# Sex Differences in the Prevalence and Correlates of Colorectal Cancer Testing: 2002-2003 Health Information National Trends Survey

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# Study Rationale

- Rates of current CRC test use among both males and females fall below desired levels (<50%).
- NHIS 2000 reported somewhat greater endoscopy test use among men.
- There is scant data that examine correlates of CRC testing stratified by sex.

# Positive Correlates of CRC Test Use

**Females**

- **Family history of CRC**
- **Annual medical check-up**
- **MD recommendation**
- **Previous mammogram**
- Older
- Non-White
- Overweight
- Vitamin supplement use

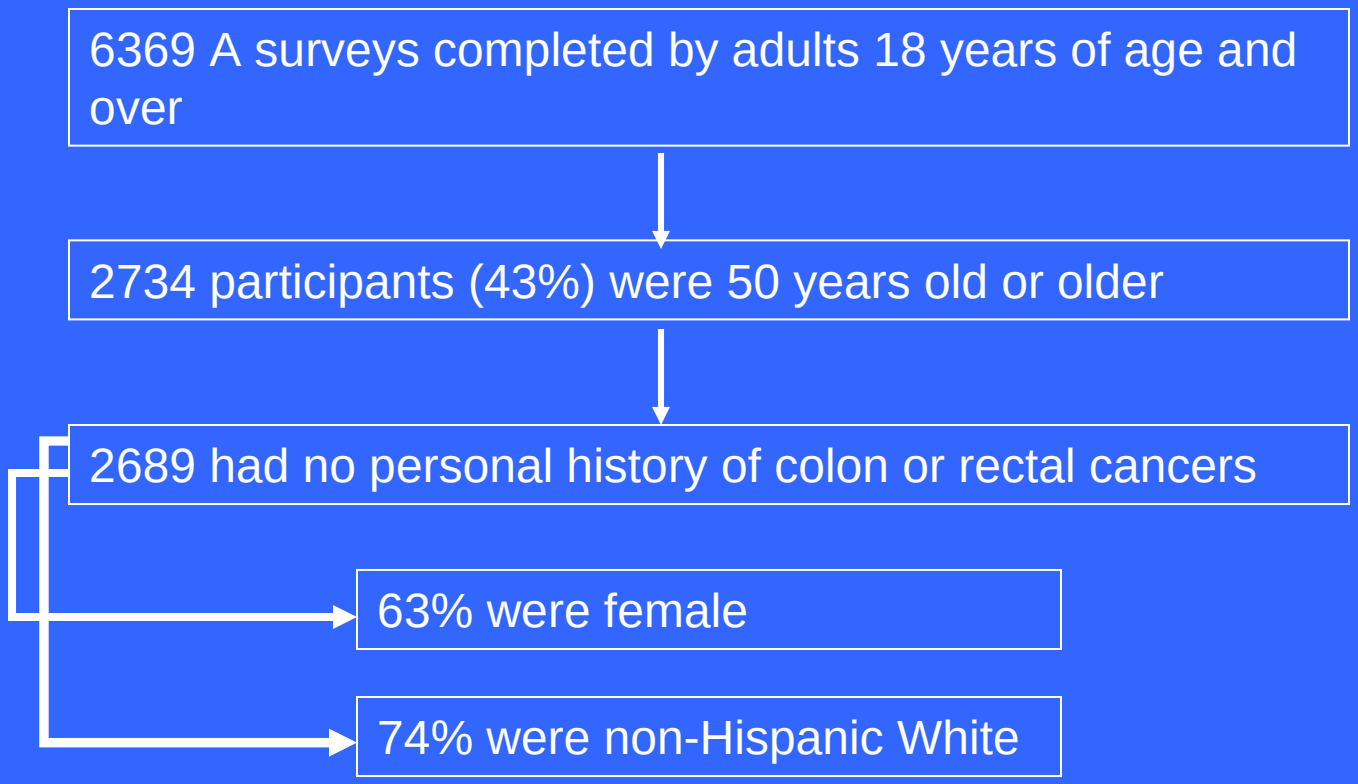
**Males**

- **Family history of CRC**
- **Annual medical check-up**
- **MD recommendation**
- **Previous PSA test**
- College educated
- Physically active
- High perceived risk for CRC
- Personal history of any cancer
- Not fatalistic about cure

# Research Questions

1. What is the prevalence of FOBT, endoscopy, or any CRC test use? How do these rates differ by sex? and How do these results compare with findings from other national surveys?
2. What are the significant correlates of FOBT, endoscopy, or any CRC test use? and How does the pattern of correlates differ by sex?

