Colorectal Cancer in Georgia, 1999-2003

Acknowledgments

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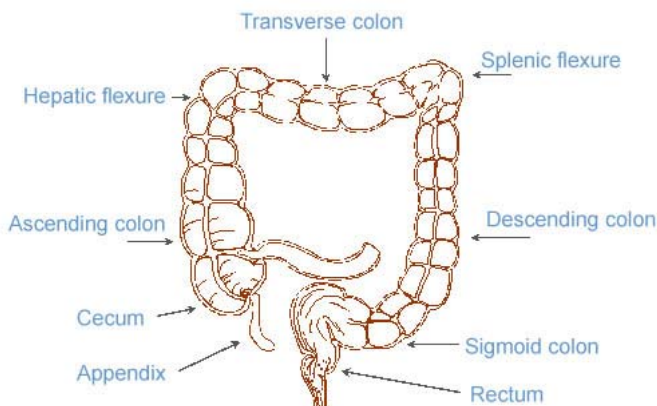
What is Colorectal Cancer?

Colorectal cancer is a collective term for cancers of the colon and rectum. Since cancers of the colon and rectum share many features, they are often referred to as colorectal cancer. The colon and rectum are parts of the digestive system. They form a long, muscular tube called the large intestine. The colon is the first 4 to 5 feet of the large intestine and the rectum is the last 4 to 5 inches.

After food is chewed and swallowed, it travels through the esophagus to the stomach. In the stomach, it is partly digested and then transferred to the small intestine. The small intestine continues digesting the food and absorbs most of the nutrients. The small intestine connects to the large intestine. The colon absorbs water and electrolytes from the food and serves as a storage place for waste. The waste moves from the colon into the rectum. From there, the waste passes out of the body through the opening called the anus during a bowel movement.

Colorectal cancers develop slowly over a period of several years. Most of these cancers begin as a polyp--a growth of tissue protruding into the center of the colon or rectum. Polyps are also known as adenomas. Removing the polyp early may prevent it from becoming cancer. Over 95 percent of colon and rectal cancers are adenocarcinomas, cancers arising from the cells that line the inside of the colon and rectum.

Colorectal cancer occurs in both men and women and most commonly occurs in people over 50 years of age. Colorectal cancer is the third most commonly diagnosed cancer in Georgia men and women. It is also the third most common cause of cancer death among Georgia men and women. Based on data from Georgia Comprehensive Cancer Registry it is estimated that in 2006, over 4,345 new cases of colorectal cancer will be diagnosed, and about 1,650 Georgians will die from this disease.

This picture shows colon and rectum.

How is Colorectal Cancer Detected?

Treatment is more likely to be successful if colorectal cancers are detected early. The American Cancer Society recommends routine colorectal cancer screening beginning at age 50. Several screening tests are available, including fecal occult blood tests (FOBT), digital rectal examination (DRE), flexible sigmoidoscopy, colonoscopy, and double contrast barium enema. The American Cancer Society's recommendations for the early detection of colorectal cancer are as follows:

Beginning at age 50, both men and women should follow one of the 5 screening options below:
1. A fecal occult blood test (FOBT) * every year
2. Flexible sigmoidoscopy every 5 years
3. A fecal occult blood test every year plus flexible sigmoidoscopy every *5 years*
(Of these first 3 options, the combination of FOBT every year and flexible sigmoidoscopy every 5 years is preferable.)
4. Double-contrast barium enema every 5 years
5. Colonoscopy every 10 years

*For FOBT, the take-home multiple sample method should be used.

Who Develops Colorectal Cancer?

- The overall age-adjusted colorectal cancer incidence rate in Georgia is 51 per 100,000. Males are 41% more likely to be diagnosed with colorectal cancer than females (age-adjusted rate 62/100,000 vs. 44/100,000).
- The overall age-adjusted colorectal cancer mortality rate is 19 per 100,000. Males are 44% more likely to die of colorectal cancer than females (age-adjusted rate 23/100,000 vs. 16/100,000).

