Natural History and Epidemiology of Colorectal Cancer

A Dialogue for Action on Cancer Screening: Hitting the Targets

Prevent Cancer Foundation

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Natural History and Epidemiology of Colorectal Cancer

- Epidemiology of colorectal cancer
- Sequence of development from polyp to cancer
- Risk factors associated with colorectal cancer
- Genetics and colorectal cancer
- Colorectal cancer screening as a part of preventive care
- Screening options

Natural History and Epidemiology of Colorectal Cancer

Epidemiology of colorectal cancer

Statistics are merely the aggregation of numbers with the tears wiped away.

Irving Sellikoff, MD (asbestos)

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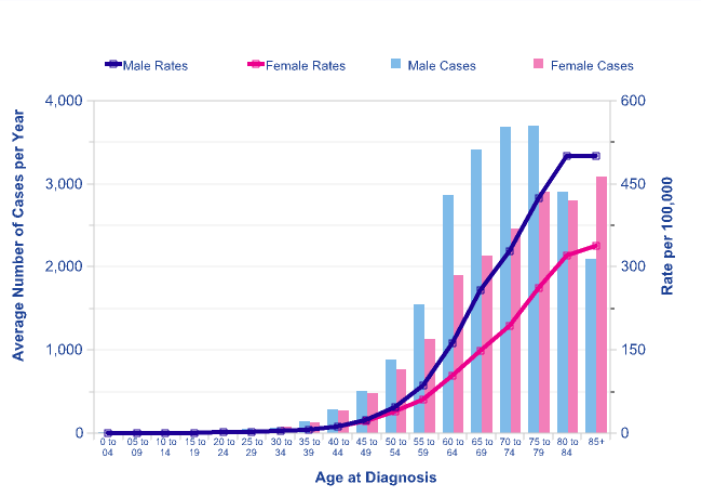
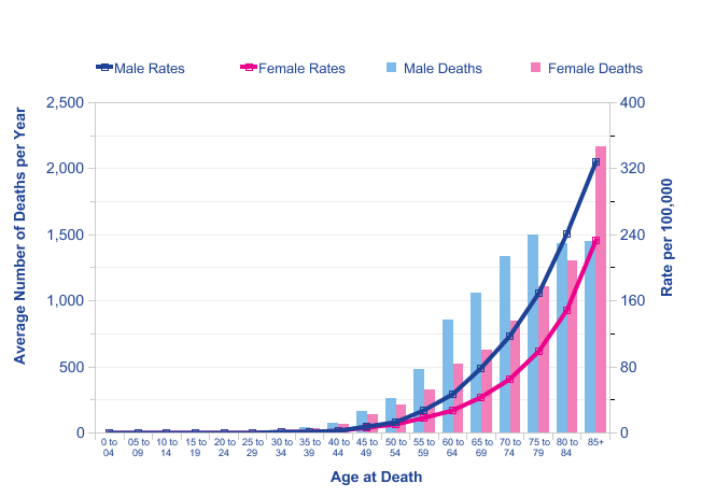
Epidemiology of colorectal cancer



The risk of CRC begins to increase after the age of 40 years and rises sharply at ages 50 to 55 years; the risk doubles with each succeeding decade, and continues to rise exponentially.



Age at death parallels diagnosis.

