CANCER IN VERMONT

Executive Summary

In Vermont, cancer is the second leading cause of death, with approximately 1,240 people dying from cancer each year. For the past 40 years, the three leading causes of death in Vermont have been heart disease, cancer, and stroke. Unlike the death rates for heart disease and stroke, the death rate for cancer has risen steadily over the last few decades. Roughly one out of every two men and one out of every three women will develop cancer in their lifetime.

> By monitoring cancer in Vermont, we can become better informed of progress towards preventing and treating cancer, and ultimately, reduce illness and death from cancer.

- Each year an average of 3,064 new cases of cancer are diagnosed among Vermonters, and 1,236 people die from cancer.
- On average, 1,554 new cases of cancer are diagnosed each year among Vermont men. The most common cancers diagnosed in men are prostate, lung, colorectal, bladder and melanoma, and account for 68 percent of all new cases.
- The Vermont male cancer incidence rate of all sites combined is not different than the U.S. Vermont men have a higher incidence than the U.S. for lung cancer and melanoma.
- On average, 1,509 new cases of cancer are diagnosed each year among Vermont women. The most common cancers diagnosed in women are breast, colorectal, lung, uterine and melanoma, and account for 67 percent of all new cases. Vermont women have a higher incidence than the U.S. for colorectal, uterine, melanoma, bladder, and cervical cancer. The Vermont female incidence rate of all cancer sites combined is higher than the U.S.
- Vermont's colorectal cancer incidence rate for both genders combined is higher than the U.S. rate. Finding and removing polyps, by receiving the recommended screening, may prevent colorectal cancer. Only 59 percent of Vermont adults aged 50 and over have been screened for colorectal cancer, either with an FOBT in the past year or sigmoidoscopy or colonoscopy within the past five years. Only one-third of colorectal cancers are diagnosed at an early stage.
- While the incidence of lung cancer has decreased in the United States for both men and women between 1997 and 2001, there has been no significant decrease in lung cancer incidence in Vermont during that same time period. Lung cancer continues to be the leading cause of cancer death for both men and women. The single most effective way to prevent lung cancer is to never start smoking. The second is to quit.
- Breast cancer is the most commonly diagnosed cancer in women. Vermont's breast cancer incidence and mortality rates are not different from the U.S. Early detection through mammography and clinical breast exam can save

lives. Over 60 percent of breast cancers in Vermont are diagnosed at an early stage, when treatment is most likely to be successful.

- Prostate cancer is the most commonly diagnosed cancer in men. Vermont's prostate cancer incidence and mortality rates are not different from the U.S. Currently, medical experts do not agree on recommendations for regular screening for prostate cancer. Men should talk with their doctors about the pros and cons for being tested for prostate cancer.
- Melanoma incidence rates for Vermont men and women are higher than the U.S. white rates. Reducing exposure to ultraviolet (UV) radiation, such as from the sun and tanning booths, can reduce the risk of skin cancer. Protective measures from sun exposure include using a sunscreen with SPF 15 or higher, staying in the shade and/or wearing protective clothing on a sunny day, and avoiding tanning beds.
- Vermont's cervical cancer incidence rate is higher than the U.S. Cervical cancer is preventable by treatment of precancerous lesions found by screening. With 48 percent of cervical cancers seen on or after age 50, it is important for women to continue with Pap test screening even after menopause.

Any disease in which abnormal cells develop, divide, grow, and have the potential to spread throughout the body can be called cancer. If the spread of these cancer cells is not controlled, death may result.

Cancer cells from a malignant tumor can invade nearby tissues either by direct growth into adjacent tissue or by migration through the bloodstream and lymphatic system to other parts of the body. This process is called metastasis. For example, cancer that started in the colon and spread to the liver is still colon cancer. Similarly, breast cancer that has spread to the bone is not bone cancer, it is metastatic breast cancer. Benign tumors are not cancer because they do not metastasize.

Cancer Sites

Cancers are defined by the cells in which they originate, and are termed carcinoma, sarcoma, lymphoma, or leukemia. Carcinoma is the most common type of cancer and arises from the cells that cover external and internal body surfaces. After non-melanoma skin cancers, the most frequent carcinomas in the U.S. are of the lung, breast, and colon. Sarcomas are cancers which arise from cells found in the supporting tissues of the body, such as bone, cartilage, fat, connective tissue, and muscle. Lymphomas are cancers that arise in the lymph nodes and tissues of the body's immune system. Leukemias are cancers of the immature blood cells that grow in the bone marrow and tend to accumulate in large numbers in the bloodstream.

Stage

Stage describes the extent to which the cancerous cells have spread from the original site to another part of the body. Stage can be grouped into the following categories: in situ, localized, regional, distant, and unknown.

CANCER STAGE DEFINITIONS:

In situ - Also known as "non-invasive."Cancer cells are present, but the tumor has not invaded the supporting structure of the organ on which it arose.

Localized - A tumor limited to the organ of origin. The cancer has gone through the basement membrane of the organ, but there is no spread beyond the boundaries of the organ.

Regional - The tumor has extended beyond the limits of the organ of origin, and there is potential for spread by lymph nodes or the blood supply. Regional stage cancers directly extend beyond the primary site, involve regional lymph nodes, or both.

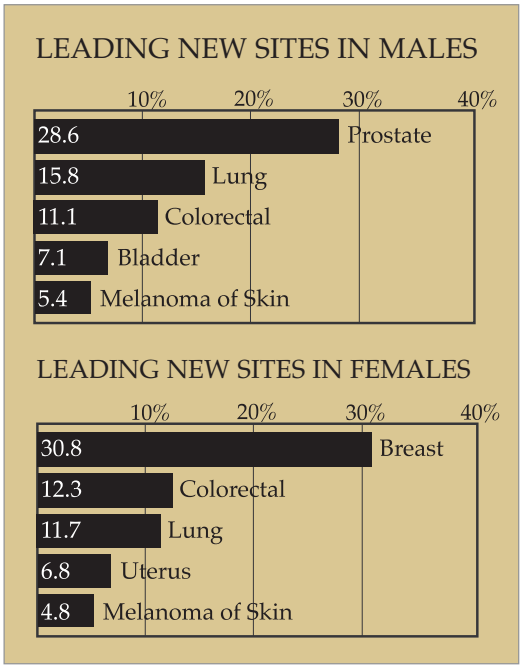
Distant - Distant metastases are tumor cells that have broken away from the primary tumor, have traveled to other parts of the body, and have begun to grow at the new location. Common sites of distant spread are liver, lung, brain and bones. These organs receive blood flow from all parts of the body and thus are a target for distant metastases.

Unknown - There is not enough information to categorize a cancer into any of the above stages.

Physicians determine the stage of a cancer at the time of diagnosis. Knowing the stage of the cancer helps patients better understand their prognosis and make treatment decisions. For some cancers, diagnosis at an earlier stage can increase a person's chance of survival. For instance, people diagnosed with colorectal cancer at a localized stage have a 90 percent 5-year survival rate, meaning they survive their colorectal cancers for at least five years. People diagnosed with distant stage colorectal cancer have a 10 percent 5-year survival rate.

Risk Factors

A risk factor is a condition, an activity or an exposure that increases a person's chance of developing cancer. Cancer develops gradually as a result of a complex mix of factors related to lifestyle choices, environment and genetics. Each type of cancer is caused by a different set of factors, some well established, some uncertain, and some unknown.



In many cases, the exact cause of cancer is unknown, and researchers continue to study how and why normal cellular growth becomes uncontrolled. Nearly two-thirds of cancer deaths in the U.S. can be linked to tobacco use, poor diet, obesity, and lack of exercise. Although not all types of cancers are preventable, the risk for many can be reduced by not smoking, being physically active, and eating a diet low in fat and calories and high in fiber. These healthy lifestyle choices also significantly reduce the risk of other chronic diseases, such as heart disease and diabetes.

Approximately one-third of cancer deaths in the U.S. are either due to unknown causes or are associated with other risk factors that are difficult or impossible to change, such as occupational factors, family history of cancer, viruses/other biologic agents, hormonal factors, and environmental pollution.

Diet and Physical Activity

> As many as one-third of the cancer deaths in the U.S. may be due to unhealthy diet and lack of physical activity.

A poor diet can lead to obesity which is known to increase a person's risk for breast, colon, endometrium, esophagus, and kidney cancers. It is recommended that people eat at least 2 servings of fruit daily and at least 3 servings of

vegetables daily. One Healthy Vermonters 2010 Objective is to increase the percentage of Vermonters who eat two or more servings of fruit per day. Another Healthy Vermonters 2010 Objective is to increase the percentage of Vermonters who eat three or more servings of vegetables per day. In 2003, 47 percent of Vermont adults reported eating the recommended serving of fruit (Goal: 75 percent), and 44 percent reported eating the recommended serving of vegetables (Goal: 50 percent).

Physical activity not only helps to maintain a person's weight but influences hormone levels. The recommendation for exercise is 30 minutes a day, 5 days a week or more for adults. It has been found that more exercise is beneficial in reducing risk of breast and colon cancer. The Healthy Vermonters 2010 Objective is to increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day. In 2003, 55 percent of Vermont adults reported engaging in moderate physical activity (Goal: 50 percent).

Tobacco

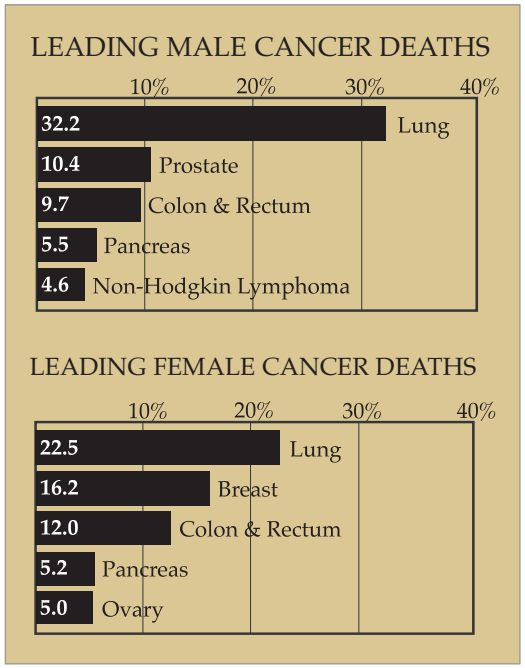
Smoking tobacco in any form is the major cause of lung cancer, the leading cause of cancer in both genders combined.

> An estimated 30 percent of cancer deaths in the U.S. each year are attributable to exposure to the carcinogens in tobacco products.

The more a person smokes, the more they increase their risk of developing lung cancer. People who smoke 2 packs or more per day are nearly 20 times more likely to develop cancer than non-smokers. People who don't smoke, but who breathe secondhand smoke, or environmental tobacco smoke, have a higher risk of lung cancer.

Alcohol

People who have more than two alcoholic drinks per day have an increased risk of cancer, especially in those who also smoke. Heavy drinking is linked to cancers of the mouth, throat, esophagus, larynx (voice box), liver, and breast. The risk of cancer of the mouth, larynx, and esophagus is further intensified by smokers who also drink more than two drinks per day. In 2003, 3 percent of



Vermont adult female smokers reported also drinking more than two drinks per day, and 5 percent of Vermont adult male smokers reported also drinking more than two drinks per day.

Race and Ethnicity

Cancer rates can vary by race and ethnicity. Although the causes of this are largely unknown, socioeconomic factors are probably more important than biological or inherited characteristics in explaining differences in cancer risk among the major racial and ethnic populations in the U.S. Cigarette smoking, physical inactivity and obesity vary by race/ethnicity and socioeconomic status. Rates of use of recommended screening tests and stage at diagnosis also vary by race and ethnicity.

