

# Natural History and Epidemiology of Colorectal Cancer

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Dialogue for Action: Right-Sizing Cancer Screening

*Prevent Cancer Foundation*

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# **Natural History and Epidemiology of Colorectal Cancer**

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- **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**

**ALL IN 27 MINUTES OR LESS!!**

# Natural History and Epidemiology of Colorectal Cancer

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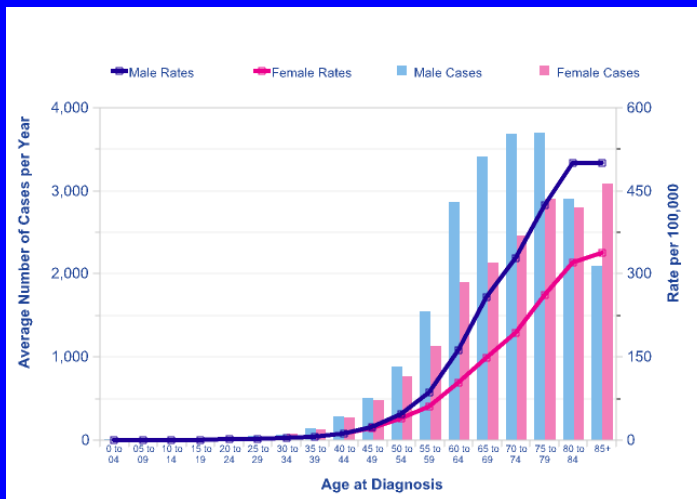
Epidemiology of colorectal cancer

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

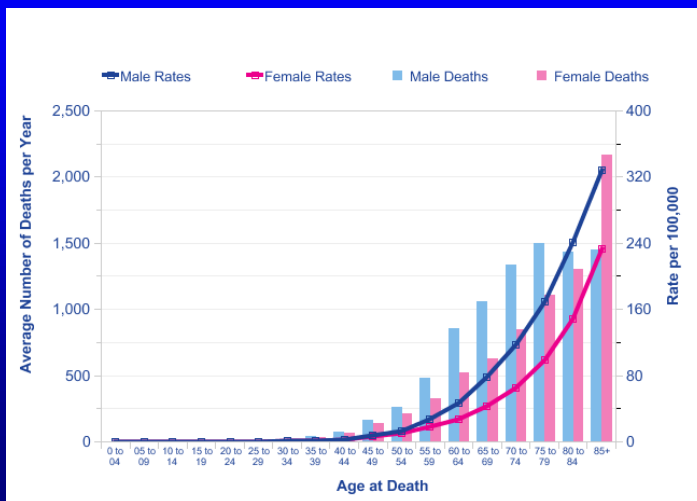
Irving Selikoff, MD (asbestos)

# Natural History and Epidemiology of Colorectal Cancer

## Epidemiology of colorectal cancer



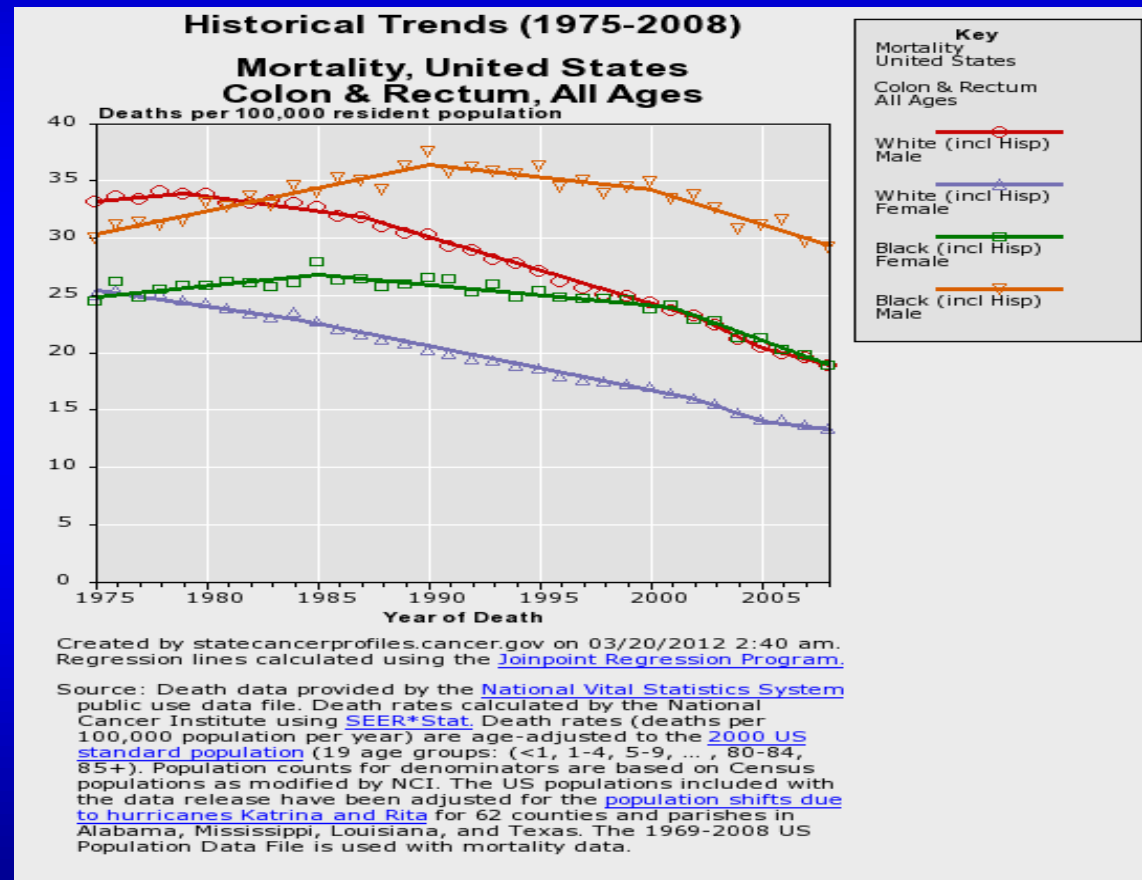
The risk of CRC begins to increase after the age of 40 years and rises sharply at ages 50 to 55 years; the risk doubles with each succeeding decade, and continues to rise exponentially.



