhD, MPH[16]; Rebecca L. Siegel, MPH[17]; Richard C. Wender, MD[18]; Robert A. Smith, PhD[19]

People at average risk

- Men and women should start regular screening at **age 45**
- People who are in good health and with a life expectancy of more than 10 years should continue regular colorectal cancer screening through **age 75**
- For people **ages 76 through 85**, the decision to be screened should be based on their preferences, life expectancy, overall health, and prior screening history
- People over **age 85** should no longer get colorectal cancer screening

Test Options for Colorectal Cancer Screening

Visual exams:

- Colonoscopy every 10 years, OR
- CT colonography (virtual colonoscopy)* every 5 years, OR
- Flexible sigmoidoscopy* every 5 years

* If a person chooses to be screened with a test other than colonoscopy, any abnormal test result should be followed up with colonoscopy.

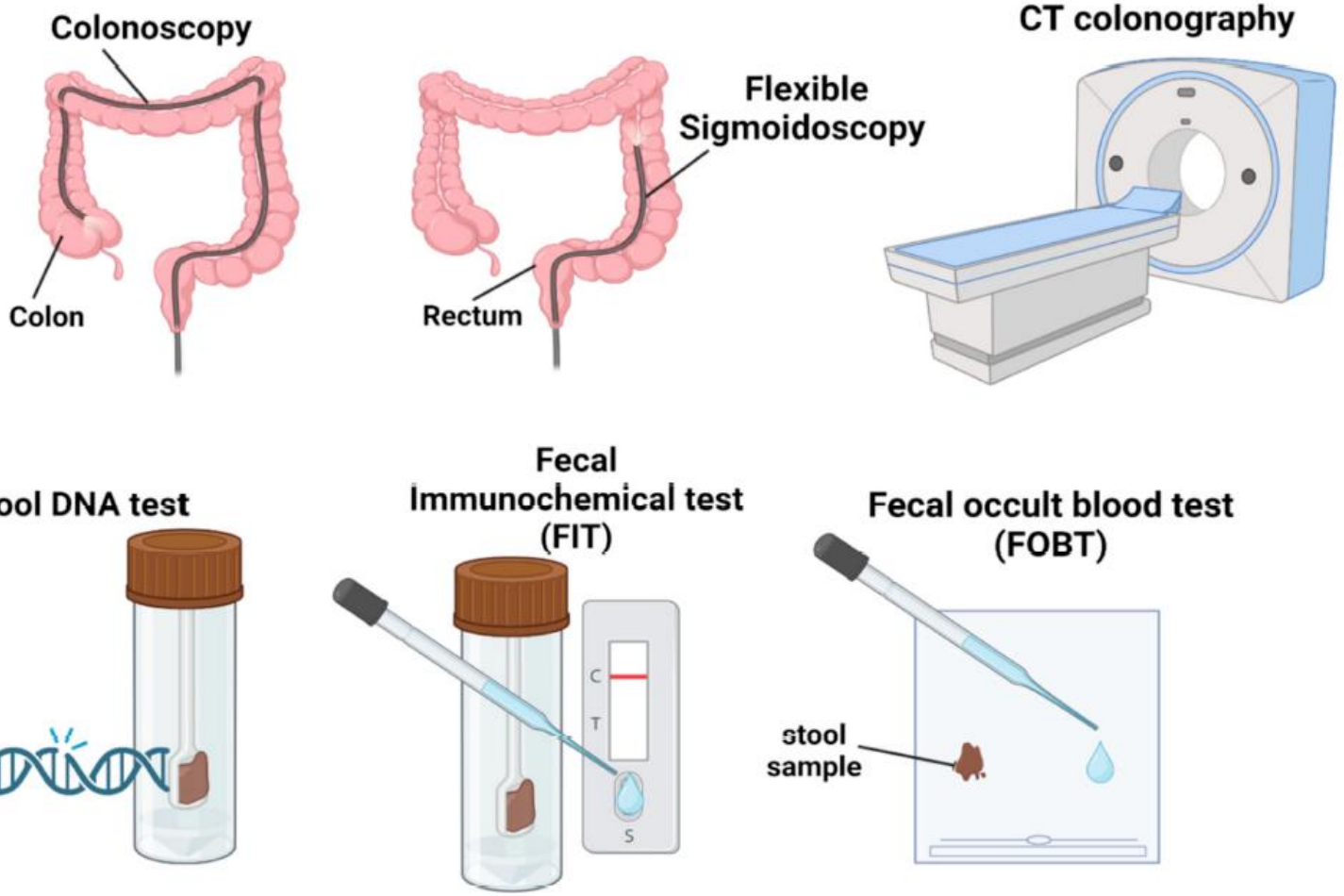
Test Options for Colorectal Cancer Screening

Stool-based tests:

- Highly sensitive fecal immunochemical test (FIT)* every year, OR
- Highly sensitive guaiac-based fecal occult blood test (gFOBT)* every year, OR
- Multi-targeted stool DNA test (MT-sDNA)* every 3 years

* If a person chooses to be screened with a test other than colonoscopy, any abnormal test result should be followed up with colonoscopy.

Screening Options



Cancers **2023**, *15*(12), 3202; https://doi.org/10.3390/cancers15123202

U.S. Preventive Services TASK FORCE 40 YEARS OF IMPROVING HEALTH

Final Recommendation Statement

Colorectal Cancer: Screening

May 18, 2021

Recommendation Summary

Population	Recommendation	Grade
Adults aged 50 to 75 years	The USPSTF recommends screening for colorectal cancer in all adults aged 50 to 75 years. See the "Practice Considerations" section and Table 1 for details about screening strategies.	A
Adults aged 45 to 49 years	The USPSTF recommends screening for colorectal cancer in adults aged 45 to 49 years. See the "Practice Considerations" section and Table 1 for details about screening strategies.	B
Adults aged 76 to 85 years	The USPSTF recommends that clinicians selectively offer screening for colorectal cancer in adults aged 76 to 85 years. Evidence indicates that the net benefit of screening all persons in this age group is small. In determining whether this service is appropriate in individual cases, patients and clinicians should consider the patient's overall health, prior screening history, and preferences.	C

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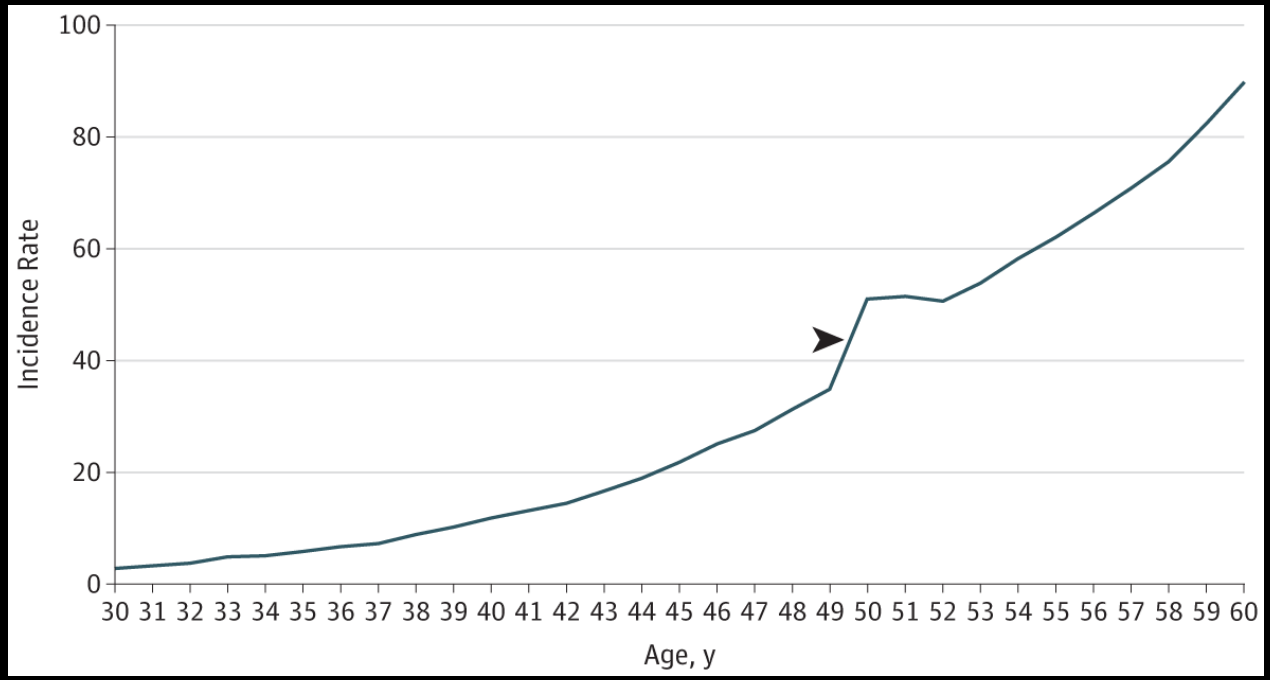
Original Investigation | Gastroenterology and Hepatology

Trends in Incidence of Early-Onset Colorectal Cancer in the United States Among Those Approaching Screening Age

Wesal H. Abualkhair, MD, MS; Meijiao Zhou, PhD; Dennis Ahnen, MD; Qingzhao Yu, PhD; Xiao-Cheng Wu, MD, MPH; Jordan J. Karlitz, MD



Colorectal Cancer Incidence Rates per 100,000 Population in 1-Year Age Increments in the US Surveillance, Epidemiology, and End Results 18 Registries Among Patients Aged 30 to 60 Years, 2000-2015
Only adenocarcinomas were analyzed. The arrowhead indicates the incidence rate increase from 49 to 50 years of age (46.1% increase: 34.9 [95% CI, 34.1-35.8] to 51.0 [95% CI, 50.0-52.1] per 100,000 population).

JAMA Netw Open. 2020;3(1):e1920407. doi:10.1001/jamanetworkopen.2019.20407

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Original Investigation | Gastroenterology and Hepatology

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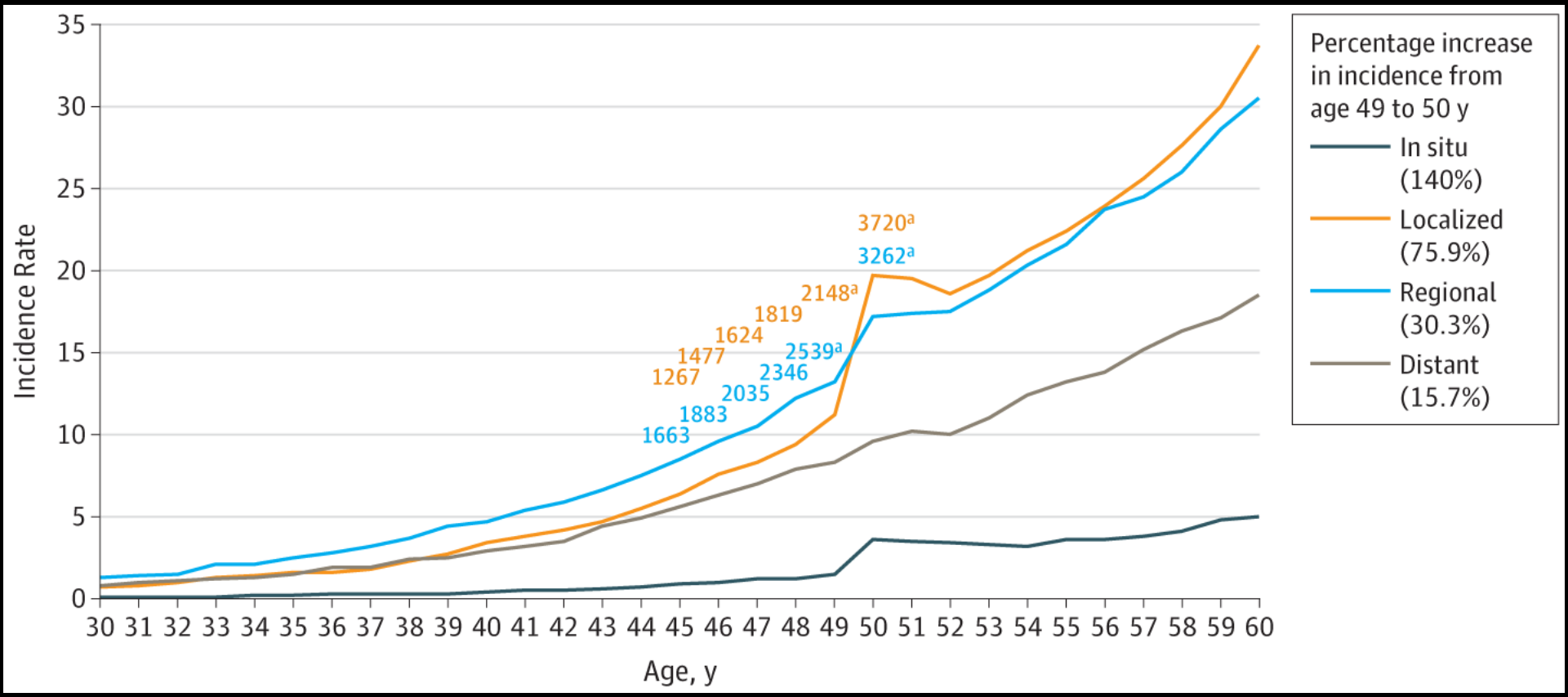

JAMA Netw Open. 2020;3(1):e1920407. doi:10.1001/jamanetworkopen.2019.20407

Blood tests for colorectal cancer?

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epi pro colon®

Epi proColon® is an FDA-approved blood test for colorectal cancer screening. This test is intended for persons age 50 and older who are unwilling or unable to be screened by recommended methods.

Rx Only

Galleri®

What is Galleri? | Patients | Healthcare Providers | Galleri for Business | Get Started

ABOUT GALLERI

A new way to screen for more cancers

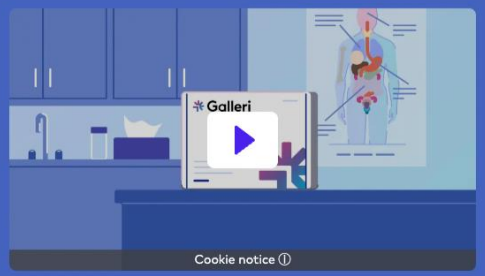
Go further with Galleri®. Adding Galleri, a multi-cancer early detection test, to your cancer screenings allows you to go beyond what's currently possible. Now you can screen for a signal shared by more than 50 types of cancer with Galleri.[1]

Request Galleri

The Galleri test does not detect a signal for all cancers and not all cancers can be detected in the blood. Galleri should be used in addition to healthcare provider recommended screening tests.

Galleri screens for a signal associated with active cancer

Galleri checks more than 100,000 DNA regions and over a million specific DNA sites to screen for a signal shared by cancers that could be hiding.[2] The Galleri test looks for cell-free DNA and identifies whether it comes from healthy or cancer cells.[1] DNA from cancer cells has specific methylation patterns that identify it as a cancer signal. Methylation patterns also contain information about the tissue type or organ associated with the cancer signal to guide next steps.[3]



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Freenome

Our Science | Clinical Expertise | Our Company | Newsroom | Careers

A comprehensive clinical studies program

Our clinical research program drives discovery, development, and validation of our early cancer detection tests.

The PREEMPT CRC Study | The PROACT LUNG Study | The Vallania Study

Our colorectal cancer screening study: The PREEMPT CRC® Study

The PREEMPT CRC Study is the largest clinical study validating a blood-based colorectal screening test. The PREEMPT CRC Study included more than 200 study sites across urban and rural communities, enrolling more than 40,000 participants across a range of racial, ethnic, and socioeconomic backgrounds.

We are thankful for the time and commitment of our participants and investigators to help Freenome develop tests to detect cancer early.

Recruitment complete

Get more information on our PREEMPT CRC Study.