**Colorectal Cancer Incidence and Mortality Rates* by Race and Sex,
Georgia (Incidence: 1999-2003; Mortality: 2000-2004) and United States (1999-2003)**

Incidence

Mortality
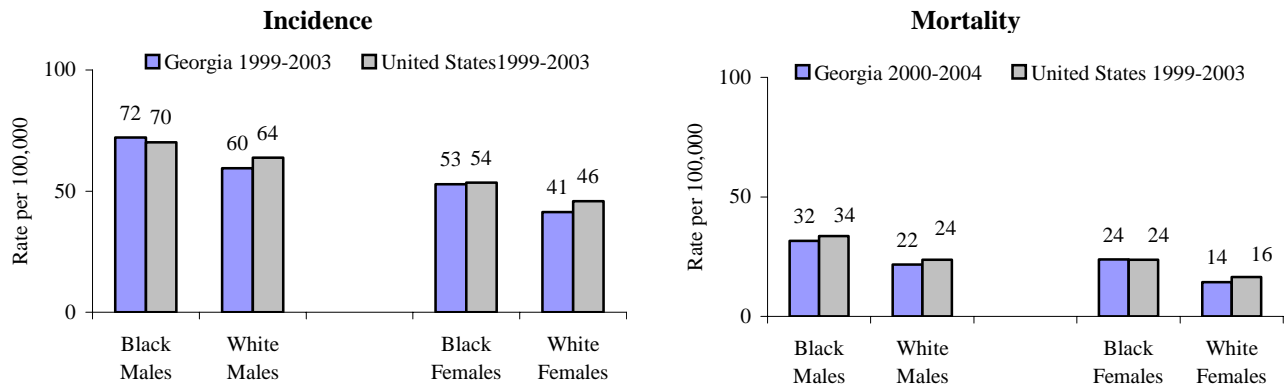
*Rates are age-adjusted to 2000 US standard population.

Each year from 1999-2003, over 3,540 colorectal cancers were diagnosed in Georgia. Black men and women were more likely to be diagnosed with the disease than were white men and women.

Each year from 2000-2004 over 1,315 Georgians died from colorectal cancer. Mortality rates were higher for black men and women than for white men and women.

What are the Causes and Risk Factors for Colorectal Cancer?

While we do not know the exact cause of most colorectal cancers, there are certain known risk factors. A risk factor is anything that indicates a person has a higher than normal chance of getting a disease such as cancer. Different cancers have different risk factors. Some risk factors, such as diet, can be controlled. Others, such as a person's age or family history, can't be controlled. Researchers have identified several risk factors that increase a person's chance of getting colorectal cancer. But having a risk factor, or even several, doesn't mean that a person will get the disease.

While everyone is at risk for colorectal cancer, the following factors can increase one's chances of getting the disease.

Risk Factors That Can Be Controlled
- **High fat diet:** A diet made up mostly of foods that are high in fat, especially from animal sources, can increase the risk of colorectal cancer. The American Cancer Society recommends choosing most of your foods from plant sources and limiting the amount of high-fat foods you eat.
- **Physical inactivity:** People who are not active have a higher risk of colorectal cancer.
- **Obesity:** Being obese increases a person's colorectal cancer risk. Having extra fat in the waist area increases this risk more than having fat in the thigh or hip area.
- **Smoking:** Most people know that smoking causes lung cancer, but recent studies show that smokers are 30% to 40% more likely than nonsmokers to die of colorectal cancer.
- **Alcohol consumption:** Heavy use of alcohol has been linked to colorectal cancer.

Risk Factors That You Cannot Change
- **Age:** The chances of getting colorectal cancer increase with age. More than 90% of people diagnosed with colorectal cancer are older than 50.
- **Family history:** Colorectal cancer risk is higher in men and women who have a close relative who has had the disease. The risk increases even further if the relative is affected before the age of 60, or if more than one relative is affected (at any age). About 5% of patients with colorectal cancer have an inherited genetic abnormality that causes the cancer. People with a family history of colorectal cancer should talk with their doctor about when to begin and how often to have screening tests.
- **Ethnic Background:** Jews of Eastern European decent (Ashkenazi Jews) have a higher rate of colon cancer. In one study about 10% of colorectal cancers in Ashkenazi Jews were associated with a genetic mutation.
- **Personal history of colorectal cancer:** An individual with colorectal cancer, even though it has been completely removed, is more likely to develop new cancers in the other areas of the colon and rectum. The chances of this happening are greater if the first colorectal cancer was diagnosed at the age of 60 or less.
- **Personal history of polyps:** Some types of polyps (inflammatory polyps) do not increase the risk of colorectal cancer. Other types, such as adenomatous polyps and hyperplastic polyps do increase the risk of colorectal cancer. This is especially true if the polyps are large or if there are many of them.
- **Personal history of bowel disease:** Inflammatory bowel disease (ulcerative colitis or Crohn's disease) increases the risk of colon cancer. People with inflammatory bowel disease should talk with their doctor about when to begin and how often to have the screening tests.
- **Diabetes:** People with diabetes have a 30%-40% increased chance of developing colon cancer. They also tend to have a higher death rate after diagnosis.