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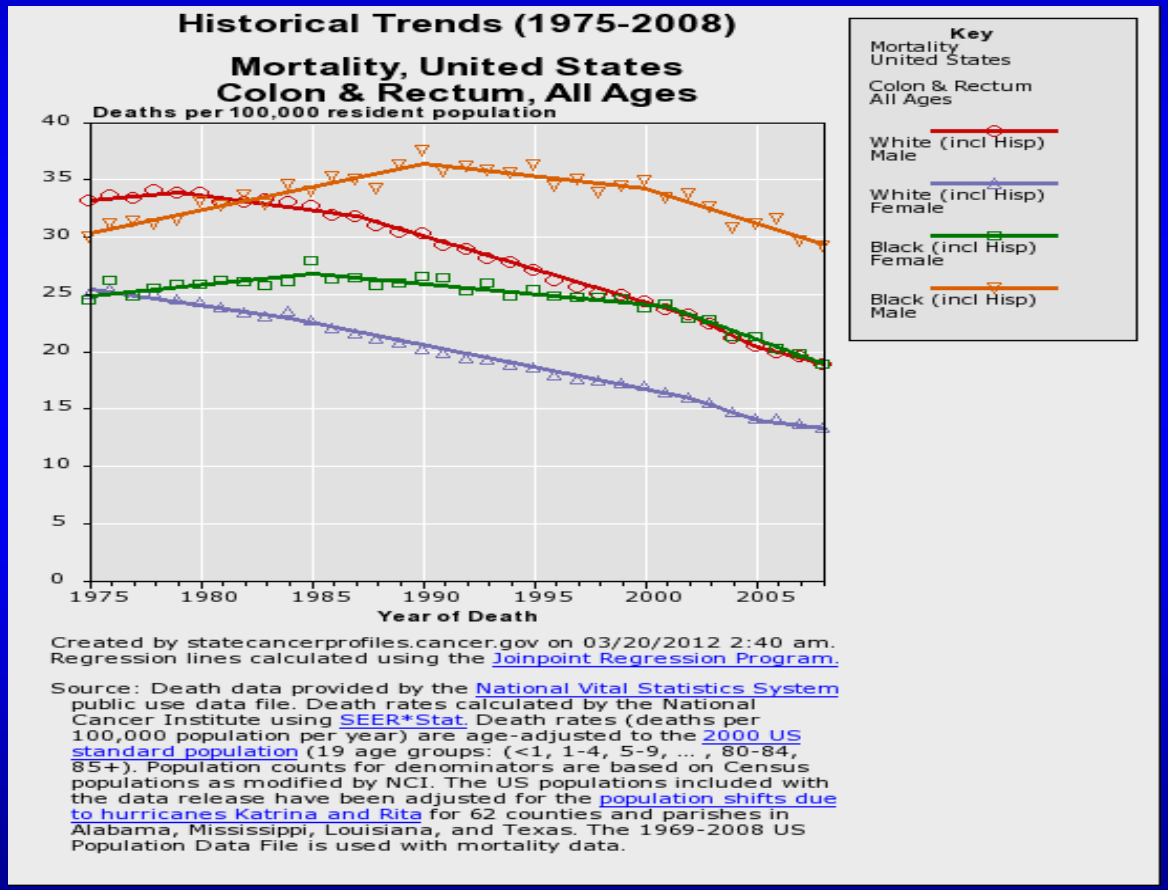
Epidemiology of colorectal cancer



Mortality for CRC has declined over the last 20 years.

Between 1985 and 2002 the decline was 1.8% per year.

The overall 5 year survival rate is about 64% ranging from over 90% for cancers diagnosed early in Stage I and less than 5% for those diagnosed at Stage IV.

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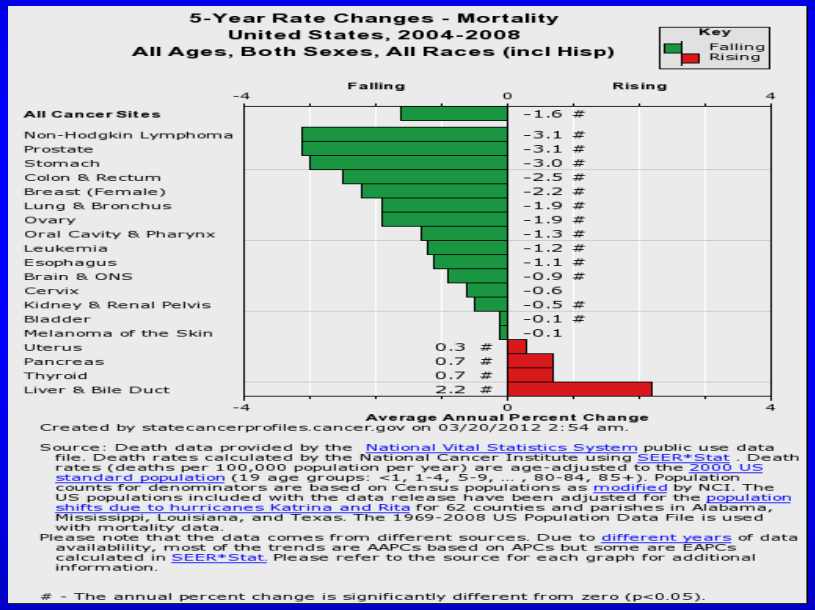
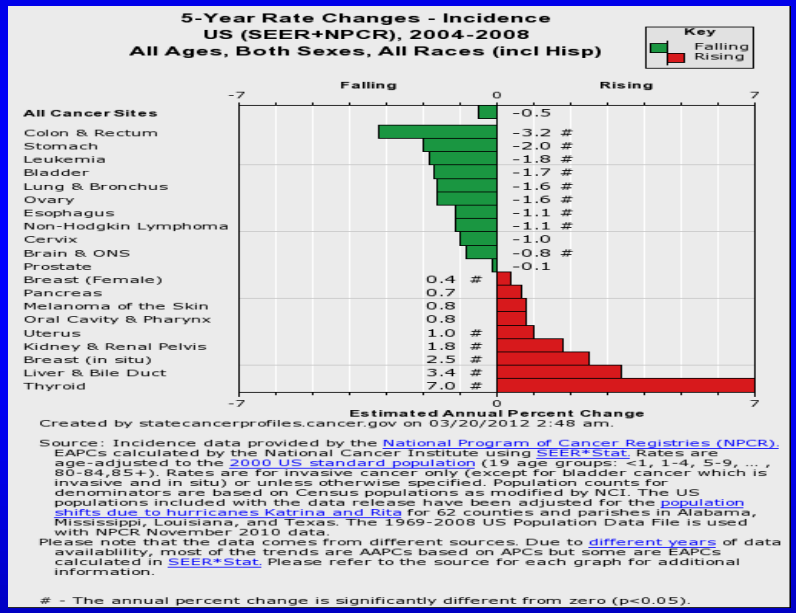
Epidemiology of colorectal cancer