Learn more at clinicaltrials.gov

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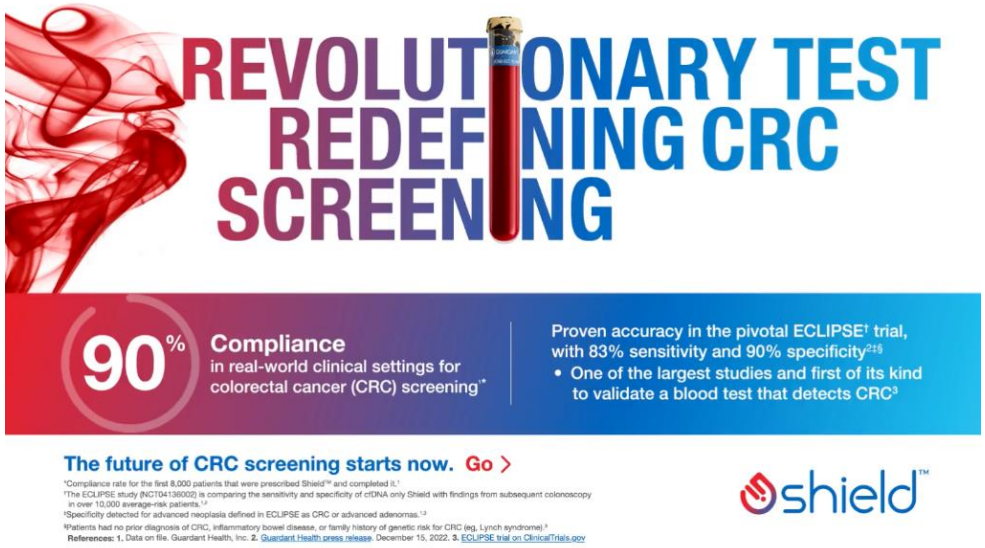
GUARDANT

Our Solutions

Blood Is at the Center of Transforming Cancer Care

With over 500,000 of our blood tests performed by 12,000 doctors to date, our commercially available tests help inform treatment decisions for patients by holding insights that can improve clinical outcomes.



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A Cell-free DNA Blood-Based Test for Colorectal Cancer Screening

Daniel C. Chung, M.D., Darrell M. Gray II, M.D., M.P.H., Harminder Singh, M.D., Rachel B. Issaka, M.D., M.A.S., Victoria M. Raymond, M.S., Craig Eagle, M.D., Sylvia Hu, Ph.D., Darya I. Chudova, Ph.D., AmirAli Talasaz, Ph.D., Joel K. Greenson, M.D., Frank A. Sinicrope, M.D., Samir Gupta, M.D., M.S.C.S., and William M. Grady, M.D

Blood tests for colorectal cancer?

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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.

Blood tests for colorectal cancer?

Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer

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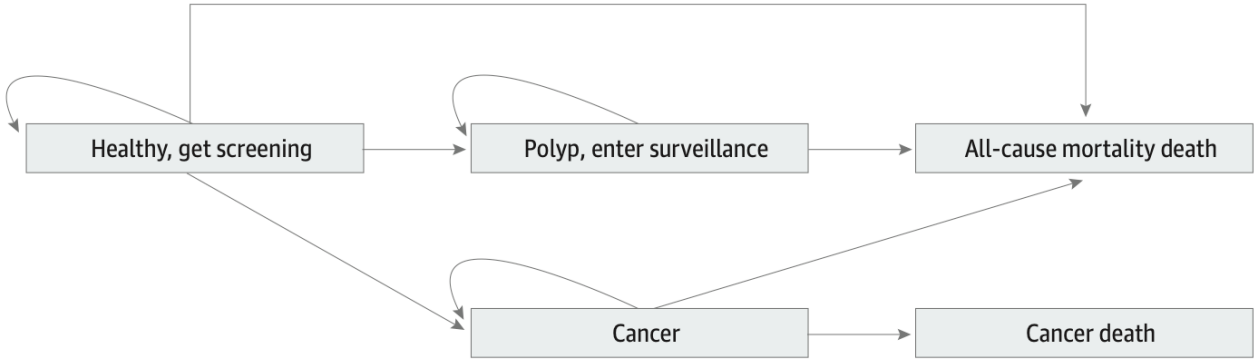
Original Investigation | Gastroenterology and Hepatology

Cost-Effectiveness of Liquid Biopsy for Colorectal Cancer Screening in Patients Who Are Unscreened

Zainab Aziz, BS; Sophie Wagner, BS; Alice Agyekum, BS; Yoanna S. Pumpalova, MD; Matthew Prest, MS; Francesca Lim, MS; Sheila Rustgi, MD; Fay Kastrinos, MD, MPH; William M. Grady, MD; Chin Hur, MD, MPH

Figure 1. Markov Model Schematic



JAMA Network Open. 2023;6(11):e2343392. doi:10.1001/jamanetworkopen.2023.43392

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Discussion

In this study, we used a Markov simulation to analyze the cost-effectiveness of LB, used both as a novel first or second-line screening modality. We present the first analysis that integrates novel LB into paradigms for CRC screening and systematically explores scenarios to determine the cost-effectiveness of LB.

The most cost-effective screening strategy in our base-case model was colonoscopy, with an ICER of $28 071 per LYG. While C-LB had the highest number of LYG and prevented the most cancers, the cost of LB would have to reduce by 66% (from $949 to $324) for the C-LB strategy to become cost-effective in our model. Compared with NH, the cost of LB would have to be reduced by 94% for its ICER to drop below the WTP threshold of $100 000 per LYG. When compared with stool-based tests, the cost of LB would have to decrease by 43% to 80% to be cost-effective. LB and C-LB had more LYG when polyp detection was introduced, but they did not achieve cost-effectiveness at LB's current price even with perfect performance.

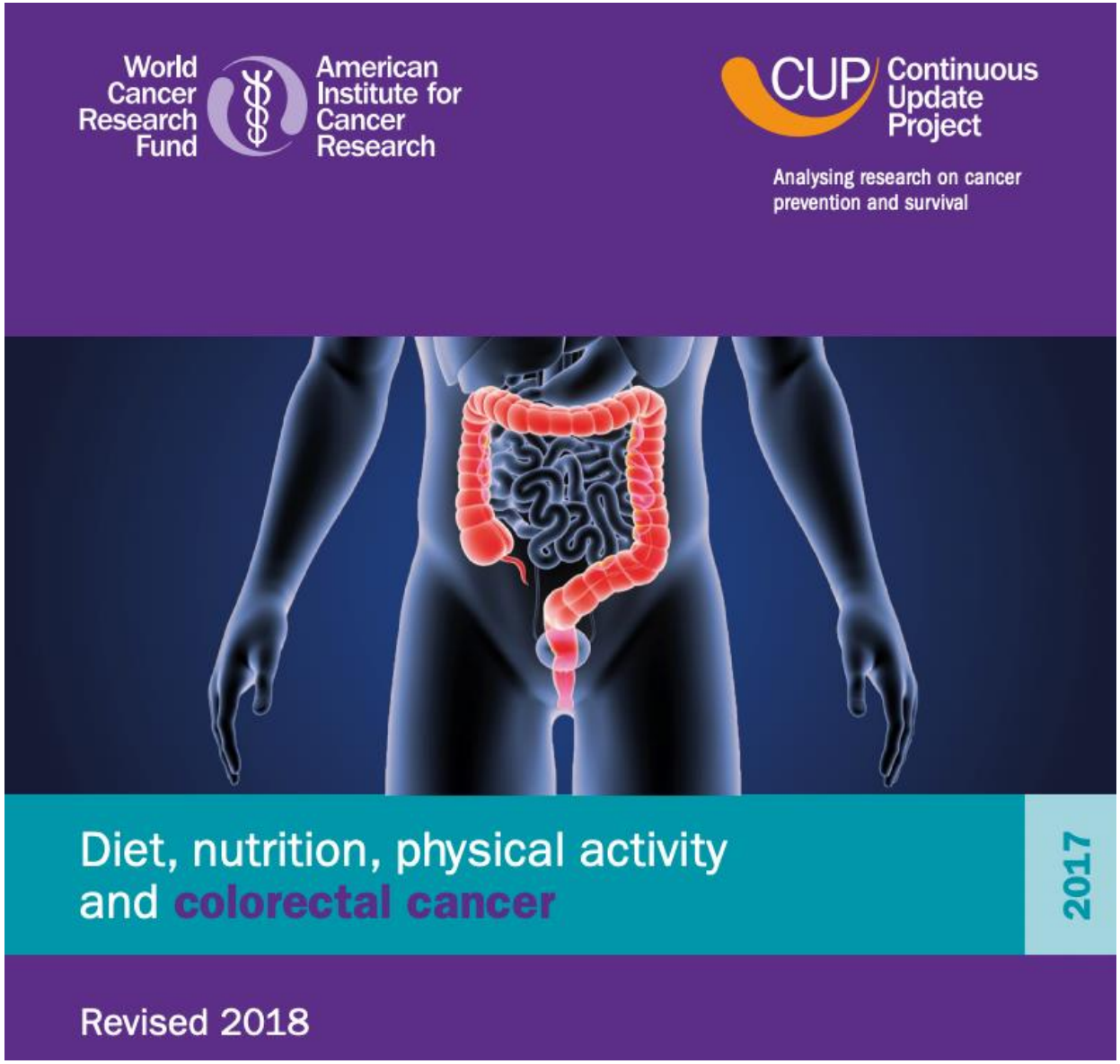
JAMA Network Open. 2023;6(11):e2343392. doi:10.1001/jamanetworkopen.2023.43392

Colorectal Cancer Symptoms

Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer

- Most people with early cancer have no symptoms
- Change in stool – shape, color, blood
- Change in bowel habits (persists)
- Abdominal pain, cramping
- Urges to have bowel movements
- Unintentional weight loss

Prevention (AICR)



https://www.aicr.org/wp-content/uploads/2020/01/colorectal-cancer-2017-report.pdf

Prevention (AICR)

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2017	DIET, NUTRITION, PHYSICAL ACTIVITY AND COLORECTAL CANCER		
		DECREASES RISK	INCREASES RISK
STRONG EVIDENCE	Convincing	Physical activity[1,2]	Processed meat[3] Alcoholic drinks[4] Body fatness[5] Adult attained height[6]
	Probable	Wholegrains Foods containing dietary fibre[7] Dairy products[8] Calcium supplements[9]	Red meat[10]
LIMITED EVIDENCE	Limited – suggestive	Foods containing vitamin C[11] Fish Vitamin D[12] Multivitamin supplements[13]	Low intakes of non-starchy vegetables[14] Low intakes of fruits[14] Foods containing haem iron[15]
	Limited – no conclusion	Cereals (grains) and their products; potatoes; animal fat; poultry; shellfish and other seafood; fatty acid composition; cholesterol; dietary n-3 fatty acid from fish; legumes; garlic; non-dairy sources of calcium; foods containing added sugars; sugar (sucrose); coffee; tea; caffeine; carbohydrate; total fat; starch; glycaemic load; glycaemic index; folate; vitamin A; vitamin B6; vitamin E; selenium; low fat; methionine; beta-carotene; alpha-carotene; lycopene; retinol; energy intake; meal frequency; dietary pattern	
STRONG EVIDENCE	Substantial effect on risk unlikely		

https://www.aicr.org/wp-content/uploads/2020/01/colorectal-cancer-2017-report.pdf

Prevention (NCI)
Factors associated with ↑ risk

- Age
- Family history of colon cancer
- Personal history
- Alcohol
- Cigarette smoking
- Obesity

https://www.cancer.gov/types/colorectal/patient/colorectal-prevention-pdq

Prevention
Factors associated with ↓ risk

- Physical activity
- Aspirin
- Combination hormone replacement therapy
- Polyp removal

https://www.cancer.gov/types/colorectal/patient/colorectal-prevention-pdq

Prevention
Other Factors…

- Unclear affects on risk:
  - NSAIDs other than aspirin
  - Calcium
  - Diet
- No affects on risk
  - HRT with estrogen only
  - Statins

https://www.cancer.gov/types/colorectal/patient/colorectal-prevention-pdq

Prevention

- Get screened regularly
- Maintain a healthy weight
- Adopt a physically active lifestyle
- Consume a healthy diet
  - ≥5 daily servings of fruits/vegetables
  - Limit red meat/processed meat
  - Choose whole grains instead of processed
- Limit alcohol consumption

American Cancer Society, 2011

Socioeconomic Disparities for CRC Risk

Published in final edited form as:
Adv Cancer Res. 2021 ; 151: 197–229. doi:10.1016/bs.acr.2021.02.007.

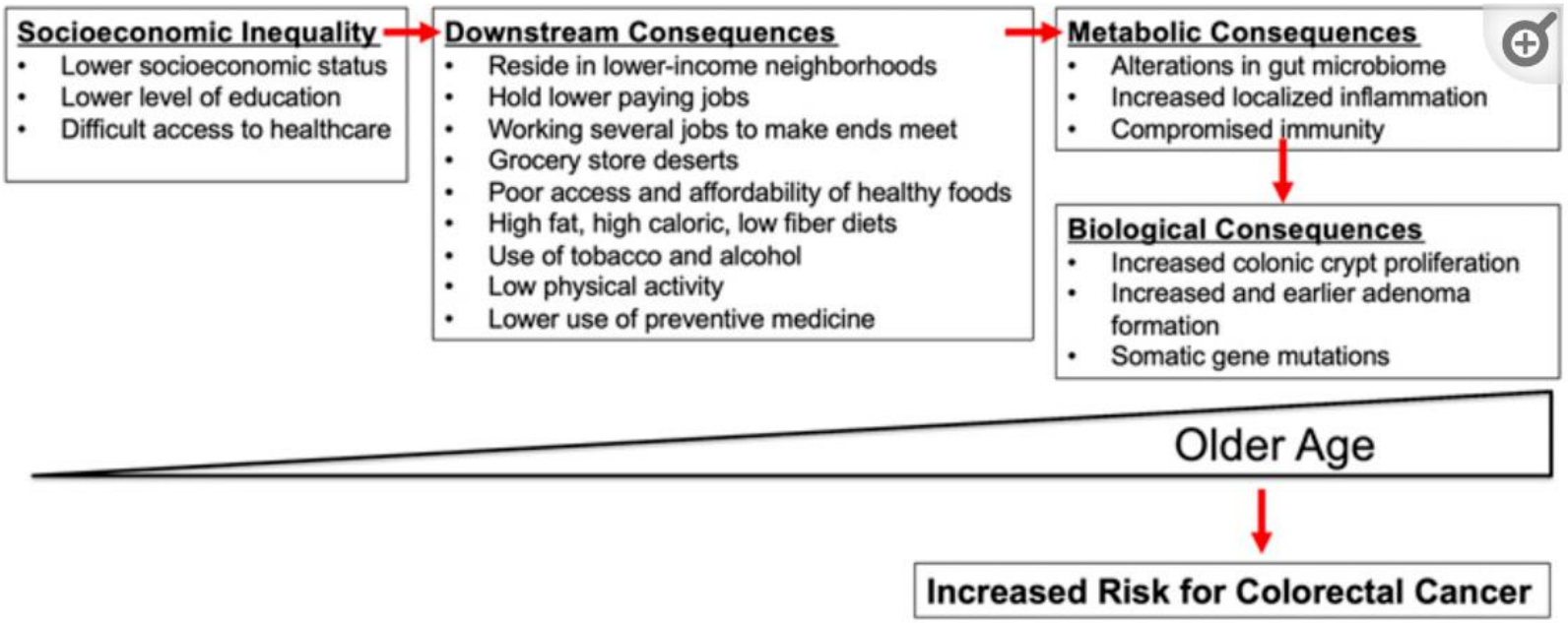
Racial and Ethnic Disparities in Colorectal Cancer Incidence and Mortality

John M. Carethers
Division of Gastroenterology and Hepatology, Department of Internal Medicine, and Department of Human Genetics and Rogel Cancer Center, University of Michigan, Ann Arbor, Michigan

Adv Cancer Res. 2021 ; 151: 197–229. doi:10.1016/bs.acr.2021.02.007.

Socioeconomic Disparities for CRC Risk Connections and Consequences

Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer



Adv Cancer Res. 2021 ; 151: 197–229. doi:10.1016/bs.acr.2021.02.007.