Examples of how cancer rates differ among people according to their race and ethnicity:

- Among black women, incidence rates for lung, breast, uterine and bladder cancers are lower than rates for white women.
- Mortality rates are higher among black women for uterine and bladder cancers.
- Prostate cancer incidence rates are higher among black men than among white men.
- Hispanic Americans have a higher rate of cervical cancer than the U.S. non-Hispanic population.
- American Indians experience lower cancer incidence rates compared to whites for all sites combined, especially cancers of the oral cavity, colon and rectum, pancreas, lung, breast, uterus, prostate, bladder, melanoma and most leukemias and lymphomas.

MALE CANCER INCIDENCE, 1997-2001

Site	U.S. SEER Rate per 100,000	VT Rate per 100,000	VT Cases (per year)
Prostate	171.2	164.5 *(157.7, 171.1)*	445
Lung	82.3	92.8 *(87.6, 98.3)* ✗	245
Colon and Rectum	64.4	67.0 *(62.5, 71.7)*	173
Bladder	41.2	43.6 *(39.9, 47.5)*	110
Melanoma of the Skin	26.3	30.1 *(27.2, 33.2)* ✗	84
Non-Hodgkin Lymphoma	24.5	23.2 *(20.7, 26.0)*	63
Leukemia	17.0	17.7 *(15.5, 20.3)*	47
Kidney	16.5	16.3 *(14.2, 18.6)*	45
Oral Cavity and Throat	15.9	14.9 *(12.9, 17.1)*	42
Pancreas	12.6	13.3 *(11.4, 15.5)*	35
Stomach	10.2	8.9 *(7.4, 10.8)*	24
Brain and Nervous System	8.8	8.3 *(6.8, 10.0)*	24
Esophagus	8.1	9.6 *(8.0, 11.5)*	26
Larynx	6.8	7.9 *(6.4, 9.6)*	22
Myeloma	6.7	5.8 *(4.5, 7.3)*	15
Liver	6.7	5.6 *(4.4, 7.1)*	15
Testis	6.5	7.8 *(6.4, 9.4)*	23
Thyroid	4.1	3.6 *(2.7, 4.8)*	11
Hodgkin Lymphoma	3.3	3.4 *(2.5, 4.6)*	10
All Sites Combined	568.3	580.9 *(567.8, 594.2)*	1,554

★ statistically lower than the U.S. SEER white rate
✗ statistically higher than the U.S. SEER white rate
Vermont rates are based on data from 1997-2001. All rates are age-adjusted to the 2000 U.S. standard population and exclude basal cell and squamous cell skin cancers and in situ carcinomas except urinary bladder. Rates based on 5 or fewer cases are not individually calculated. U.S. Rates are 1997-2001 SEER 9 Registries white population incidence rates.

- American Indians have higher incidence of gallbladder, stomach and cervical cancer than whites.

Age and Gender

Cancer occurs in people of all ages, however, the risk of cancer increases with age. In Vermont:

- people under the age of 20 represent about percent of newly diagnosed cases
- 20-49 year olds represent 15 percent
- 50-64 year olds represent 28 percent
- 65-74 year olds represent 27 percent
- 75 year olds and older represent nearly 30 percent of newly diagnosed cases.

Prevention

Although not all cancers can be prevented, many risk factors relating to lifestyle could be reduced by making healthy choices. For instance, smoking cessation reduces the risk for lung cancer, and using sunscreens to limit exposure to the sun reduces the risk of skin cancer. Improving physical activity and nutrition could help reduce the risk of certain types of cancer, as well as other chronic diseases.

Screening and Early Detection

Many cancers can be treated quickly and effectively if they are detected and treated in early stages. Regular visits to a health-care provider can help maintain good health, guide healthy lifestyle choices, and look for signs and symptoms of various health conditions, including cancer.

FEMALE CANCER INCIDENCE, 1997-2001

Site	U.S. SEER Rate per 100,000	VT Rate per 100,000	VT Cases (per year)
Breast	143.2	138.6 *(133.0, 144.4)*	465
Lung	53.5	52.3 *(48.9, 55.9)*	176
Colon and Rectum	46.8	53.1 *(49.7, 56.6)* ✗	186
Uterus	26.6	30.8 *(28.1, 33.6)* ✗	103
Melanoma of the Skin	18.1	22.5 *(20.3, 25.0)* ✗	73
Non-Hodgkin Lymphoma	16.9	18.6 *(16.6, 20.8)*	63
Ovary	15.0	14.2 *(12.4, 16.2)*	48
Thyroid	11.1	10.1 *(8.6, 11.8)*	32
Bladder	10.2	12.6 *(11.0, 14.4)* ✗	44
Leukemia	10.1	9.8 *(8.3, 11.4)*	33
Pancreas	9.5	9.4 *(8.0, 11.0)*	33
Kidney	8.2	7.9 *(6.6, 9.4)*	27
Cervix	7.8	9.7 *(8.2, 11.3)* ✗	31
Oral Cavity and Throat	6.6	5.9 *(4.8, 7.2)*	20
Brain and Nervous System	6.1	5.1 *(4.1, 6.4)*	17
Stomach	4.5	3.6 *(2.8, 4.6)*	13
Myeloma	4.2	2.9 *(2.2, 3.9)* ★	10
Hodgkin Lymphoma	2.7	3.3 *(2.5, 4.4)*	10
Liver	2.6	1.7 *(1.2, 2.5)* ★	6
Esophagus	2.0	2.7 *(1.9, 3.6)*	9
Larynx	1.5	1.9 *(1.3, 2.7)*	6
All Sites Combined	435.1	446.8 *(436.7, 457.0)*	1,509

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There are screening tests that can detect certain types of cancers at an early stage, such as mammograms for breast cancer, Pap tests for cervical cancer, and fecal occult blood tests, sigmoidoscopies and colonoscopies for colorectal cancer.

Treatment

Cancer treatment depends on the type and location of the cancer, the stage of the disease, the patient's age and general health, and other factors. Treatment decisions involve a team of specialists, which may include a medical oncologist, surgeon, radiation oncologist, nurse, nutritionist and social worker. Cancer may be treated with surgery, radiation, chemotherapy, hormones, and immunotherapy. Working together, healthcare providers and people diagnosed with cancer may decide to use a single treatment method or a combination of methods.

Survival

One way to measure treatment success is by survival, or how long a person lives after being diagnosed with cancer. A five-year relative cancer survival rate is the proportion of patients surviving cancer five years after their diagnosis (after adjusting for normal life expectancy). The survival rate includes those who are disease-free, in remission, or under treatment.

Medical advances in the way cancer is diagnosed and treated has improved survival rates of many cancers, and people are living longer after diagnosis. The most recent U.S. estimate shows that for people diagnosed with cancer (all sites) from 1995 through 2000, 66 percent survived cancer after five years compared with a 61 percent 5-year survival rate for people diagnosed with cancer from 1989 through 1994.

MALE CANCER MORTALITY, 1997-2001

Site	U.S. Rate *per 100,000*	VT Rate *per 100,000*	VT Deaths *per year*
Lung	76.2	78.2 *(73.4, 83.4)*	205
Prostate	28.9	30.4 *(27.1, 34.0)*	66
Colon and Rectum	24.6	25.7 *(22.8, 28.9)*	62
Pancreas	12.0	13.5 *(11.5, 15.7)*	35
Non-Hodgkin Lymphoma	10.8	11.5 *(9.7, 13.6)*	29
Leukemia	10.4	11.0 *(9.2, 13.1)*	27
Bladder	7.9	8.3 *(6.7, 10.3)*	19
Esophagus	7.4	7.9 *(6.4, 9.7)*	21
Kidney	6.2	7.1 *(5.7, 8.8)*	19
Brain and Nervous System	5.9	5.4 *(4.2, 6.9)*	15
Stomach	5.8	5.1 *(2.9, 6.6)*	13
Liver	6.0	4.9 *(3.8, 6.4)*	13
Melanoma of the Skin	4.3	4.8 *(3.7, 6.2)*	13
Myeloma	4.6	3.9 *(2.9, 5.3)*	10
Oral Cavity and Throat	3.9	3.8 *(2.8, 5.2)*	10
Larynx	2.3	2.5 *(1.7, 3.6)*	7
Thyroid	0.5	0.6 *(0.3, 1.2)*	2
Testis	0.3	--	--
Hodgkin Lymphoma	0.6	--	--
All Sites Combined	245.9	253.3 *(244.4, 262.5)*	636

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Uses of Cancer Data

> Cancer registry data can help identify specific populations that could benefit from increased education and access to cancer prevention and screening.

Public health officials use cancer registry data to guide cancer prevention and control programs that are focused on preventing risk behaviors for cancer. The data can be used in clinical, epidemiologic and health services research.

Surveillance

Cancer surveillance is the systematic collection, analysis and interpretation of cancer data. The goal of cancer surveillance is to improve our understanding of the prevention and treatment of cancer, and ultimately, to reduce illness and death from cancer.

Cancer registries at the local, state and national level collect and analyze data on the diagnosis, stage, and treatment of cancer. The Vermont Cancer Registry is Vermont's statewide population-based cancer surveillance system. The registry collects information about all cancers diagnosed in Vermont (except non-melanoma skin cancers and carcinoma in situ of the cervix).

Operated by the Vermont Department of Health, the Vermont Cancer Registry is part of a national effort to gain a better understanding of cancer in the

FEMALE CANCER MORTALITY, 1997-2001

Site	U.S. Rate *per 100,000*	VT Rate *per 100,000*	VT Deaths *per year*
Lung	41.5	39.4 *(36.4, 42.5)*	135
Breast	26.5	27.7 *(25.3, 30.4)*	97
Colon and Rectum	17.2	19.9 *(17.9, 22.1)* ✗	72
Pancreas	9.0	8.9 *(7.5, 10.5)*	31
Ovary	9.2	8.5 *(7.2, 10.1)*	30
Non-Hodgkin Lymphoma	7.1	7.7 *(6.5, 9.2)*	27
Leukemia	6.0	5.7 *(4.7, 7.1)*	20
Uterus	3.9	5.0 *(4.0, 6.3)* ✗	18
Bladder	2.3	3.5 *(2.7, 4.6)* ✗	13
Brain and Nervous System	4.0	3.5 *(2.7, 4.6)*	12
Myeloma	3.1	3.3 *(2.5, 4.3)*	12
Cervix	2.6	3.0 *(2.2, 4.0)*	10
Stomach	2.8	2.5 *(1.8, 3.4)*	9
Esophagus	1.7	2.1 *(1.5, 2.9)*	8
Kidney	2.8	2.1 *(1.4, 2.9)*	7
Liver	2.7	2.0 *(1.4, 2.8)*	7
Melanoma of the Skin	2.0	1.6 *(1.1, 2.4)*	6
Oral Cavity and Throat	1.6	1.6 *(1.0, 2.4)*	6
Hodgkin Lymphoma	0.4	0.5 *(0.2, 1.0)*	2
Larynx	0.5	0.5 *(0.2, 1.0)*	2
Thyroid	0.5	0.5 *(0.2, 1.0)*	2
All Sites Combined	166.6	171.4 *(165.3, 177.7)*	600

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population. The goals of the registry are to:

- Determine the incidence of cancer in the Vermont population
- Monitor cancer incidence and mortality trends among state residents
- Identify high risk populations
- Report findings to health care professionals and the public
- Contribute data for cancer prevention, control and treatment programs.

Concerns about Elevated Rates

When people observe a number of cases of cancer in their neighborhood, community or workplace, concerns often arise about what is causing the cancers, and if there is some exposure that is resulting in an increased risk for others to develop cancer. A cancer cluster is the occurrence of more cancers in a particular geographic area than would normally be expected within a certain a period of time.