In raw numbers, there will be an estimated 142,820 new cases of CRC diagnosed in the United States this year and an estimated 50,830 deaths.*



Between 2002 and 2005, mortality declined 4.3% per year however in young adults less than 50 years of age there has been a 1.7% annual increase in CRC mortality since 1992.



Between 2004 and 2008, CRC incidence rates in the United States declined by 2.5% per year in women, and by 2.7% per year in men.
About 5% of Americans are expected to develop the disease within their lifetimes

*American Cancer Society, Cancer Facts and Figures, 2013

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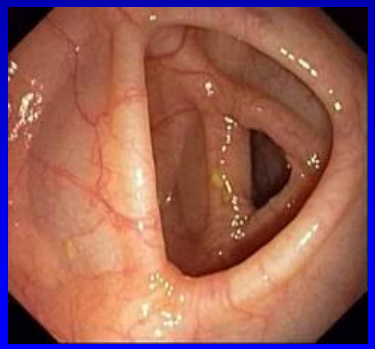
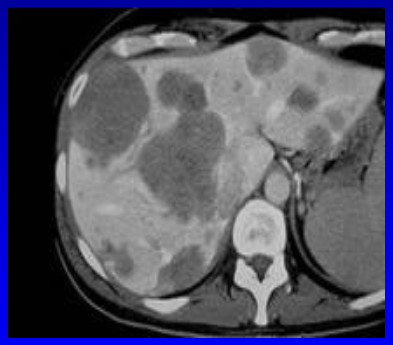
Sequence of development from polyp to cancer







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Risk factors associated with colorectal cancer

- **Risk factors**
  - **Modifiable risk factors**
    - **Factors that increase risk**
    - **Factors that decrease risk**
  - **Non-modifiable risk factors**
    - **Who our parents are**
    - **Who we are**

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Risk factors associated with colorectal cancer

- **Factors associated with increased risk**
  - **Excess alcohol use**
  - **Smoking**
  - **Obesity/lack of physical activity**
  - **Diabetes**
- **Factors assoicated with decreased risk**
  - **Physical activity**
  - **Interventions**
    - **NSAIDs**
    - **ASA**
    - **Polyp removal**
    - **Diet**

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Risk factors associated with colorectal cancer












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Risk factors associated with colorectal cancer

- **Dietary considerations**
  - **Dietary fat**
  - **Meat**
  - **Bile acids**
  - **Fiber, fruits and vegetables**
  - **Vitamins**
  - **Calcium**