Disparities in Screening - Hispanic

Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer

Cancer
An International Interdisciplinary Journal of the American Cancer Society

ORIGINAL ARTICLE | Free Access

Understanding the role of access in Hispanic cancer screening disparities

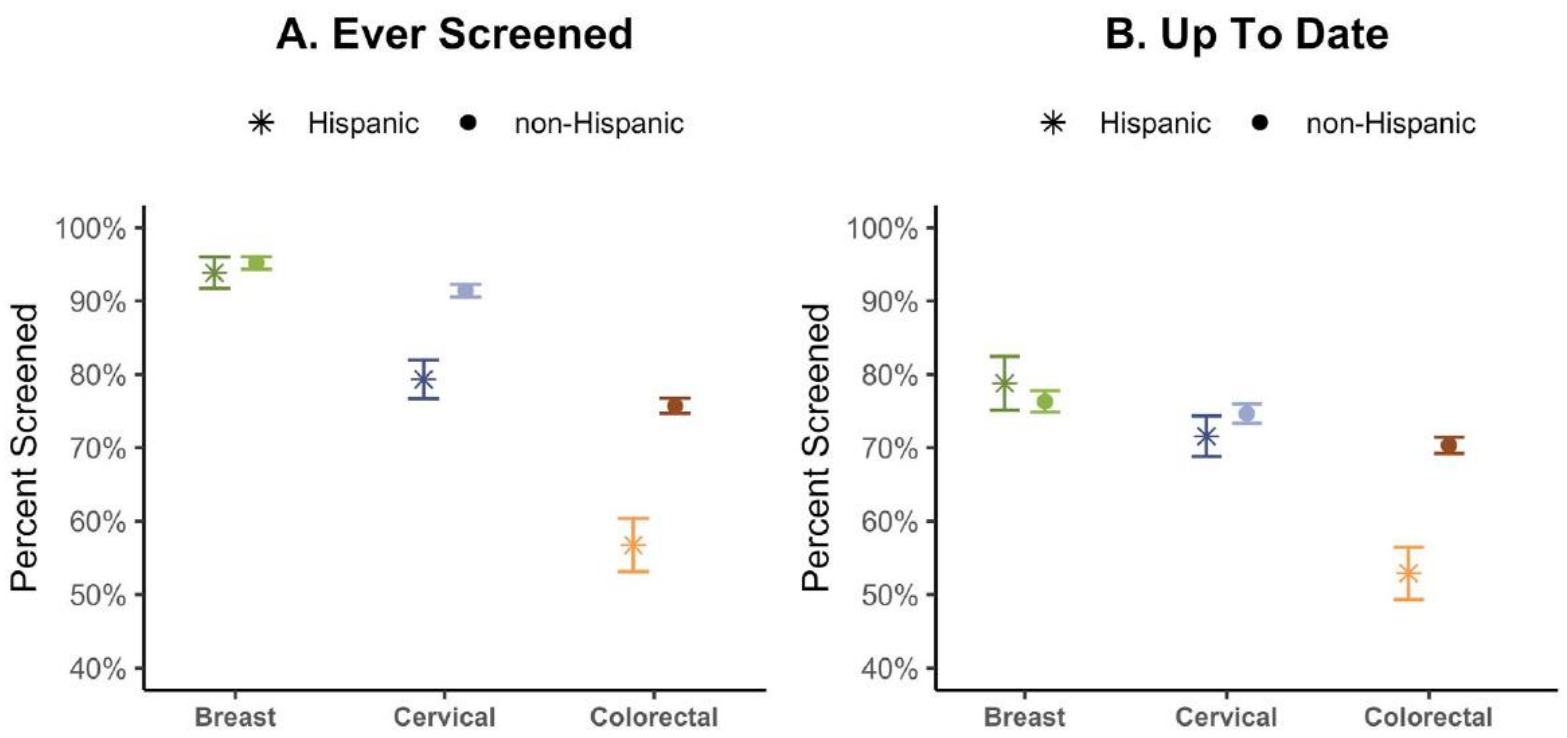
Jennifer C. Spencer PhD, Lailea Noel PhD, Navkiran K. Shokar MD, MPH, Michael P. Pignone MD, MPH

First published: 14 February 2023 | https://doi.org/10.1002/cncr.34696

- Secondary analysis of 2019 National Health Interview Survey
- Sex and age-eligible for:
  - Cervical (n=8316)
  - Breast (n=6025)
  - Colorectal (n=11,313)
- Proportion of ever screened and up to date for each screening type compared

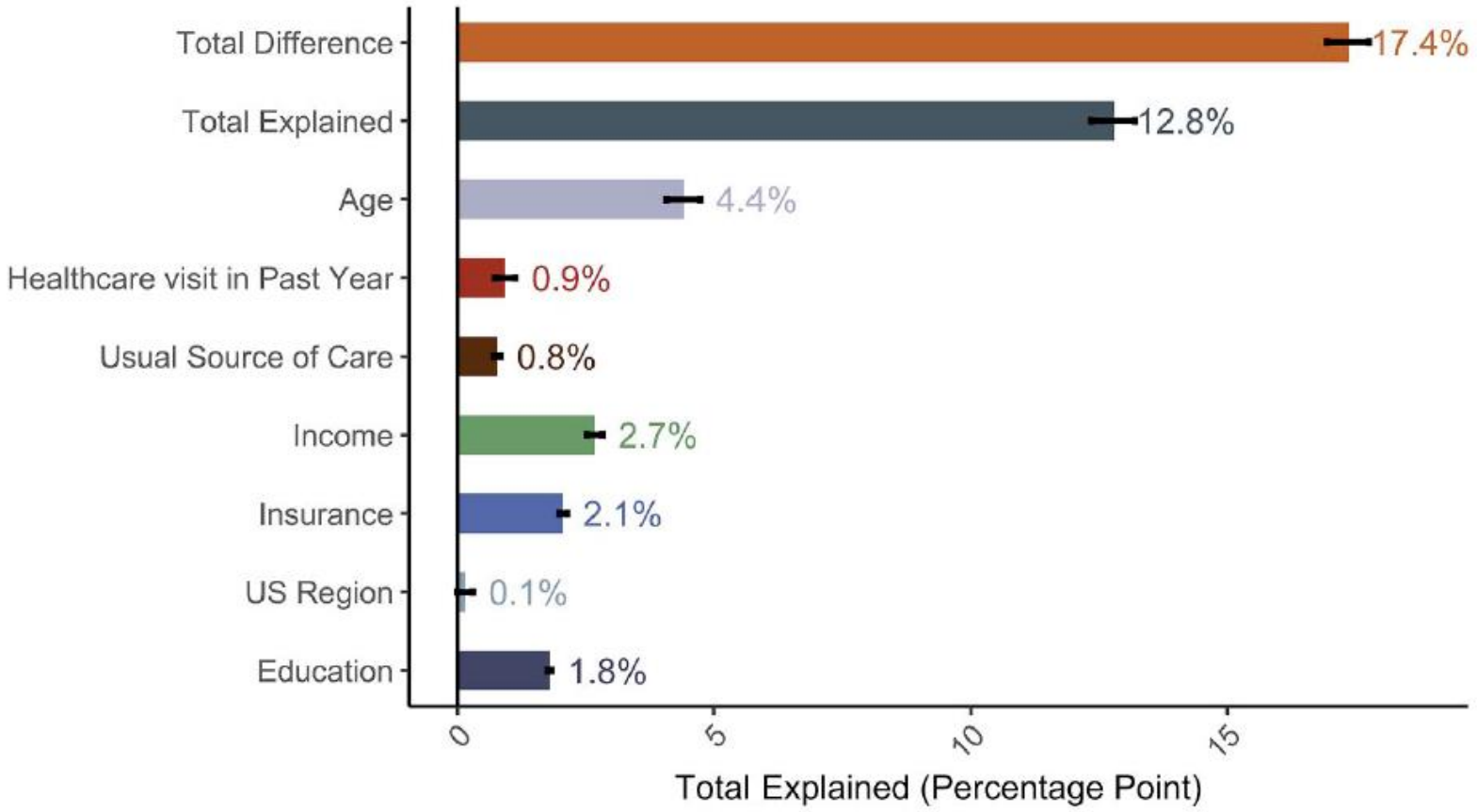
Cancer, Volume: 129, Issue: 10, Pages: 1569-1578, First published: 14 February 2023, DOI: (10.1002/cncr.34696)

Cancer Screening Usage by Hispanic Ethnicity



Cancer, Volume: 129, Issue: 10, Pages: 1569-1578, First published: 14 February 2023, DOI: (10.1002/cncr.34696)

Role of access in Hispanic Screening Disparities



Cancer, Volume: 129, Issue: 10, Pages: 1569-1578, First published: 14 February 2023, DOI: (10.1002/cncr.34696)

Framework/Strategies to Eliminate Disparities in CRC Screening Outcomes

Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer

Published in final edited form as:

Annu Rev Med. 2021 January 27; 72: 383–398. doi:10.1146/annurev-med-051619-035840.

Framework and Strategies to Eliminate Disparities in Colorectal Cancer Screening Outcomes

Chyke A. Doubeni[1,2], **Kevin Selby**[3], **Samir Gupta**[4,5,6]

[1]Center for Health Equity and Community Engagement Research, Mayo Clinic, Rochester, Minnesota 55905, USA

[2]Department of Family Medicine, Mayo Clinic, Rochester, Minnesota 55905, USA

[3]Center for Primary Care and Public Health (Unisanté), Lausanne 1011, Switzerland

[4]Section of Gastroenterology, Veterans Affairs San Diego Healthcare System, San Diego, California 92161, USA

[5]Department of Medicine, University of California at San Diego, La Jolla, California 92103, USA

[6]Moores Cancer Center, University of California at San Diego, La Jolla, California 92103, USA

Doubeni, Chyke A., Kevin Selby, and Samir Gupta. "Framework and strategies to eliminate disparities in colorectal cancer screening outcomes." *Annual review of medicine* 72 (2021): 383-398.

Framework/Strategies to Eliminate Disparities in CRC Screening Outcomes

Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer

BOX 1:

MAJOR STRATIFICATIONS OF DISPARITIES IN COLORECTAL CANCER SCREENING OUTCOMES

1. Race/ethnicity
2. English proficiency/Language
3. Immigrant status
4. Educational level
5. Income
6. Insurance coverage
7. Occupation
8. Age
9. Sex/Gender
10. Geography (neighborhoods, county, state, rural vs. urban, etc.)
11. Behavioral risk factors (e.g., obesity)

Doubeni, Chyke A., Kevin Selby, and Samir Gupta. "Framework and strategies to eliminate disparities in colorectal cancer screening outcomes." *Annual review of medicine* 72 (2021): 383-398.

Framework/Strategies to Eliminate Disparities in CRC Screening Outcomes

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BOX 2:

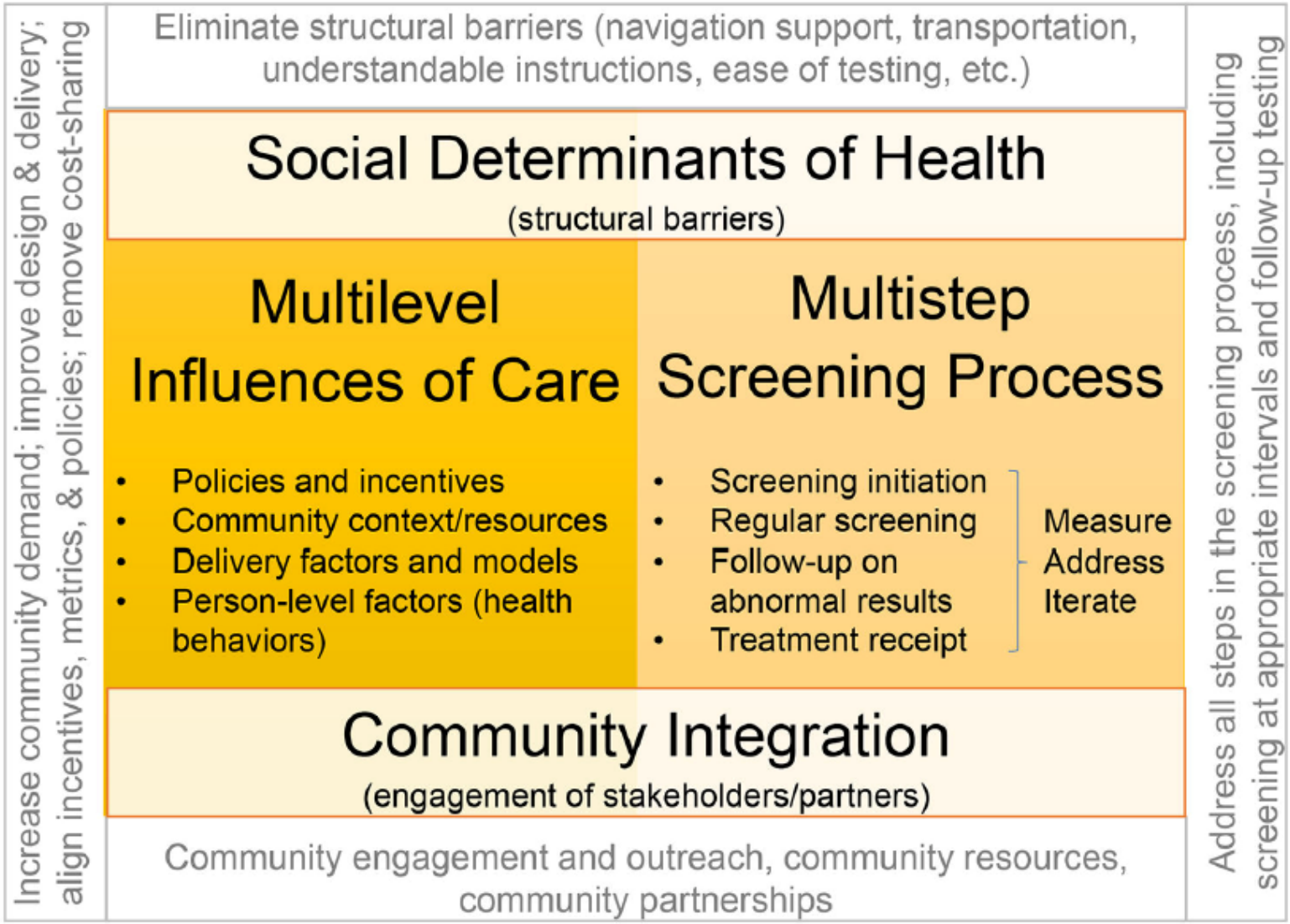
PRINCIPLES OF COMMUNITY ENGAGEMENT

1. Have shared goals with the community
2. Understand the community and its history of engagement
3. Build trust and seek commitment from stakeholders
4. Respect diverse perspectives within the community
5. Identify and mobilize community assets
6. Partner with the community
7. Assure community ownership and control of actions
8. Long-term commitment

Doubeni, Chyke A., Kevin Selby, and Samir Gupta. "Framework and strategies to eliminate disparities in colorectal cancer screening outcomes." *Annual review of medicine* 72 (2021): 383-398.

Framework/Strategies to Eliminate Disparities in CRC Screening Outcomes

Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer



Doubeni, Chyke A., Kevin Selby, and Samir Gupta. "Framework and strategies to eliminate disparities in colorectal cancer screening outcomes." *Annual review of medicine* 72 (2021): 383-398.

