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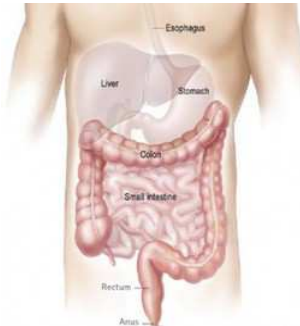
COLORECTAL CANCER

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Colorectal Cancer (CRC)

- 3rd most common cancer in U.S.
 - 136,800 new cases expected in 2014
- 3rd deadliest cancer in U.S.
 - > 50,000 deaths

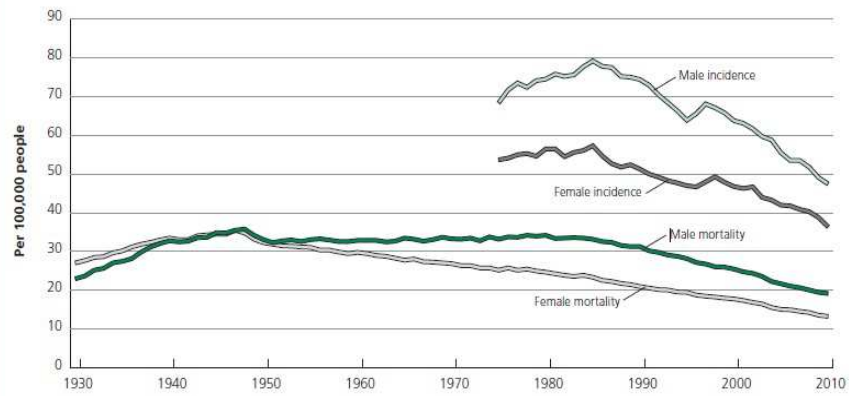


Imperiale TF et al. *N Engl J Med* 2014;370:1287-1297.

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CRC Trends

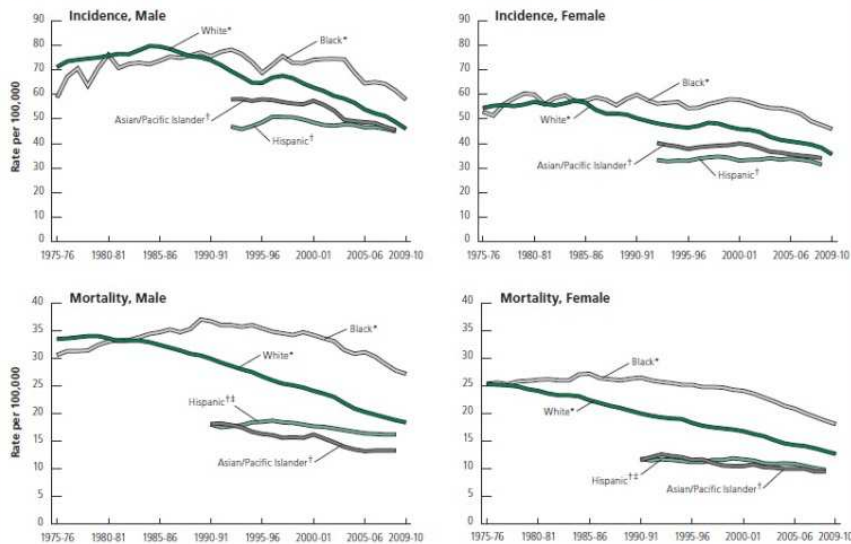
Figure 4. Trends in Colorectal Cancer Incidence and Death Rates by Sex, US, 1930-2010



Rates were age adjusted to the 2000 US standard population. Incidence rates were adjusted for delays in reporting. Due to changes in International Classification of Diseases (ICD) coding for mortality, numerator information has changed over time.
Source: Incidence - Surveillance, Epidemiology, and End Results (SEER) Program, SEER 9 registries, National Cancer Institute, 2013.
 Mortality - US Mortality Volumes 1930 to 1959, US Mortality Data 1960-2010, National Center for Health Statistics, Centers for Disease Control and Prevention, 2013.
 American Cancer Society, Surveillance Research, 2014