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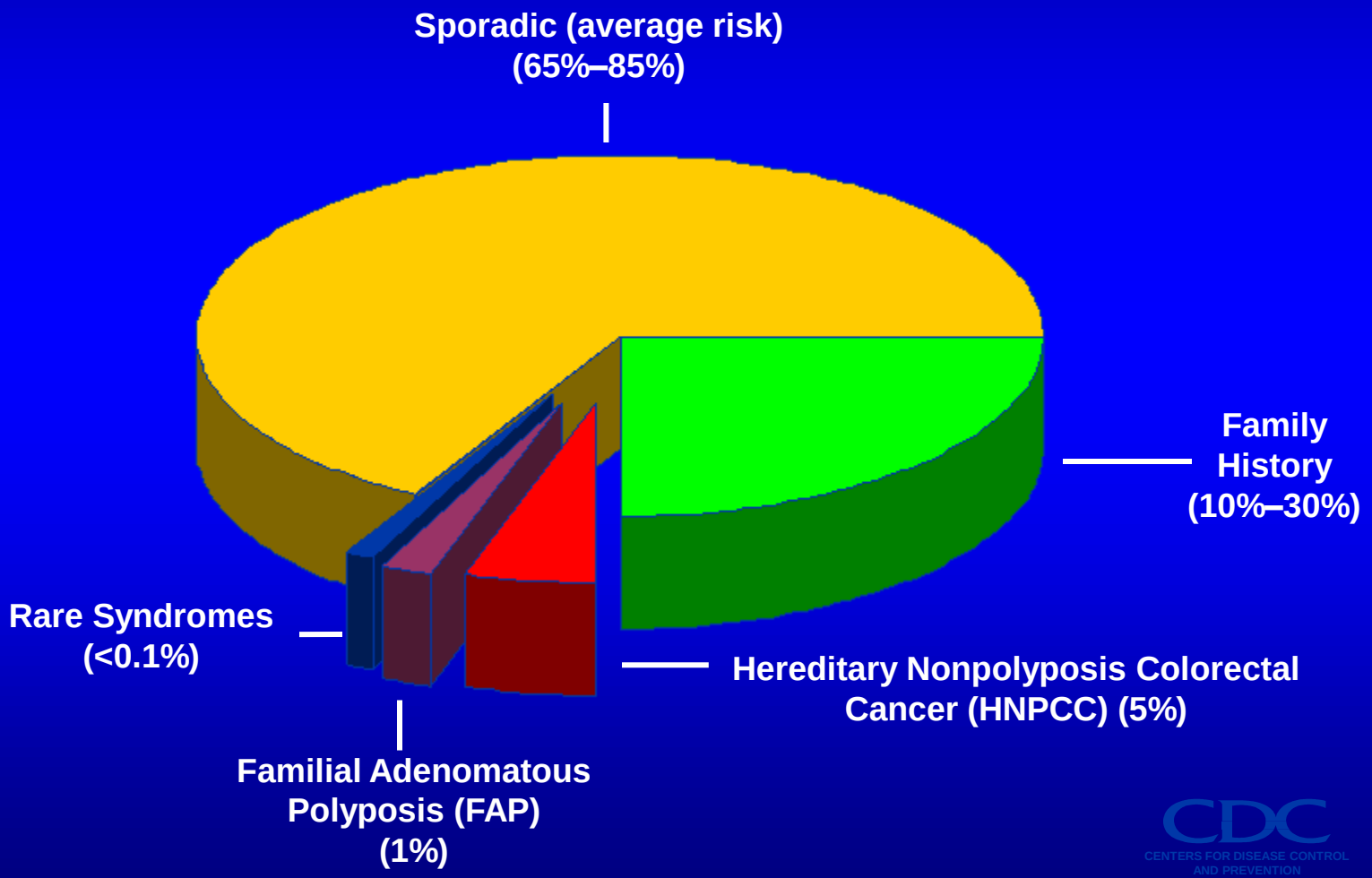
Genetics and colorectal cancer