The Delaware Model…

Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer

Journal of Clinical Oncology®
An American Society of Clinical Oncology Journal

J Clin Oncol. 2013 Jun 1; 31(16): 1928–1930.
Published online 2013 Apr 15. doi: 10.1200/JCO.2012.47.8412

PMCID: PMC3661932
PMID: 23589553

Eliminating Racial Disparities in Colorectal Cancer in the Real World: It Took a Village

Stephen S. Grubbs, Blase N. Polite, John Carney, Jr, William Bowser, Jill Rogers, Nora Katurakes, Paula Hess, and Electra D. Paskett

The Delaware Model…

Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer

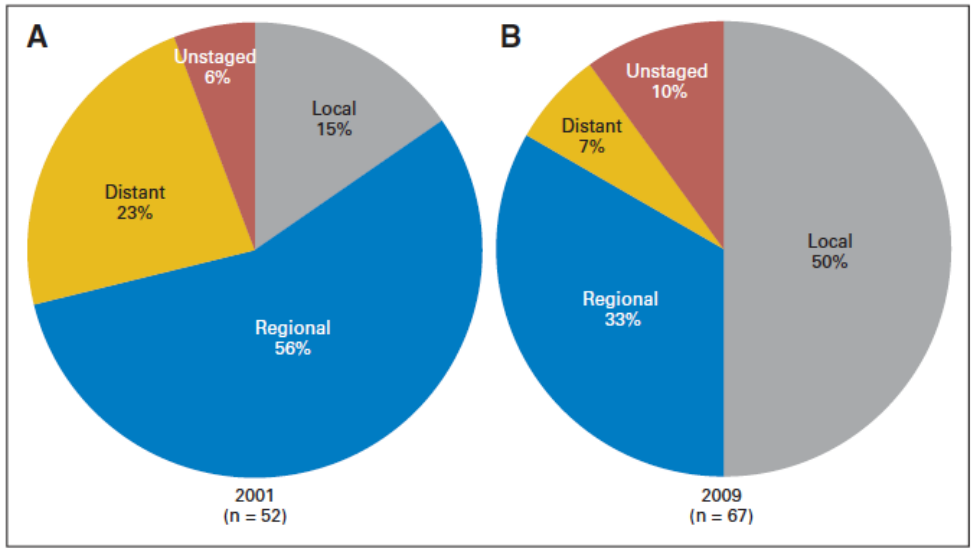


Fig 1. Colorectal cancer by stage of diagnosis among African Americans in Delaware (A) 2001 and (B) 2009.

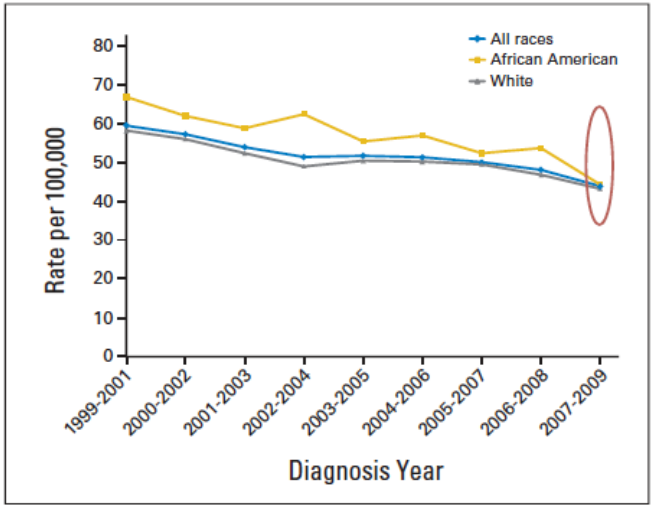


Fig 2. Age-adjusted colorectal cancer incidence rates (rolling 3-year averages) by race in Delaware from 1999 to 2009.

J Clin Oncol. 2013 Jun 1; 31(16): 1928–1930

The Delaware Model…

Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer

Trends in CRC Screening, Incidence, and Mortality Rates by Race in Delaware: 2001 and 2009

	2001*		2009		>Change From 2001 to 2009 (%)	
Trend	**Black**	**White**	**Black**	**White**	**Black**	**White**
Ever had screening colonoscopy, %	47.8	58.0	73.5	74.7	54	29
CRC incidence rate per 100,000‡	66.9	58.2	44.3	43.2	−34	−26
Total No. of cases‡	205	1,206	235	1,149		
CRC mortality rate per 100,000‡	31.2	19.5	18.0	16.9	−42	−13
Total No. of cases§	88	398	75	420		

J Clin Oncol. 2013 Jun 1; 31(16): 1928–1930

Socioeconomic Disparities for CRC Risk

Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer

Published in final edited form as:

Adv Cancer Res. 2021 ; 151: 197–229. doi:10.1016/bs.acr.2021.02.007.

Racial and Ethnic Disparities in Colorectal Cancer Incidence and Mortality

John M. Carethers

Division of Gastroenterology and Hepatology, Department of Internal Medicine, and Department of Human Genetics and Rogel Cancer Center, University of Michigan, Ann Arbor, Michigan

Adv Cancer Res. 2021 ; 151: 197–229. doi:10.1016/bs.acr.2021.02.007.

Socioeconomic Disparities for CRC Risk Mitigation

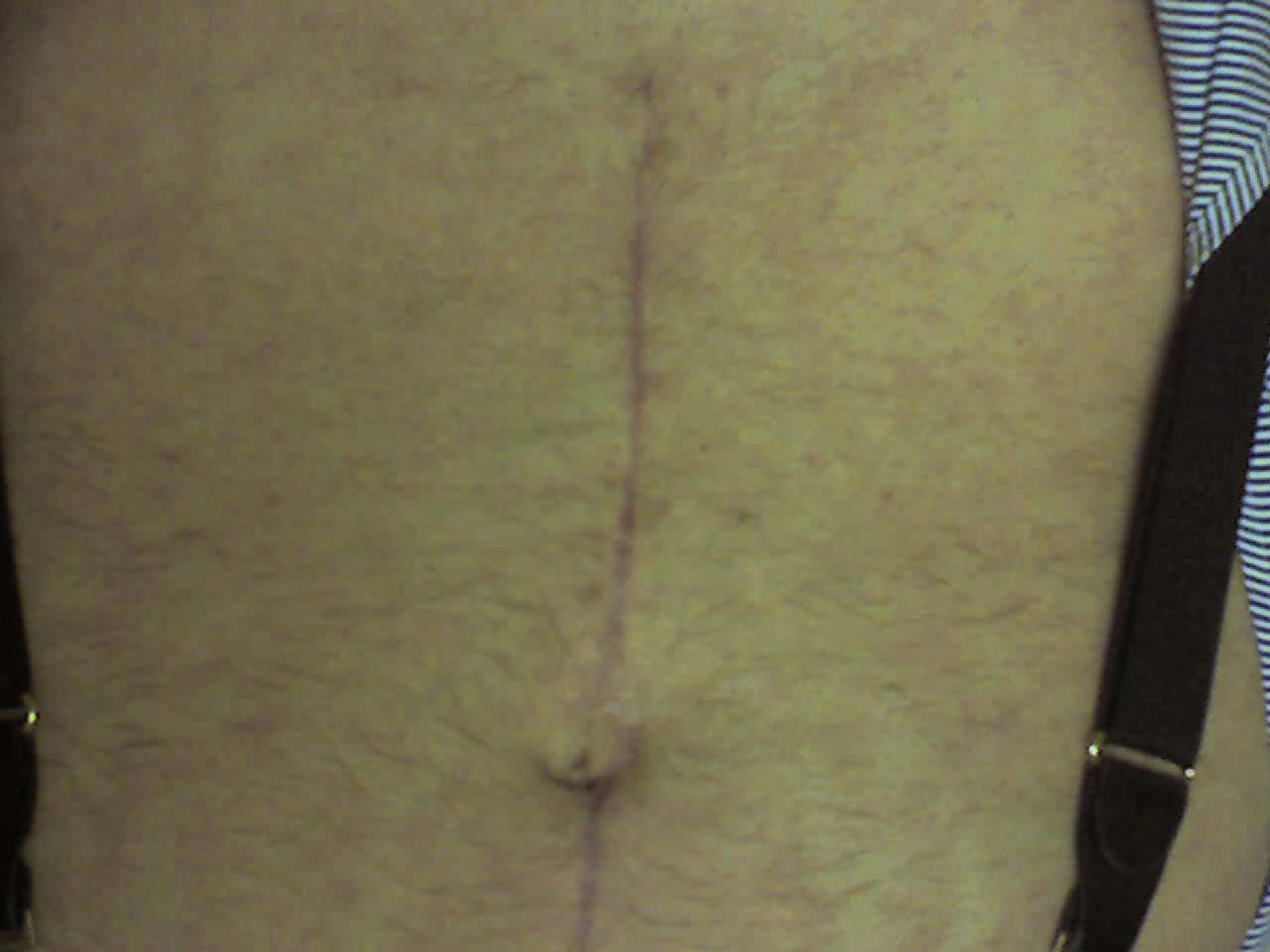
Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer

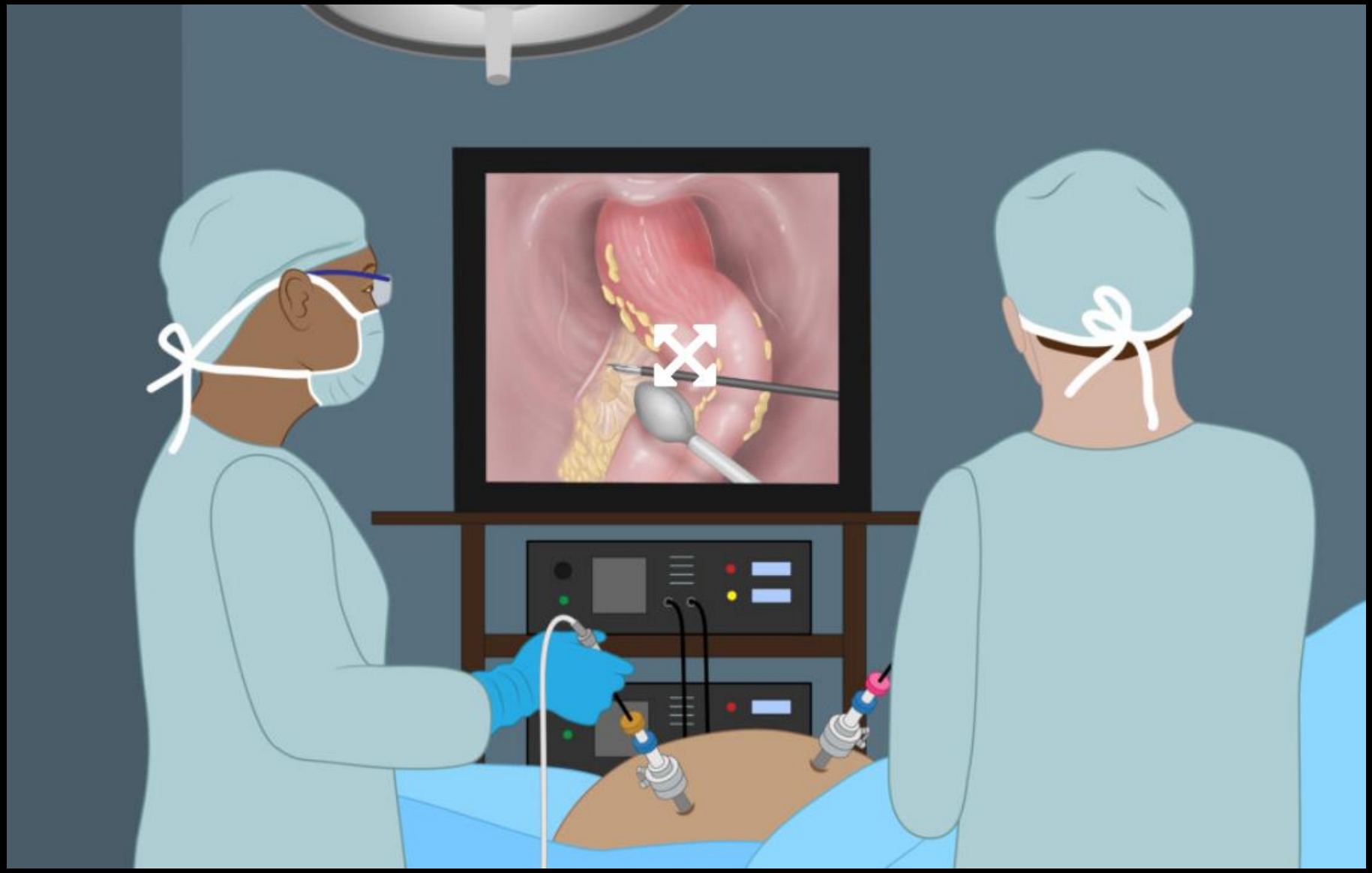
Colonoscopy	Non-invasive Screening
Navigation personnel's racial/ethnic background similar to patient's background; use native language	Telemedicine (phone or video) instructions and advice from virtual assistants
Multifaceted points of communication and execution: (a) provides general education about the procedure, including its importance in reducing cancer risk, (b) ensure prep is picked up and/or delivered, (c) instructions and coaching on prep utilization and completion, (d) arrange transportation to and from colonoscopy site, (e) arrange observer post-procedure with follow-up contact within hours post procedure	Post-navigation follow-up after test evaluation for transmission of results and next steps
Mitigates screening costs through insurance and other means for underinsured patients	Move to colonoscopy navigation if non-invasive test is positive
With healthcare provider, communicates results of colonoscopy and any pathology, and next steps	Persistent community education presence on importance of colorectal cancer screening for racial/ethnic groups

Adv Cancer Res. 2021 ; 151: 197–229. doi:10.1016/bs.acr.2021.02.007.

What's "new" in treatment

- What's new in treatment
  - Minimally invasive surgery (MIS)
  - Enhanced recovery pathways
    - Shorter hospital stay
    - Opiate reducing strategies
  - Watch and wait for rectal cancer
  - Immunotherapy - checkpoint inhibitors





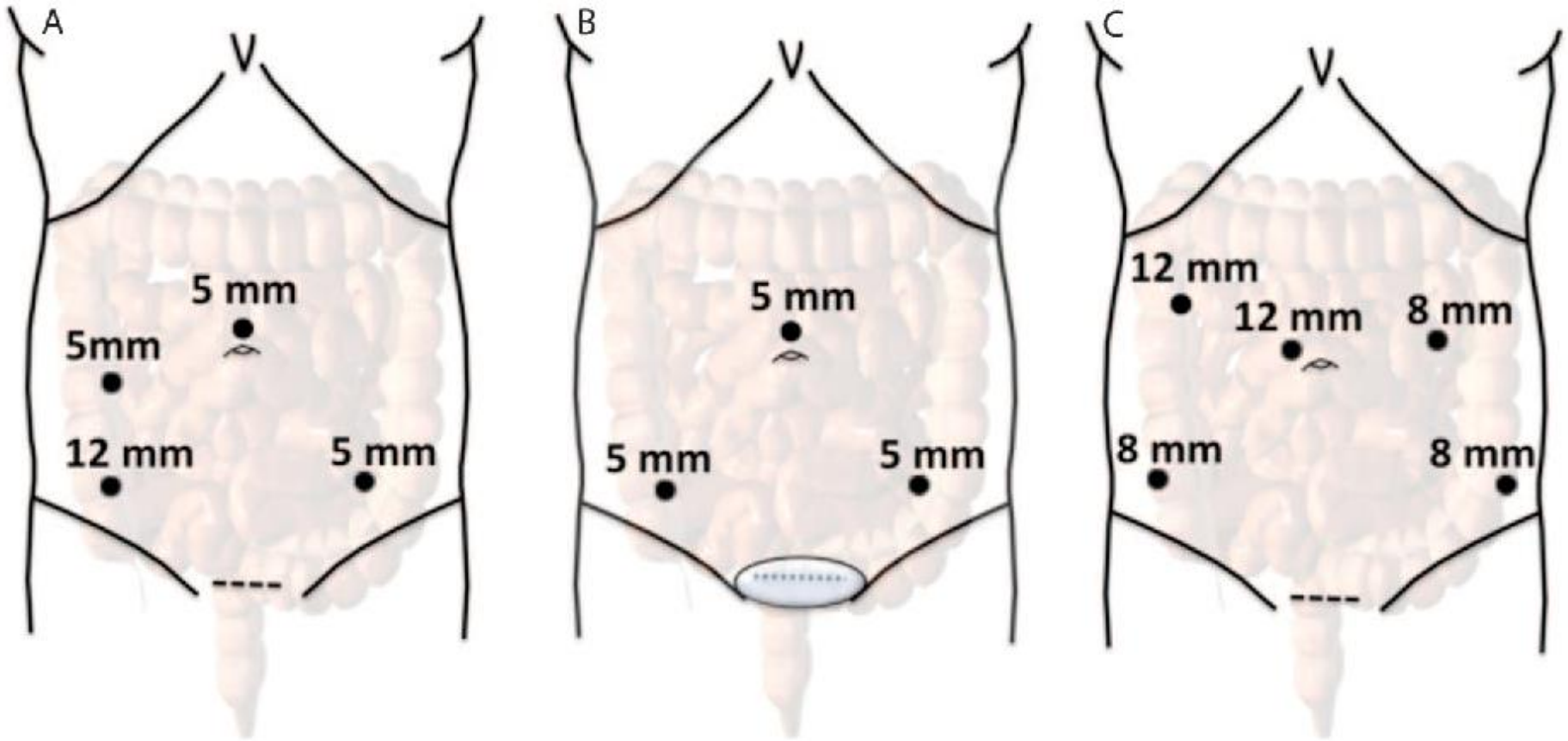
Randomized Controlled Trial > Ann Surg. 2007 Oct;246(4):655-62; discussion 662-4.
doi: 10.1097/SLA.0b013e318155a762.

