



THE UNIVERSITY OF ARIZONA
Cancer Center

9th Annual Tribal Collaborative Conference Colorectal Cancer

Peter Lance, MD

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Cancer Center

November 19, 2015
Flagstaff

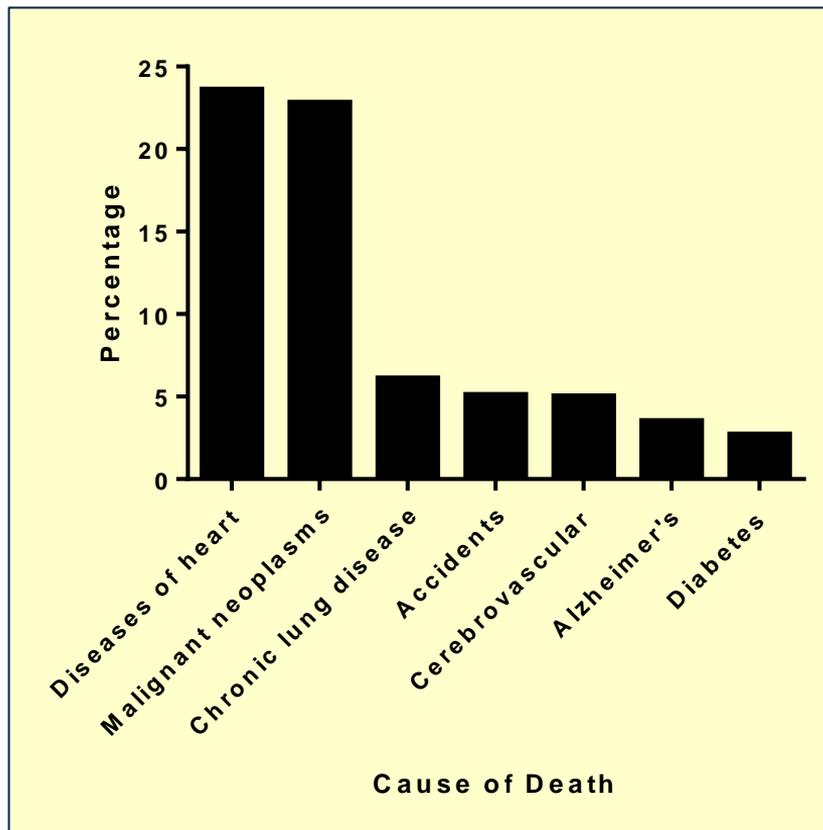


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Epidemiology



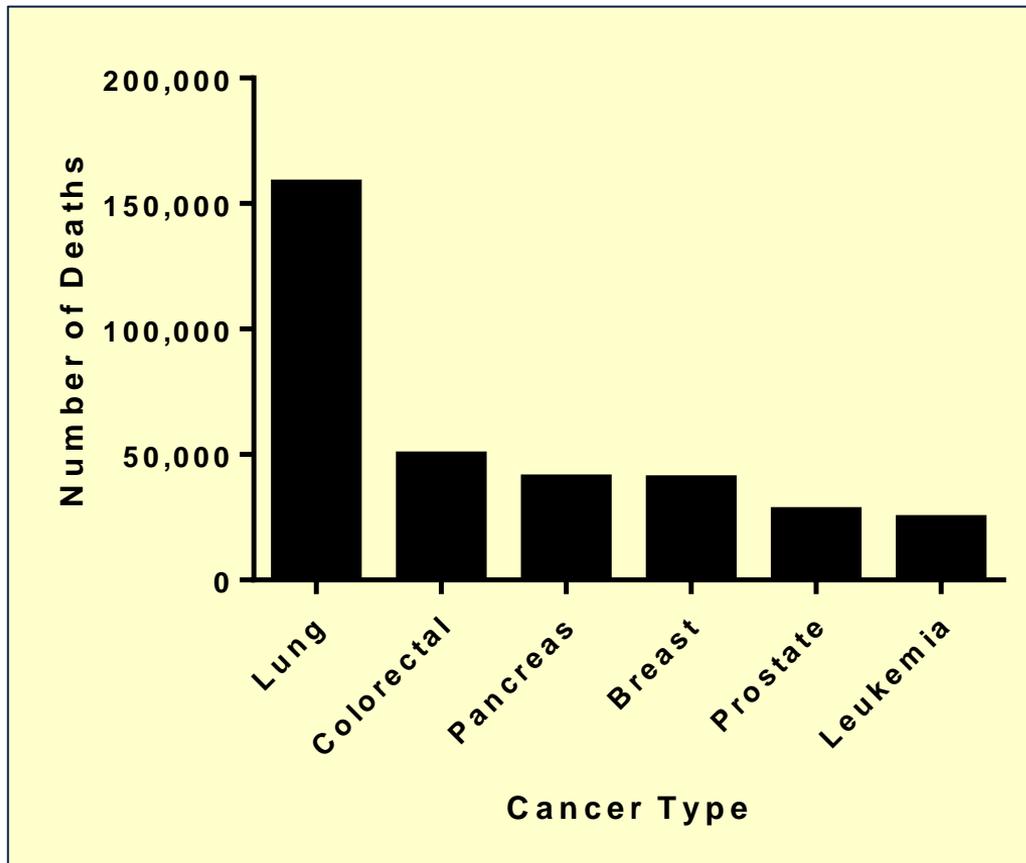
