

Colorectal Cancer: The Preventable Killer

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Relevant Conflicts of Interest:

Co-Investigator (past)- CRC screening trial for stool DNA test

Co-Investigator (current)- CRC Screening trial of colonoscopy vs FIT

Co-Author- Modeling studies commissioned by ACS for current guidelines

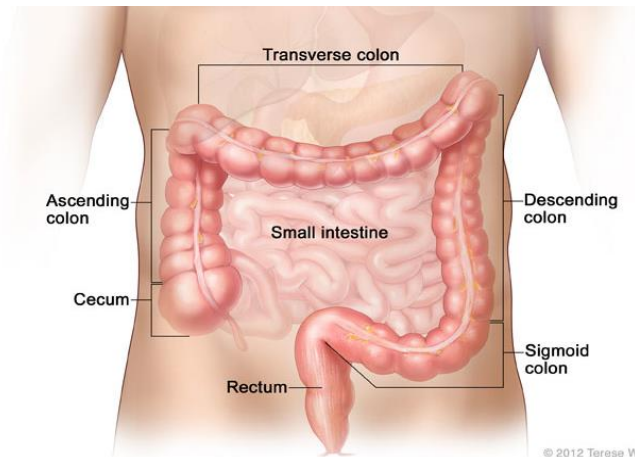


Colorectal Cancer: The Preventable Killer

Colorectal Cancer is the result of a sequence
of biologic events; It is

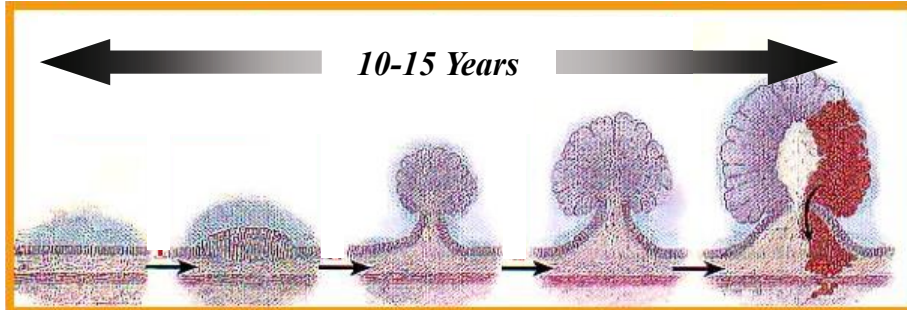
- Common
- Lethal
- Preventable

What is Colorectal Cancer?



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U.S. Govt. has cert.

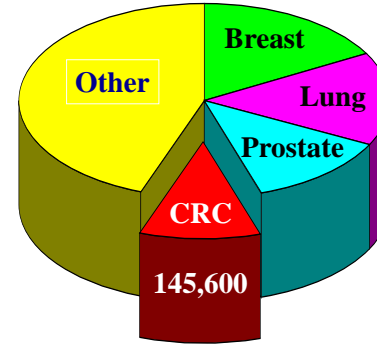
The Adenoma Carcinoma Sequence



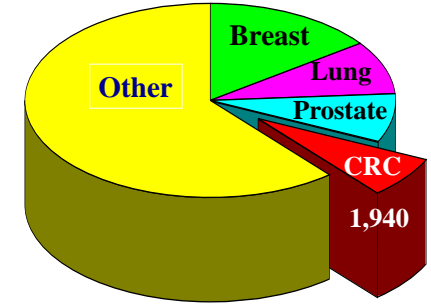
Normal epithelium Abnormal epithelium Small adenoma Large adenoma Colon carcinoma