Age at death parallels diagnosis.

# Natural History and Epidemiology of Colorectal Cancer

## Epidemiology of colorectal cancer



Mortality for CRC has declined over the last 20 years.

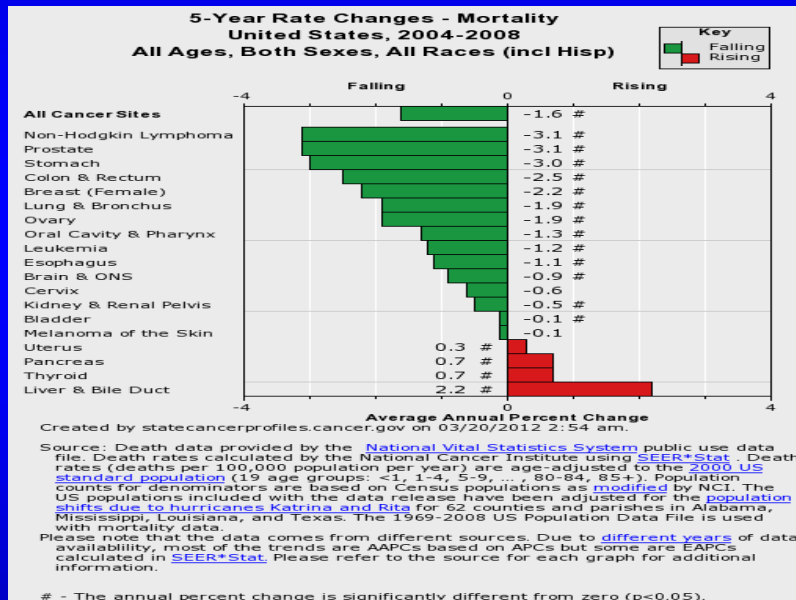
Between 1985 and 2002 the decline was 1.8% per year.

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.

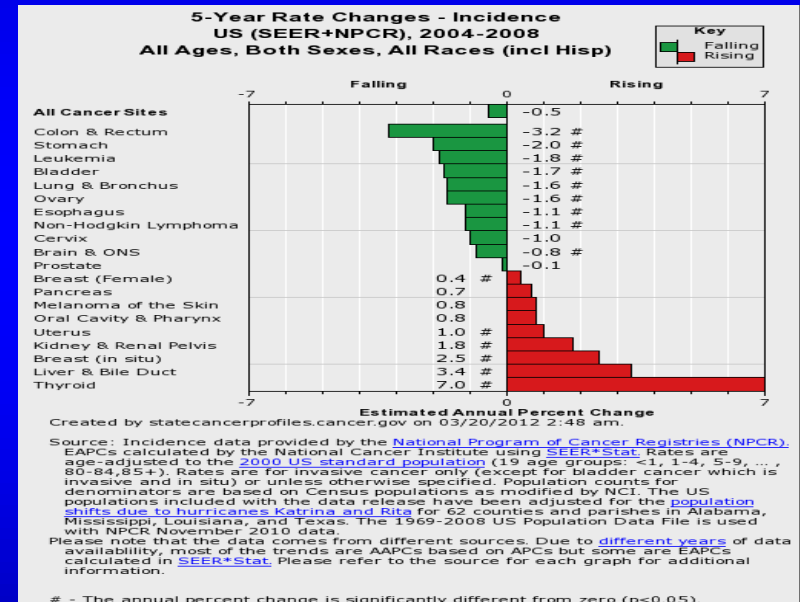
# Natural History and Epidemiology of Colorectal Cancer