CRC Trends by Race/Ethnicity & sex

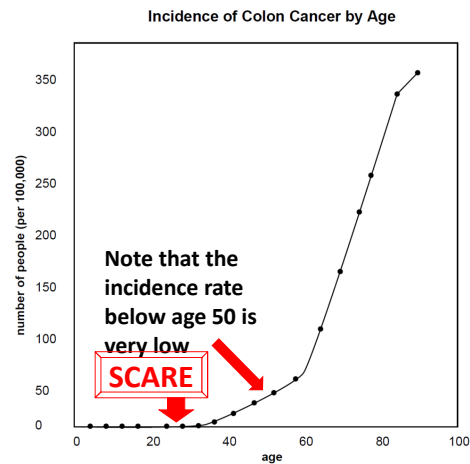
Figure 5. Trends in Colorectal Cancer Incidence and Mortality Rates by Race/Ethnicity and Sex, 1975-2010



Age: the Most Impactful Risk Factor

CRC usually develops after age 50.

The chances of getting it increases as you get older.



<http://science.education.nih.gov/supplements/nih1/cancer/guide/pdfs/ACT3M.PDF>

CRC screening should begin at age 50 for most people, earlier for those with a family history.

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Non-Modifiable Risk Factors



Age

- 90% of cases occur in people 50 and older

Gender

- Slight male predominance, but common in both men and women

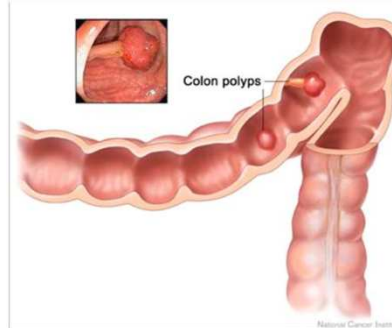
Race/Ethnicity – higher rates among

- African Americans
- Native Americans (esp. Northern Plains Tribes)
- Alaska Natives

Risk Factor - Polyps

Different types of polyps:

- **Hyperplastic**
 - Low risk: very small chance they'll grow into cancer
- **Adenomatous**
 - About **9 out of 10** colon and rectal cancers start as adenomas



It may take ≥ 10 -15 years for polyps to become cancer

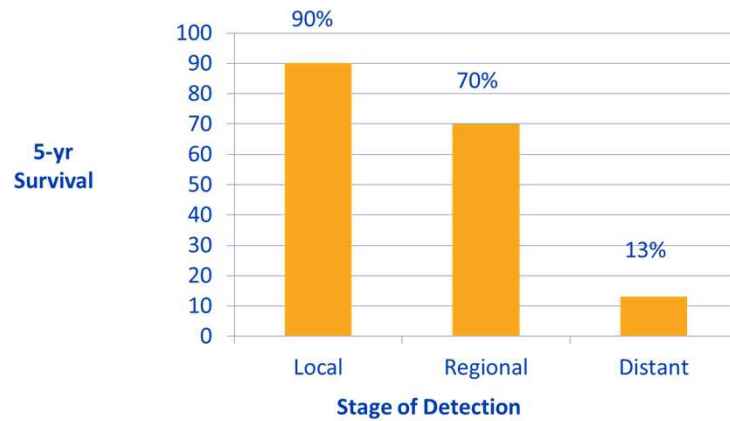
The Adenoma-Carcinoma Sequence

- **Most cancers of the colon and rectum develop from adenomatous polyps**
- **Estimates of polyp dwell time from a < 1 cm polyp to an invasive cancer is about 10 years**
- **Screening Emphasizes early detection and prevention**



Benefits of Screening

Survival Rates by Disease Stage*



*1975-2010

These results define the two aims of testing

1. Prevention

Find and remove polyps to prevent cancer

2. Early Detection

Find cancer in the early stages, when best chance for a cure



Colorectal Screening in Average Risk Adults: Update 2008

Recommendation	ACS, USMSTF, ACR	USPSTF
Age to begin and end screening	<p>Begin screening at age 50</p> <p>End screening at a point where curative therapy would not be offered due to life-limiting co-morbidity</p>	<p>Begin screening at age 50 (A)</p> <p><i>Routine screening in adults aged 76-85 is not recommended (C).</i></p> <p>There may be considerations that support screening in an individual patient.</p> <p><i>Screening after age 85 is not recommended (D)</i></p>