CRC is Common

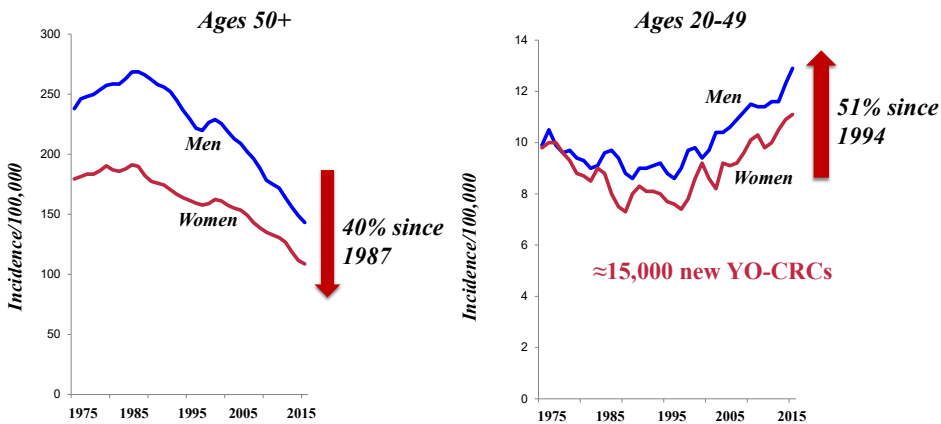
United States
New Cases- 1,762,450



Colorado
New Cases- 28,600



CRC Incidence Over Time The Good and Bad



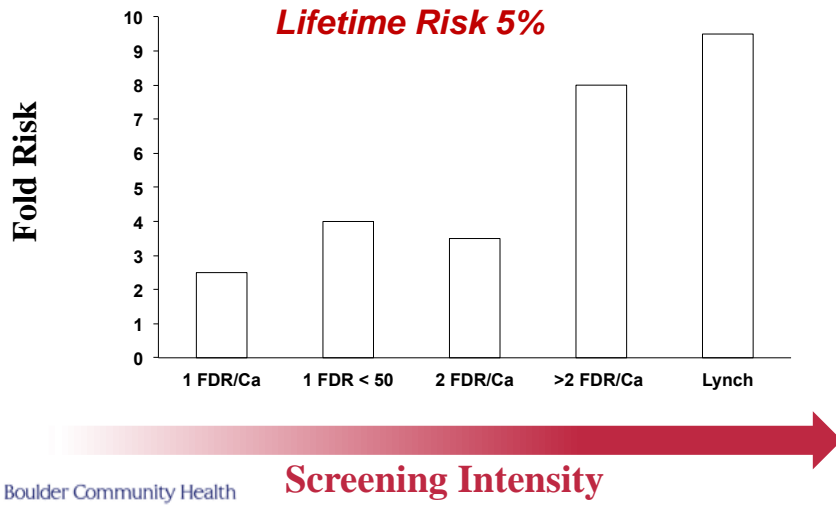
Siegel R: Source--SEER 9 delay-adjusted rates, 1975-2012; 2-yr moving average.

CRC Risk Factors

Demographic

- Country of origin
- Age
- Sex
- Race/Ethnicity
- SES
- Family History

Family History and CRC Risk



CRC Risk Factors

Demographic

- Country of origin
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Diet

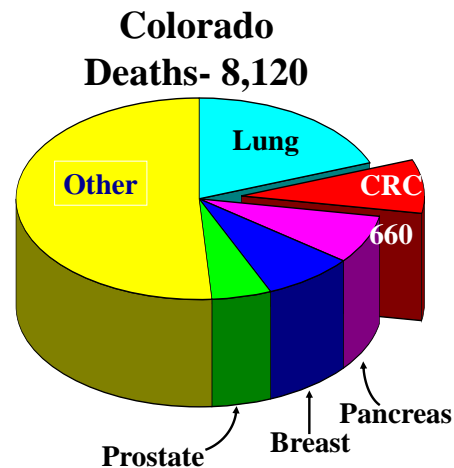
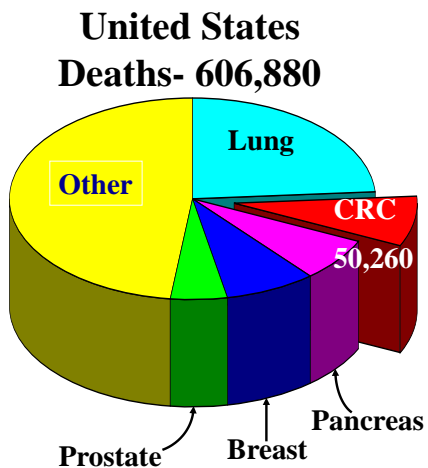
- High Red/Processed Meat
- Low Fiber Containing foods
 - Fruits and Vegetables

Lifestyle

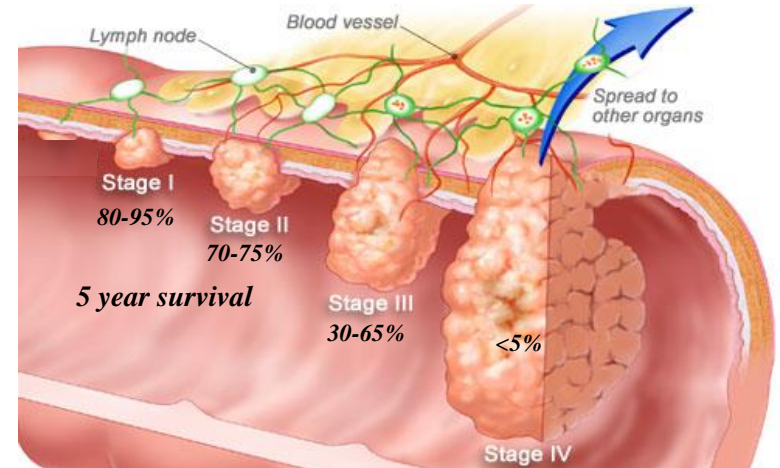
- Obesity
- Low Physical Activity
- Smoking
- Alcohol