Only an estimated four percent of cancer deaths can be attributed to environmental pollution or radiation. In contrast, almost two-thirds of cancer death in the U.S. can be linked to tobacco use, poor diet, obesity and lack of exercise. Most geographic differences in cancer rates appear to result from behavioral differences or differences in lifestyle, not from anything in a person's physical surroundings or from environmental pollution.

With 9 percent of people age 50 and over living with cancer in the U.S., it is not unusual to know several people who have cancer. As a population ages, the occurrence of new cancer cases is expected to increase. With treatment advances, people are living longer with a cancer diagnosis; the number of cancer survivors has doubled in the past 20 years.

Because a variety of factors often work together to create the appearance of a cluster where nothing abnormal is occurring, most reports of suspected cancer clusters are not shown to be true clusters. A suspected cancer cluster is more likely to be a true cluster if it involves a large number of cases of one type of cancer, rather than several different types; a rare type of cancer; or an increased number of cases of a certain type of cancer in an age group not usually affected by that type of cancer.

Vermonters Taking Action Against Cancer (Vermont Cancer Coalition)

> Opportunities to reduce the burden of cancer exist all along the continuum of care from prevention, early detection (screening), diagnosis, treatment, surviving cancer, pain management and end-of-life care.

Comprehensive Cancer Control is an integrated, collaborative approach to reducing the burden of cancer in

Vermont by coordinating priorities, resources and efforts. The Vermonters Taking Action Against Cancer (VTAAC) is a statewide partnership of more than 140 organizations, individuals and healthcare professionals working together to reduce the incidence, suffering and deaths related to cancer among all Vermonters.

Goals of the VTAAC are:

- Prevent future cancers by reducing exposure to known risk factors.
- Detect new cancers as early as possible through appropriate screening.
- Increase access to high quality cancer treatment and follow-up care.
- Improve the quality of life for people living with, through and beyond cancer.
- Improve end-of-life care for cancer patients.

FOR MORE INFORMATION about Vermonters Taking Action Against Cancer, or to join in this statewide effort, please call (802) 865-7706 or visit www.HealthyVermonters.info/cancer

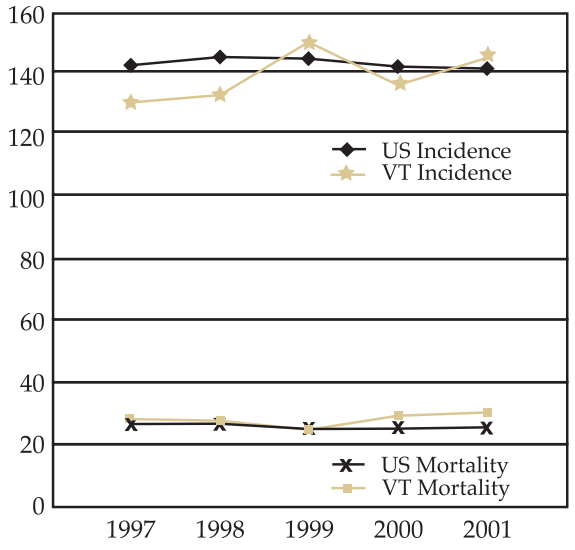
BREAST CANCER
In Vermont

> Among women, breast cancer is the most commonly diagnosed cancer and a leading cause of cancer death in the United States.

Nationally, breast cancer accounts for 16 percent of all cancer deaths among women, and a woman's risk for developing breast cancer in her lifetime is one in seven.

Breast cancer in men accounts for less than one percent of breast cancers diagnosed nationally. Because male breast cancer is a rare occurrence, only female breast cancer is emphasized in this report.

BREAST CANCER INCIDENCE AND MORTALITY
per 100,000 females



Breast cancer is a malignant cell growth in the breast. A woman's breast is made up of lobules, ducts, fatty and connective tissue, blood vessels, and lymph vessels. Breast cancer can begin in the lobules, ducts, or in the other tissue of the breast, and if left untreated, the cancer can spread to other parts of the body.

Incidence

Breast cancer is the most common cancer diagnosed in women. Each year in Vermont, approximately 465 female breast cancer cases are diagnosed.

Mortality

Breast cancer is the second leading cause of cancer death among women. Each year in Vermont, approximately 97 women die from breast cancer.

Vermont vs. U.S.

Breast cancer incidence and mortality rates for Vermont women are not significantly different compared to U.S. rates among white women.

Yearly Trends

In the U.S., while breast cancer mortality significantly decreased from 1997 to 2001, there has been no significant change in breast cancer incidence. In Vermont, there has been no significant change in breast cancer incidence or mortality.

Age

The incidence of breast cancer, as with many cancers, is extremely low in childhood and increases dramatically with age. Breast cancer is most often found women over the age of 50. Vermont women aged 75-79 have the highest age-specific incidence rate of breast cancer, 477.2 per 100,000. Women aged 70-74

have a significantly lower incidence rate than the U.S. All other Vermont age groups are not significantly different than the U.S.

County

Breast cancer incidence rates for women in Addison County are significantly higher than the U.S. SEER rate. The breast cancer incidence rates for women in Franklin, Orleans, and Windham counties are significantly lower than the U.S. SEER rate. There are no significant differences in breast cancer mortality rates by county in Vermont compared to the U.S.

Stage

In Vermont, 65 percent of breast cancers are diagnosed at the localized stage, and 3 percent of breast cancers are diagnosed at the distant stage. According to national survival data, 98 percent of women with localized breast cancer survive for at least five years, and 27 percent of women diagnosed with distant breast cancer survive for at least 5 years.

Screening

The Healthy Vermonters 2010 Objective is to increase the percentage of women (age 40+) who have had a mammogram in the preceding two years. In 2004, 75 percent of Vermont women 40 and older had a mammogram in the preceding two years (Goal: 70%).

Risk Factors

While many factors have been associated with breast cancer, most only relate to a moderate increase in risk. This suggests that multiple factors may play a role in each woman's disease and that unrecognized factors may exist.

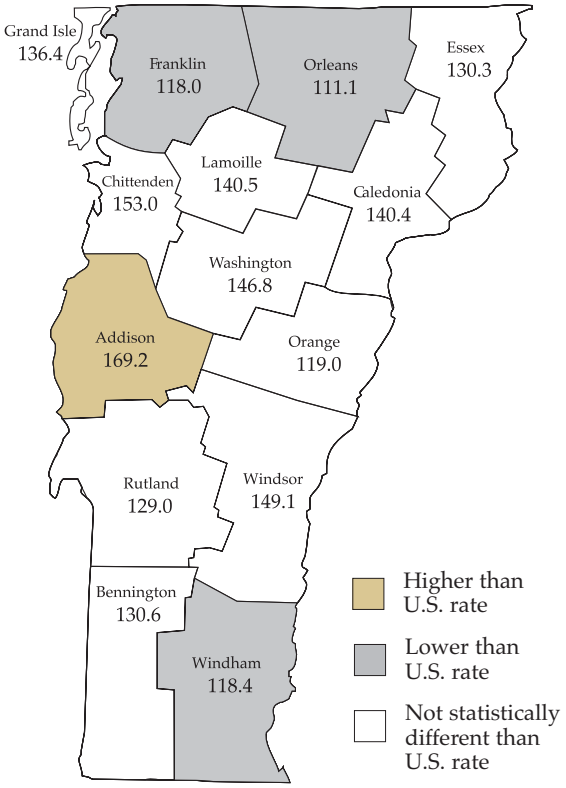
Age

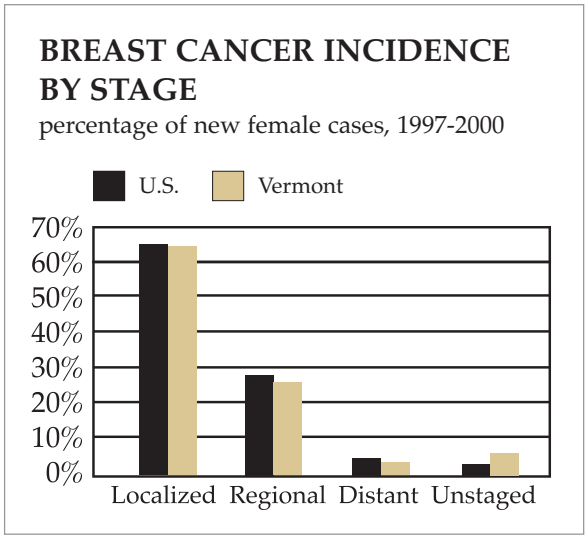
Breast cancer incidence increases with age. Nationally, most women who get breast cancer are over age 50. Women over age 60 are at greatest risk.

Hormonal Factors

Women who began menstruation at an early age, before 12 years old, or who began menopause after age 55 have an increased risk of developing breast cancer. The use of menopausal hormone therapy drugs for five or more years

BREAST CANCER INCIDENCE BY COUNTY per 100,000 females, 1997-2001





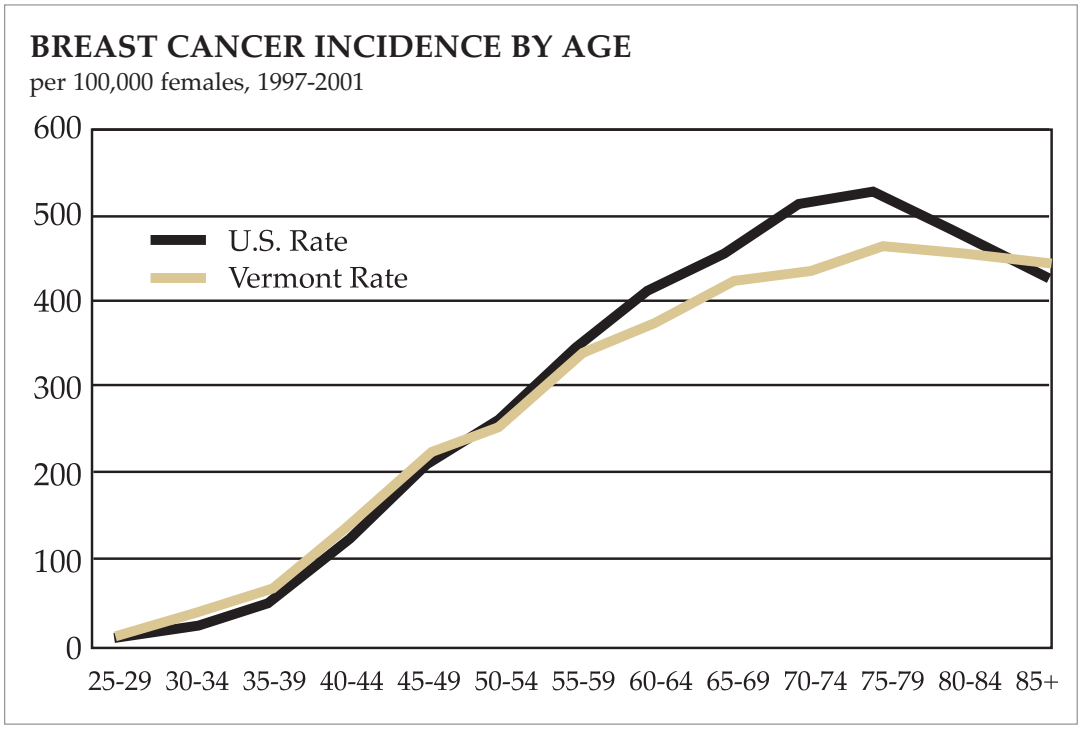
may increase a woman's risk of developing breast cancer. Having a first child after the age of 35, or never bearing children, can increase a woman's risk for developing breast cancer.