US Leading Causes of Death, 2012



All causes: 2,175,178
Almost 50% heart + malignancy



Estimated Cancer Deaths, 2015

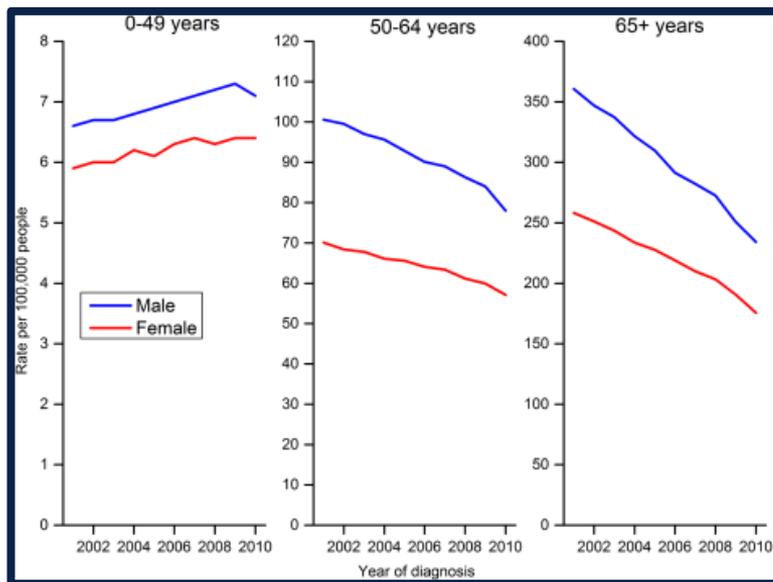
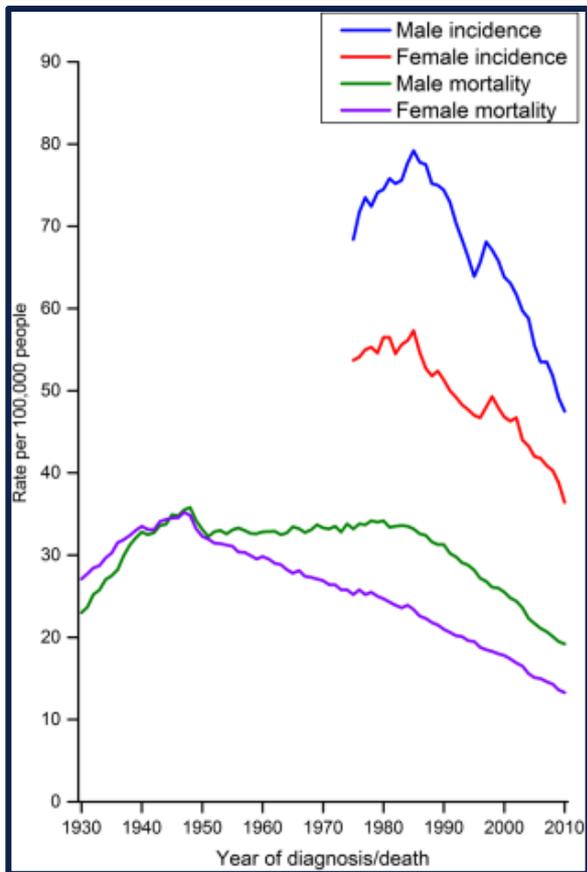


All sites: 589,430



Early-Onset Colorectal Cancer

- Overall incidence & mortality ↓ 10% in past 10 y
- Screening credited
- **BUT** ↑ by 2-3% per year in under 50's