## Epidemiology of colorectal cancer

In raw numbers, there will be an estimated **136,830** new cases of CRC diagnosed in the United States this year and an estimated **50,310** 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.

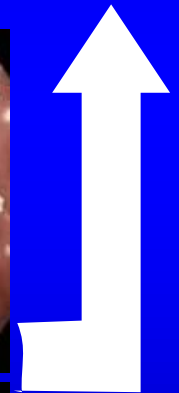
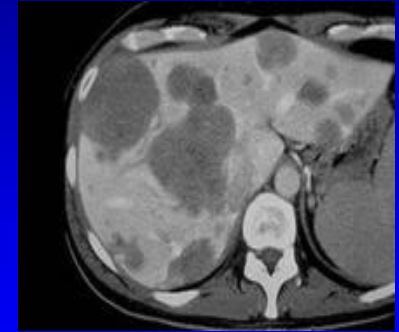
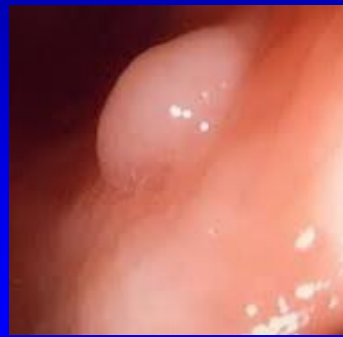
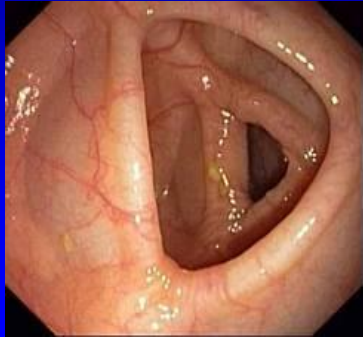


Between 2004 and 2008, CRC incidence rates in the United States declined by 2.5% per year in women, and by 2.7% per year in men. About 5% of Americans are expected to develop the disease within their lifetimes

