

# COLORECTAL CANCER FACTS & FIGURES, TENNESSEE, 2002-2006

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## *What Is Colorectal Cancer?*

Colorectal cancer is a term used to refer to cancer that starts in either the colon or the rectum. Colon cancer and rectal cancer have many features in common. They are discussed together here.

### **The normal digestive system**

Colon and rectal cancers begin in the digestive system, also called the GI (gastrointestinal) tract (see the picture below). Foods consumed are digested to make the nutrients more absorbable by the body and the remaining non-absorbable components of the food are converted to solid waste matter (stool) that is then excreted. In order to understand colorectal cancer, it helps to know some basics about the normal structure and function of the digestive system.

After food is chewed and swallowed, it travels down to the stomach through the esophagus. There it is partly broken down and then continues on to the small intestine. The word "small" refers to the width of the small intestine. In fact, the small intestine is the longest part of the digestive system -- about 20 feet.

The small intestine continues the digestion of the food and absorbs most of the nutrients made available by the digestion process. The small intestine leads to the large intestine (also called the large bowel or colon), a muscular tube about 5 feet long. The colon absorbs water and nutrients from the food and also serves as a storage place for waste matter. The waste matter moves from the colon into the rectum, the last 6 inches of the digestive system. From there the waste passes out of the body through the opening called the anus.

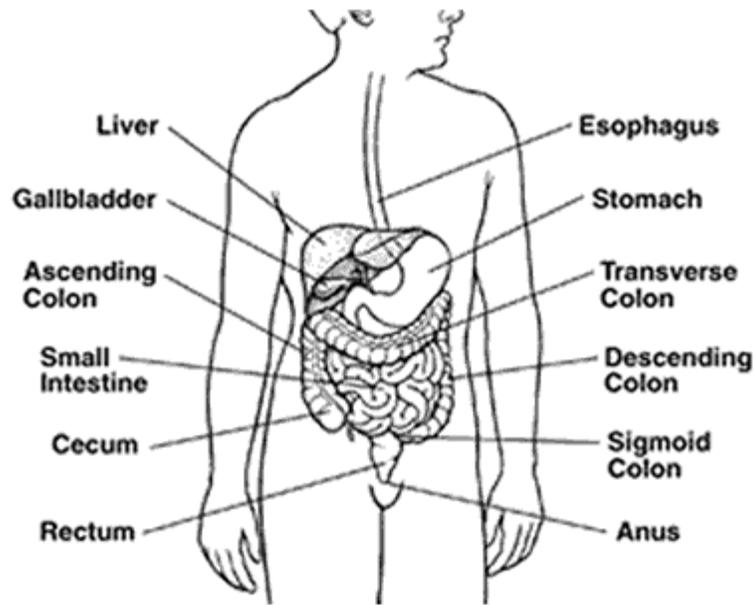


Image courtesy of American Cancer Society

The wall of the colon and rectum has several layers of tissues. Colorectal cancer starts in the inner layer and can grow through some or all of the other layers. Knowing a little about these layers is helpful because the stage (extent of spread) of a cancer depends to a great degree on how deep the cancer goes into these layers.

### **Abnormal growths in the colon or rectum**

Cancer that starts in these different areas may cause different symptoms. But colon cancer and rectal cancer have many things in common. In most cases, colorectal cancers develop slowly over many years. We now know that most of these cancers begin as a polyp--a growth of tissue that starts in the lining and grows into the hollow core of the colon or rectum. This tissue may or may not be cancerous. A type of polyp known as an *adenoma* can become cancerous. Removing a polyp early may prevent it from becoming cancer.

Over 95% of colon and rectal cancers are *adenocarcinomas*. These are cancers that start in the cells that line the inside of the colon and rectum. There are other, rarer, types of tumors of the colon and rectum, but the facts given here refer only to adenocarcinomas.