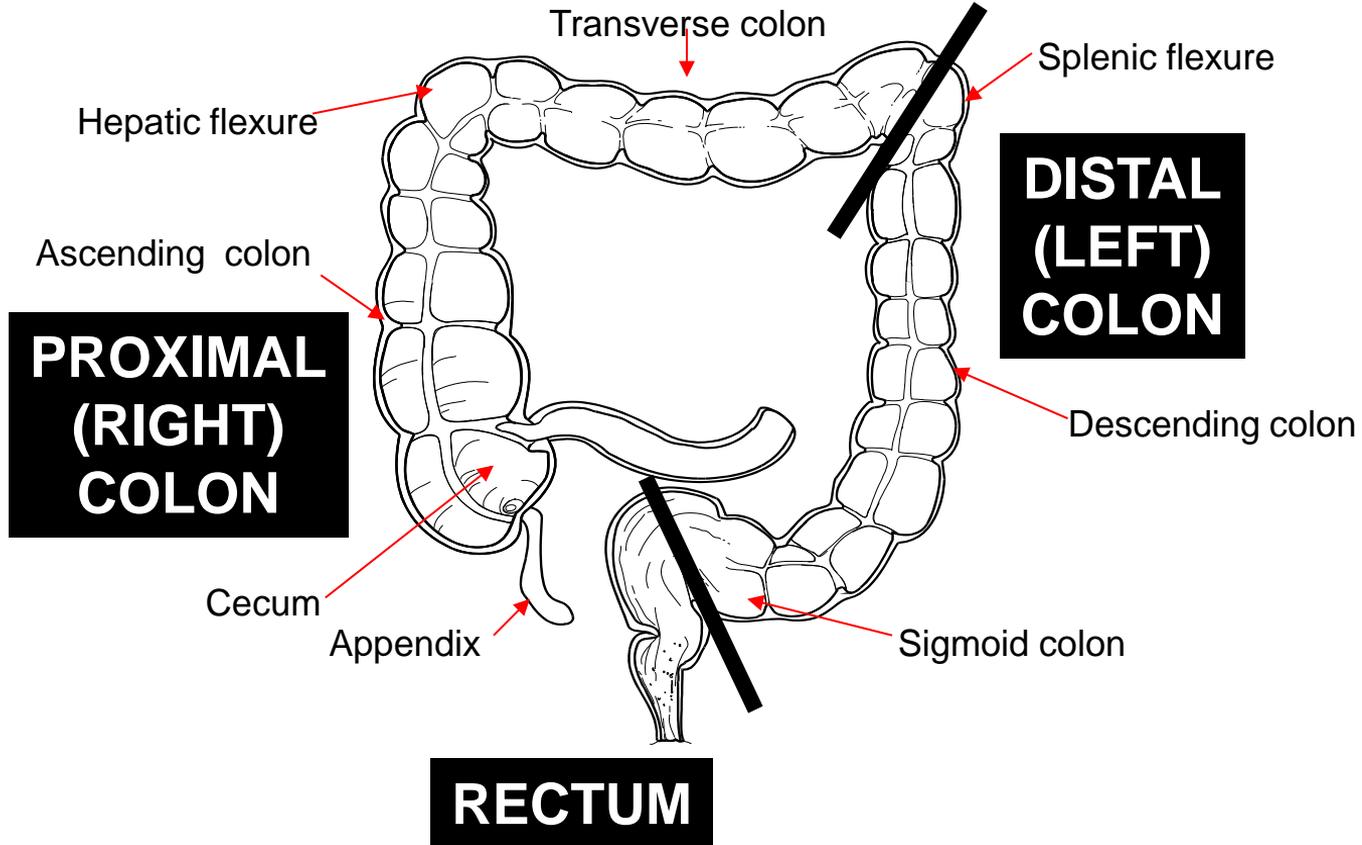




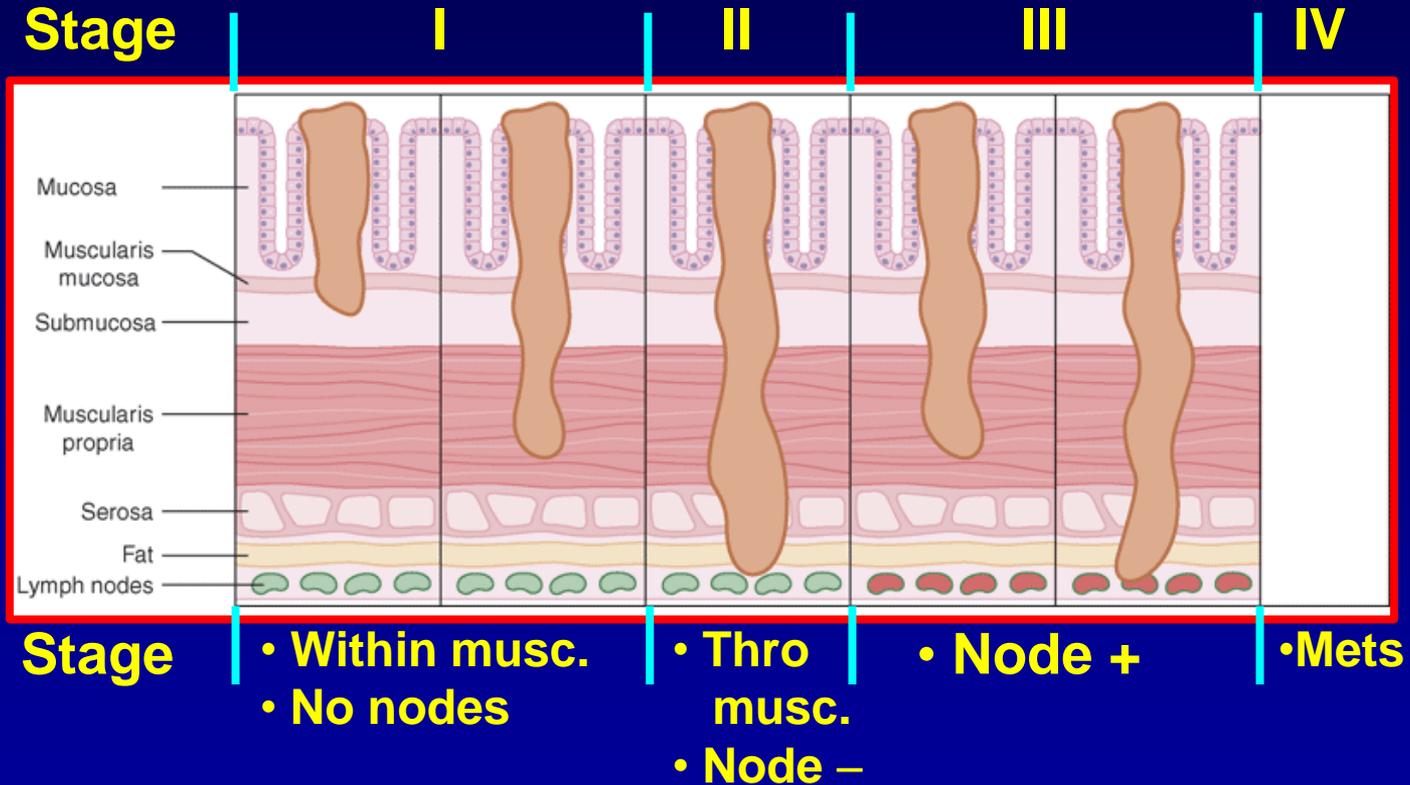
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Anatomy & Staging