\*American Cancer Society, Cancer Facts and Figures, 2014

# Natural History and Epidemiology of Colorectal Cancer

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



# **Natural History and Epidemiology of Colorectal Cancer**

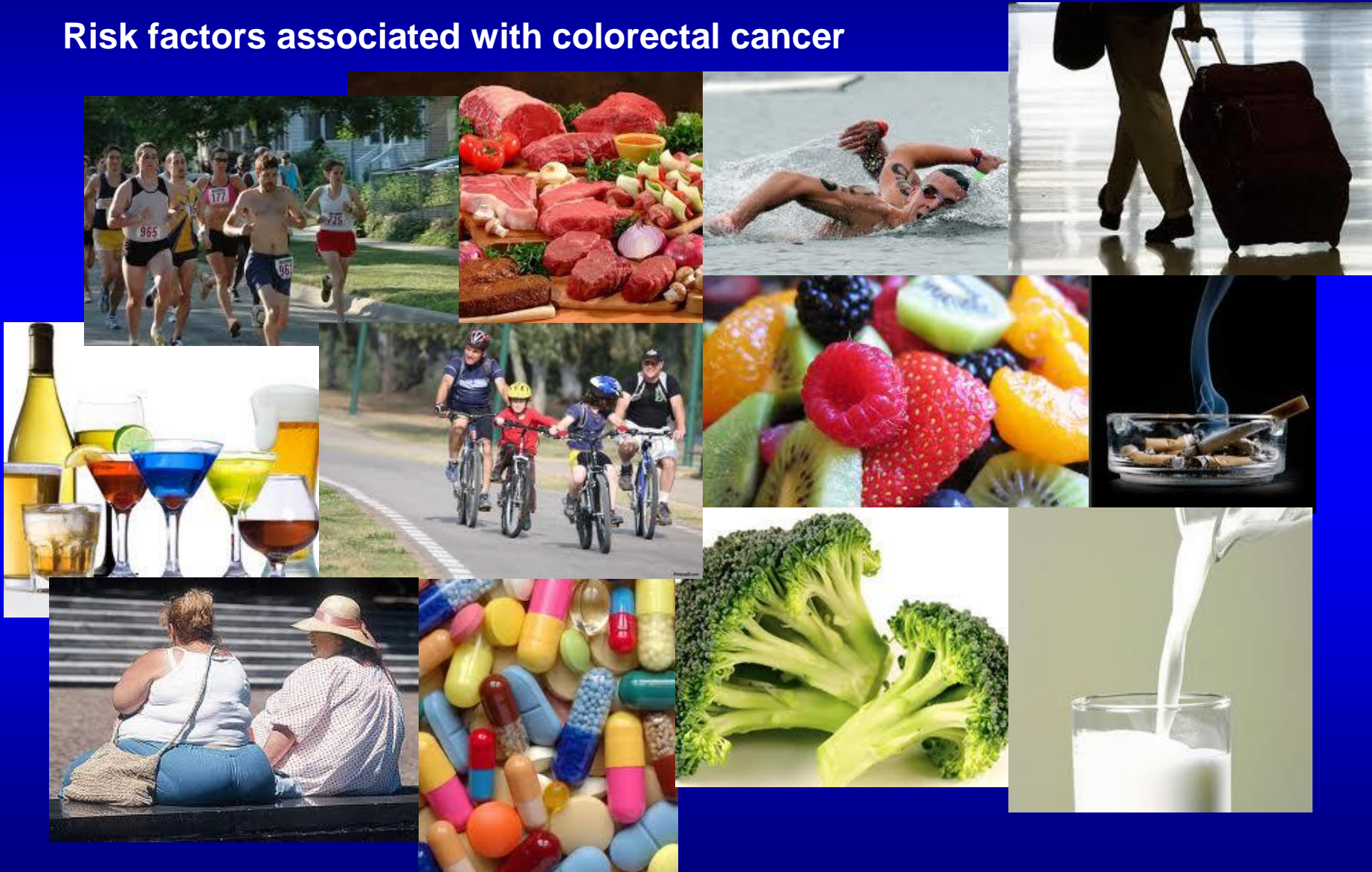
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Risk factors associated with colorectal cancer

- **Factors associated with increased risk**
  - Excess alcohol use
  - Smoking
  - Obesity/lack of physical activity (Levi, 2011)
  - Diabetes
- **Factors associated with decreased risk**
  - Physical activity
  - Interventions
    - NSAIDs
    - ASA
    - Polyp removal
    - Diet