Laparoscopic colectomy for cancer is not inferior to open surgery based on 5-year data from the COST Study Group trial

James Fleshman [1], Daniel J Sargent, Erin Green, Mehran Anvari, Steven J Stryker, Robert W Beart Jr, Michael Hellinger, Richard Flanagan Jr, Walter Peters, Heidi Nelson, Clinical Outcomes of Surgical Therapy Study Group

Affiliations + expand

PMID: 17893502 DOI: 10.1097/SLA.0b013e318155a762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12 mm
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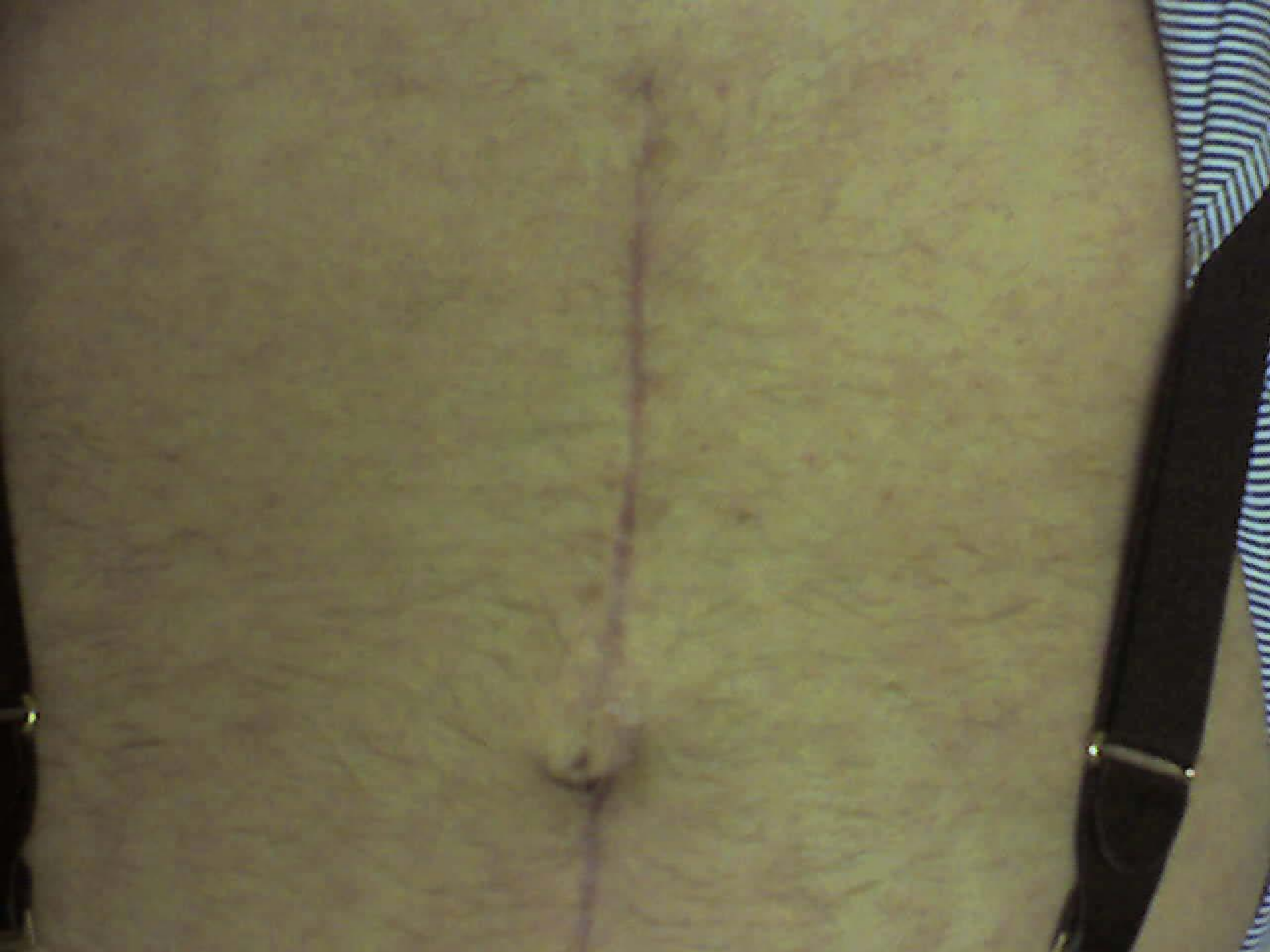