Family History and Genetics

Women who have had breast cancer or have a mother, sister, or daughter with breast cancer, have an increased risk. Women who inherit specific genes are at a greater risk for developing breast cancer. Research is underway to develop methods of identifying high-risk genes.

Diet and Lifestyle

Diet is being studied as a risk factor for breast cancer. Studies show that women



are more likely to die of breast cancer if they consume a diet high in fat, but it is not known if a diet low in fat will prevent breast cancer. Studies suggest that the consumption of alcohol is associated with a slight increase in risk. Postmenopausal weight gain, especially after natural menopause and after age 60, may increase breast cancer risk.

Prevention and Screening

Currently, there is no way to prevent breast cancer, only ways to reduce a person's risk. Exercise, especially in young women, may decrease hormone levels and contribute to decreased breast cancer risk. Breast feeding may also decrease a woman's risk of breast cancer.

Early detection is the goal of breast cancer screening. If breast cancer is diagnosed at an earlier stage, the chances for survival are greater. Mammography, combined with clinical breast exam, is the most effective means of early detection. It is recommended that women have a mammogram every 1-2 years beginning at age 40.

BREAST CANCER IN VERMONT COMPARED TO U.S.

Age-Adjusted rates of female breast cancer, Vermont and the U.S., 1997-2001

	Incidence	Mortality
Vermont	138.6 *(133.0, 144.4)*	27.7 *(25.3, 30.4)*
U.S.	143.2	26.5

CERVICAL CANCER

In Vermont

Nationally over the past 40 years, the incidence of invasive cervical cancer has decreased significantly. This decrease is due to the introduction of the Papanicolaou (Pap) test and the treatment of precancerous cervical lesions.

Cervical cancer is a condition in which cells in the lining of the cervix (the lower, narrow end of the uterus, or womb) go through abnormal changes. These pre-cancer cell changes can progress to cancer and will start to grow and spread more deeply into the cervix and to surrounding areas.

Incidence

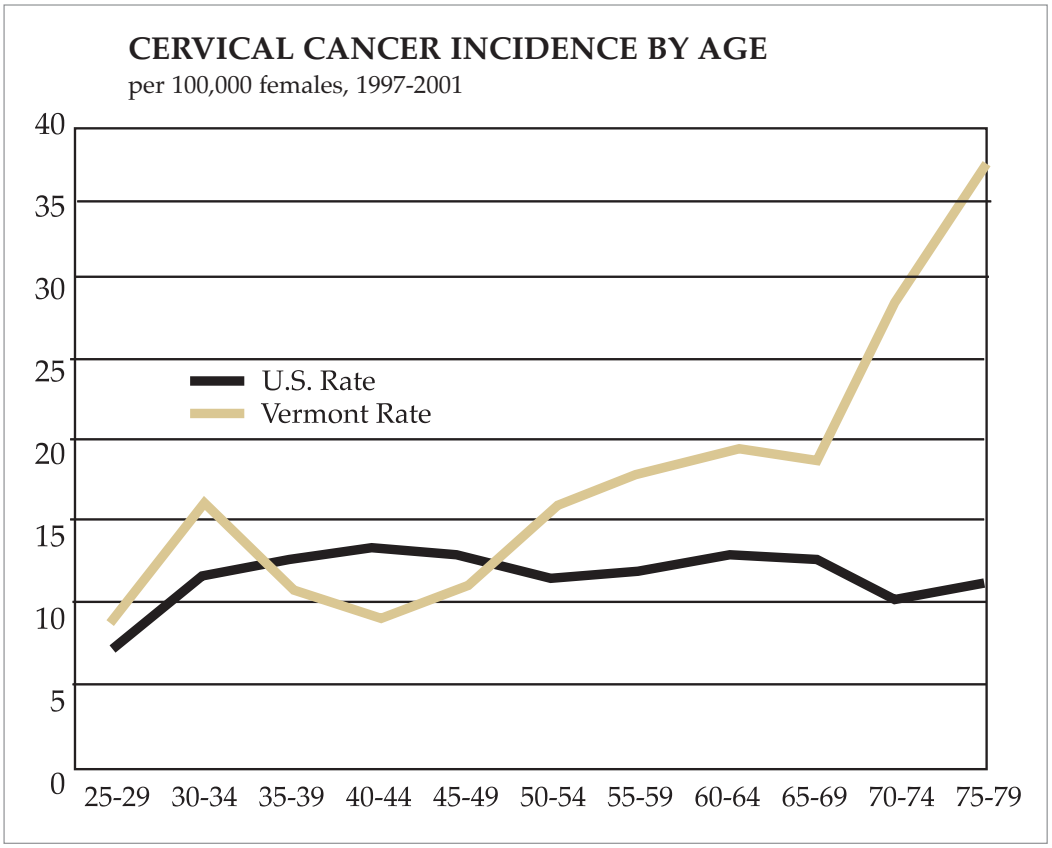
Cervical cancer is the tenth most commonly diagnosed cancer in women. Approximately 31 Vermont women are diagnosed with cervical cancer each year.

Mortality

Cervical cancer is ranked twelfth in causes of cancer deaths in women. Approximately 10 Vermont women die with cervical cancer annually.

Vermont vs. U.S.

Cervical cancer incidence rates for



CERVICAL CANCER
In Vermont

Vermont women are significantly higher than the U.S. The Vermont cervical cancer mortality rates are not significantly different compared to the U.S.

> While both the incidence and mortality of cervical cancer have decreased in the U.S., there has been no significant change in cervical cancer incidence or mortality in Vermont.

Age

Women of all ages are at risk for cervical cancer. In Vermont, 94 percent of newly diagnosed cervical cancer cases are in women age 30 and older; 30 percent of these cases are in women 65 and older. Women aged 75-79 have the highest age-specific incidence of cervical cancer. Women aged 70-74 have a significantly higher incidence rate compared to the U.S., and the rates of all other Vermont age groups are not significantly different than the U.S.

Stage

In Vermont, 63 percent of cervical cancers are diagnosed at the localized stage, and 9 percent are diagnosed at the distant stage. National survival data show that 93 percent of women diagnosed with localized cervical cancer survive for at least five years, while 18 percent of women diagnosed with distant cervical cancer survive for at least 5 years. The cervical cancer incidence rate for Vermont women age 65 and older, with localized stage, is 10.1 per 100,000 women. This is significantly higher than the U.S. rate of 4.1 per 100,000.

Screening

The Healthy Vermonters 2010 Objective is to increase the percentage of women (age 18+) who have had a Pap test in the preceding three years. In 2004 in Vermont, 87 percent of women (age 18+) had a Pap test in the preceding three years (Goal: 90%).

Risk Factors

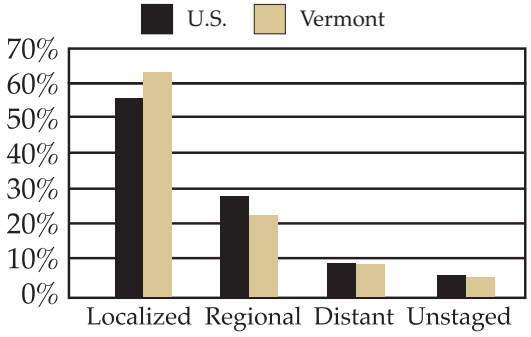
Many cases of cervical cancer are associated with known risk factors for the disease. Some of the risk factors cannot be avoided, but many can.

HPV Infection

Cervical infection with human papillomavirus (HPV) is the primary risk factor for cervical cancer. However, HPV infection is very common and only a very small number of women infected with untreated HPV will develop cervical cancer.

CERVICAL CANCER INCIDENCE BY STAGE

percentage of new female cases, 1997-2000



CERVICAL CANCER
In Vermont

Sexual History
Women who begin having sexual intercourse at an early age and women who have had many sexual partners are at greater risk of HPV infection and developing cervical cancer.

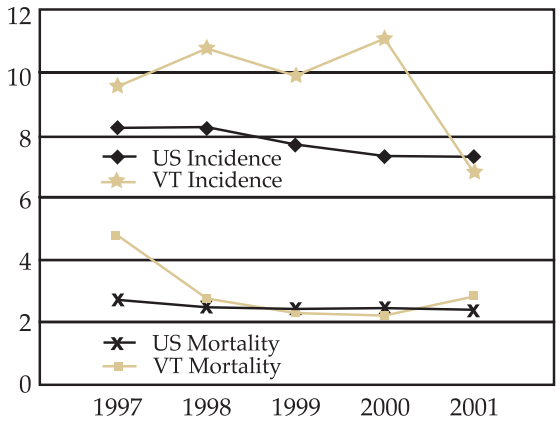
Reproductive History
Having seven or more full-term pregnancies increases the risk of cervical cancer.

CERVICAL CANCER IN VERMONT COMPARED TO U.S.

Age-Adjusted rates of female cervical cancer, Vermont and the U.S., 1997-2001

	Incidence	Mortality
Vermont	9.7 *(8.2, 11.3)*	3.0 *(2.2, 4.0)*
U.S.	7.8	2.6

CERVICAL CANCER INCIDENCE AND MORTALITY
per 100,000 females



Oral Contraceptives
Use of oral contraceptives for 5 or more years increases the risk of cervical cancer.

Smoking
Women who smoke are twice as likely as nonsmokers to develop cervical cancer.

Prevention and Screening
Receiving regular gynecological exams and Pap tests helps to prevent cervical cancer. Abnormal changes in the cervix can be found by the Pap test and treated before cancer develops. Women who do not regularly have Pap tests have an increased risk of cervical cancer.

Early detection increases the chances of long-term survival by diagnosing the cancer at an early and more treatable stage. All women should begin cervical cancer screening about 3 years after they begin having vaginal intercourse, but no later than age 21. Screening should be done every year with the regular Pap test or every 2 years using the newer liquid-based Pap test. Beginning at age 30, women who have had 3 normal Pap test results in a row may get screened every 2 to 3 years.

COLORECTAL CANCER

In Vermont

> Nationally, colorectal cancer is the third most common cancer and the third leading cause of cancer-related mortality.

Located within the digestive system, the colon and rectum make up the large bowel, or large intestine. The colon refers to the upper five to six feet of the large intestine and the rectum refers to the last five to six inches. Because of similarities between cancer of the colon and rectum, they are often grouped as colorectal cancer.

Incidence

In Vermont, colorectal cancer is the third most common cancer diagnosed in men and the second most common cancer diagnosed in women. Each year, approximately 173 colorectal cancer cases are diagnosed in men, and 186 colorectal cancer cases are diagnosed in women.

Mortality

Colorectal cancer is the third leading cause of cancer death in both men and women. Each year in Vermont, approximately 72 women and 62 men die from colorectal cancer.

Vermont vs. U.S.

Vermont women have significantly higher rates of colorectal cancer incidence and mortality compared to U.S. white women. Rates among Vermont men do not differ significantly from the U.S. white rates. In Vermont, colorectal cancer is the second most common cancer diagnosed in women, while in the United States, colorectal cancer is ranked third.

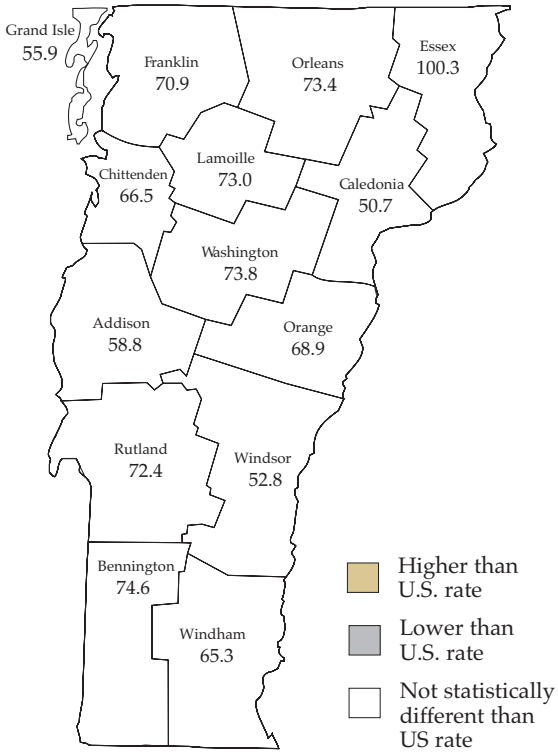
Yearly Trends

While both the incidence and mortality rates of colorectal cancer have decreased between 1997 and 2001 in the United States, there has been no significant change in colorectal cancer incidence or mortality rates in Vermont.