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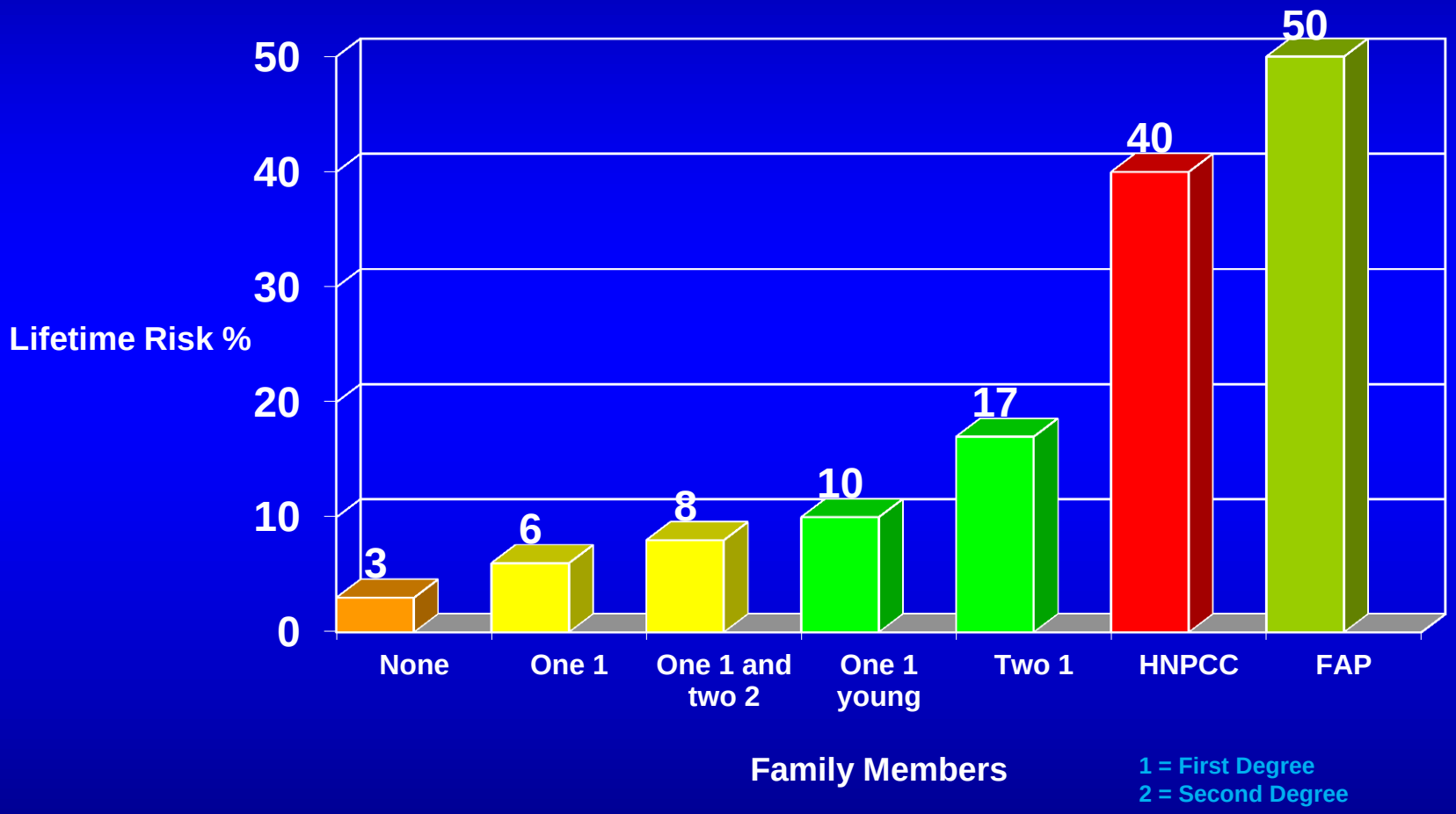
Personal Risk Based on Family History of CRC