# Natural History and Epidemiology of Colorectal Cancer

## Risk factors associated with colorectal cancer



# Natural History and Epidemiology of Colorectal Cancer

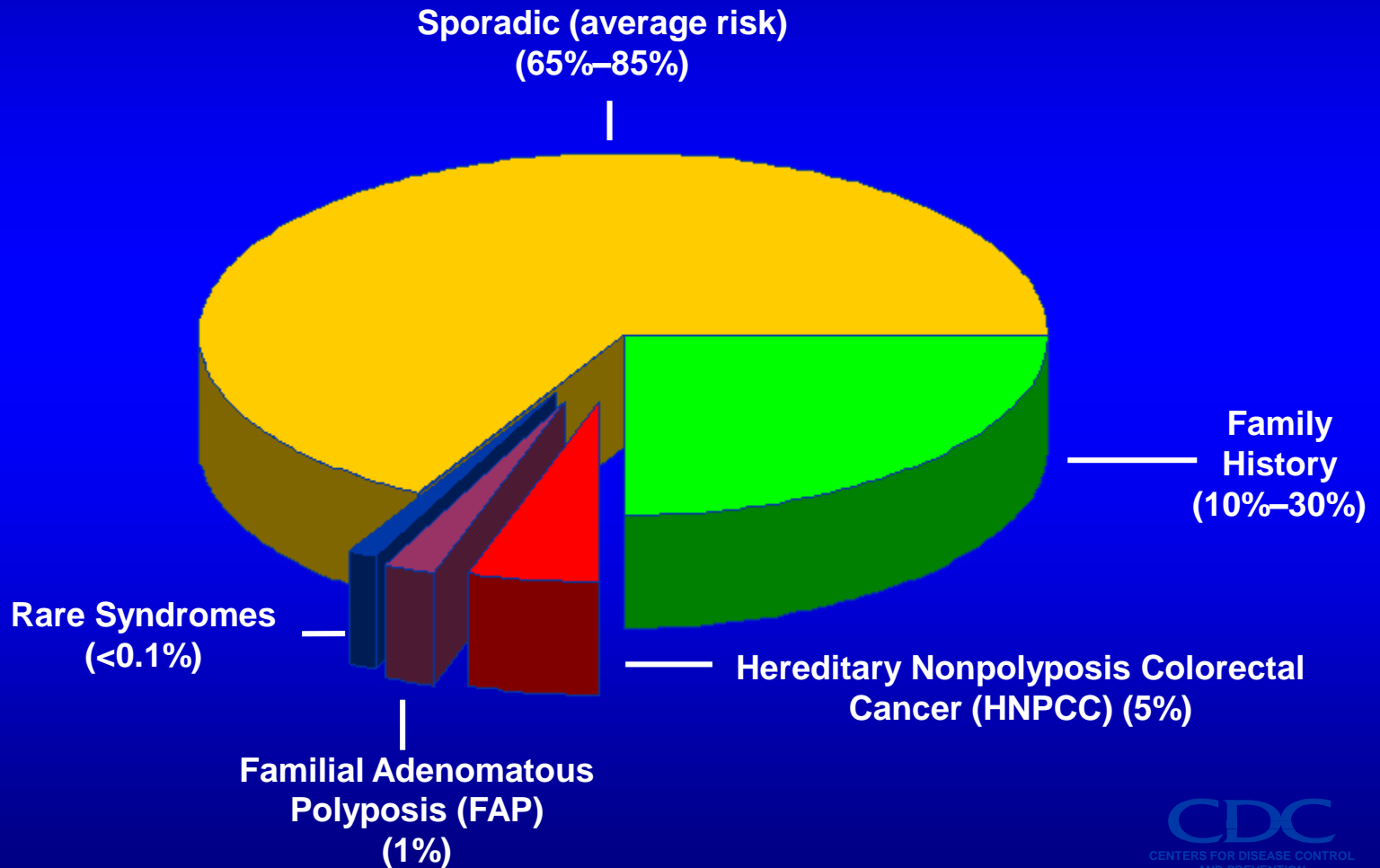
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Risk factors associated with colorectal cancer

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

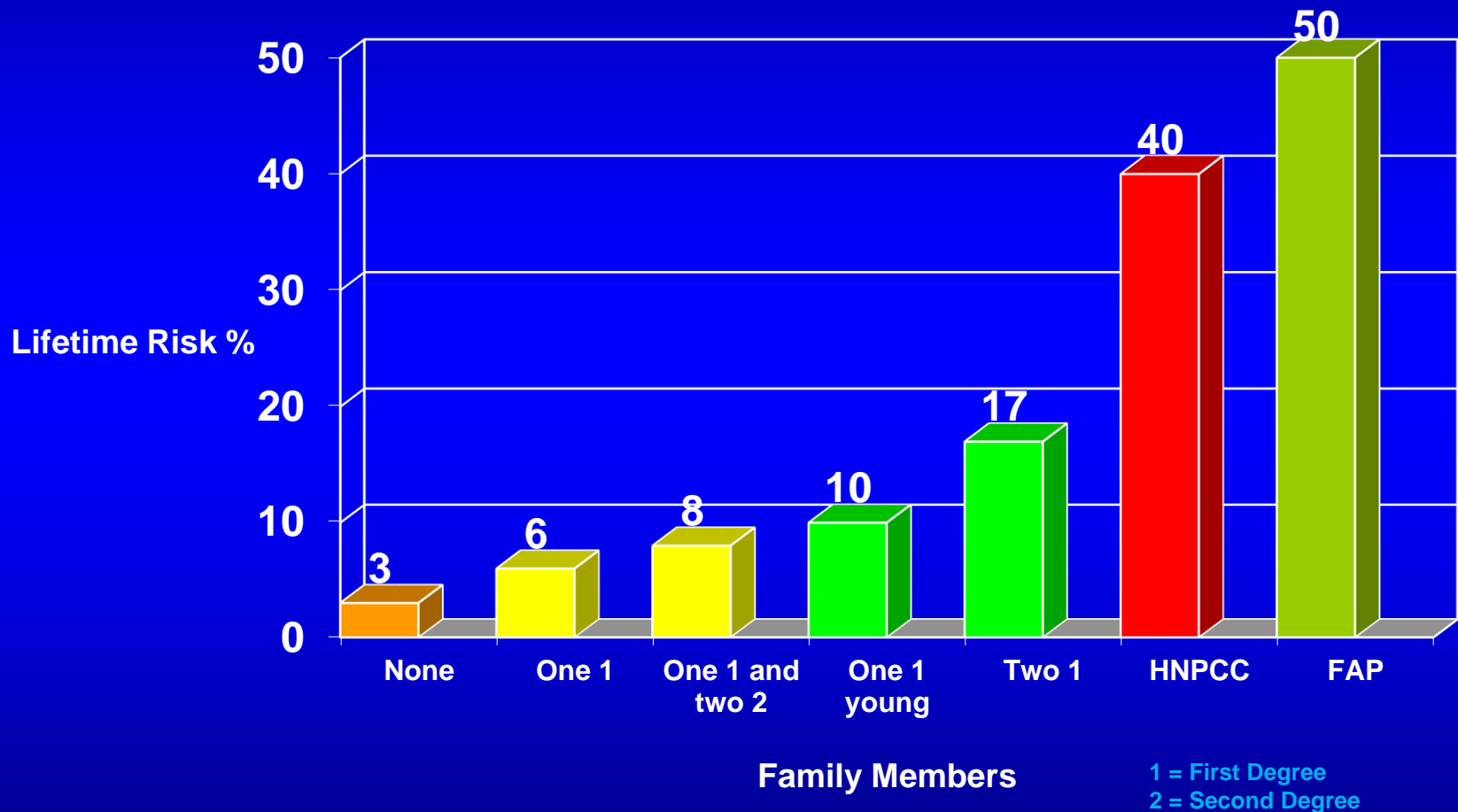
# Natural History and Epidemiology of Colorectal Cancer