Gender

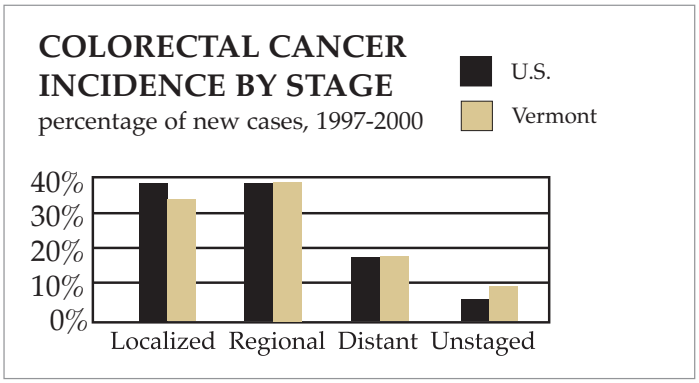
In Vermont, both incidence and mortality rates of colorectal cancer are about 1.3 times higher among men than women.

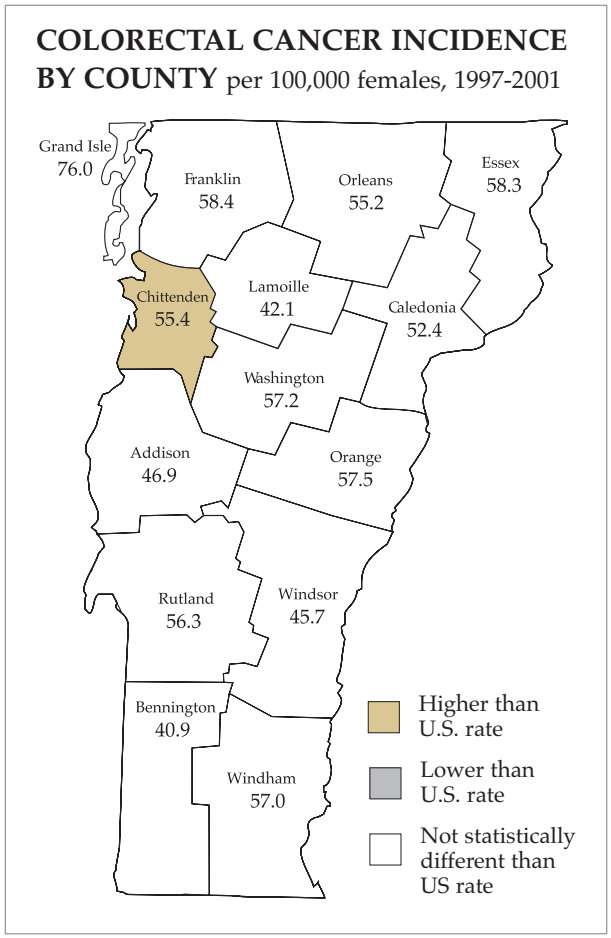
COLORECTAL CANCER INCIDENCE BY COUNTY per 100,000 males, 1997-2001



COLORECTAL CANCER

In Vermont





Age

The incidence of colorectal cancer, as with many cancers, is extremely low in childhood and increases dramatically with age. More than 90 percent of colorectal cancer cases are diagnosed in people aged 50 and over. In Vermont, people aged 85 and over have the highest age-specific incidence rates of colorectal cancer. Men aged 85 and older have a colorectal cancer incidence rate of 622.1 per 100,000. Women aged 85 and older have a colorectal cancer incidence rate of 426.9 per 100,000.

County

The colorectal cancer incidence rate for females in Chittenden County is significantly higher than the U.S. female white rate. For males, there are no significant differences between Vermont county colorectal cancer incidence rates and the U.S. male white rate.

Stage

In Vermont, only 34.3 percent of colorectal cancers are diagnosed at the localized stage, which is significantly lower than the U.S. (38.6 percent). National survival data have shown that 90 percent of people who have colorectal cancer diagnosed in a localized stage survive their cancers for at least five years. Over half, or 56.5 percent, of colorectal cancers are diagnosed in late stage (either regional or distant) in Vermont. Nationally, 10 percent of people diagnosed in the distant stage survive colorectal cancer for at least five years.

Screening

Of Vermont adults aged 50 and over, 59 percent have been screened for

colorectal cancer, either with an FOBT in the past year or sigmoidoscopy or colonoscopy within the past five years. Goals for increasing the percentage of Vermonters screened for colorectal cancer are being revised to be more consistent with current best practices.

Risk Factors

The exact cause of most colorectal cancers is unknown. Researchers have found several risk factors that increase a person's chance of getting colorectal cancer.

Family History

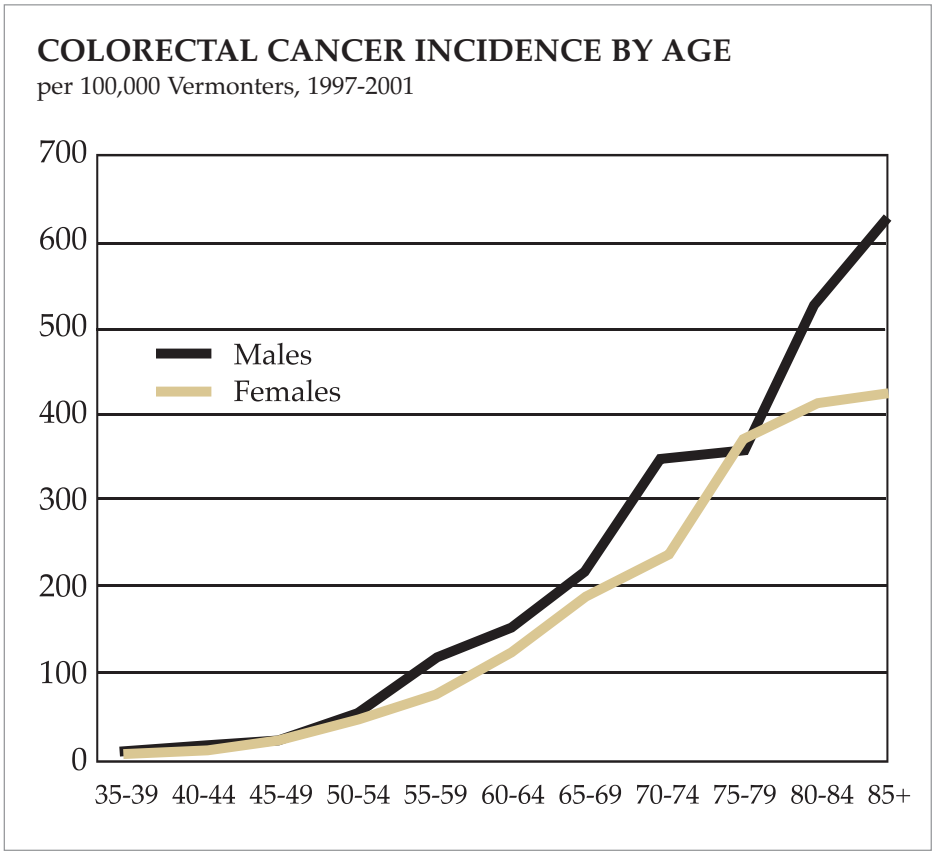
People with a close relative (parent, brother, sister or child) who have had colorectal cancer have an increased risk of developing it.

Certain Family Syndromes

In some families, members tend to get a type of syndrome that involves having hundreds of polyps in their colon or rectum. Cancer can develop in one or more of these polyps.

Ethnic Background

Jews of Eastern European descent



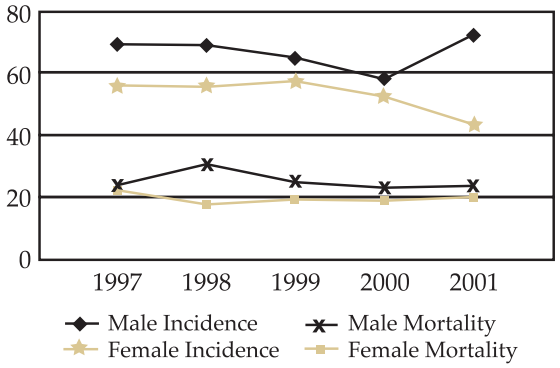
(Ashkenazi Jews) have a higher rate of colon cancer.

Previous colorectal cancer

Even if a person's colorectal cancer has been completely removed, new cancers may start in other areas of the colon or rectum.

COLORECTAL CANCER INCIDENCE AND MORTALITY

per 100,000 Vermonters, 1997-2001



COLORECTAL CANCER IN VERMONT COMPARED TO U.S.

Age-Adjusted rates of colorectal cancer, Vermont and the U.S., 1997-2001

	Incidence	Mortality
VT Males	67.0 *(62.5, 71.7)*	25.7 *(22.8, 28.9)*
U.S.	64.4	24.6
VT Females	53.1 *(49.7, 56.6)*	19.9 *(17.9, 22.1)*
U.S.	46.8	17.2

Polyps

Polyps are growths on the inner wall of the colon or rectum. They are common in people over the age of 50. Most polyps are benign (non-cancerous) growths, but some types of polyps increase the risk of colorectal cancer, especially if they are large or if there are many of them. Screening to find and remove polyps may reduce the risk of developing colorectal cancer.

Prevention and Screening

Some studies suggest that a diet low in fat and calories and high in fiber can help prevent colorectal cancer. Individuals can lower their risk of colorectal cancer by being more physically active, eating more vegetables, and getting regular screening tests.

Research shows that colorectal cancer develops gradually from benign polyps. Polyps detected by sigmoidoscopy or colonoscopy can be removed before they become malignant. Screening recommendations for people age 50 and over:

- Fecal occult blood test (FOBT) every year
- Sigmoidoscopy every 5 years
- FOBT annually and sigmoidoscopy every 5 years
- Colonoscopy every 10 years
- Double-contrast barium enema every 5-10 years.

LUNG CANCER

In Vermont

Lung cancer causes more deaths per year in Vermont than breast, prostate, and colorectal cancers combined. In Vermont, it is the second leading cause of new cancer cases for men, and the third leading cause of new cancers cases for women.

> Lung cancer is the leading cause of cancer death in the United States and in Vermont.

There are two main categories for lung cancer, non-small cell cancer and small cell cancer, also called oat cell cancer because of the cells' resemblance to grains of oats. The aggressiveness of the disease and the treatment options depend upon which type of cancer is diagnosed. Because many types of lung cancer can grow and spread quickly, early detection and prompt treatment are important.

Incidence

Each year in Vermont, approximately 245 lung cancers are diagnosed in men and 176 lung cancers are diagnosed in women.

Mortality

Each year in Vermont, approximately 205 men and 135 women die from lung cancer.

Vermont vs. U.S.