Anatomy of the Colon and Rectum



Colorectal Cancer Staging

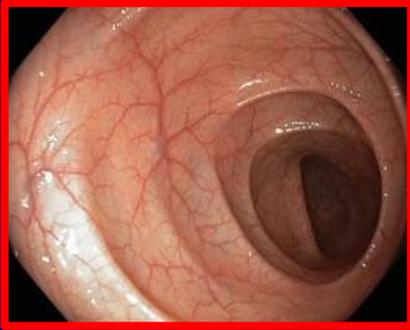




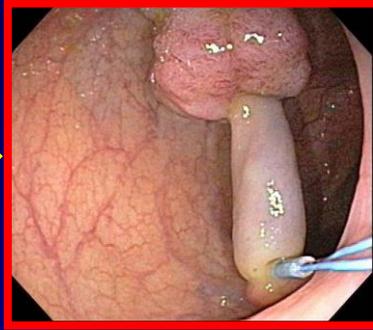
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Pathobiology

Adenoma-Carcinoma Sequence



Normal



Adenoma



Carcinoma

-
- ~50% of US population have 1+ adenomas by age 70 y
 - <10% are at risk of progression to CRC



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Presentation

Symptoms of Colorectal Cancer

- **Blood with stool**
- **Weight loss**
- **Change in bowel habit**
- **Loss of appetite**
- **Abdominal pain**
- ***Intestinal obstruction***
- **Consult physician sooner rather than later**
- **Low threshold of suspicion for ordering colonoscopy**



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Approaches to Reducing Disease Burden

Reducing Colorectal Cancer Mortality

1. Primary prevention
2. Improved therapy of established (invasive) disease
3. Early detection
 - i. Prognosis following treatment of early-stage disease is excellent – \geq 90% 5-year survival
 - ii. Premalignant stage – adenoma

BUT..... adenomas and localized cancers rarely cause symptoms

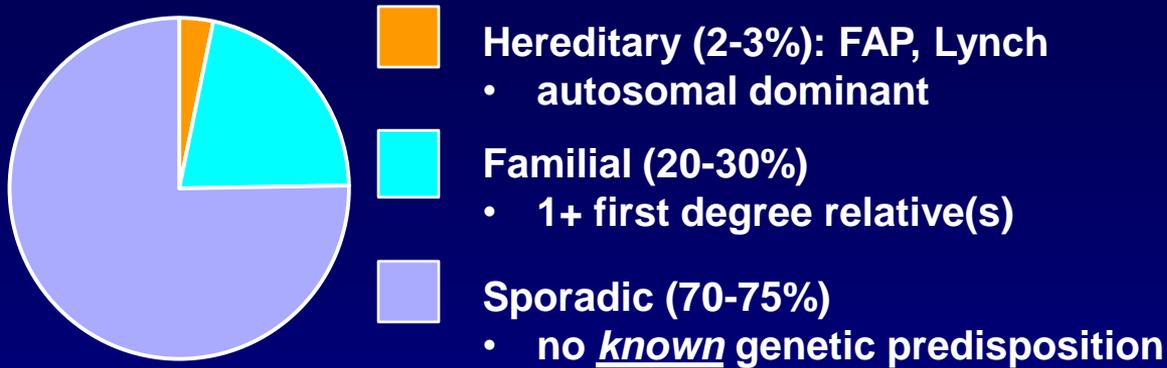
∴.....SCREENING



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Screening

Triaging Colorectal Cancer Risk for Screening



INDIVIDUALS AND THEIR PCPs MUST KNOW FH OF CRC

- Hereditary:** Expert genetic & subspecialty management
- Familial:** Colonoscopy, starting at least 10 years before index case's age when first diagnosed with colorectal cancer
- Sporadic:** From age 50 – 75 years according to guidelines
 - US Preventive Services Task Force
 - US Multi-Society Task Force: ACS, ACG, ACR, ASGE, AGA