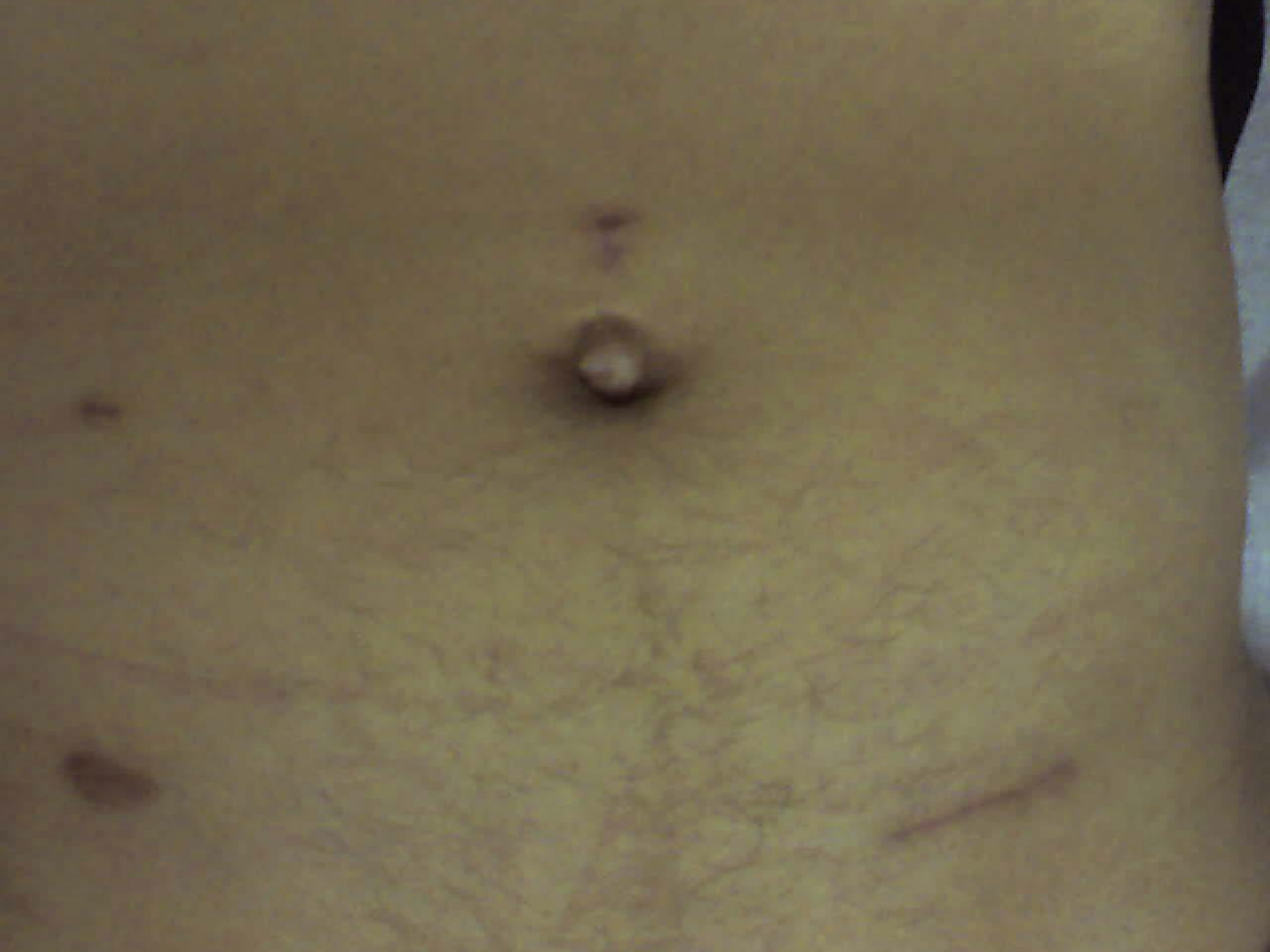

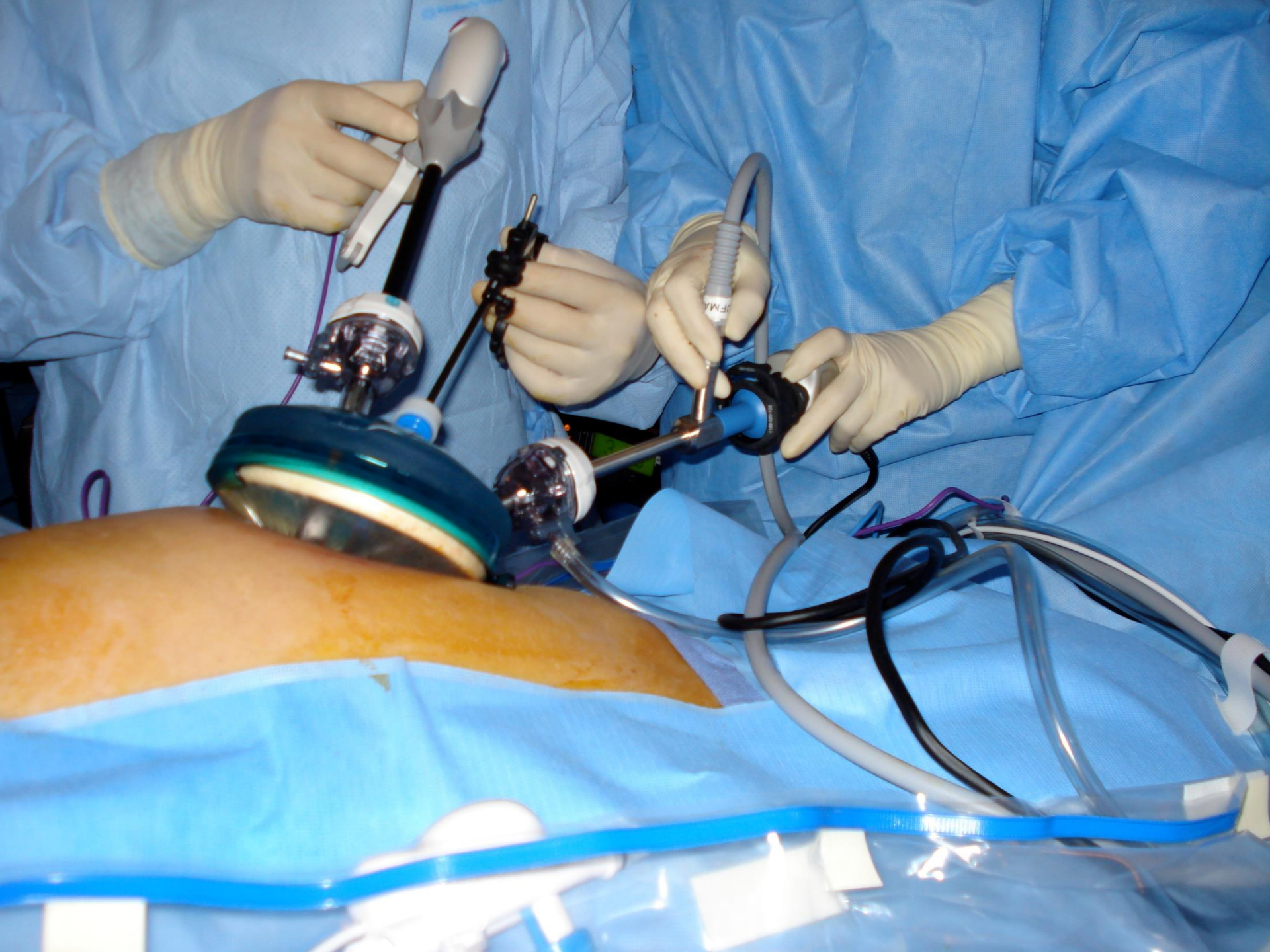

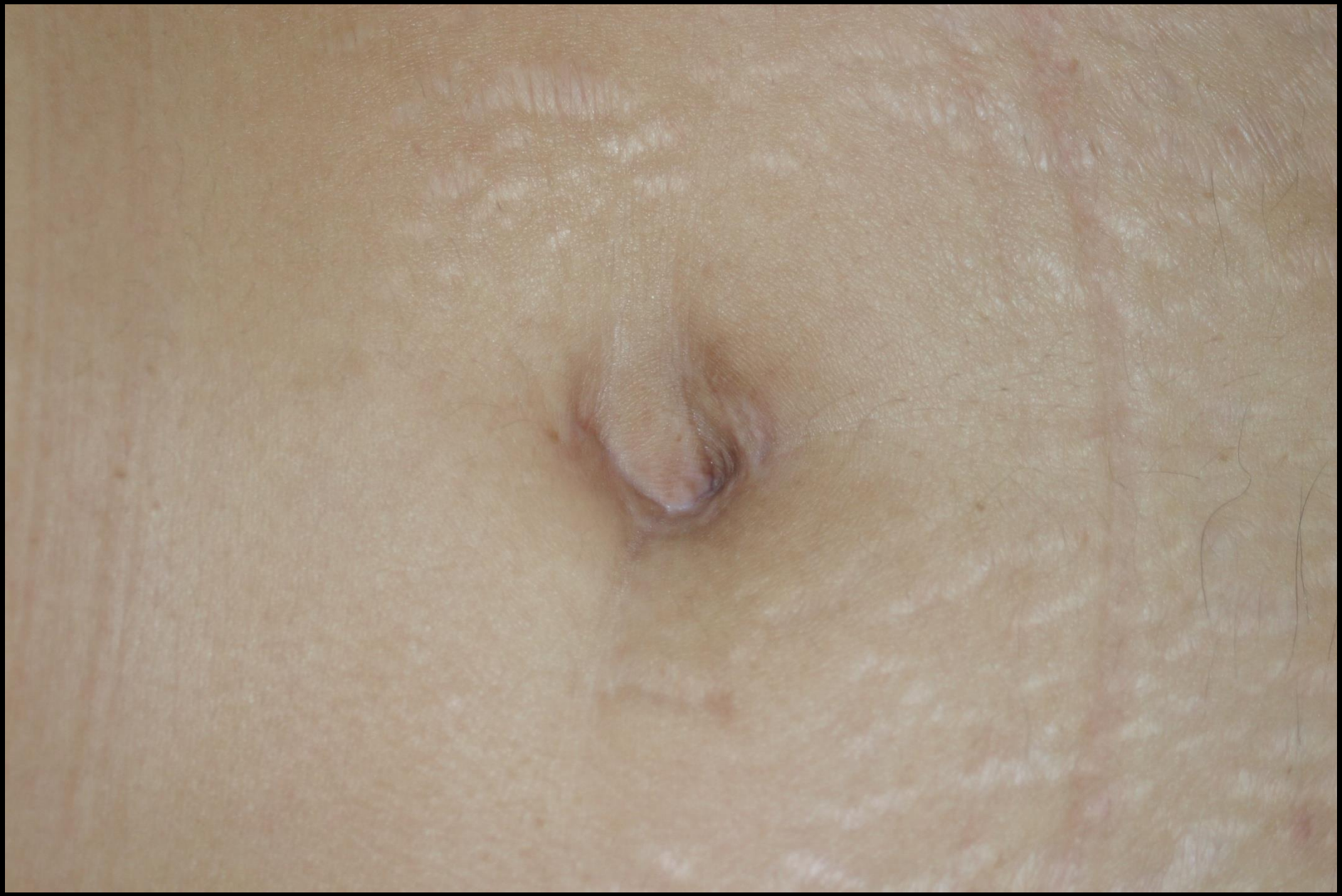

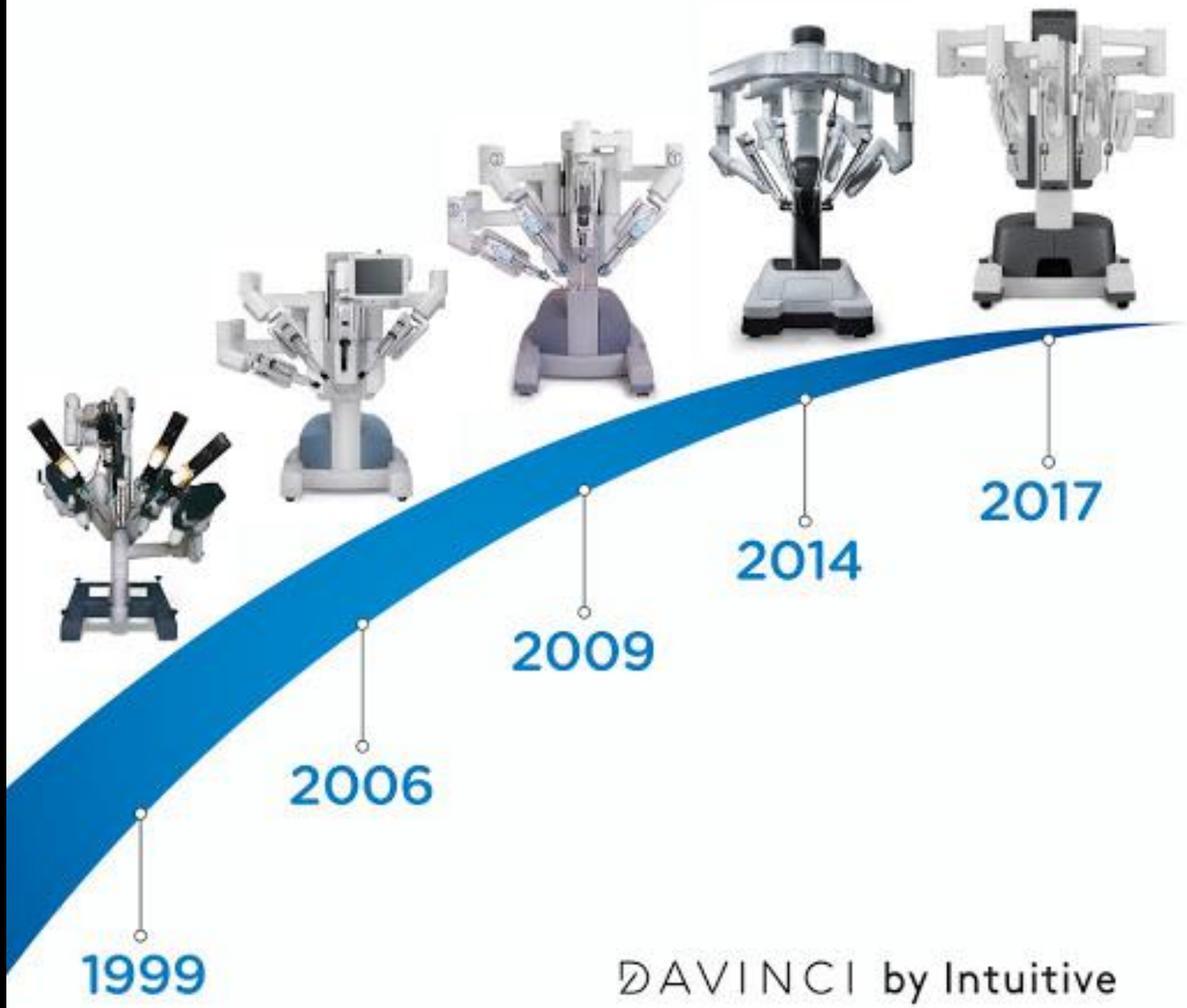
1999
2006
2009
2014
2017
DAVINCI by Intuitive


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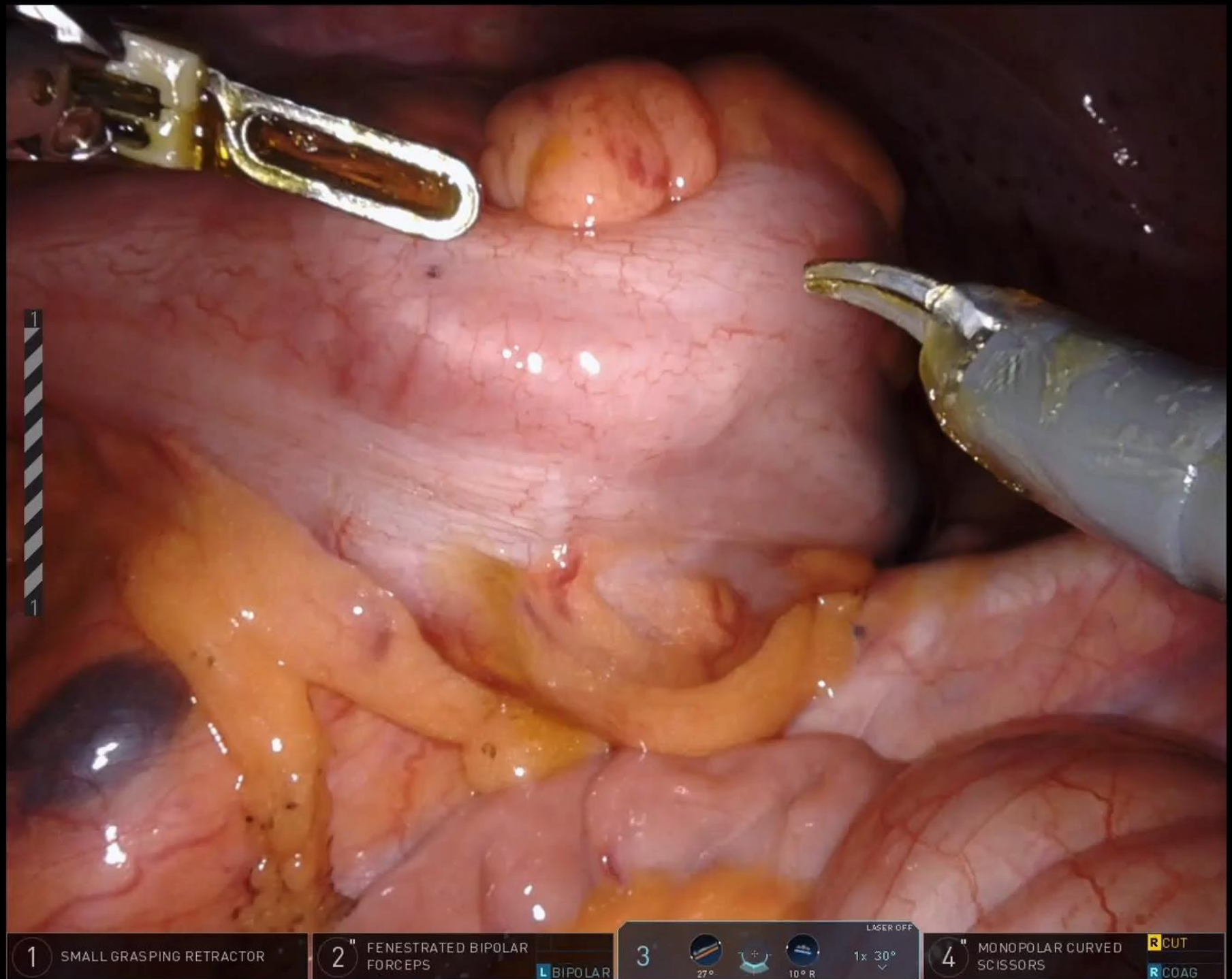
2
3
4


1
1
1 SMALL GRASPING RETRACTOR
2" FENESTRATED BIPOLAR FORCEPS
L BIPOLAR
3
LASER OFF
27°
10° R
1x 30°
4" MONOPOLAR CURVED SCISSORS
R CUT
R COAG

Current Surgical Challenges

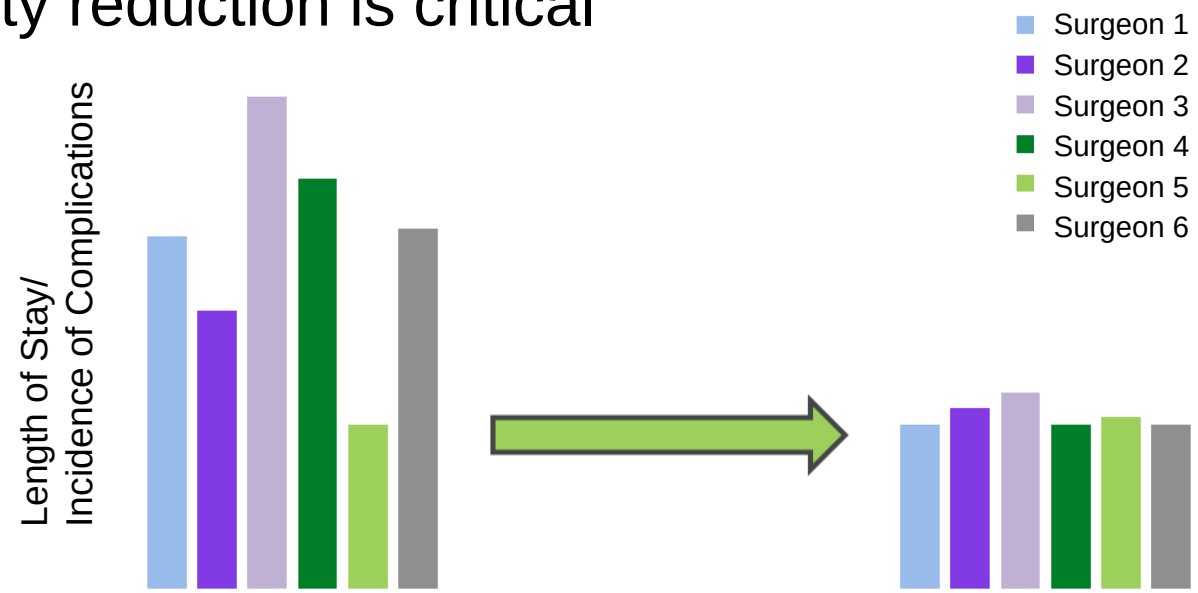
Preoperative

Intraoperative

Postoperative

STANDARDIZED CARE

Variability reduction is critical



Adapted from Cohen ME et al. *Ann Surg*. 2009;250(6):901-907.

What Is Enhanced Recovery After Surgery?[1,2]

ERAS protocols are:

- Multidisciplinary care pathways
  - From decision of need for procedure to return to baseline level of function

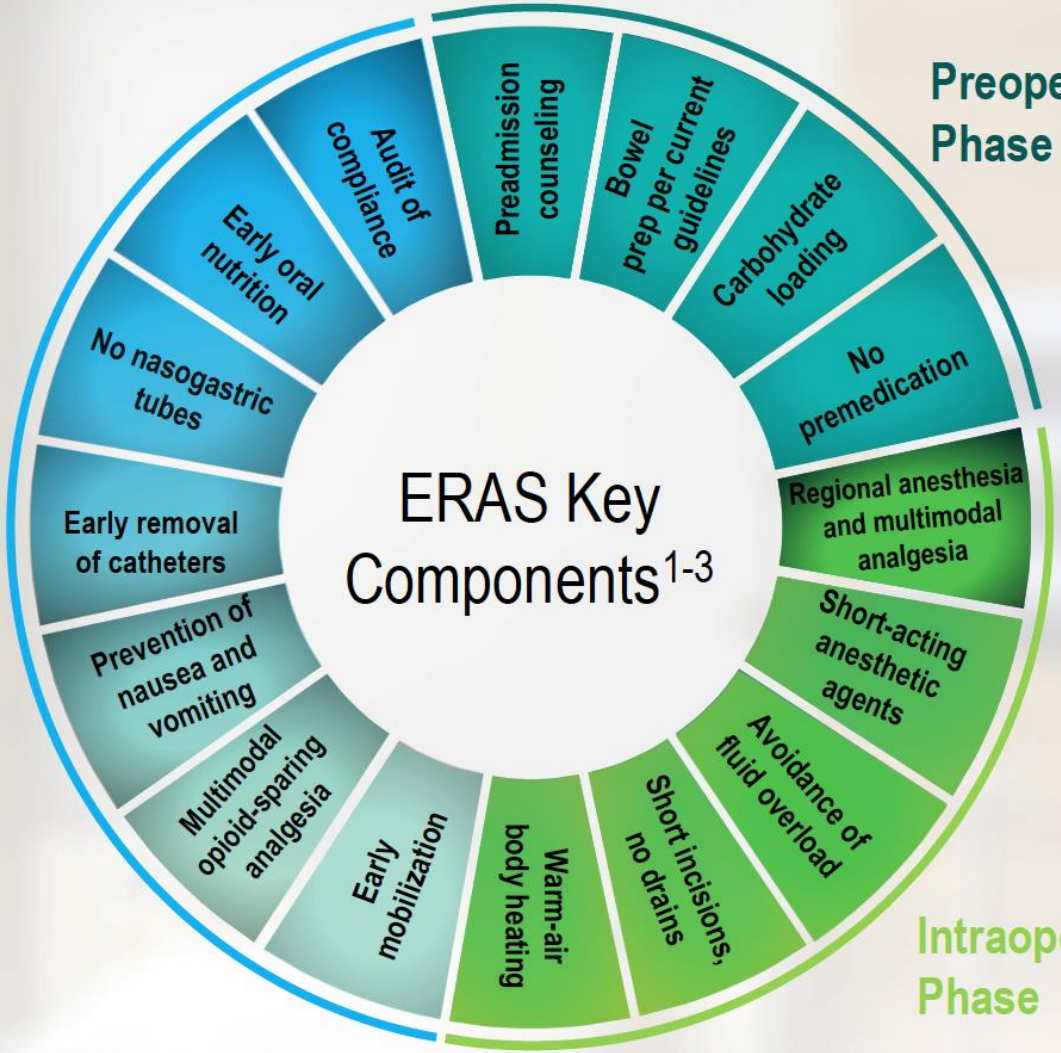
ERAS key characteristics:

- Evidence-based, patient-centered care
- Designed to reduce patients' stress response to surgery
- Includes prehabilitation
- Patient involved in his/her own preparation/recovery

Integrated continuum from:

Home → Preoperative → Intraoperative → Postoperative → Home

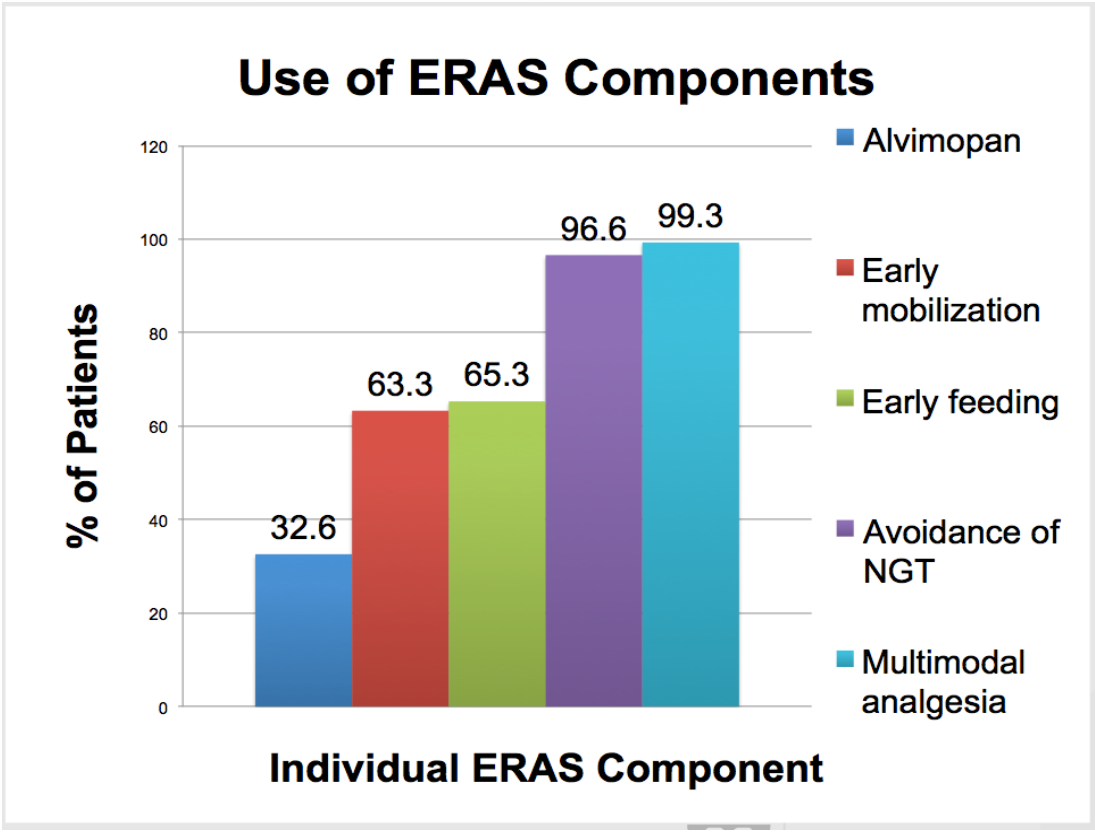
1. Ljungqvist O, et al. *JAMA Surg*. 2017;E1-E7. Published online January 11, 2017. Accessed July 8, 2018. 2. AANA. https://www.aana.com/practice/clinical-practice-resources/enhanced-recovery-after-surgery. Accessed July 8, 2018.