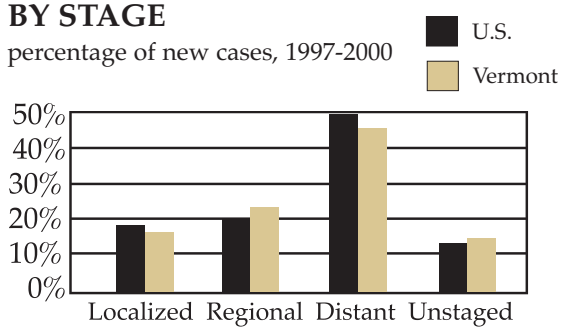
Vermont men have a significantly higher incidence rate of lung cancer than U.S. white men. Incidence rates among Vermont women do not differ significantly from the U.S. white female rates. Vermont lung cancer mortality rates are not significantly different from the U.S. white rates.

Yearly Trends

While the incidence of lung cancer has significantly decreased in the United States for both men and women during 1997-2001, there has been no significant

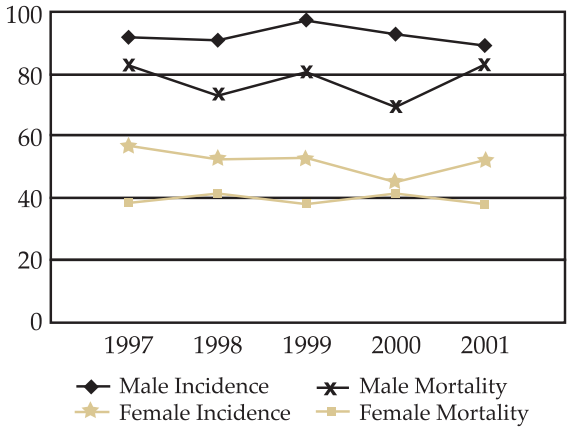
LUNG CANCER INCIDENCE BY STAGE

percentage of new cases, 1997-2000



LUNG CANCER INCIDENCE AND MORTALITY

per 100,000 Vermonters, 1997-2001



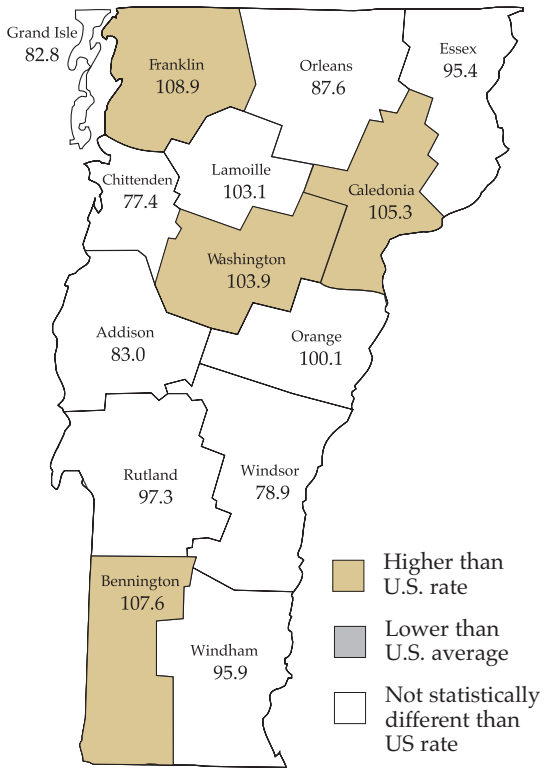
change in Vermont during the same time period.

There was no significant change in male or female lung cancer mortality in Vermont. In the U.S. male mortality rates decreased significantly, and female mortality rates did not significantly change.

Gender

In Vermont, the incidence of lung cancer is about 1.8 times higher among men than women, and the mortality of lung cancer is about 2 times higher among men than women.

LUNG CANCER INCIDENCE BY COUNTY
per 100,000 males, 1997-2001



Age

Incidence of lung cancer increases with age. In Vermont , 88 percent of lung cancer cases occur in those over age 55. Men aged 75-79 have the highest age-specific incidence of lung cancer, at a rate of 662.7 per 100,000. Women aged 70-74 have the highest age-specific incidence of lung cancer, at a rate of 316.5 per 100,000.

County

Lung cancer incidence rates for females in Windsor County are significantly lower than the U.S. female white rate. Lung caner incidence rates for males in Bennington, Caledonia, Franklin, and Washington County are significantly higher than the U.S. male white rate.

Stage

In Vermont, nearly half, 46.4 percent, of all lung cancers are diagnosed at the distant stage. National survival data have shown that 2 percent of people diagnosed in the distant stage survive lung cancer for at least five years.

Risk Factors

Tobacco

Smoking tobacco products in any form is the major cause of lung cancer. An estimated 87 percent of all lung cancer cases in the U.S. are attributable to smoking. The more a person smokes, the more they increase their risk of developing lung cancer. People who smoke 2 packs or more per day are

nearly 20 times more likely to develop cancer than nonsmokers. People who don't smoke but who breathe the smoke of others also have a higher risk of lung cancer.

Lung cancers diagnosed today reflect people's smoking habits of decades ago. The incidence rate of lung cancer is highest among people 65 and older both in the U.S. and in Vermont. Even though the incidence of lung cancer is highest in this age group, Vermont adults age 18 to 24 have the highest smoking rate, 29 percent. The latency period is shown by the higher lung cancer incidence rates in the people age 65 and over.

Asbestos

Asbestos is a natural material made of tiny fibers that are used in certain industries. People who work with asbestos have a higher risk of getting lung cancer. If they smoke as well, the risk is greatly increased. Although asbestos was used for many years, the government has now regulated its use in the workplace and in home products. While it is still present in many buildings, it is not thought to be harmful as long as it is not released into the air.

Radon

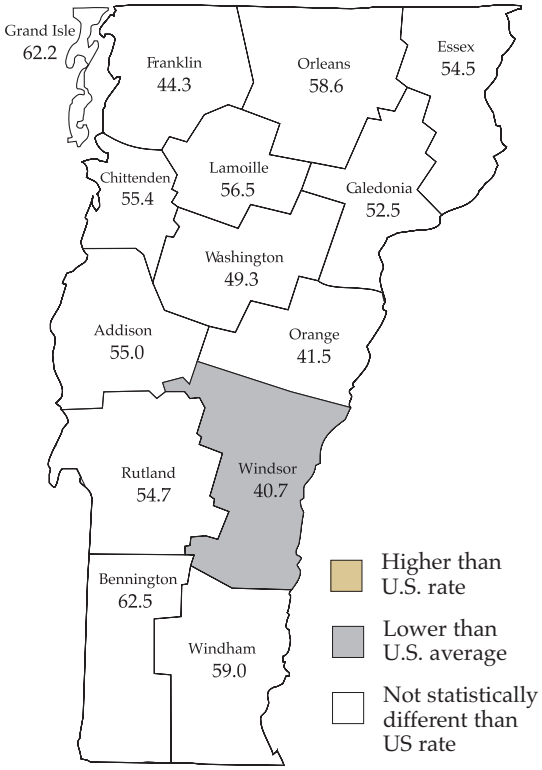
Radon is an invisible, odorless, radioactive gas made by the natural breakdown of uranium, which can be found in the soil. Exposure to radon gas in the home accounts for about nine percent of lung cancer deaths in the U.S. Radon can become concentrated indoors and create a possible risk for cancer. Smokers are especially sensitive to the effects of radon.

Prevention and Screening

> The single most effective way to prevent lung cancer is to never start smoking. The second is to quit.

Quitting smoking greatly reduces the risk of developing lung cancer, although the chances of developing

LUNG CANCER INCIDENCE BY COUNTY
per 100,000 females, 1997-2001

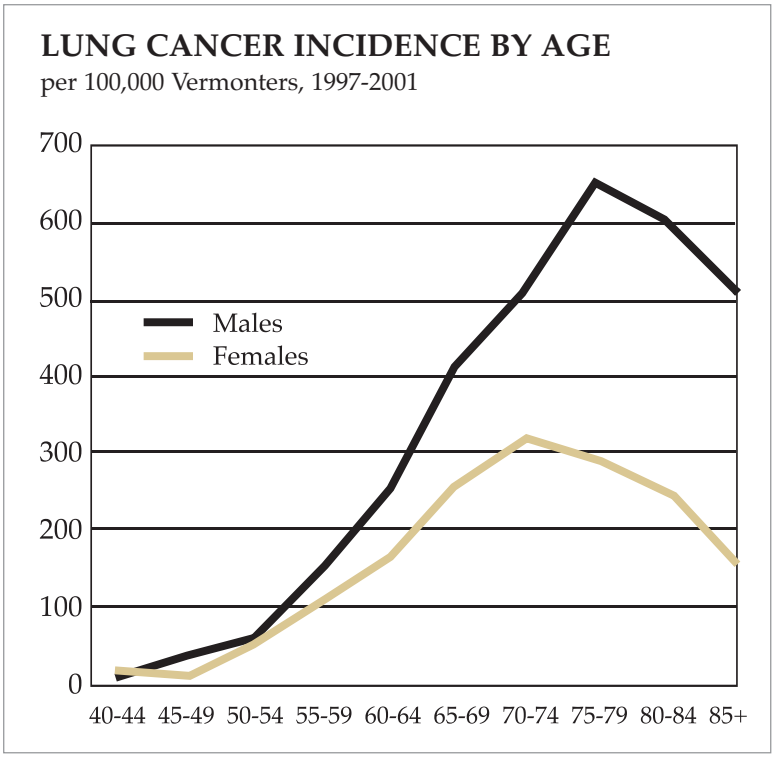


lung cancer are still greater for an ex-smoker than for a person who has never smoked at all. Ten years after quitting, the risk or lung cancer among former smokers is about half of the risk for people who continue to smoke.

As part of the Healthy Vermonters 2010 objectives, Vermont set a goal to reduce the percentage of adults (18+) who smoke cigarettes. Vermont also set a goal to increase the smoking cessation attempts by adult smokers. The 2004 Vermont Behavioral Risk Factor Surveillance System data show that of Vermonters age 18 and over:

- 20 percent of Vermont adults currently smoke. (Goal: 12 percent)
- 58 percent of current smokers have attempted to quit smoking at least once in the past year. (Goal: 75 percent)

Currently, there are no screening tests for lung cancer that have been clinically proven to help improve survival. However, there are many studies currently underway to develop an accurate screening tool.



LUNG CANCER
In Vermont

LUNG CANCER IN VERMONT COMPARED TO U.S.

Age-Adjusted rates of lung cancer, Vermont and the U.S., 1997-2001

	Incidence	Mortality
VT Males	92.8 *(87.6, 98.3)*	78.2 *(73.4, 83.4)*
U.S.	64.4	76.2
VT Females	52.3 *(48.9, 55.9)*	39.4 *(36.4, 42.5)*
U.S.	53.5	41.5

FOR MORE INFORMATION Contact Vermont's online quit-smoking services at www.VermontQuitNet.com, or call the Vermont Quit Line (toll-free, 1-877-YES-QUIT or 877-937-7848) or the Ready, Set.... STOP program at your local hospital.

FOR RADON INFORMATION please visit: www.healthyvermonters.info/hp/rad/radon.shtml.

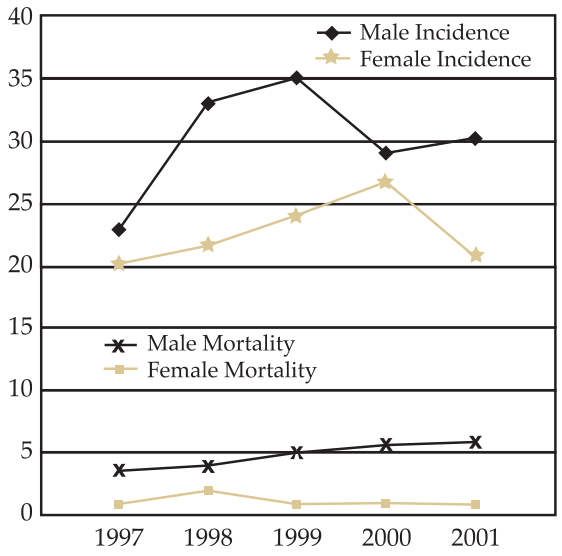
MELANOMA
In Vermont

In the United States and Vermont, melanoma of the skin is the fifth most commonly diagnosed cancer in men and women.