Failure to Get Screened

CRC is Lethal



CRC Staging



Early Detection is Critical

CRC is Preventable- Modifiable Risk Factors

Demographic

- Country of origin
- Age
- Sex
- Race/Ethnicity
- SES
- Family History

Diet

- High Red/Processed Meat
- Low Fiber Containing foods
 - Low Fruit and Vegetable

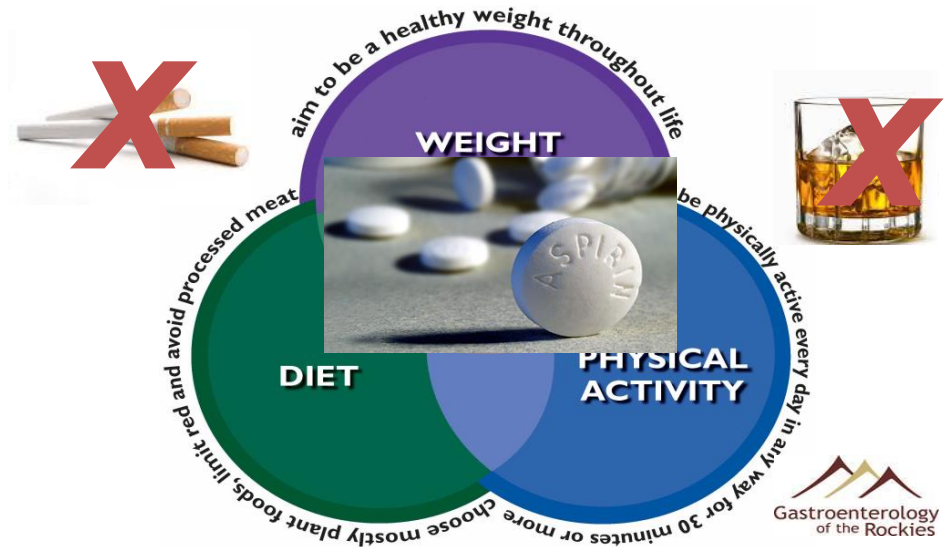
Lifestyle

- Obesity
- Low Physical Activity
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Modifiable



CRC Prevention



Risk Factors

Demographic

- Country of origin
- Age
- Sex
- Race/Ethnicity
- SES
- Family History

Diet

- High Red/Processed Meat
- Low Fiber Containing foods
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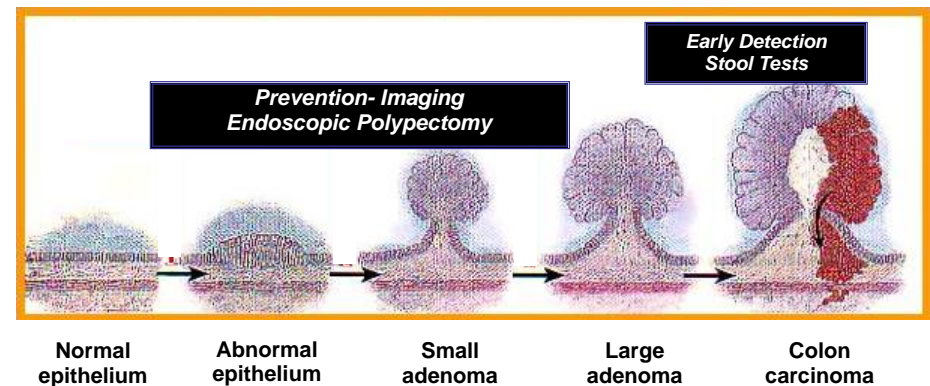
Protective Factors