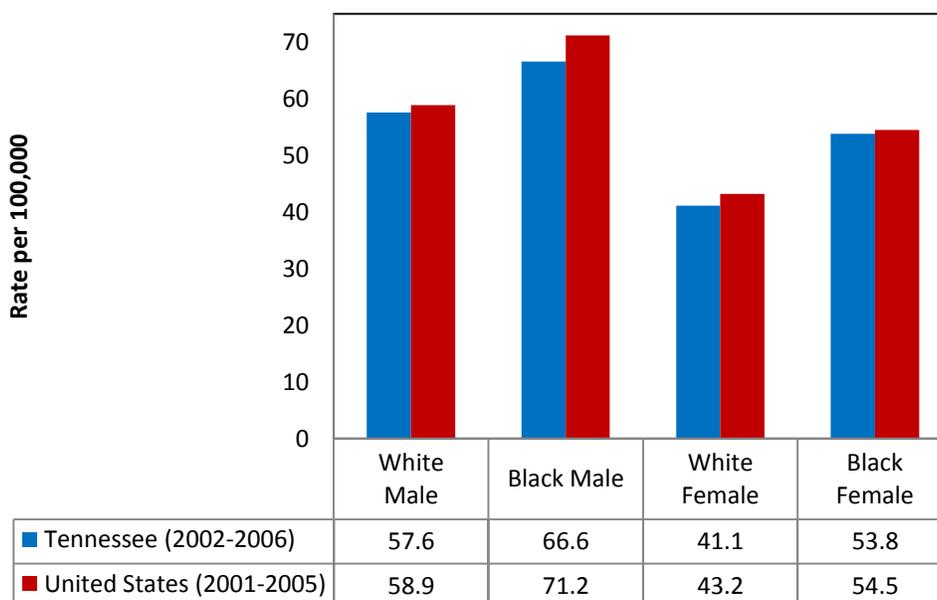
## How Many Tennesseans Get Colorectal Cancer?

Not counting skin cancers, colorectal cancer is the third most common cancer found in men and women in United States. According to the Tennessee Cancer Registry, there are greater than 3,000 new cases of colorectal cancer diagnosed each year in Tennessee. There are greater than 1,100 deaths each year in Tennessee due to colorectal cancer.

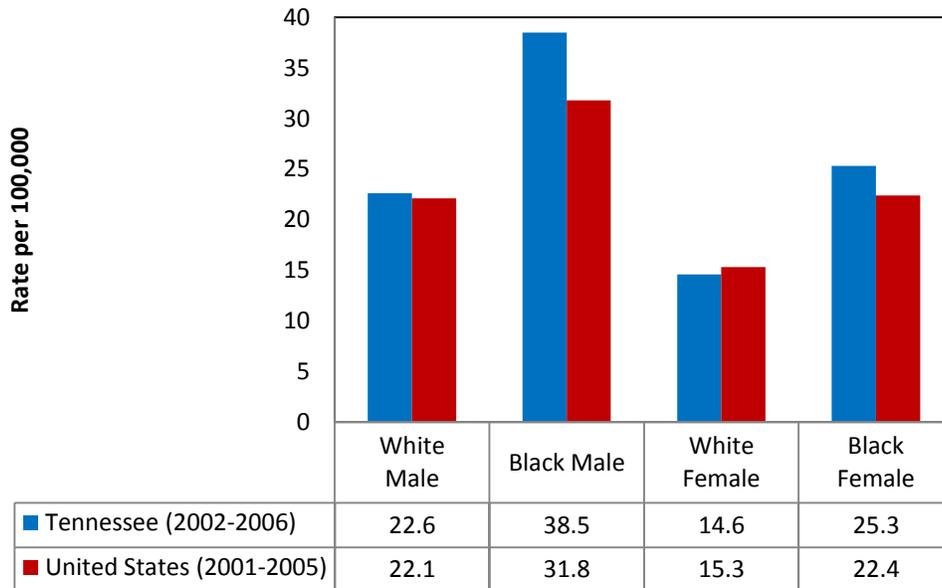
The death rate from colorectal cancer in Tennessee has generally been decreasing for the past 5 years. Thanks to colorectal cancer screening techniques, such as colonoscopies, polyps can be found earlier when they are easier to cure and can be removed during the screening procedure. Treatments have improved as well.

Overall, colorectal cancer incidence and mortality rates are higher in men than in women. Also, colorectal cancer incidence and mortality rates are higher in blacks than whites. Black men have the highest colorectal cancer incidence and mortality rates of all sex/race groups. The incidence rate of colorectal cancer is lower in Tennessee compared to the overall U.S. rate. However, the mortality rate of colorectal cancer for Tennessee blacks is higher than the overall U.S. rate.