What are the Symptoms of Colorectal Cancer?

Cancer that starts in the different sections of the colon and rectum may cause different symptoms. Symptoms of colorectal cancer can mimic other conditions like hemorrhoids, infections and inflammatory bowel disease. It is also possible to have colon cancer and not have any symptoms. If you have any of the following symptoms, it is important to talk to your doctor since finding colorectal cancer early makes successful treatment more likely:

- Change in bowel habits: Diarrhea, constipation, or narrowing of stools that last for more than a few days.
- A feeling that you need to have a bowel movement that is not relieved by doing so.
- Rectal bleeding or blood in stool.
- Cramping or steady abdominal pain.
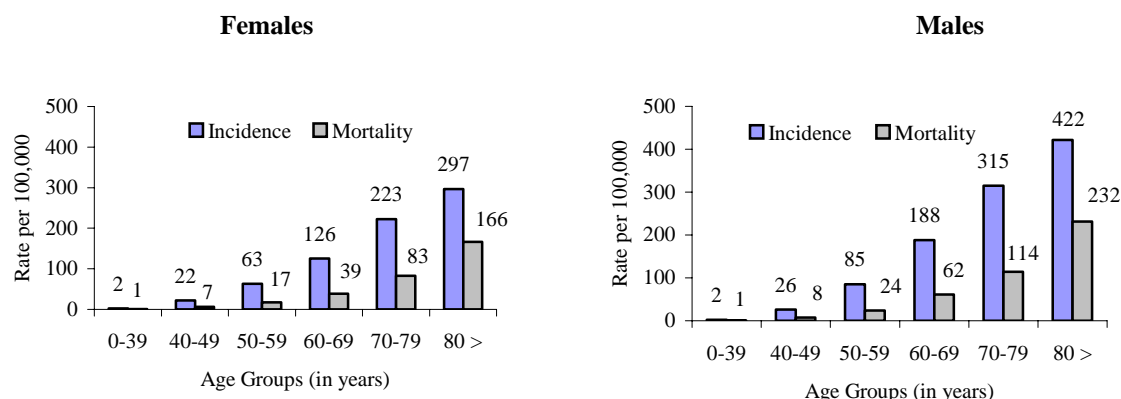- Weakness and fatigue.

Top Five Cancer Types and Cancer-Related Deaths in Georgia

Cases		Deaths	
Male	**Female**	**Male**	**Female**
Prostate	Breast	Lung & Bronchus	Lung & Bronchus
Lung & Bronchus	Lung & Bronchus	Prostate	Breast
Colorectal	**Colorectal**	**Colorectal**	**Colorectal**
Bladder	Uterus	Pancreas	Pancreas
Melanoma	Ovary	Leukemia	Ovary

Colorectal cancer is the third most common cancer diagnosed and the third leading cause of cancer deaths among men and women in Georgia. One in 17 Americans will develop colorectal cancer in their lifetime.

At What Age is Colorectal Cancer Most Often Diagnosed?

Georgia Colorectal Cancer Incidence (1999-2003) and Mortality (2000-2004) Rates, by Age Group and Sex

Females

Rate per 100,000

□ Incidence □ Mortality

Age Group	Incidence	Mortality
0-39	2	1
40-49	22	7
50-59	63	17
60-69	126	39
70-79	223	83
80 >	297	166

Age Groups (in years)

Males

Rate per 100,000

□ Incidence □ Mortality

Age Group	Incidence	Mortality
0-39	2	1
40-49	26	8
50-59	85	24
60-69	188	62
70-79	315	114
80 >	422	232

Age Groups (in years)

Colorectal cancer incidence and mortality rates are higher in older individuals. This cancer rarely occurs among individuals less than 40 years of age. In Georgia, men and women over the age of 80 have the highest incidence rate of colorectal cancer.