The Needle in the Haystack



Sensitivity and specificity

USPSTF CRC Screening Guidelines

Ann Intern Med 149: 627-637 (2008)

Provisionally revised October, 2015

TEST	FREQUENCY
High-sensitivity FBT, Hemocult SENSA or FIT	Annual
High-sensitivity FBT + FSIG	Annual Every 10 years
Colonoscopy	Every 10 years

*For reasons not evidence-based, availability of
FSIG is now very restricted in US*

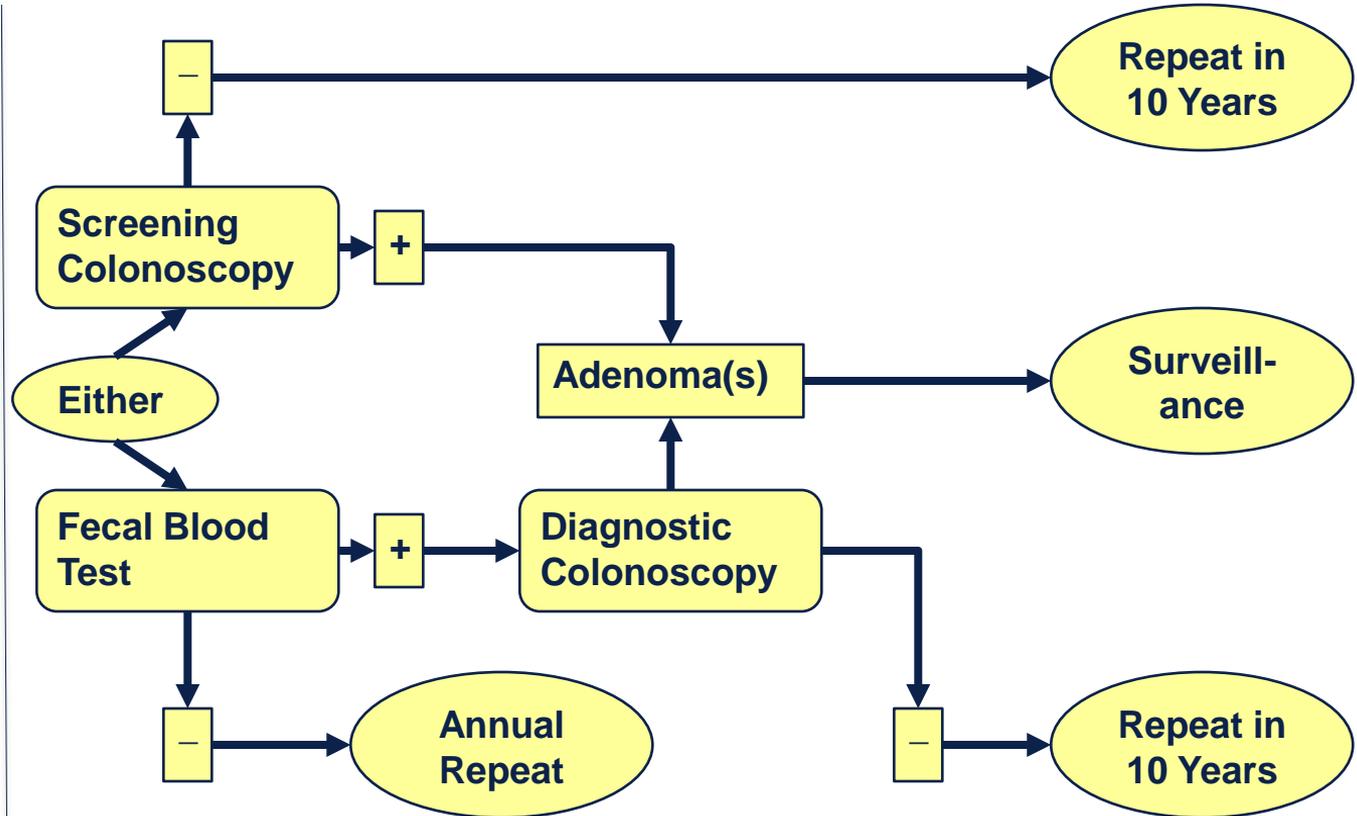


Colorectal Cancer Screening

AVERAGE RISK

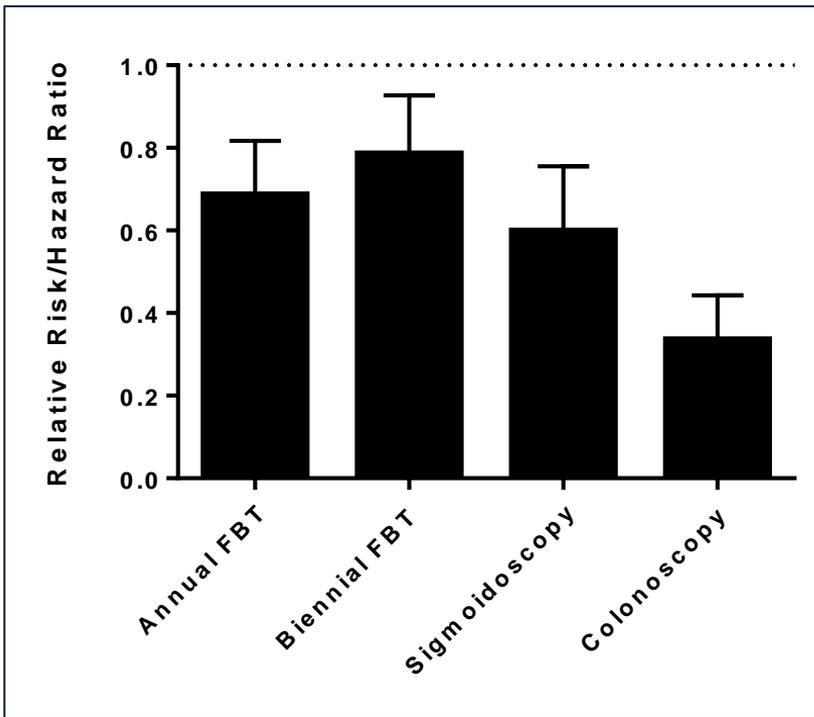
- FBT – annual
- Flex sig – every 10 y + annual FBT
- Colonoscopy – every 10 y

USPSTF, October 2015





CRC Screening Efficacy



Test	Mortality ↓
Annual FBT*	32%
Biennial FBT	22%
Sigmoidoscopy	41%