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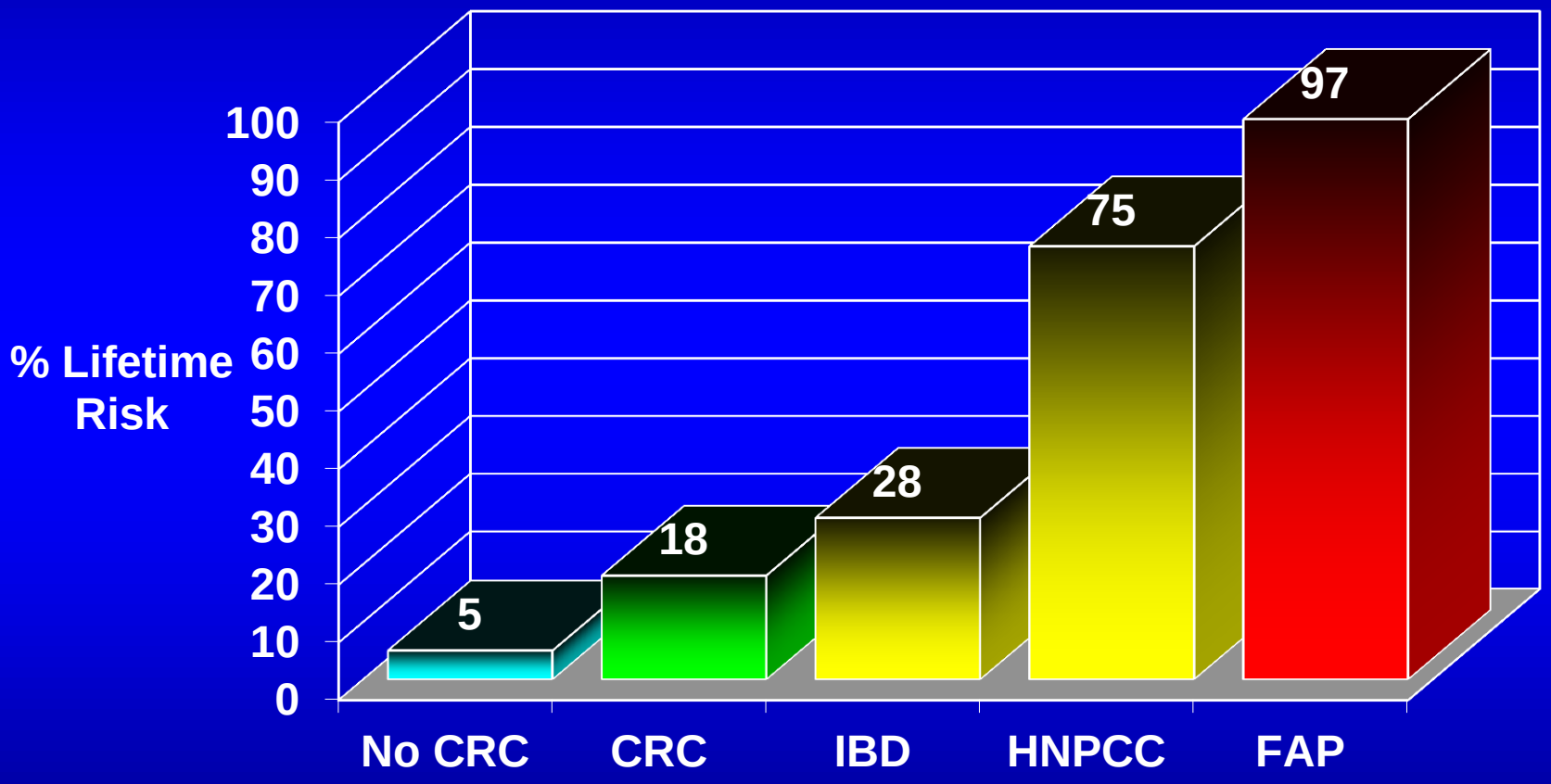
Personal Risk Based on Personal History of:



"I'll have an ounce of prevention."