- *Aspirin for selected groups*
- **Screening**

Lifestyle

- Obesity
- Low Physical Activity
- Smoking
- Alcohol

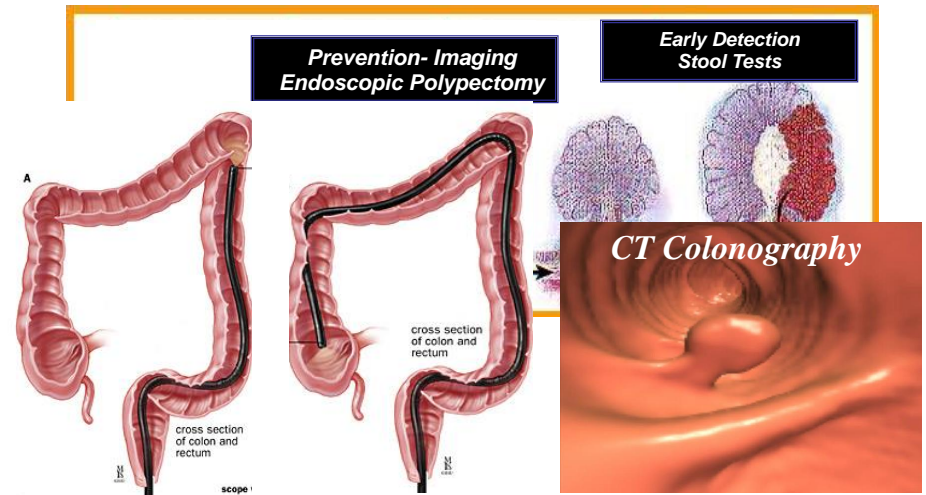
Screening- Prevention and Early Detection



The Adenoma Carcinoma Sequence



The Adenoma Carcinoma Sequence

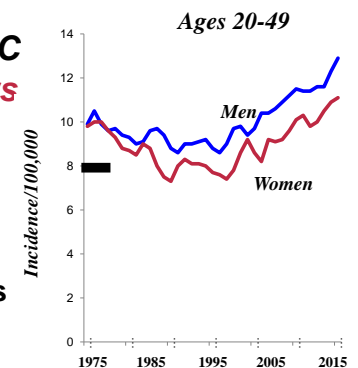


CRC Screening- Risk Groups

- Average risk
 - No personal or FH of colonic neoplasia or IBD
 - Start CRC screening at age 45/50, stop at age 75-85
 - Options for screening
 - hsFOBT/FIT- annually
 - FIT/DNA- every 3 years
 - Flexible Sigmoidoscopy- every 5 years
 - CT Colonography- every 5 years
 - Colonoscopy- every 10 years
 - If done-↓ CRC cases and deaths by 60-80%

Current Screening Guidelines

- USPSTF 2016- “recommends CRC screening starting at age 50 years and continuing until age 75.... multiple screening strategies to choose from” (A recommendation) Individualize screening age 76-85
- ACS 2017- Repeated modeling studies using current incidence and mortality rates for the young.
- Conclusion- starting at age 45 led to a 4-8% decrease in number of new CRCs, and an 8-11% decrease in CRC deaths with a 12-17% increase in the number of colonoscopies needed, compared to starting at age 50.



Current Screening Guidelines

- **USPSTF 2016-** “recommends CRC screening starting at age **50 years** and continuing until age 75.... multiple screening strategies to choose from” (A recommendation)
Individualize screening age 76-85
- **ACS 2018-** “recommends that adults aged **45 years** and older with average risk of colorectal cancer undergo regular screening” and continuing until age 75 with any of multiple screening strategies
Individualize screening age 76-85
- State legislatures decide which guidelines insurers in their state must follow- Colorado is currently a USPSTF state

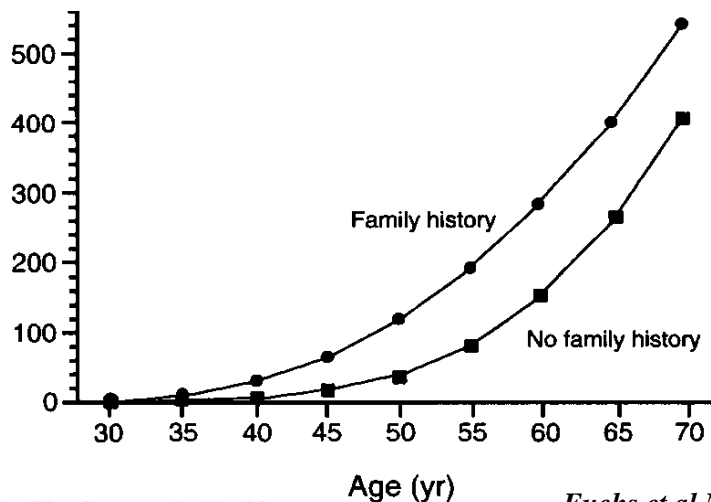


CRC Screening- Risk Groups

- **Increased risk- FDRs of patients with CRC**
 - Start at age 40 or earlier depending on # and age of CRCs in family, colonoscopy is preferred
- **Hereditary Syndromes**
 - Start much earlier (12-25), annual colonoscopy