**Colorectal Cancer Incidence Rates  
Tennessee and United States, by sex and race**



**Colorectal Cancer Mortality Rates  
Tennessee and United States, by sex and race**



*What Causes Colorectal Cancer?*

While we do not know the exact cause of most colorectal cancers, there are certain known risk factors. A risk factor is something that affects a person's chance of getting a disease. Some risk factors, like smoking, can be controlled. Others, such as a person's age, can't be changed.

But risk factors don't tell us everything. Having a risk factor, or even several risk factors, does not mean that you will get the disease. And some people who get the disease may not have any known risk factors. Even if a person with colorectal cancer has a risk factor, it is often very hard to know what part that risk factor may have contributed to the cancer development.

Researchers have found several risk factors that may increase a person's chance of getting polyps and/or colorectal cancer.

**Risk factors you cannot change**

**Age:** The chances of having colorectal cancer go up after age 50. More than 9 out of 10 people found to have colorectal cancer are older than 50.

**Having had polyps or colorectal cancer before:** Some types of polyps increase the risk of colorectal cancer, especially if they are large or if there are many of them. If you have had colorectal cancer (even if it has been completely removed), you are more likely to have new cancers start in other areas of your colon and rectum. The chances of this happening are greater if you had your first colorectal cancer when you were younger than age 60.

**Having a history of bowel disease:** Two chronic inflammatory bowel diseases, called *ulcerative colitis* and *Crohn's disease*, increase the risk of colon cancer. In these diseases, the colon is inflamed over a long period of time. If you have either of these diseases your doctor may want you to have colon screening testing more often. (These diseases are different than *irritable bowel syndrome (IBS)*, which does not carry an increased risk for colorectal cancer.)

**Family history of colorectal cancer:** If you have close relatives who have had this cancer, your risk might be increased. This is especially true if the family member got the cancer before age 60. People with a family history of colorectal cancer should talk to their doctors about when and how often to have screening tests. The increased risk may be due to genetic factors, but similar lifestyles within family units may be a more important factor.

**Certain family syndromes:** A syndrome is a group of symptoms. For example, in some families members tend to get a type of syndrome called Familial Adenomatous Polyposis coli (FAP) that involves having hundreds of polyps in their colon or rectum. Cancer often develops in 1 or more of these polyps.

If your doctor tells you that you have a condition that makes you or your family members more likely to get colorectal cancer, you will probably need to begin colon cancer testing at a younger age and you might want to talk about genetic counseling.

**Race or ethnic background:** Some racial and ethnic groups such as African Americans and Jews of Eastern European descent (Ashkenazi Jews) have a higher colorectal cancer risk. All of the reasons for this are not yet understood.

### **Risk factors linked to lifestyle**

Several lifestyle-related factors have been linked to colorectal cancer. In fact, the links between diet, weight, and exercise and colorectal cancer risk are some of the strongest for any type of cancer.

**Certain types of diets:** A diet that is high in red meats (beef, lamb, or liver) and processed meats such as hot dogs, bologna, and lunch meat can increase your colorectal cancer risk. Cooking meats at very high heat (frying, broiling, or grilling) can create chemicals that might increase cancer risk. Diets high in vegetables and fruits have been linked with a lower risk of colorectal cancer.

**Lack of exercise:** Getting more exercise may help reduce your risk.

**Overweight:** Being overweight or obese increases a person's risk of dying from colorectal cancer.

**Smoking:** Most people know that smoking causes lung cancer, but long-term smokers are more likely than non-smokers to die of colorectal cancer. Smoking increases the risk of many other cancers, too.

**Alcohol:** Heavy use of alcohol has been linked to colorectal cancer.

**Diabetes:** People with type 2 diabetes have an increased chance of getting colorectal cancer. They also tend to have a higher death rate from this cancer.