Mortality rates also increase with age; the highest rates are seen in men and women 80 years of age and older. Before the age of 40, colorectal cancer deaths are rare. Fewer than 30 deaths occurred every year in males and females under 40 years of age from 2000 through 2004.

What is the Treatment for Colorectal Cancer?

Each type of treatment has benefits and side effects. Age, overall health, and the stage of the cancer are all factors that need to be considered. Staging is a standardized way to summarize information about how far a cancer has spread from its point of origin. In situ colorectal cancers are confined to the innermost lining of the colon and rectum. Localized colorectal cancers have invaded the middle layers of the colon or rectum, but have not spread to the outermost layer. Regional stage colorectal cancers have spread beyond the colon and rectum to the adjacent tissues, organs, or regional lymph nodes. Distant stage colorectal cancers have spread to sites such as the liver, lungs, or lymph nodes far from the colon and rectum.

There are three main types of treatment for colorectal cancer: surgery, radiation therapy, and chemotherapy. Depending on the stage of cancer, multiple treatment modalities may be used at the same time or one after another.

- **Surgery:** This is the most common treatment. Usually, the cancer and a length of colon or rectum on either side of the cancer including some lymph nodes are removed. A small malignant polyp can be removed from the colon or upper rectum with a colonoscope thus avoiding abdominal surgery.
- **Radiation Therapy:** This treatment uses x-rays or other type of radiation to kill cancer cells. There are two types of radiation therapies: External – radiation comes from a machine and is directed to the cancer. Internal – radioactive material/implants are put directly into or near the cancer. Research has shown that radiation in combination with surgery will often decrease the risk of recurrence of rectal cancer.
- **Chemotherapy:** Systemic chemotherapy is given using anti-cancer drugs that are injected into a vein or taken by mouth. These drugs reach all areas of the body through the bloodstream, making them potentially effective against cancers that have metastasized to other parts of the body.

Adjuvant and Neoadjuvant Therapy: Neoadjuvant therapy is treatment given before the primary treatment. Examples of neoadjuvant therapy include chemotherapy, radiation therapy, and hormone therapy. Adjuvant therapy is treatment given after the primary treatment to increase the chances of a cure. Adjuvant therapy may include chemotherapy, radiation therapy, hormone therapy, or biological therapy.

Who Survives Colorectal Cancer?

**Percent of US Men and Women Surviving Five Years after Diagnosis
of Colorectal Cancer, by Stage of Disease and Race, 1996-2002**
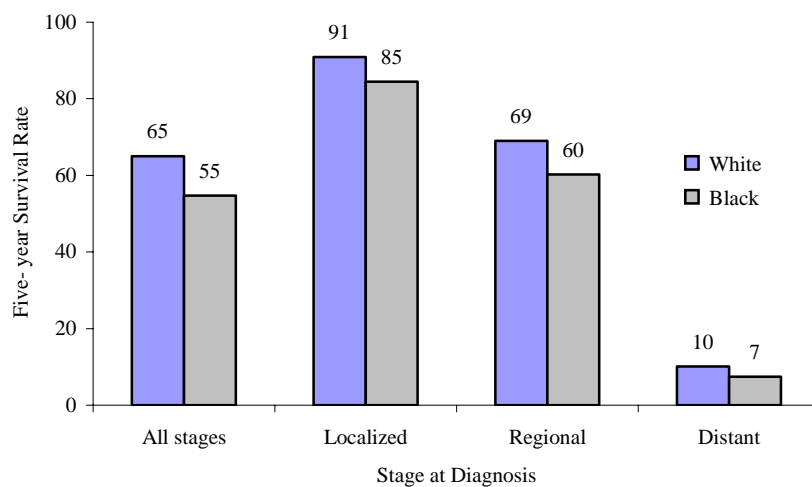
|		Localized	Regional	Distant
% of	US White†	40%	37%	19%
Tumors	US Black†	35%	35%	24%
found at	GA White†	34%	38%	15%
this stage[*]	GA Black†	29%	36%	20%