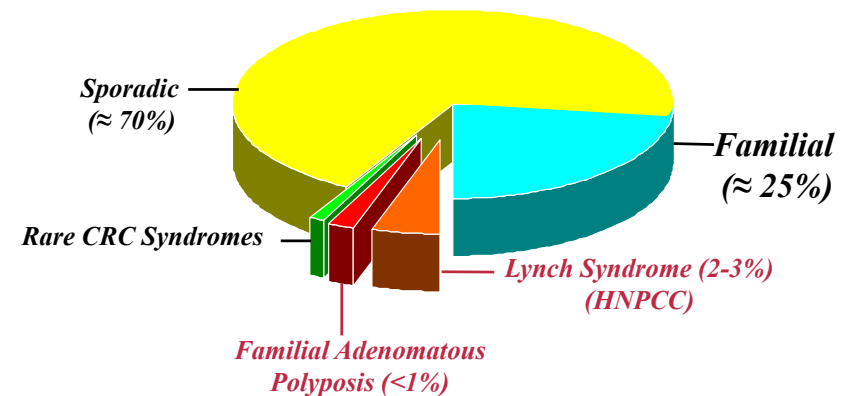


Family History of CRC Increases Risk



Fuchs et al NEJM 1994

Familial and Hereditary CRC

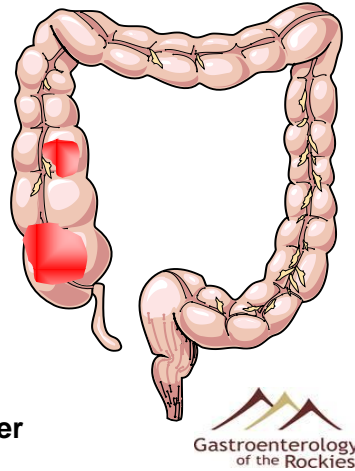


Burt RW et al. Prevention and Early Detection of CRC, 1996



Lynch Syndrome

- Autosomal Dominant – 3% of CRCs
- High CRC risk- up to 50%
- Early onset- 44 yrs
- Proximal location- 65%
- Other cancers (Uterus, Ovary)
- Under-recognized (<5%)
- Genetic testing (MMR genes) by age 25
- Screening works
 - Annual colonoscopy age 25 or earlier



Familial Adenomatous Polyposis

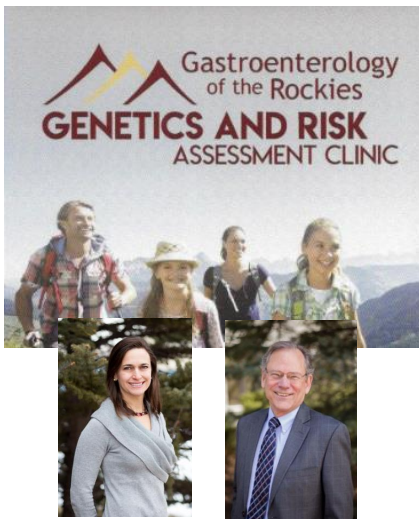


- Rare- 1/7,000 to 1/22,000
- Autosomal Dominant
- High CRC risk ≈100%
- Easily recognized
- Genetic testing or screening around age 12
- Surveillance annually
- Attenuated FAP is different

Boulder Community Health

Gastroenterology of the Rockies

What Is GROCK Doing?



- Routine cancer family history
- Test all biopsies of CRCs for DNA MMR deficiency
- Outreach to family members of patients with CRC or advanced colonic polyps
- G & RA Clinic
 - Complete risk evaluation
 - Screening and prevention recommendations
 - Genetic counseling and testing when appropriate

Colorectal Cancer: The Preventable Killer

- Sequential progression from polyp to cancer
- Common-
 - 4th most common cancer in US and CO
 - Decreasing but increasing in the young
- Lethal
 - 2nd most common cause of cancer death in US/CO
 - Strongly dependent on stage at diagnosis
- Preventable
 - Prudent lifestyle changes
 - Screening is most effective prevention as well as early detection strategy
- Familial and Hereditary CRC require special attention

Boulder Community Health

Gastroenterology of the Rockies



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