## Genetics and colorectal cancer



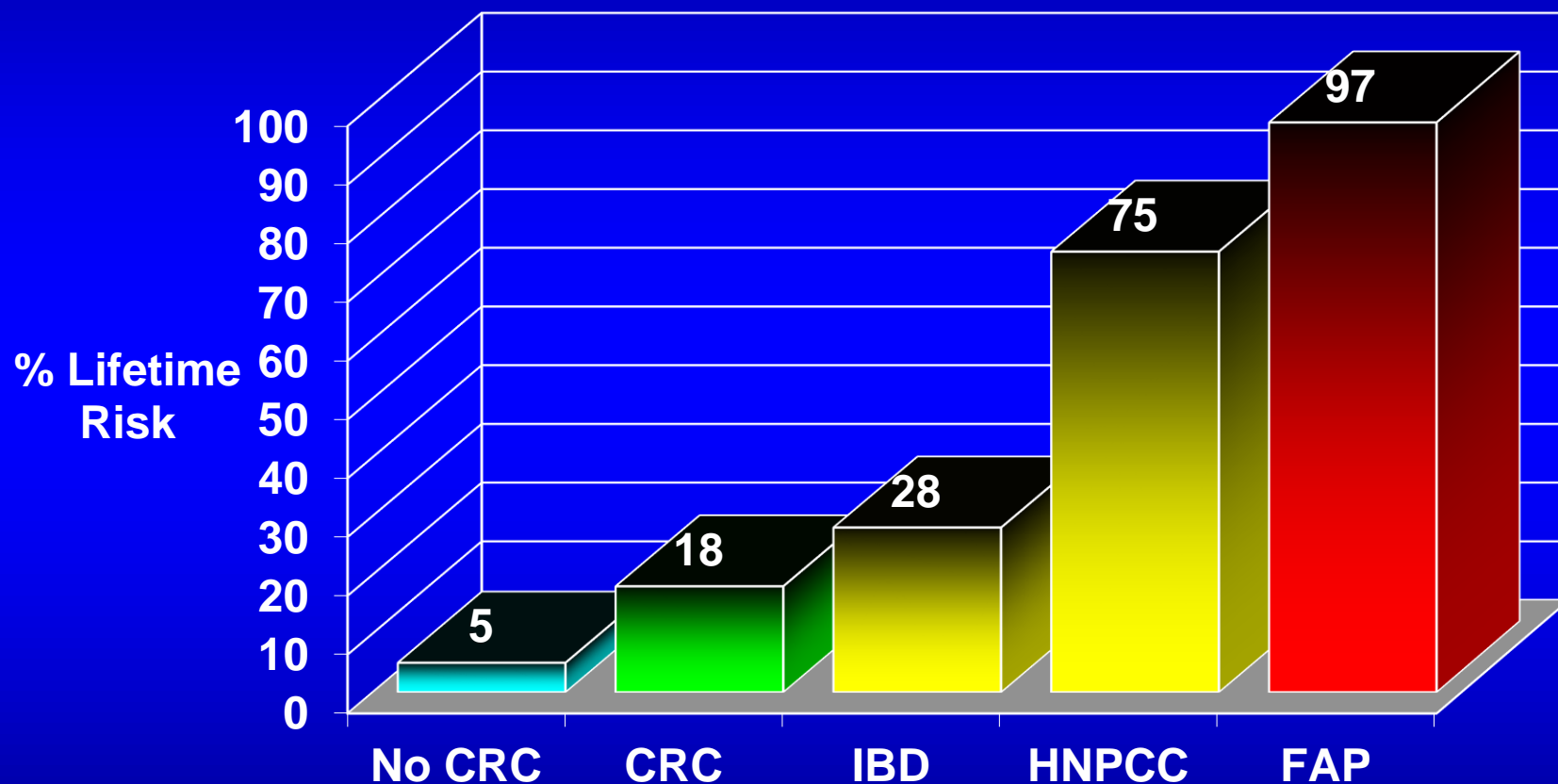
# Natural History and Epidemiology of Colorectal Cancer