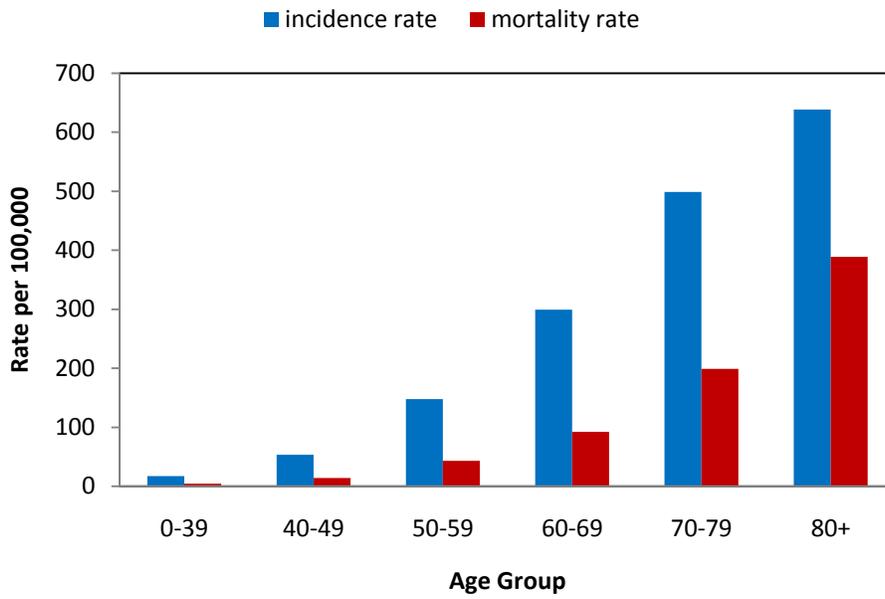
### **Risk factors that are less certain**

**Night-shift work:** One study suggests that working a night shift at least 3 nights a month for at least 15 years might increase the risk of colorectal cancer in women. More research is needed to check out this finding.

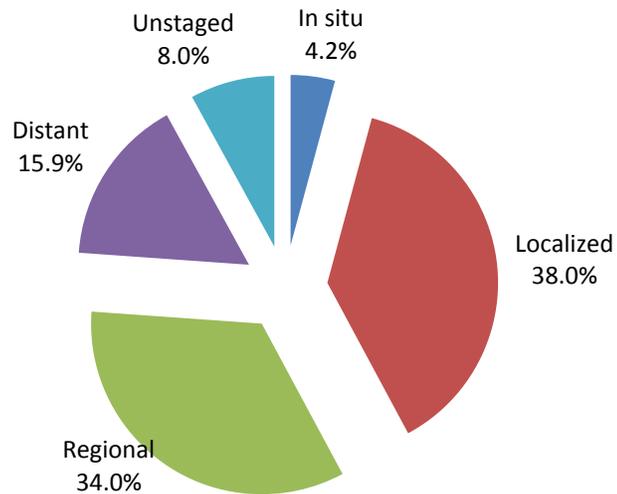
**Other cancers and their treatment:** A recent report on testicular cancer survivors found that these men had a higher rate of colorectal cancer. Men who receive radiation therapy for prostate cancer have been reported to have a higher risk of rectal cancer, too.

The American Cancer Society and several other medical organizations recommend earlier testing for people with increased colorectal cancer risk. These recommendations differ from those for people at average risk. For more information, talk with your doctor.

### Tennessee Colorectal Cancer Incidence and Mortality by Age Group, 2002-2006



### Colorectal Cancer by Stage, Tennessee, 2002-2006



## *Can Colorectal Cancer Be Prevented?*

Even though we don't know exactly what causes colorectal cancer, there are some steps you can take to reduce your risk.

**Screening tests:** Regular colorectal cancer screening or testing beginning at the age of 50 (unless you are in a high-risk group) is one of the best ways to help prevent colorectal cancer. Some polyps, or growths, can be found and removed before they have the chance to turn into cancer. Screening can also help find colorectal cancer early, when it is more likely to be cured.

People who have a history of colorectal cancer in their family should check with their doctor for advice about when and how often to have screening tests.

### **Genetic testing, screening, and treatment for those with a strong family history**

People with a strong family history of colorectal polyps or cancer should think about getting genetic counseling to help them decide whether genetic testing or earlier screening may be right for them.

**Diet and exercise:** People can lower their risk of getting colorectal cancer by taking charge of the risk factors that they can control, such as diet and exercise. It is important to eat plenty of fruits, vegetables, and whole grain foods and to limit intake of high-fat foods. Getting enough exercise is also important. The American Cancer Society recommends at least 30 minutes of physical activity on 5 or more days of the week. Forty-five to 60 minutes of exercise on 5 or more days of the week is even better.