Nationally, the number of new cases of melanoma has more than doubled in the past 30 years.

The two most common forms of skin cancer are basal cell and squamous cell carcinoma. Although more than a million new cases of these non-melanomas are estimated to occur each year in the U.S., cancer registries do not routinely track them. Non-melanomas rarely spread elsewhere in the body and are less likely than melanomas to be fatal.

MELANOMA INCIDENCE AND MORTALITY
per 100,000 Vermonters, 1997-2001



Melanoma is a form of skin cancer that occurs in the cells in the outer layer of skin that gives skin its tan coloring.

Melanomas are the most serious form of skin cancer. Melanoma can be treated early, but if left untreated, a majority of melanomas will eventually spread to other parts of the body and become much more difficult to treat.

Incidence

Each year in Vermont, an average of 84 men and 73 women are diagnosed with melanoma.

Mortality

Each year in Vermont, approximately 13 men and 6 women die from melanoma.

Vermont vs. U.S.

Melanoma incidence rates for Vermont men and women are significantly higher compared to the U.S. white rates. Mortality rates among Vermont men and women do not differ significantly from the U.S. white mortality rates.

Yearly Trends

From 1997 to 2001, there has been no significant change in male or female melanoma incidence in Vermont. In the U.S., white male incidence rates increased significantly, and white female incidence rates did not change. From 1997 to 2001, there has been no significant change in male or female melanoma mortality rates among U.S. whites. In Vermont, the male mortality

rates have increased significantly, and female rates have not changed.

Gender

In Vermont, both incidence and mortality of melanoma are higher among males than females. The incidence of melanoma is about 1.3 times higher among men than women, and the mortality of melanoma is about three times higher among men than women. Melanoma is more likely to occur on the head, neck or trunk in men. In women, melanoma is more likely to be found on the arms and legs.

Age

Incidence of melanoma cancer increases with age. In Vermont, 95 percent of melanoma cases are diagnosed in people age 30 and older. In the 30-39 age group, the incidence of melanoma is over three times higher among women than men. The melanoma incidence rates for men aged 70 and over are significantly higher than women aged 70 and over. Men aged 85 and older have the highest age-specific incidence of melanoma.

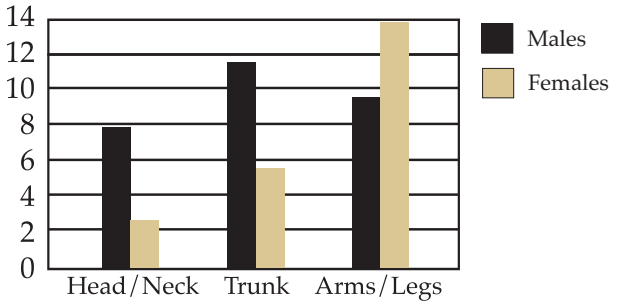
County

Melanoma incidence rates for males in Chittenden County are significantly higher than the U.S. white male rate. For females, melanoma incidence rates in Bennington, Chittenden, and Lamoille counties are significantly higher than the U.S. white female rate.

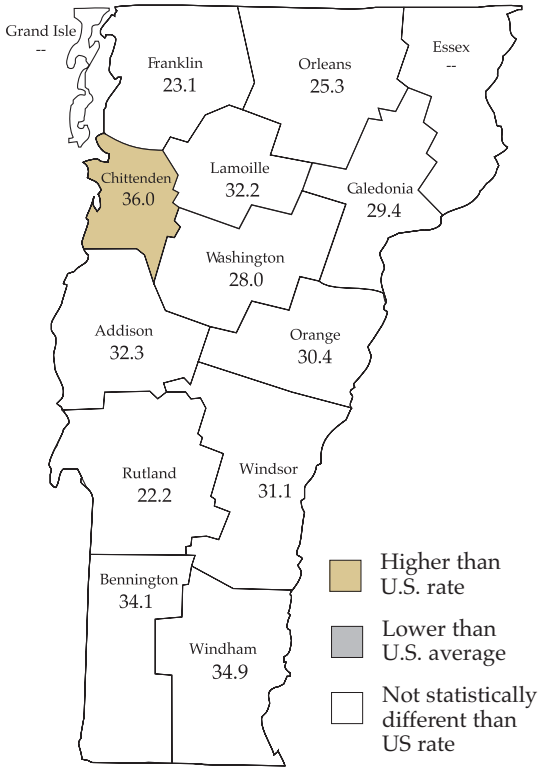
Risk Factors

The chance of developing melanoma increases with age, but the condition

MELANOMA SUBSITE BY GENDER
per 100,000 Vermonters, 1997-2001



Melanoma Incidence by County
per 100,000 males, 1997-2001

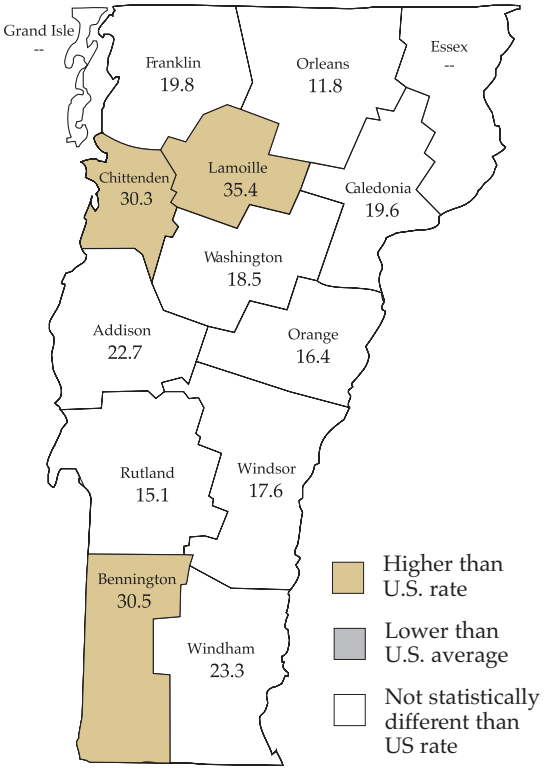


affects people of all age groups and is one of the most common cancers in adults aged 20 to 49. Some of the factors associated with an increased risk of developing melanoma are:

UV Radiation

Sources of UV radiation are natural and artificial sunlight, like tanning booths and sunlamps. Excessive exposure to UV radiation places a person at greater risk for melanoma.

Melanoma Incidence by County
per 100,000 females, 1997-2001



Fair Skin

In the U.S., rates are more than 10 times higher in whites than in African Americans. People with fair skin, red or blonde hair, or who burn easily are at greater risk for melanoma.

Unusual Moles

Having an atypical mole increases a personís risk for melanoma. Most people have moles, and almost all moles are harmless. An atypical moles' appearance is different from common moles. They are generally larger than ordinary moles and have irregular and indistinct borders. Their color is frequently not uniform and the texture is usually flat but may be raised above the skin surface.

> It is important to watch for changes in a mole such as its size, shape, or color that suggest a melanoma may be developing.

Be sure to show your doctor any area that concerns you. Having many moles (greater than 50) can increase a person's risk for melanoma.

Family or Personal History:

Approximately 10 percent of people with melanoma have a mother, father, brother, sister, or child with melanoma. This could be due to shared lifestyles of family members or a shared genetic susceptibility. Being treated for a previous melanoma puts a person at a greater risk of developing a second melanoma.

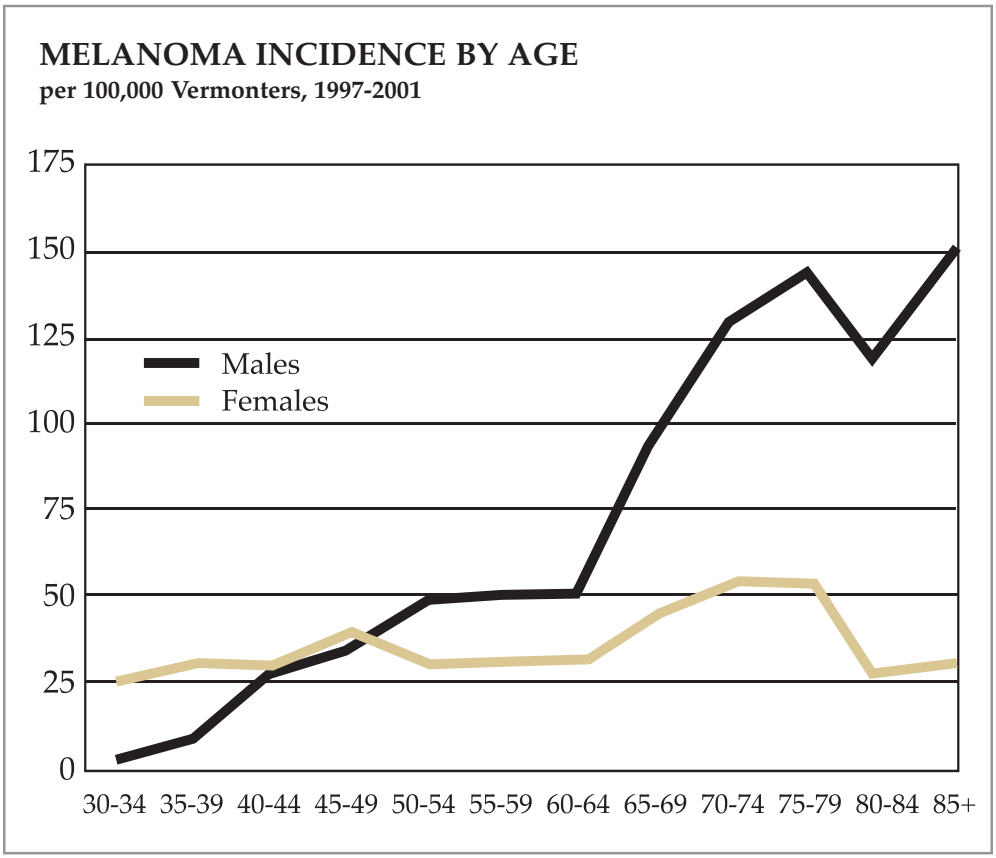
MELANOMA
In Vermont

Prevention and Screening

Reducing exposure to ultraviolet (UV) radiation, such as from the sun and tanning booths, can decrease the incidence of skin cancer. Ways to protect yourself from UV rays:

- Limit direct sun exposure during midday. Plan activities out of the sun during 11 am and 3 pm.
- Cover up. Wear protective clothing (such as long sleeves and hats) when exposed to sunlight.
- Wear a hat. A hat with at least a 2- to 3-inch brim all around is ideal.
- Use a sunscreen with a Sun Protection Factor (SPF) of 15 or higher; use it regularly and properly.
- Wear sunglasses that block UV rays.
- Avoid tanning beds and sunlamps.

Skin cancer is largely preventable when sun protective practices and behaviors are consistently used. The 2001 Vermont Behavioral Risk Factor Surveillance



MELANOMA
In Vermont

MELANOMA IN VERMONT COMPARED TO U.S.

Age-Adjusted rates of melanoma, Vermont and the U.S., 1997-2001

	Incidence	Mortality
VT Males	30.1 *(27.2, 33.2)*	4.8 *(3.7, 6.2)*
U.S.	26.3	4.3
VT Females	22.5 *(20.3, 25.0)*	1.6 *(1.1, 2.4)*
U.S.	18.1	2.0

System Data show that of Vermonters age 18 and over:

- 76 percent of adults use at least one protective measure to decrease their risk of skin cancer. (Goal: 75 percent)
- 80 percent of women, and only 71 percent of men, use at least one protective measure to decrease their risk of skin cancer.