# Sample Characteristics



# Fecal Occult Blood Test (FOBT)
## HINTS Protocol

- Description of FOBT was read
- Have you **ever heard** of a fecal occult or stool blood test? (yes/no)
- Have you **ever done** a stool blood test using a home test kit? (yes/no)
- When did you do your **most recent** stool blood test using a home kit to check for colon cancer?
  - A year ago or less
  - More than 1 but not more than 2 years ago
  - More than 2 but not more than 5 years ago
  - Over 5 years ago

# Endoscopy
## HINTS Protocol

- Have you **ever heard** of a sigmoidoscopy or a colonoscopy? (yes/no)
- Description of sigmoidoscopy/colonoscopy is read
- Have you **ever had**…
  - a sigmoidoscopy? (yes/no)
  - a colonoscopy? (yes/no)
- When did you have your **most recent** {sigmoidoscopy/(or) colonoscopy} to check for colon cancer?
  - A year ago or less
  - More than 1 but not more than 5 years ago
  - More than 5 but not more than 10 years ago
  - Over 10 years ago

# CRC Test Use Prevalence: HINTS 2002-2003

| | Males | | Females | |
|---|---|---|---|---|
| | Sample Size n = 999 | Weighted % | Sample Size n = 1687 | Weighted % |
| **Lifetime use "ever had"** | | | | |
| FOBT or Endoscopy | 619 | 61.5% | 1137 | 66.5% |
| **Current use** | | | | |
| FOBT within past year | 55 | **5.2%** | 146 | **9.4%** |
| Endoscopy within 10 years | 303 | **31.4%** | 524 | **31.1%** |
| Both FOBT & Endoscopy | 143 | 13.4% | 218 | 11.7% |
| Either FOBT or Endoscopy | 511 | 50.9% | 902 | 53.3% |

# Independent Variables
## Measured in the HINTS & NHIS

- **Demographics**:
  - Age
  - Race/ethnicity
  - Marital status
  - Education
  - Income
- **Health History & Status**:
  - Insurance status
  - Regular physician
  - Number of physician visits in the past year
  - Weight
  - Personal history of cancer
  - Family history of cancer
- **Health Behaviors**:
  - fruit & vegetable intake
  - weekly exercise, enough to sweat
  - smoking status
  - prostate-specific antigen (PSA) test in past year or mammogram in past 2 years

# Independent Variables
## Measured in the HINTS

- **Cancer Information Seeking**
  - Looked for cancer information from any source (self, other)
  - Confidence in being able to get advice or information about cancer if needed
  - Trust in sources of cancer information*
  - Attention paid to information about health or medical topics in the media*
- **Cancer Knowledge**
  - Age to start regular CRC testing
  - CRC test-specific intervals
  - High risk age group for developing CRC
- **Cancer Beliefs**
  - Perceived risk (absolute, comparative)
  - Cancer worry
  - Arranging a CRC test is easy
  - Afraid to find CRC if tested
  - Regular CRC testing increases chances of finding cancer when it's easy to treat
  - CRC testing is too expensive
  - Everything causes cancer
  - There's not much people can do to lower their chances of getting cancer
  - So many different recommendations about preventing cancer, it's hard to know which ones to follow

* Multiple items used to create scale scores

# Data Analysis

- Logistic regression analyses were conducted in SUDAAN to account for the sampling strategy and all results reflect weighted data.
- **A 2-step procedure was used. First, demographic, health history & status, and health behavior variables were analyzed in a multivariate logistic model and correlates significant at P < .05 were included with the HINTS variables in the second model.**
- This procedure was repeated for each dependent variable, stratified by gender.