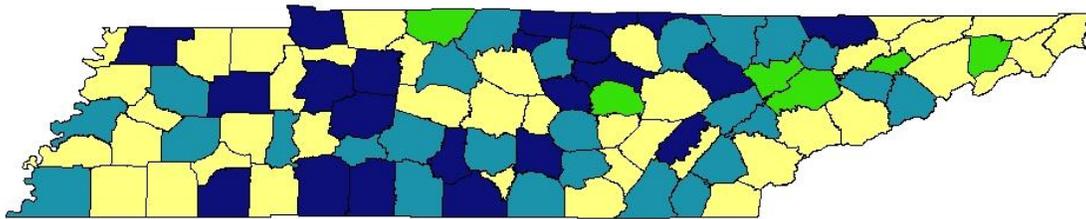
**Vitamins:** Some studies suggest that taking a daily multivitamin containing folic acid or folate can lower colorectal cancer risk. Other studies suggest that getting more calcium and vitamin D can help. One recent study suggested that a diet high in magnesium may also reduce colorectal cancer risk in women. But not all studies have found these supplements to reduce risk. More research is needed in this area.

**Aspirin and other drugs:** Aspirin and drugs such as ibuprofen (Motrin, Advil) or naproxen (Aleve), appear to prevent the growth of polyps. A drug called Celebrex also reduces polyps for some people with FAP. But these medicines can have serious or even life-threatening side effects such as stomach bleeding. For this reason, experts do not advise the general public to take them to try to prevent colorectal cancer. If you are at high risk for colorectal cancer, talk to your doctor about what you should do.

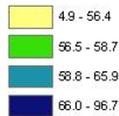
**Female hormones:** Hormone replacement therapy (HRT) in women after menopause may reduce their risk of getting colorectal cancer. But those women on HRT who do get colorectal cancer may have a faster growing cancer. The decision to use HRT should be based on a careful discussion of benefits and risks with your doctor.

*How Does Colorectal Cancer Vary By Region?*

Colorectal Cancer Incidence Rates  
by County, Tennessee, All Races, Males, 2002-2006



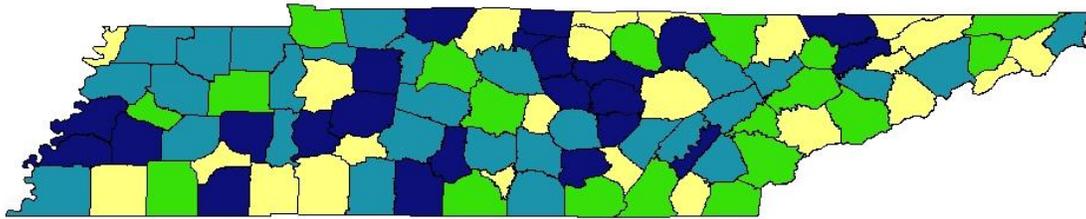
Colorectal Cancer Age-adjusted Incidence Rate



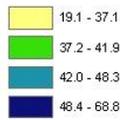
Tennessee Males Colorectal Cancer Incidence Rate (2002-2006): 58.7 per 100,000  
U.S. Males Colorectal Cancer Incidence Rate (2005): 56.4 per 100,000

\* Five-year average annual rate per 100,000 Tennessee males and females, age-adjusted to the 2000 U.S. standard population  
\* U.S. rate is from U.S. Cancer Statistics 2005 Incidence and Mortality

Colorectal Cancer Incidence Rates  
by County, Tennessee, All Races, Females, 2002-2006



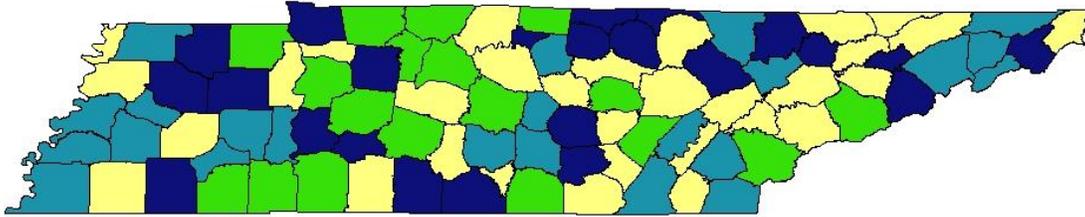
Colorectal Cancer Age-adjusted Incidence Rate