*Unstaged tumors are not shown.
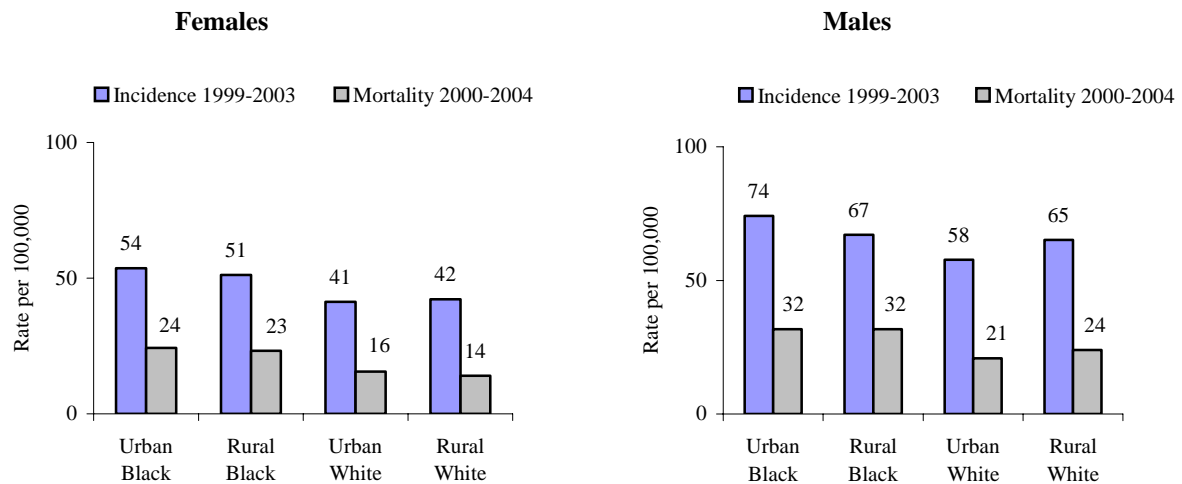†US data is for 1996-2002, GA data is for 1999-2003

Early detection is important because survival for early stage colorectal cancer is much greater than that for later stage disease. Five-year survival for tumors found in the localized stage, when the cancer is still contained within the colon, is 91 percent among US whites and 85 percent among US blacks. In Georgia, about 34 percent of white men and women and about 29 percent of black men and women are diagnosed at a localized stage. If the cancer spreads to organs away from the colon or rectum (distant stage), five-year survival rate drops to about 10 percent for US white men and women and 7 percent for US black men and women.

How does Colorectal Cancer Vary by Region?

Urban and Rural Counties in Georgia

Legend: □ Urban Counties ▨ Rural Counties
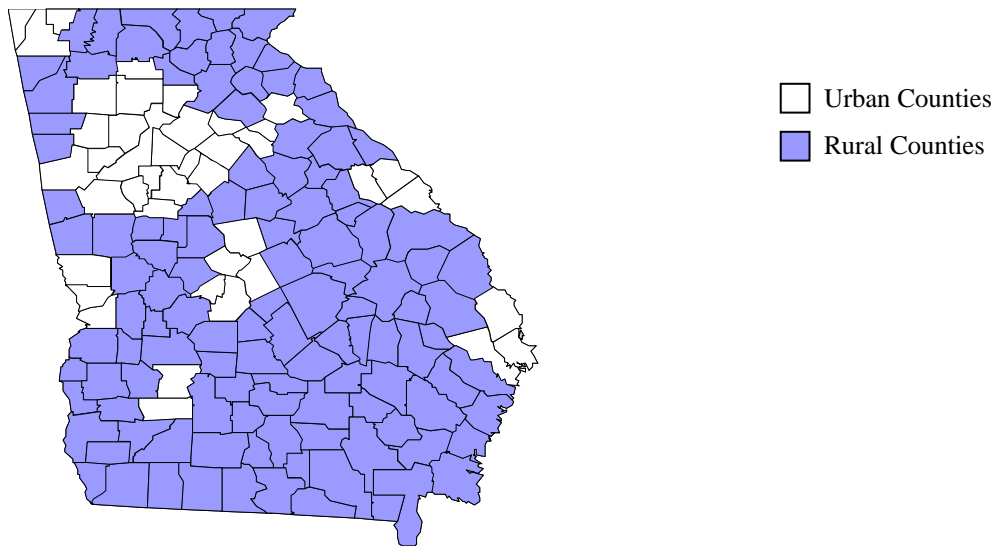
Georgia Colorectal Cancer Incidence and Mortality Rates* by Geography