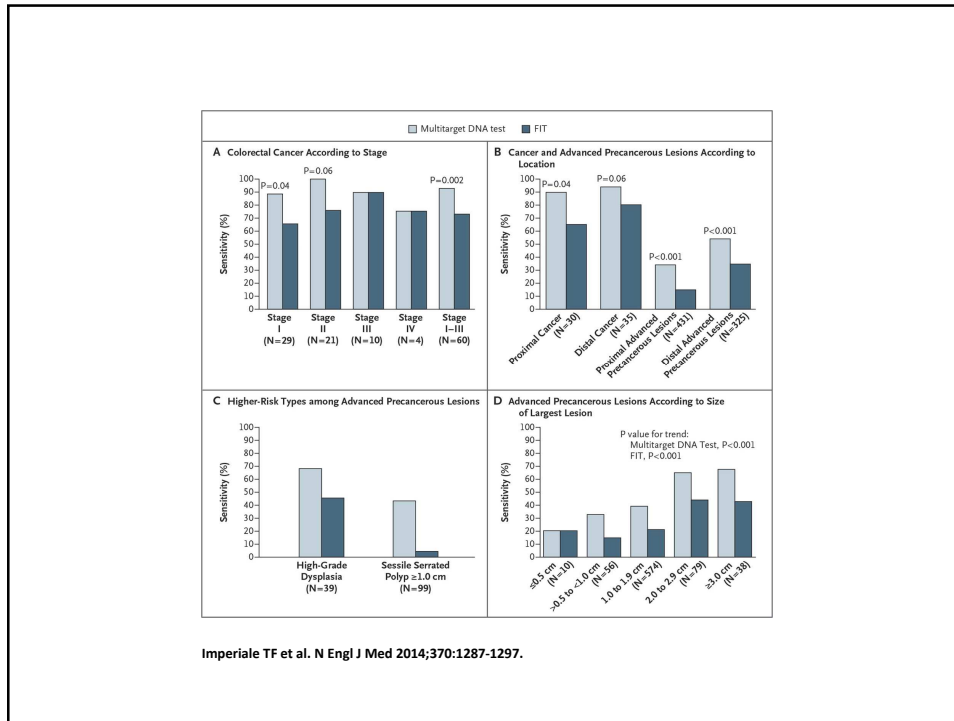
CRC Screening in Average Risk Adults: Update 2008

Recommendation	ACS, USMSTF, ACR	USPSTF
Stool Testing • gFOBT • FIT	<p>Annual screening with high sensitivity gFOBT or FIT</p> <p>Low sensitivity gFOBT not recommended</p>	<p>Annual screening with high sensitivity gFOBT or FIT</p>
Flexible sigmoidoscopy	<p>Screening every 5 years</p> <p>Screening every 5 years, with annual gFOBT or FIT is an option</p>	<p>Screening every 5 years, with gFOBT or FIT every 3 years</p>
Colonoscopy	<p>Screening every 10 years</p>	<p>Screening every 10 years</p>
CT Colonography	<p>Screening every 5 years</p>	<p>Insufficient evidence (I)</p>

Why are Screening Rates Low? *(according to patients)*

- Low awareness of CRC as a *personal* health threat
- Lack of knowledge of screening benefits
- Fear, embarrassment, discomfort
- Time
- Cost
- Access
- Structural issues (lack of systems in most settings)
- **My doctor never talked to me about it!**

THE FUTURE



DNA STUDY 9989 participants

- 65 had colorectal cancer (0.7%)
- 757 had advanced precancerous polyps (7.6%)
- Sensitivity for detecting colorectal cancer was
 - 92.3% with DNA testing
 - 73.8% with FIT (P=0.002)
- Sensitivity for detecting advanced precancerous lesions was
 - 42.4% with DNA testing
 - 23.8% with FIT (P<0.001)
- Specificities with DNA testing and FIT were
 - 89.8% with DNA testing
 - 96.4% with FIT (P<0.001)

QUESTIONS?