# Positive Correlates of CRC Test Use

## Results of Step 1 Multivariate Analysis

### Females

- **More physician visits[E]**
- **Mammogram in past 2 years[F,E]**
- College graduate[E]

### Males

- **More physician visits[F,E]**
- **PSA in past year[F,E]**
- Older age (≥65 years)[F,E]
- Non-Hispanic[E]
- Exercising weekly[E]
- Fruit & vegetable intake ≥ 5/day[F]

[F] = FOBT; [E] = Endoscopy

# Positive Correlates of CRC Test Use

## Results of Step 2 Multivariate Analysis

### Females

- **More physician visits[E]**
- **Mammogram in past 2 years[F,E]**
- **More attention to health topics in the media[F]**
- **Knowledge of CRC test-specific interval[F,E]**
- **Arranging CRC testing is easy[E]**
- **CRC testing is <u>not</u> too expensive[F]**
- **CRC testing is too expensive[E]**
- Distrust in cancer information sources[F,E]
- More perceived comparative risk for CRC [E]
- Afraid to find CRC if tested[E]
- CRC testing leads to early detection[F]

### Males

- **More physician visits[E]**
- **PSA in past year[F,E]**
- **More attention to health topics in the media[F]**
- **Knowledge of CRC test-specific interval[F,E]**
- **Arranging CRC testing is easy[F]**
- **CRC testing is too expensive[F, E]**
- Older age (≥65 years)[F,E]
- Fruit & vegetable intake ≥ 5/day[F]
- Cancer information seeking other [E]

[F] = FOBT; [E] = Endoscopy

# Correlates of CRC Test Use

## Comparing NHIS 2000 & HINTS Step 1

### NHIS 2000

- **Gender[F,E]**
- **Non-Hispanic[E]**
- **Older age[F,E]**
- **More education[F,E]**
- **More physician visits[F,E]**
- **Mammogram within 2 years[F,E]**
- **More physical activity[F,E]**
- Married[F,E]
- Usual source of care[F,E]
- Personal history of cancer[E]
- Family history of CRC or any cancer[E]
- Former smoker[F], never smoker[F,E]

### HINTS Step 1

- **Not applicable**
- **Males, Non-Hispanic[E]**
- **Males, Older age[F,E]**
- **Females, College education[E]**
- **More physician visits[E]**
- **Recent cancer screening[F,E]**
- **Males, Exercising weekly[E]**

- Males, Fruit & vegetable intake ≥ 5/day[F]

[F] = FOBT; [E] = Endoscopy

# Correlates of CRC Test Use
## HINTS Step 2

- **HINTS provided new correlates of CRC test use:**
  - Information seeking by other
  - Distrust in cancer information sources
  - More attention to health topics in the media
  - Knowledge of CRC test-specific interval
  - Higher perceived comparative risk for CRC
  - Arranging a CRC test is easy
  - Afraid to find CRC if tested
  - Belief that CRC testing finds CRC when it's easier to treat
  - Belief that CRC testing is not too expensive

# Correlates of CRC Test Use
## HINTS Step 2

- Variables expected to be associated with CRC test use, but were not statistically significant using HINTS data included:
  - Absolute perceived risk
  - Cancer worry
  - Cancer information seeking for self
  - Fatalistic beliefs (can't do much to reduce risk, too many different recommendations, everything causes cancer)

# Comparison of Prevalence Estimates

| Current adherence | NHIS 2000 | HINTS 2002-3 |
|---|---|---|
| FOBT – males | 16.8% | 5.2% |
| FOBT – females | **17.5%** | **9.4%** |
| Endoscopy – males | **37.4%** | **31.4%** |
| Endoscopy – females | **31.1%** | **31.1%** |
| Any test – males | 44.5% | 50.9% |
| Any test – females | 41.0% | 53.3% |

# Conclusions

- Current CRC test use is still very low in both men and women
- Correlates of test use show some sex-specific differences
  - Beliefs/attitudes are associated with test use for women but not for men
  - Other health behaviors are associated with test use for men but not for women