## Personal Risk Based on Family History of CRC



# Natural History and Epidemiology of Colorectal Cancer

Personal Risk Based on Personal History of:



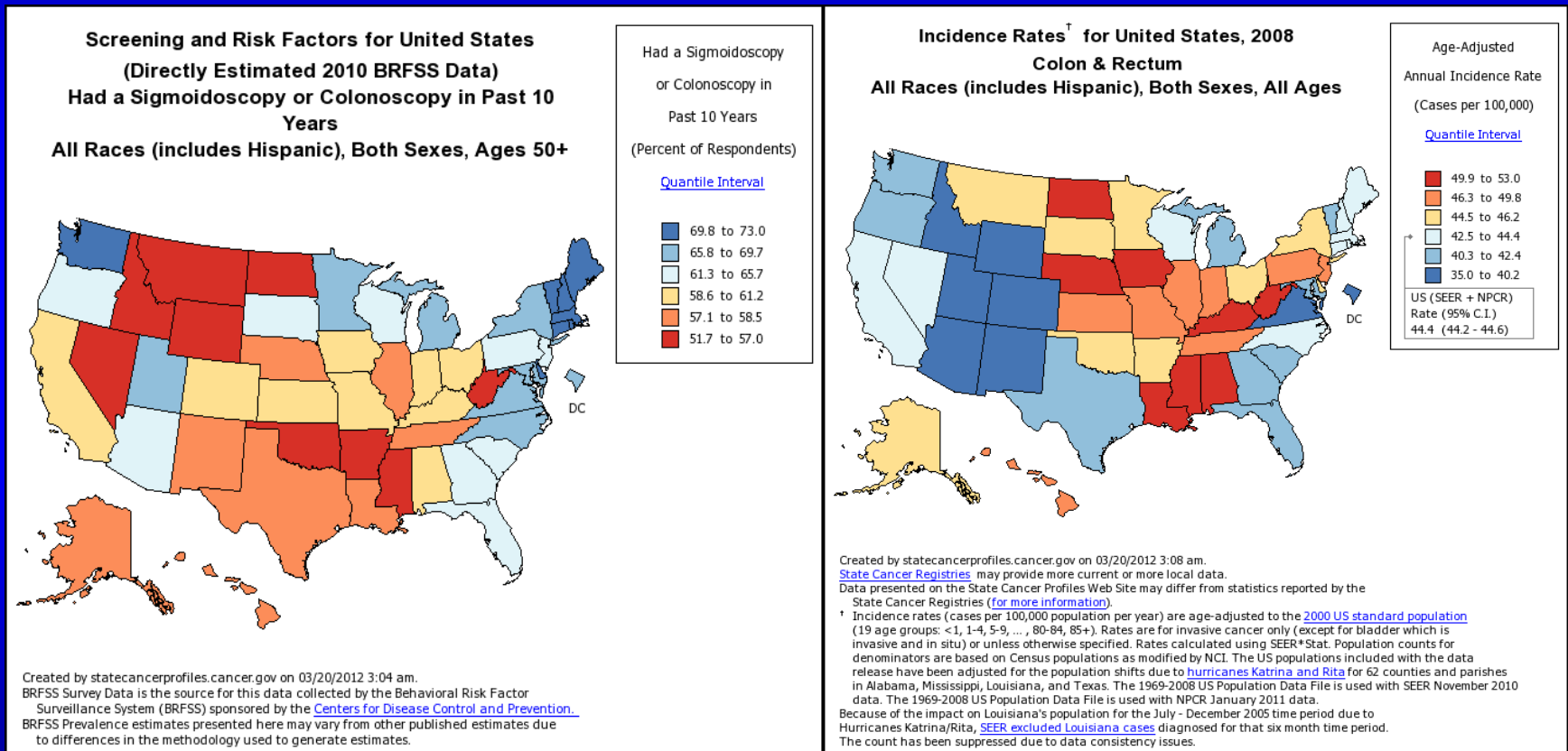


*"I'll have an ounce of prevention."*



# Natural History and Epidemiology of Colorectal Cancer

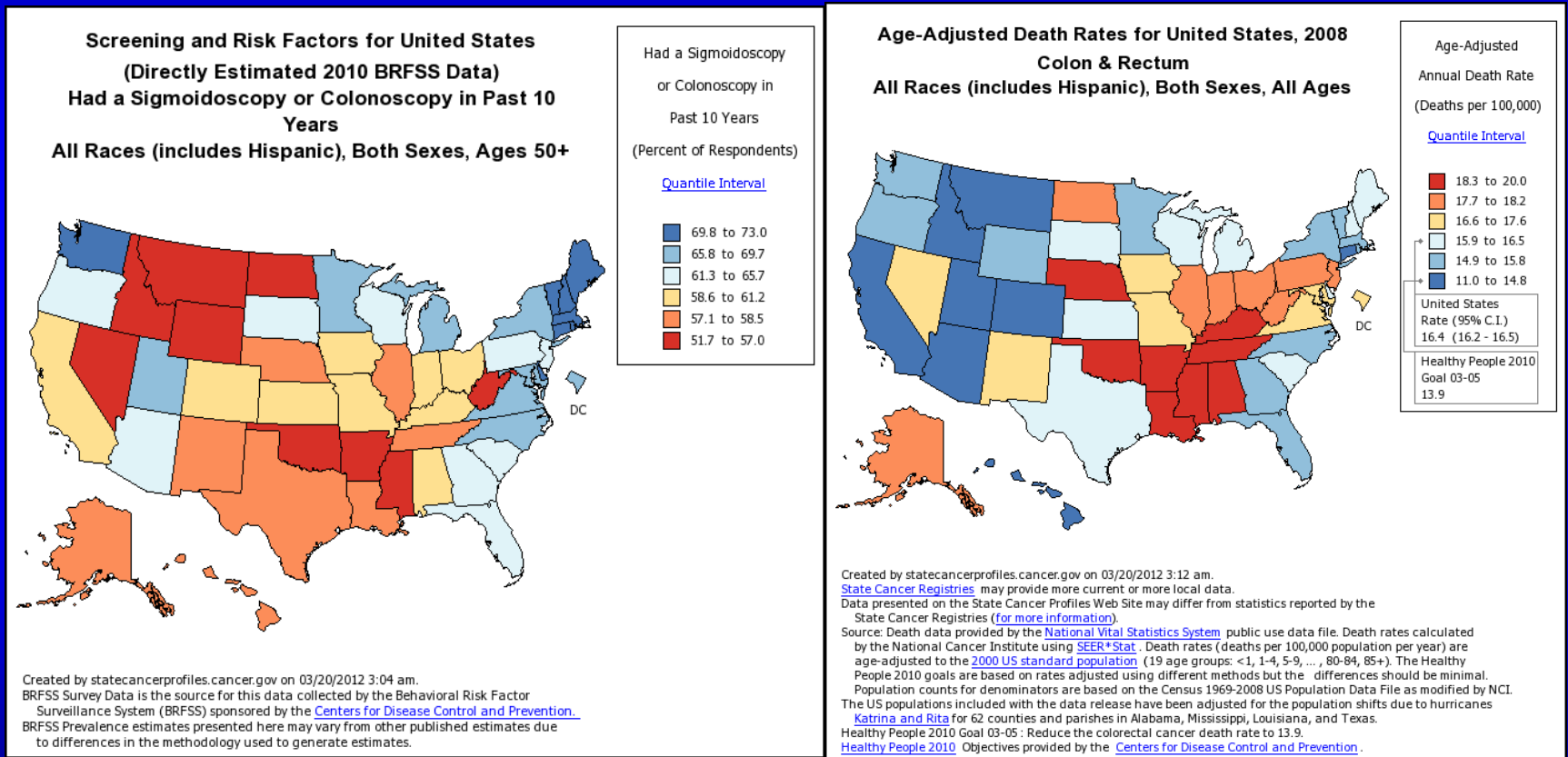
## Colorectal cancer screening as a part of preventive care





# Natural History and Epidemiology of Colorectal Cancer

## Colorectal cancer screening as a part of preventive care



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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
  - Pillcam

**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**

# 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

**When you are born, you cry  
and the world rejoices.  
Live your life so that when you  
die, the world will cry and you  
will rejoice.**

**Native American saying**

**Thank You!**