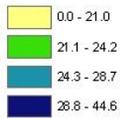
Tennessee Females Colorectal Cancer Incidence Rate (2002-2006): 42.7 per 100,000  
U.S. Females Colorectal Cancer Incidence Rate (2005): 41.9 per 100,000

\* Five-year average annual rate per 100,000 Tennessee males and females, age-adjusted to the 2000 U.S. standard population  
\* U.S. rate is from U.S. Cancer Statistics 2005 Incidence and Mortality

Colorectal Cancer Mortality Rates  
by County, Tennessee, All Races, Males, 2002-2006



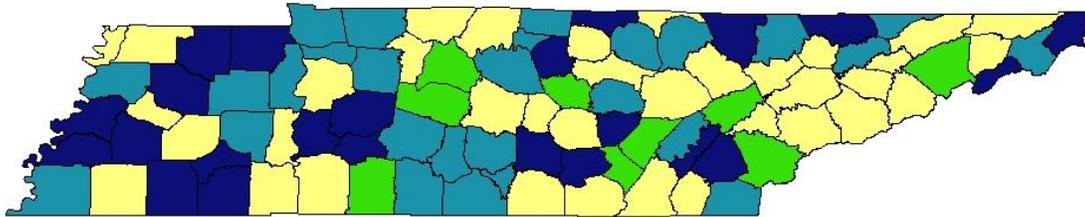
Colorectal Cancer Age-adjusted Mortality Rate



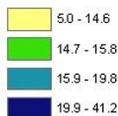
Tennessee Males Colorectal Cancer Mortality Rate (2002-2006): 24.2 per 100,000  
U.S. Males Colorectal Cancer mortality Rate (2005): 21.0 per 100,000

\* Five-year average annual rate per 100,000 Tennessee males and females, age-adjusted to the 2000 U.S. standard population  
\* U.S. rate is from U.S. Cancer Statistics 2005 Incidence and Mortality

Colorectal Cancer Mortality Rates  
by County, Tennessee, All Races, Females, 2002-2006



Colorectal Cancer Age-adjusted Mortality Rate



Tennessee Females Colorectal Cancer Mortality Rate (2002-2006): 15.8 per 100,000  
U.S. Females Colorectal Cancer mortality Rate (2005) 14.6 per 100,000

\* Five-year average annual rate per 100,000 Tennessee males and females, age-adjusted to the 2000 U.S. standard population  
\* U.S. rate is from U.S. Cancer Statistics 2005 Incidence and Mortality

### *Hospitalization of Cancer in Tennessee*

Hospital discharge summary data was analyzed by using SAS software.

As showed in the following Tables 1 and 2, a total of 27,343 inpatient hospitalizations and a total of 61,082 outpatient hospitalizations with cancer coded as the principal diagnosis were reported in 2005.

Lung cancer and colorectal cancer accounted for over a quarter of all cancer inpatient hospitalizations in the state of Tennessee. 4,212 inpatient hospitalizations (15.4 percent) for lung cancer and 3,203 (11.7 percent) for colorectal cancer.

Females had more inpatient hospitalizations than males for all cancers sites combined (50.8 percent vs. 49.2 percent).

Whites had a larger percentage of inpatient hospitalizations than blacks for all cancers sites combined (81.9 percent vs. 15.2 percent).

The same pattern applied to outpatient hospitalizations.

The crude inpatient hospitalization rate for all cancers combined for the state of Tennessee in 2005 was 459 per 100,000 population. The crude outpatient hospitalization rate for all cancers combined for the state of Tennessee in 2005 was 1026 per 100,000 population.

### *Length of Hospital Stay for Cancer in Tennessee*

The diagnosis and treatment of cancer spend a large portion of available healthcare resources. As shown in the following Table 3, in 2005, inpatient with a principal diagnosis of cancer stayed in hospital for a total of 189,209 days and outpatient with a principal diagnosis of cancer stayed in hospital for a total of 53,180 days.

The average length of stay per inpatient hospitalization for cancer was seven days. The median length of stay per inpatient hospitalization for cancer was five days.

### *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.cancer.gov>