Colonoscopy	68%

*FBT: Fecal Blood Test

NEJM 369: 1095-1105 (2013)

NEJM 369: 1106-1114 (2013)

Colonoscopy Quality Control

Bowel preparation	Repeat the procedure if poor
Cecal intubation (images)	≥90%
Withdrawal time	≥6 min
Adenoma detection rate	≥25% in men ≥15% in women
Perforation rate	1 – 2/1,000 in Medicare and UK NHS populations



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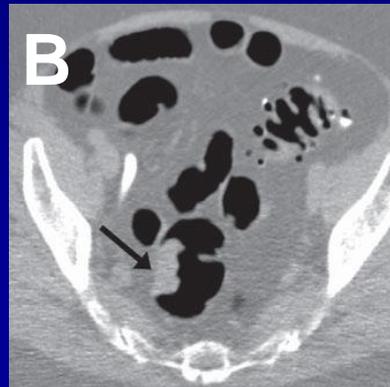
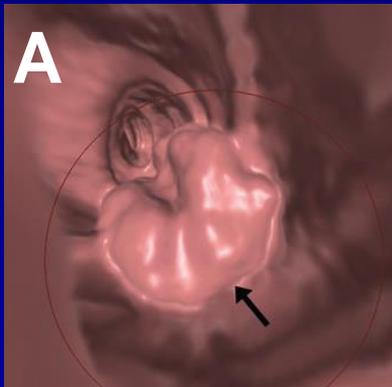
Computed Tomographic (CT) Colonography

“Virtual Colonoscopy”

CT Colonoscopy at Navajo IHS Facilities

AJR Am J Roentgenol 185: 1110-1117 (2010)

Number Screened	321	
Technically Satisfactory	292	91%
Referred for Colonoscopy	45	14%
Polyp/Mass	18/45	41%