Females

■ Incidence 1999-2003 ▨ Mortality 2000-2004

Rate per 100,000

Category	Incidence	Mortality
Urban Black	54	24
Rural Black	51	23
Urban White	41	16
Rural White	42	14

Males

■ Incidence 1999-2003 ▨ Mortality 2000-2004

Rate per 100,000

Category	Incidence	Mortality
Urban Black	74	32
Rural Black	67	32
Urban White	58	21
Rural White	65	24

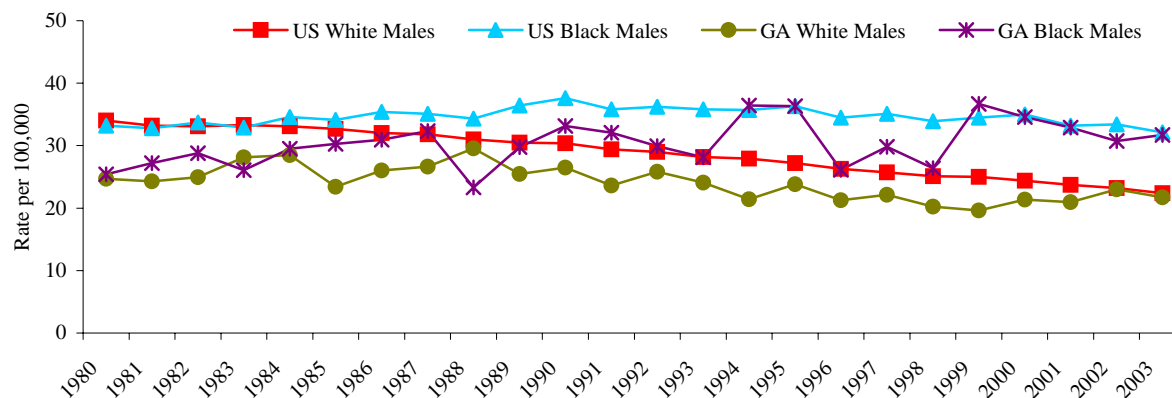*Rates are age-adjusted to the 2000 US standard population

Incidence (1999-2003) rates for rural white males were significantly higher than for urban white males. Incidence rates for urban black males and females were higher than for rural black males and females, but the results were not statistically significant.

Mortality (2000-2004) rates for rural white males were significantly higher than for urban white males. Mortality rates for urban black males and females were higher than for rural black males and females, but the results were not statistically significant.

How Does Georgia Compare with the United States?

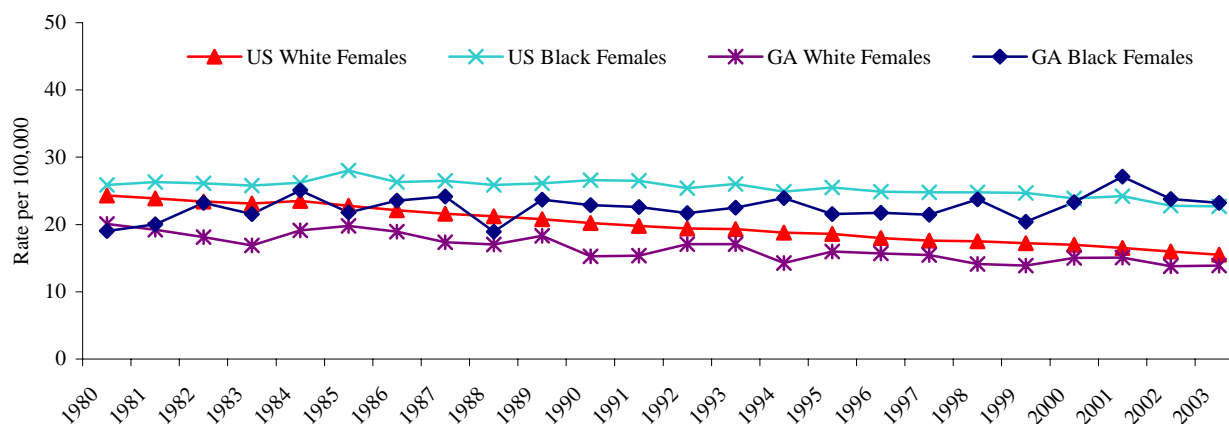**Male Colorectal Cancer Mortality Rate*, by Race, Georgia vs. US, 1980-2003**

*Rates are age-adjusted to the 2000 US standard population

Overall, from 1980 to 2003, the colorectal cancer mortality rates among Georgia males were lower than among US males.