1. Modified from Melnyk M, et al. *Can Urol Assoc J.* 2011;5(5):342-348. 2. Ljungqvist O, et al. *JAMA Surg.* 2017;E1-E7. Published online January 11, 2017. Accessed July 8, 2018. 3. AANA. https://www.aana.com/practice/clinical-practice-resources/enhanced-recovery-after-surgery. Accessed July 8, 2018.

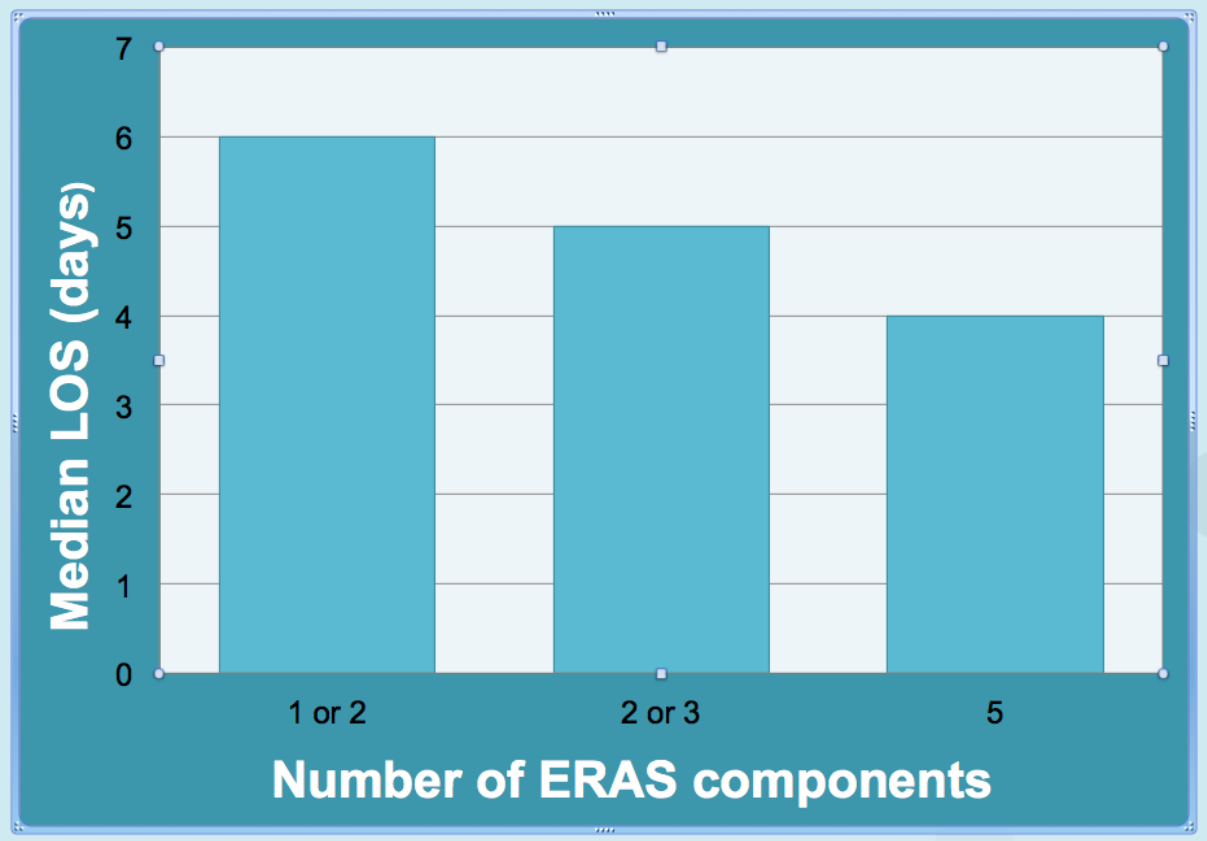
Audit of ERP adoption

Post EHR (Cerner)
126 Consecutive patients
MIS colorectal surgery 3/14-12/15



Cruz JY, et al. *Gastroenterology*, 2017;152(5):S1280.

Audit of ERP adoption



Cruz JY, et al. *Gastroenterology*, 2017;152(5):S1280.

Identification of Eligibility Criteria for Ambulatory Colectomy

Seija Maniskas, MD, MS; Dena Nasir, MD; Allison McCurdy, MD; Juliane Y. Golan, MD; Gabriel Akopian, MD; Howard S. Kaufman, MD

QI - Ambulatory Colectomy?

Patients identified using ICD 9/10 and CPT codes

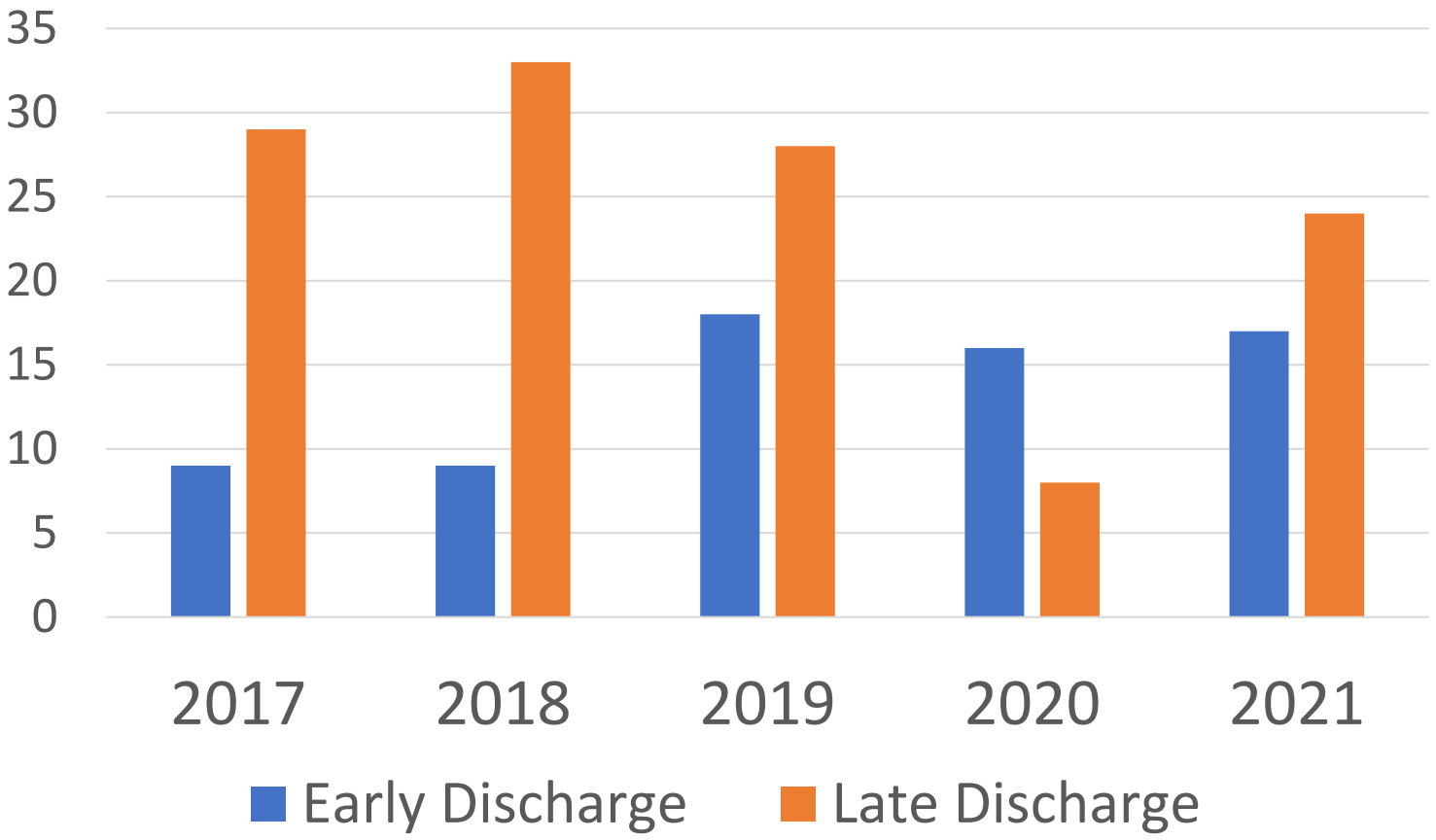
Data collected (2017-21):

- Demographics
- Disease data
- Procedural data
- Perioperative/Post operative data

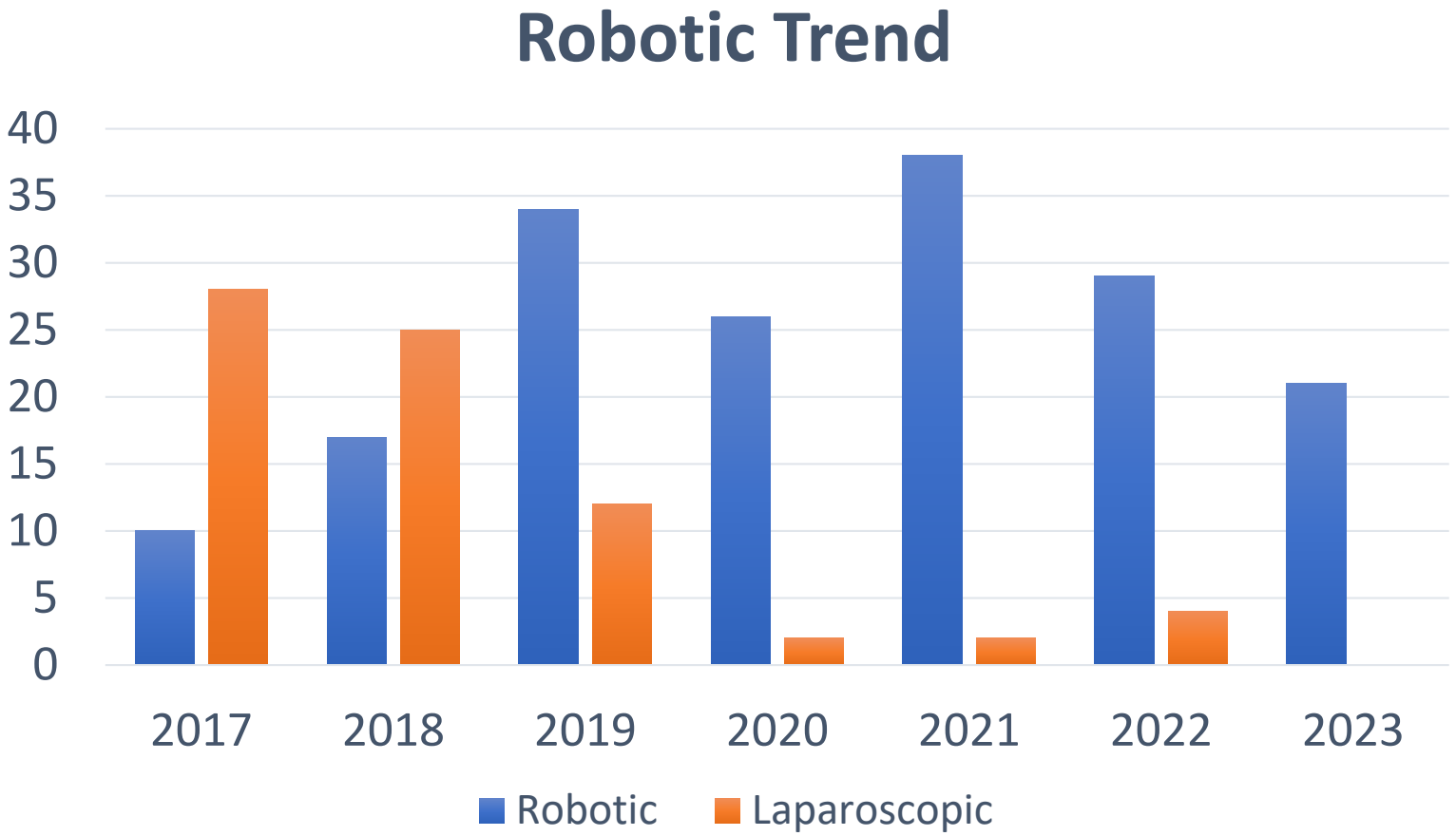
Patients were divided into groups based on LOS:
Early Discharge (≤ 2d, n=70) vs. **Late Discharge (>2d, n=125)**

Analyses performed on SPSS

QI - Ambulatory Colectomy?



Robotics


Robotic Trend
40
35
30
25
20
15
10
5
0
2017
2018
2019
2020
2021
2022
2023
Robotic
Laparoscopic

Patient Factors

	Early Discharge (70)	Late Discharge (125)	
	Median	Median	*p*
Age	63	68	**0.006**
BMI	27	26	0.76
	n (%)	n (%)	
DM	10 (14)	25 (20)	.32
Prior Abdominal/Pelvic Surgery	27 (39)	63 (50)	.11
Steroids	2 (3)	1 (1)	.29
Anticoagulation	4 (6)	11 (9)	.58

Procedural Variables

	Early Discharge	Late Discharge	*p*
	n (%)	n (%)	
Robotic	55 (79)	71 (57)	**0.002**
Extraction Incision			**0.004**
Pfannenstiel	55 (79)	69 (55)	
Minilap (midline)	12 (17)	50 (40)	
Other	3 (4)	6 (5)	
Anastomosis			**0.006**
Intracorporeal	55 (79)	74 (59)	
Extracorporeal	15 (21)	51 (41)	
LOA	11 (15)	24 (19)	0.54

Procedural Variables

	Early Discharge	Late Discharge	
	n (%)	n (%)	*p*
TAP Block	59 (84)	97 (78)	0.26
Alvimopan	59 (84)	69 (55)	**<.001**
Physical Therapy	14 (20)	43 (34)	**0.03**
Complications	2 (3)	13 (10)	0.06
30 Day Readmission	3 (4)	4 (3)	0.68
	Median	Median	*p*
MME POD 0	16	20	0.19
MME POD 1	18	33	**0.02**
MME POD 0 + 1	39	55	**0.02**

Procedural Variables

	Early Discharge	Late Discharge	
	n (%)	n (%)	*p*
Side of Resection	18	18	0.33
Left	30 (43)	41 (33)	
Right	39 (56)	83 (66)	
Subtotal	1 (1)	1 (1)	
Surgeon Specialty			**0.001**
Colorectal	43 (61)	40 (32)	
Surgical Oncology	22 (31)	68 (54)	
Minimally Invasive	1 (1)	7 (6)	
General	4 (6)	10 (8)	
Intraoperative Complication	1 (1)	1 (1)	0.68

RESEARCH SUMMARY

PD-1 Blockade in Mismatch Repair–Deficient, Locally Advanced Rectal Cancer

Cercek A et al. DOI: 10.1056/NEJMoa2201445

CLINICAL PROBLEM

Standard treatment for locally advanced rectal cancer includes neoadjuvant chemotherapy and radiation, followed by surgical resection of the rectum. This approach, however, is associated with substantial complications and toxic effects. Research suggests that immune checkpoint blockade alone is highly effective in patients with mismatch repair–deficient metastatic colorectal cancer; whether this strategy is effective in mismatch repair–deficient, locally advanced rectal cancer is unknown.