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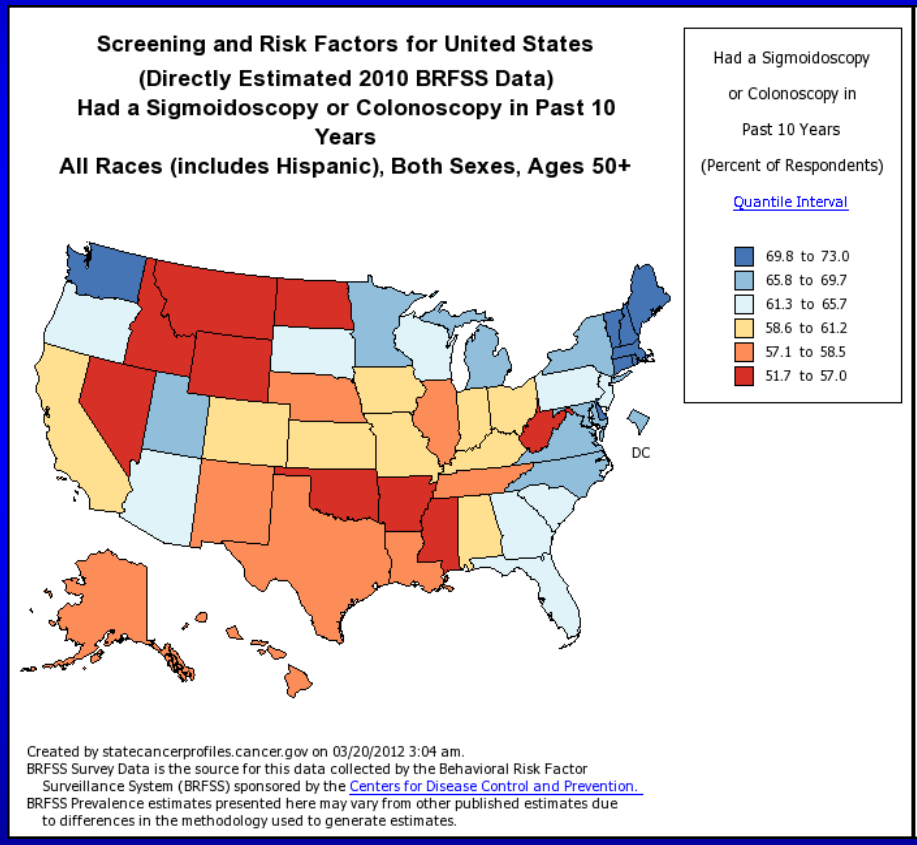
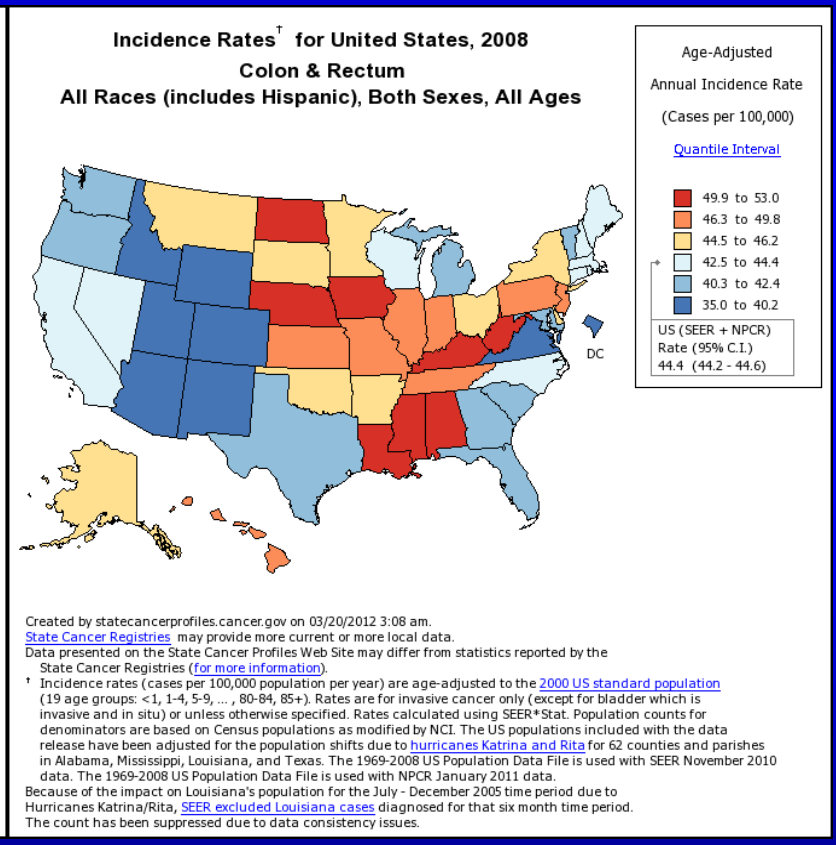
Colorectal cancer screening as a part of preventive care





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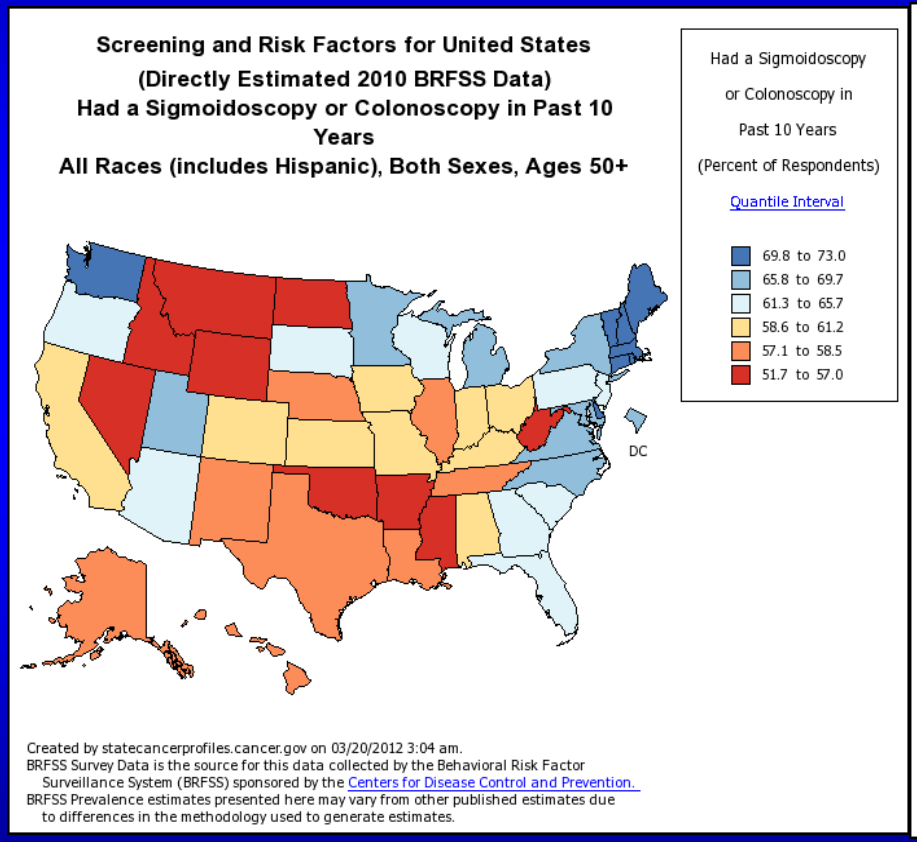