From 1980 to 1999, the mortality rates among Georgia white males decreased by 0.8 percent. Since 1999 the rates have been rising again. The mortality rate among Georgia black men has been fluctuating. From 1980 to 1999, the rates increased by 3.4 percent per year and have been decreasing since 1999.

Female Colorectal Cancer Mortality Rate*, by Race, Georgia vs. US, 1980-2003

*Rates are age-adjusted to the 2000 US standard population

Overall, from 1980 to 2003, the colorectal cancer mortality rates among Georgia females were lower than among US females.

The mortality rate for white women in Georgia has been declining at an average annual decrease of 1.3 percent. The mortality rates among black women have been rising at an average annual increase of 1.5 percent.

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Where Can I Find Out More about Colorectal Cancer?

You can learn more about colorectal cancer from the following organizations:

American Cancer Society
Telephone: 1-800-ACS-2345
Internet Address: http://www.cancer.org

National Cancer Institute, Cancer Information Service
Telephone: 1-800-4-CANCER
Internet Address: http://www.nci.nih.gov

Cancer Research and Prevention Foundation
(Colossal Colon)
Telephone: 1-800-227-2732
Internet Address: http://www.preventcancer.org

Colon Cancer Alliance
Telephone: 212-627-7451
Internet Address: http://www.ccalliance.org

National Colorectal Cancer Research Alliance
Telephone: 818-760-7722
Internet Address: http://www.eifoundation.org/home/

Cancer Control Planet
Internet Address: http://cancercontrolplanet.cancer.gov/

Technical Notes

Definitions:
Age-adjusted rate: A rate calculated in a manner that allows for the comparison of rates derived from populations with different age structures.
Cancer incidence rate: The number of new cancer cases occurring in a population during a specified period of time. Often expressed per 100,000 population.
Cancer mortality rate: The number of cancer deaths occurring in a population during a specified period of time. Often expressed per 100,000 population.

Data Sources:
The number of deaths and mortality rates for the state of Georgia were obtained from the Georgia Department of Human Resources, Division of Public Health, Vital Records Branch. The number of deaths and mortality rates for the United States were obtained from the National Center for Health Statistics, Centers for Disease Control and Prevention (CDC). Mortality data were coded using ICD-9 codes (1980-1998) and ICD-10 codes (1999-2004). The ICD-9 codes for colorectal cancer are 153.0–154.1, 159.0, while the ICD-10 codes for colorectal cancer are C180:C209, C260.

The number of new cases and incidence rates for the state of Georgia were obtained from the Georgia Department of Human Resources, Division of Public Health, Georgia Comprehensive Cancer Registry. The number of new cases and incidence rates for the United States were obtained from the North American Association of Central Cancer Registries (NAACCR). Incidence data were coded using ICD-O3 codes. The ICD-O3 codes used for colorectal cancer are C180:C209, C260.

Cancer stage and survival data for the United States were obtained from the Surveillance, Epidemiology, and End Results (SEER) program, National Cancer Institute.

Population projections for 2005 were obtained from the Office of Planning and Budget for the state of Georgia. Population estimates for 1980-2003 and the 2000 US standard population were obtained from the US Bureau of the Census.

Methods:
Mortality rates were calculated per 100,000 population and age-adjusted by the direct method to the 2000 US standard population. Except where calculated to show trends, the mortality rates are five-year average annual rates for the period 2000 through 2004. Incidence rates were calculated per 100,000 population and age-adjusted by the direct method to the 2000 US standard population. Rates were calculated for 1999-2003, as these are the years in which Cancer Registry data are greater than 95% complete.

The estimated number of cases for 2006 was calculated by multiplying age-specific incidence rates for 1999-2003 by age-specific population projections for 2006. The estimated number of deaths for 2006 was calculated by multiplying age-specific mortality rates for 2000-2004 by age-specific population projections for 2006.