CLINICAL TRIAL

Design: A prospective, phase 2, single-group study examined the efficacy and safety of neoadjuvant therapy with the programmed death 1 (PD-1) inhibitor dostarlimab in patients with mismatch repair–deficient stage II or III rectal adenocarcinoma.

Intervention: Adult patients received intravenous dostarlimab every 3 weeks for 6 months, to be followed by chemoradiotherapy and total mesorectal excision. Patients with a clinical complete response to dostarlimab could forgo chemoradiotherapy and surgery. A key primary end point was overall response to dostarlimab alone or to dostarlimab plus chemoradiotherapy, determined on the basis of rectal magnetic resonance imaging, endoscopic visualization, and digital rectal examination.

RESULTS

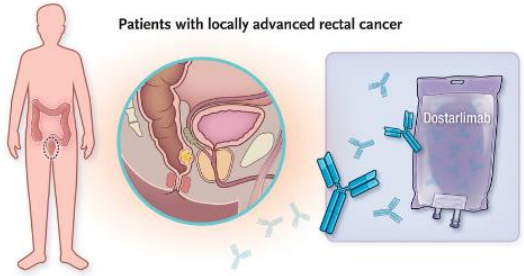
Efficacy: 12 of 16 enrolled patients have already completed 6 months of dostarlimab. All 12 had a clinical complete response, with no evidence of tumor on any diagnostic test. During a median follow-up of 12 months, no patient received chemoradiotherapy or underwent surgery, and none had disease progression or recurrence.

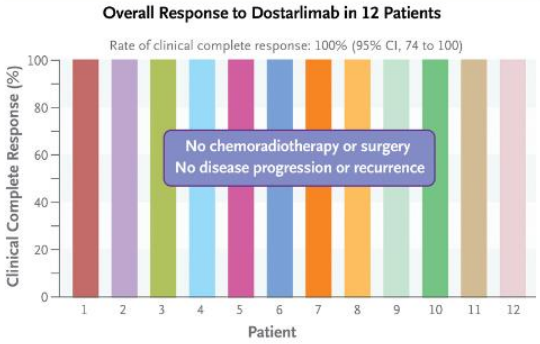
Safety: No adverse events of grade 3 or higher have occurred. The most common adverse events of grade 1 or 2 included rash or dermatitis, pruritus, fatigue, and nausea.

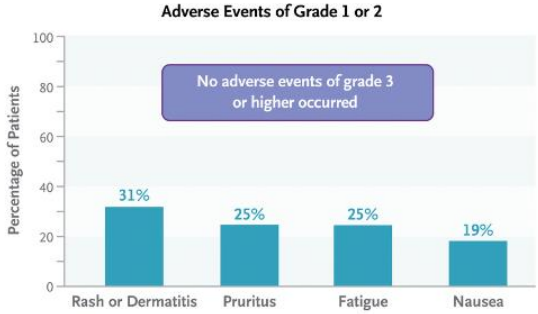
LIMITATIONS AND REMAINING QUESTIONS

- The study was small and limited to a single institution, and most of the patients were White.
- Longer-term follow-up is needed to evaluate the duration of response.

Links: Full Article | NEJM Quick Take | Editorial







CONCLUSIONS

All patients with mismatch repair–deficient, locally advanced rectal cancer who were treated with the PD-1 inhibitor dostarlimab alone for 6 months had a clinical complete response, although longer follow-up is warranted.

Immune Checkpoint Inhibitors

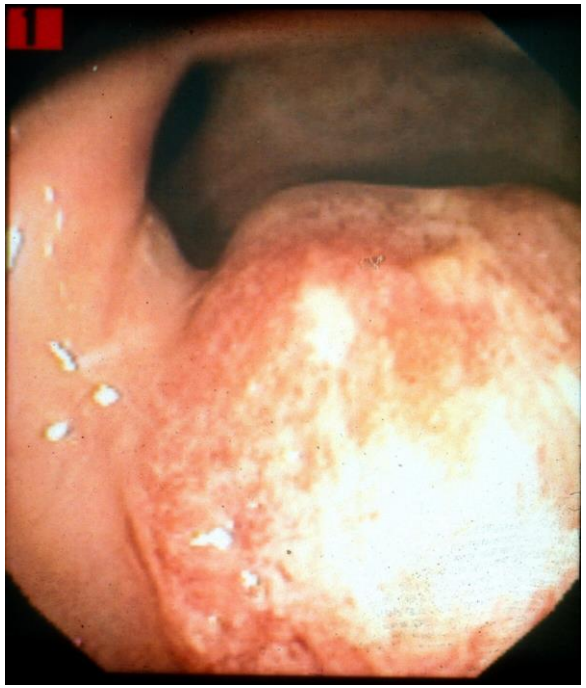
YouTube · National Cancer Institute · Nov 13, 2018

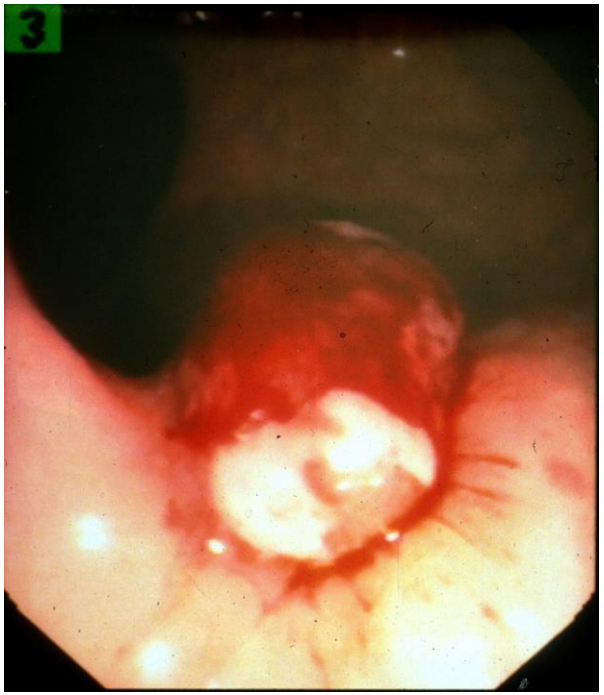
https://www.google.com/search?q=checkpoint+inhibitors+mechanism+of+action+video&sca_esv=1d77d30c05e3b912&sxsrf=ACQVn0-SF-001nLPkAcv_x7_WBv3PP0WvQ%3A1710192572751&ei=vHfvZfPBLbjekPIPypWJ-AU&oq=checkpoint+inhibitors+mechanism+of+action+v&gs_lp=Egxnd3Mtd2l6LXNlcnAiK2NoZWNrcG9pbnQgaW5oaWJpdG9ycyBtZWNoYW5pc20gb2YgYWN0aW9uIHYqAggAMgUQIRigATIFECEYoAEyBRAhGKABMgUQIRigATIFECEYoAEyBRAhGJ8FSOYTUKsCWIAHcAF4AZABAJgBggGgAdcBqgEDMS4xuAEByAEA-AEBmAIDoALpAclCChAAGEcY1gQYsAPCAgYQABgWGB7CAgsQABiABBiKBRiGA5gDAIgGAZAGCJIHAzIuMaAHrgw&sclient=gws-wiz-serp#fpstate=ive&vld=cid:a16cdb10,vid:GIUu239FWMg,st:0

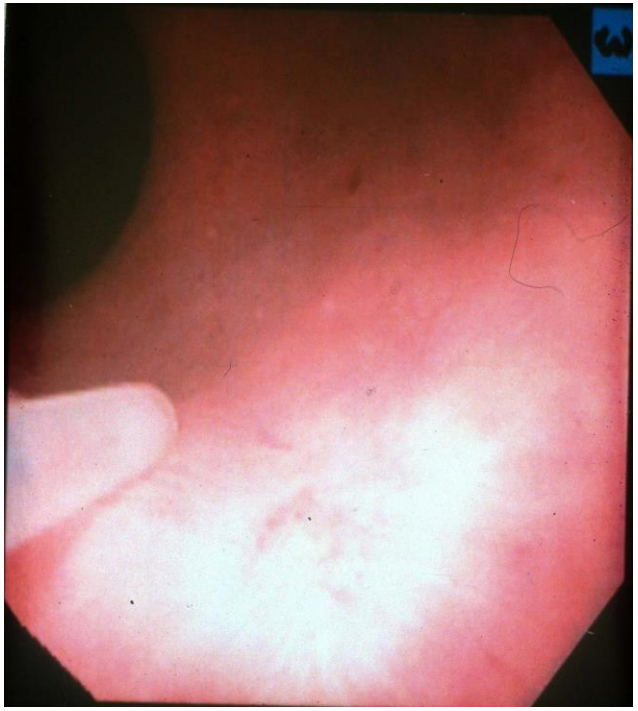
Video Link

https://www.google.com/search?q=immune+checkpoint+inhibitors+youtube&oq=youtube+immune+checkpoint+in&gs_lcrp=EgZjaHJvbWUqCAgBEAAYFhgeMgYIABBFGDkyCAgBEAAYFhgeMg0IAhAAGIYDGIAEGIoFMg0IAxAAGIYDGIAEGIoFMg0IBBAAGIYDGIAEGIoFMg0IBRAAGIYDGIAEGIoFMgoIBhAAGIAEGKIEMgoIBxAAGKIEGIkFMgoICBAAGIAEGKIEMgoICRAAGIAEGKIE0gEJMTA0NTZqMGo3qAIAsAIA&sourceid=chrome&ie=UTF-8#fpstate=ive&vld=cid:a16cdb10,vid:GIUu239FWMg,st:0

What's New…Rectal Cancer



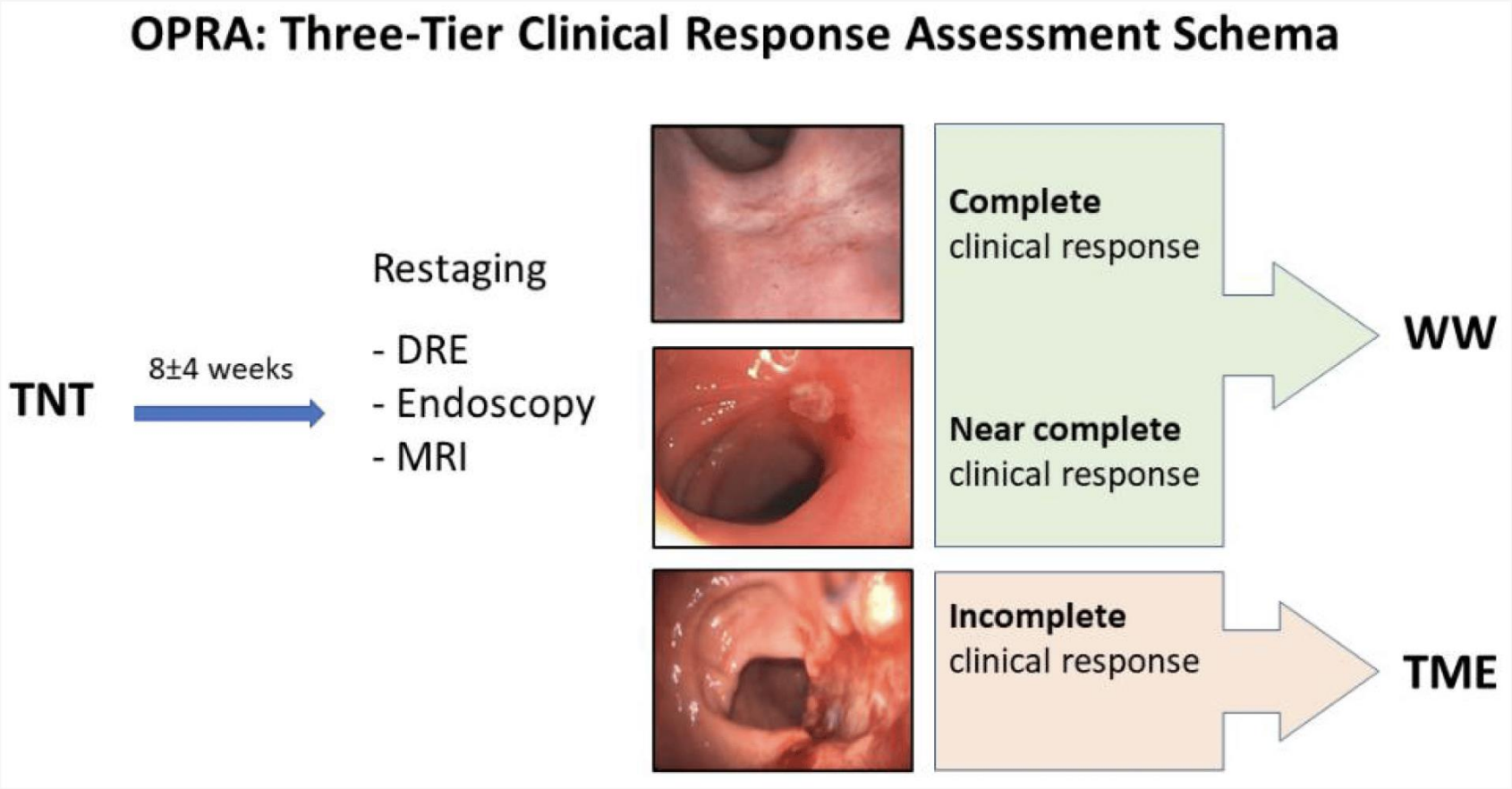




Watch and Wait for Rectal Cancer

Huntington Cancer Center | An Affiliate of Cedars Sinai Cancer

Figure 1. Memorial Sloan Kettering three-tiered response/regression schema.



Cancers 2022, 14, 3204. https://doi.org/10.3390/cancers14133204

Summary

- Common, 2nd leading US cause of cancer death
- Screening saves lives, multiple options exist
- Disparities in age, race, ethnicity
- System- and community-wide efforts are needed to address disparities
- Improved outcomes including opioid reduction through MIS and ERPs
- More to come…
  - Outpatient colorectal surgery?
  - Checkpoint inhibitors
  - Watch and wait for rectal cancer

FAQs

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1. What are the 2018 American Cancer Society recommendations for colorectal cancer screening for average-risk adults?

a. Begin screening at age 50.

b. Continue to screen all individuals after age 85.

c. Screen all average-risk individuals age 45 to 75; selectively offer screening up to age 85.

2. Which is a true statement regarding colorectal cancer in younger individuals?

a. Individuals born in the 1990s have an approximately fourfold greater risk of developing rectal cancer than those born in the 1950s

b. A personal history of inflammatory bowel disease is not a risk factor for developing colorectal cancer

c. Rectal bleeding in a young individual can always be attributed to hemorrhoids and does not require further evaluation

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FAQs

3. Which outcomes should be tracked to identify disparities in colorectal cancer screening?

a. Rates of screening participation, income, and geography.

b. Follow up for abnormal results.

c. Incidence of colorectal cancer by age, race, and ethnicity.

d. All of the above.

4. Which statement is true regarding rectal cancer?

a. All patients with rectal cancer experience and describe rectal bleeding.

b. Rectal cancer treatment is no different than colon cancer.

c. Selected patients who have a complete clinical response to chemo and radiation therapy may not require surgery if carefully watched.

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Thank you!

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