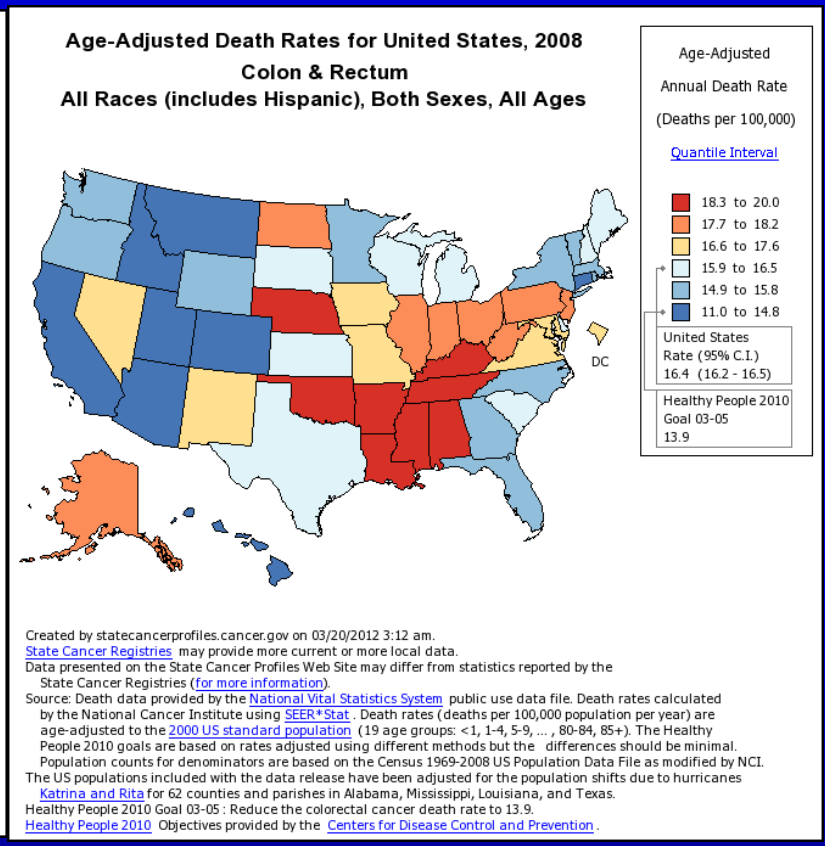

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Screening options

- Tests that primarily detect cancer early
  - FOBT
  - FIT
  - Stool DNA
- Tests that detect adenomatous polyps and cancer
  - Flexible sigmoidoscopy
  - Colonoscopy
  - Double contrast barium enema
  - CT colonography
- Tests for the future?
  - Blood tests

Conclusions

- Colon cancer is a leading cause of cancer death
- Colon cancer is highly preventable with opportunities for both primary and secondary intervention
- Polyp removal may be the most important prevention
- Secondary prevention represents a complex juxtaposition of many variables

Considerations

- CRC presents many unique opportunities for intervention that can reduce morbidity and prevent disease
- We are not currently taking full advantage of our knowledge to maximize the benefit thereof
- Because of multifactorial causation, the best opportunities for improved outcome in CRC are harbored in lifestyle and system changes

Even the woodpecker owes his success to the fact that he uses his head and keeps pecking away until he finishes the job he starts.

Coleman Cox

Thank You!