- Female, 64 yrs
- Cancer, sigmoid

A: Fly Through
B: 2D



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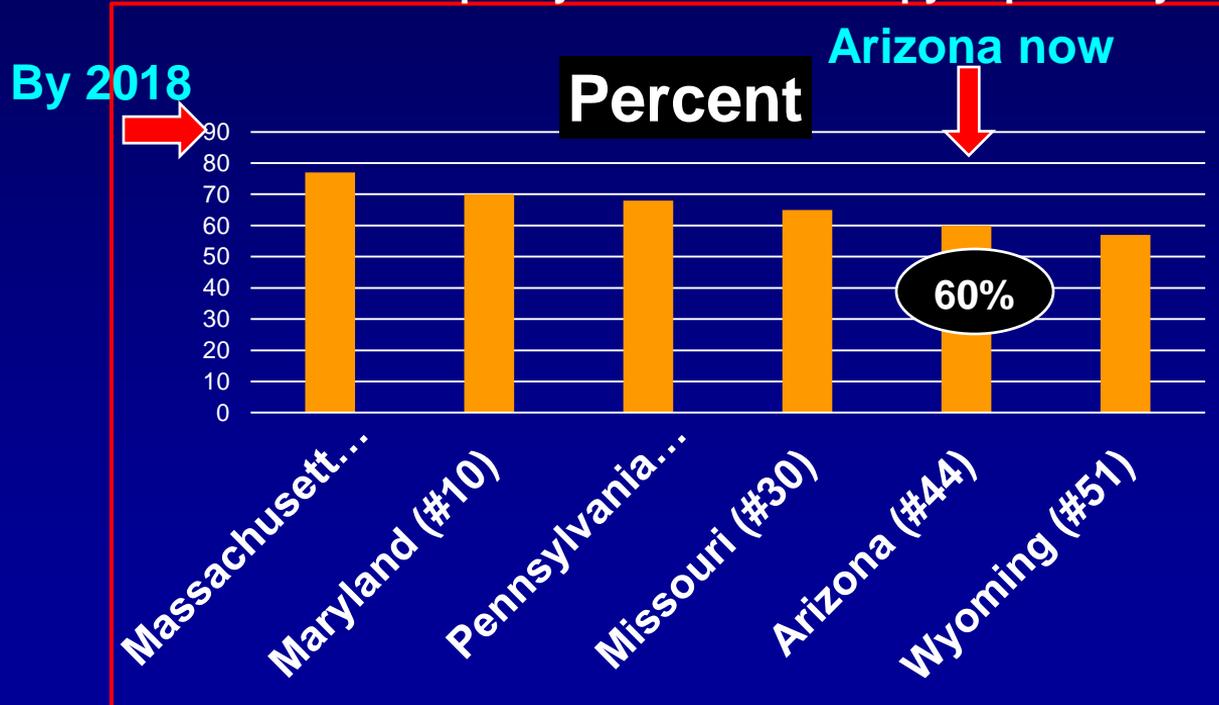
Colorectal Cancer Screening – Uptake

State Colorectal Cancer Screening Rates

ACS Colorectal Cancer Facts & Figures 2014-2016

ACS Goal: 80% CRC screening by 2018

Fecal blood test in past year or colonoscopy in past 10 years



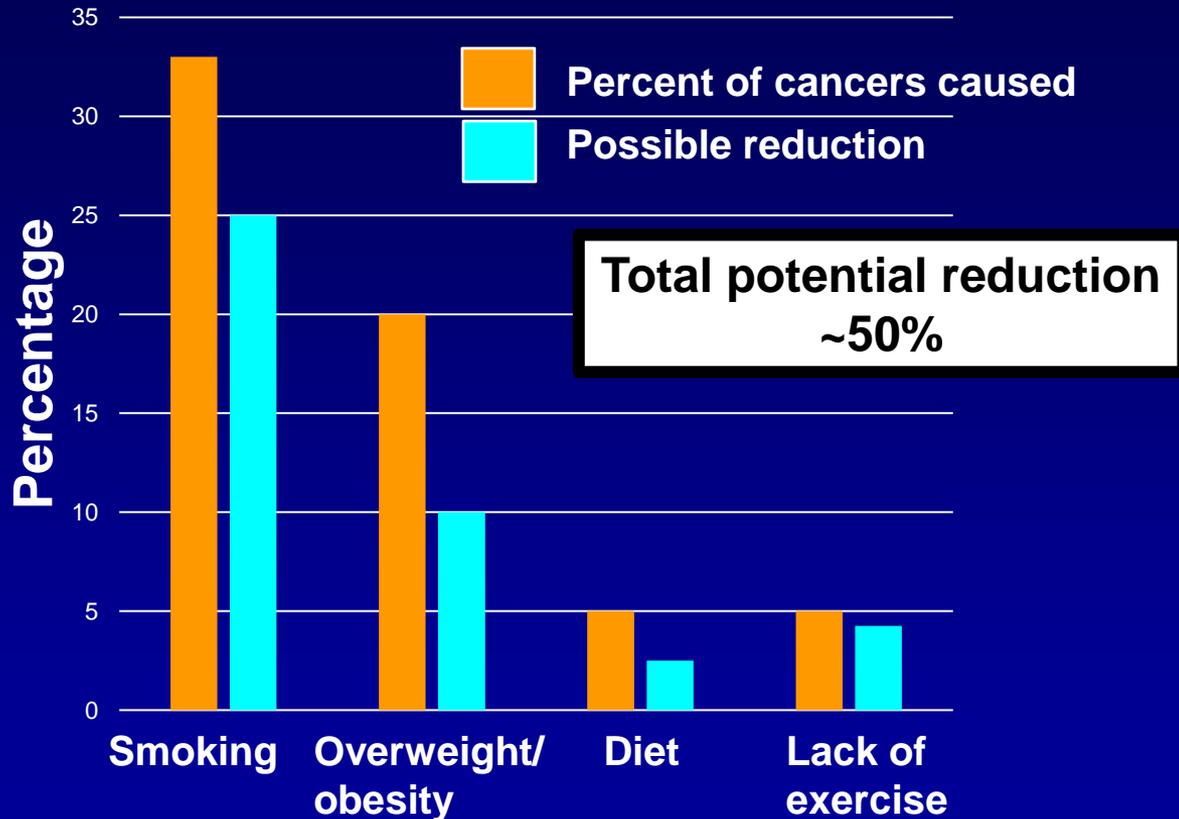


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Colorectal Cancer – Primary Prevention

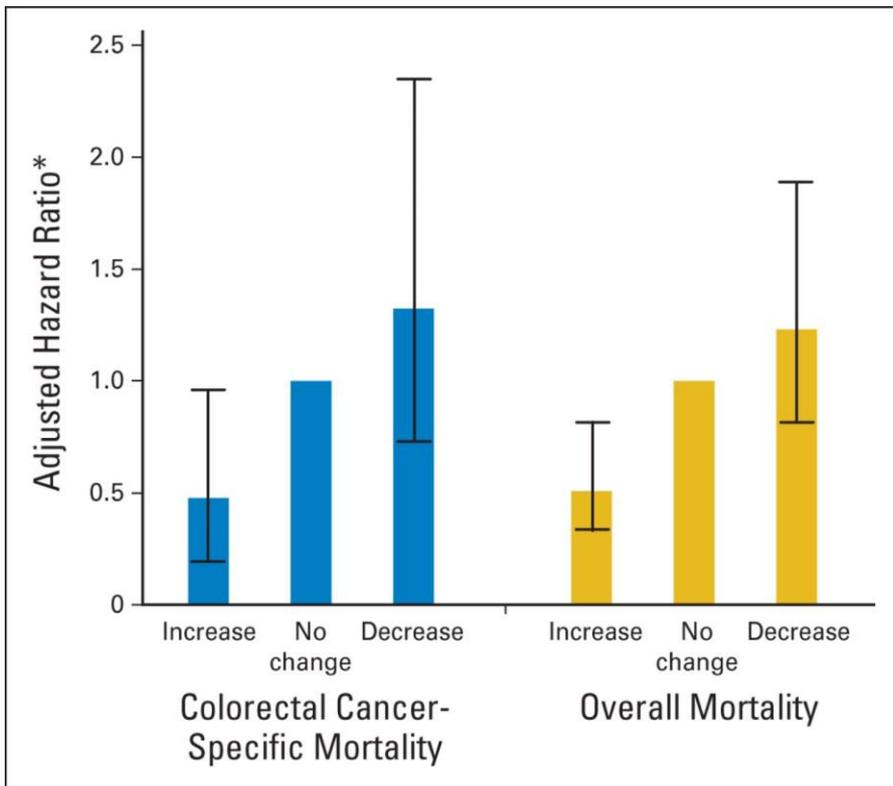
Reduction in Cancer Burden through Prevention

Colditz. *Sci Transl Med* 4: 127rv4 (2012)





Exercise After Diagnosis of Stage I – III CRC



Approx. 50% lower risk of CRC-specific & all-cause mortality with exercise

***J Clin Oncol* 33: 1825-1834 (2015)**

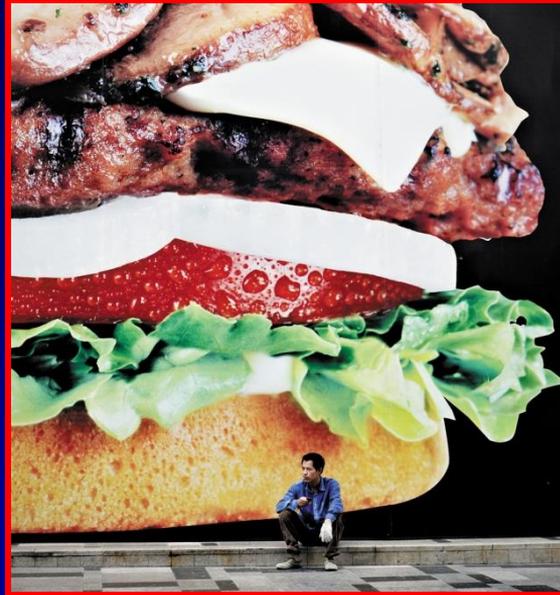
Non-Communicable Diseases

Nature 511: 147 (2014)

NCDs

- Cardiovasc
- Cancer
- Ch pulm
- Diabetes

65% of deaths worldwide already



Risk Factors

- Tobacco*
- Diet*
- Lack of exercise
- Excess alcohol*

**3 of 4 RFs are aggressively marketed industrial products*

- Only environmental, i.e. population approaches, are feasible and cost-effective
- Thus, prevention of NCDs is a political issue



- **Colorectal cancer the 2nd most frequent cause of death from cancer**
- **Although overall rates are declining, incidence increasing in under-50's**
- **Prompt colonoscopy for suggestive symptoms**
- **Prognosis for early-stage disease excellent**
- **Premalignant polyps can be removed by colonoscopy**
- **Screening by FBT or colonoscopy of proven major benefit**
- **Achieving ACS goal of 80% screening uptake a major challenge**
- **Colorectal cancer and other NCDs are eminently preventable but this can only be achieved by political action**