Experts do not agree whether to recommend routine screening for skin cancer by total skin examination. Generally, it is recommended that people with risk factors talk with their physician about skin cancer, the symptoms to watch for, and a schedule for checkups.

PROSTATE CANCER

In Vermont

In the United States and Vermont, prostate cancer is the most commonly diagnosed cancer in men. In Vermont, prostate cancer is the second leading cause of death due to cancer, representing 32 percent of all cancer deaths in men.

> A man's risk of developing prostate cancer in his lifetime is one in six.

Prostate cancer is a disease in which malignant cells form in the prostate, a gland in the male reproductive system, normally about the size of a walnut, which is located just below the bladder and in front of the rectum.

Incidence

Each year in Vermont, approximately 445 prostate cancer cases are diagnosed in men.

Mortality

Each year, approximately 205 men die from prostate cancer in Vermont.

Vermont vs. U.S.

Prostate cancer incidence and mortality rates for Vermont men are not significantly different compared to U.S. white men.

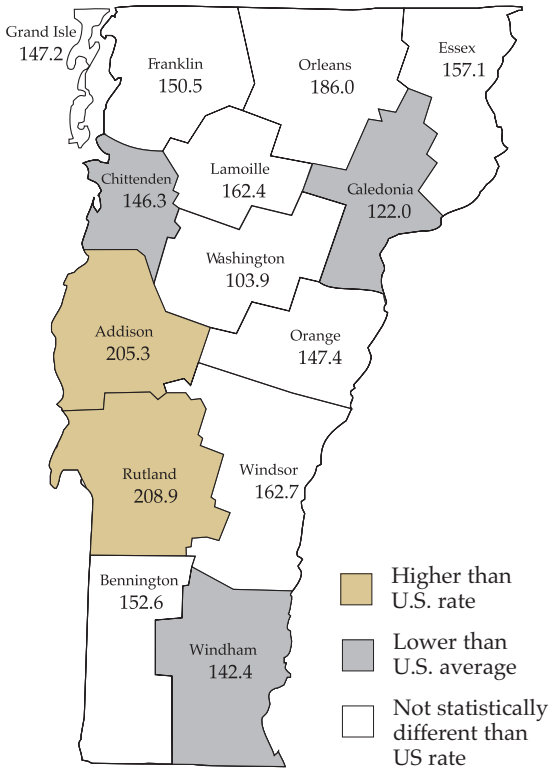
Yearly Trends

In the United States, while the mortality rate of prostate cancer has decreased significantly from 1997-2001, there has been no significant change in prostate cancer incidence. In Vermont, there has been no significant change in prostate cancer incidence or mortality.

Age

The incidence of prostate cancer increases dramatically with age. In Vermont, approximately 65 percent of all prostate cases are diagnosed in men 65 and older. Men aged 75-79 have the highest age-specific incidence of prostate cancer, at a rate of 1050.4 per 100,000. Vermont men aged 50-54 have a significantly higher prostate cancer incidence rate compared to the U.S. male white rate. Vermont men aged 80-84 have a significantly lower prostate cancer incidence

Prostate Incidence by County
per 100,000 males, 1997-2001

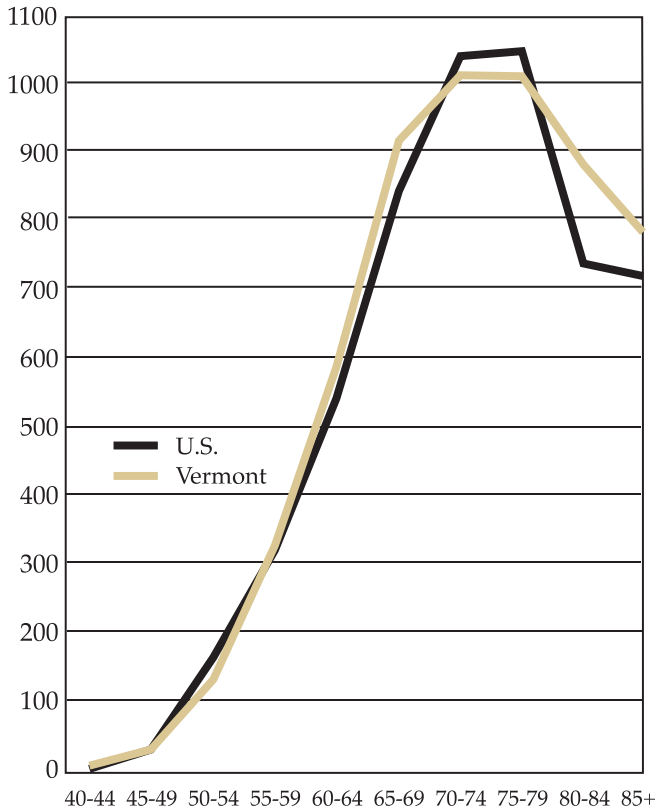


rate compared to the U.S. male white rate.

County

Prostate cancer incidence rates for men in Addison and Rutland County are significantly higher than the U.S. male white rate. The prostate cancer incidence rates for men in Caledonia, Chittenden, and Windham County are significantly lower than the U.S. male white rate.

PROSTATE CANCER INCIDENCE BY AGE
per 100,000 men, 1997-2001



Risk Factors

The causes of prostate cancer are not well understood, however, certain risk factors are linked to the disease.

Age

The chance of getting prostate cancer goes up as a man gets older. Nationally, about two out of every three prostate cancers are diagnosed in men over the age of 65.

Race

For unknown reasons, prostate cancer is more common among African-American men than among white men. African-American men are twice as likely to die of the disease. Prostate cancer occurs less often in Asian men than in whites.

Nationality

Prostate cancer is most common in North America and northwestern Europe. It is less common in Asia, Africa, Central and South America.

Family History

Men with close family members (father or brother) who have had prostate cancer are more likely to develop it themselves, especially if their relatives were young when they got the disease.

Diet

Men who eat a lot of red meat or high-fat dairy products seem to have a greater chance of getting prostate cancer.

PROSTATE CANCER

In Vermont

Prevention and Screening

Some men with risk factors may never develop prostate cancer, while others without any known risk factors may develop the disease. There is still a significant amount of research being conducted to better understand risk factors associated prostate cancer and how it may be prevented.

> Medical experts disagree about whether regular screening for prostate cancer is recommended. However, they do agree that all men should receive all available information on the pros and cons of prostate cancer screening before making an informed decision.

Medical experts who encourage regular screening believe current scientific evidence shows that finding and treating prostate cancer early, when treatment might be more effective, may save lives. These experts recommend that all men with a life expectancy of at least 10 or more years should be offered the prostate specific antigen (PSA) test and a digital rectal exam (DRE) annually beginning at age 50. They also recommend offering earlier screening tests to black men, and men who have a father or brother with prostate cancer. A biopsy is the only procedure that can definitively diagnose prostate cancer and is performed when screening tests indicate.

Medical experts who do not recommend regular screening want convincing evidence that finding early-stage prostate cancer and treating it, saves lives. They believe that some of these cancers may never affect a man's health and treatment could cause temporary or long-lasting side effects.

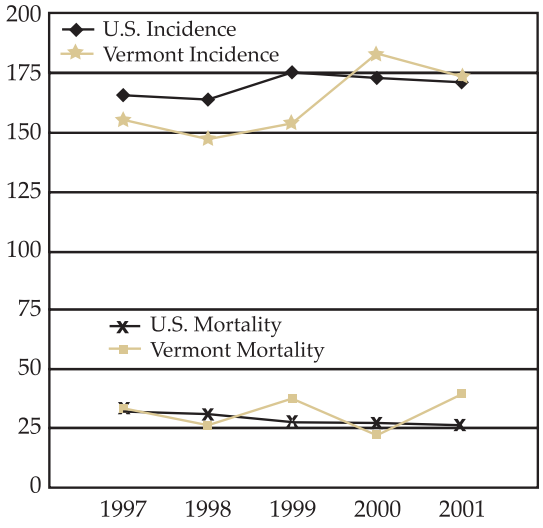
PROSTATE CANCER IN VERMONT COMPARED TO U.S.

Age-adjusted rates of male prostate cancer, Vermont and the U.S., 1997-2001

	Incidence	Mortality
Vermont	164.5 *(157.7, 171.7)*	30.4 *(27.1, 34.0)*
U.S.	171.2	28.9

PROSTATE CANCER INCIDENCE AND MORTALITY

per 100,000 men, 1997-2001



Vermont Cancer Registry

The Vermont Cancer Registry is a central bank of information on all cancer cases diagnosed or treated in Vermont since January 1, 1994. The registry enables the state to collect information on new cases (incidence) of cancer. Previously, the state only kept records on deaths from cancer. The information maintained by the registry allows the Health Department to study cancer trends and improve cancer education and prevention efforts. Suggested Citation: Vermont Department of Health Cancer Registry, 1997-2001. The Vermont Cancer Registry can be contacted at 802-865-7749.

Data Collection

TheVermont Cancer Registry Law (18 VSA ßß 151-157) requires physicians and hospitals to report information on all cases of cancer and benign brain-related tumors they diagnose or treat in Vermont. Through interstate agreements, information on Vermonters diagnosed or treated in other states is also included in Vermont's registry. The registry does not collect information directly from patients.

Data Confidentiality

State law requires reporting for public health purposes, and does not allow people to opt out of the reporting. However, all information that is reported under the Vermont Cancer Registry Law, which could possibly be used to identify an individual Vermonter, is kept confidential and privileged by the Vermont Cancer Registry. This specifically includes identifying information regarding individual patients, health care providers and health care facilities. The law permits disclosure of certain confidential data to other cancer registries and federal cancer control agencies to collaborate in a national cancer registry and to health researchers for cancer control and prevention research studies. However, strict requirements, including prior approval of the researcher's academic committee for the protection of human subjects, must be met.

Public data releases, such as published statistical reports, are carefully designed in order to provide data to the fullest extent possible while still realizing the mandate to protect patient confidentiality.

Vermont Vital Statistics

In Vermont, towns are required to file certified copies of death certificates with the Department of Health for all deaths occurring in their jurisdictions. The Health Department is responsible for maintaining the vital statistics system.

Behavioral Risk Factor Surveillance System

Since 1990, Vermont and 49 other states and three territories track risk behaviors using a telephone survey of adults called the Behavioral Risk Factor Survey.

Age Adjustment

All rates in this document are age-adjusted to the 2000 U.S. standard population. This allows the comparison of rates among populations having different age distributions by standardizing the age-specific rates in each population to one standard population.

Confidence Intervals

A confidence interval is a range of values within which the true rate is expected to fall. If the confidence intervals of two groups (such as Vermont and the U.S.) overlap, then any difference between the two rates is not statistically significant. All rates in this report are calculated at a 95 percent confidence level. For example, the age-adjusted Vermont male colorectal cancer incidence rate is 67.0 (62.5, 71.7) per 100,000 population. There is a 95 percent chance that the true age-adjusted Vermont male colorectal cancer incidence rate is between 62.5 and 71.7.

Incidence

Incidence refers to the number or rate of newly diagnosed cases of cancer. Rates are age-adjusted to 2000 U.S. standard population and exclude basal cell and squamous skin cancers and in situ (malignant but non-invasive) carcinomas except urinary bladder. Rates based on 5 or fewer cases are not calculated.

Mortality

Mortality refers to the number or rate of deaths from cancer. Rates are age-adjusted to 2000 U.S. standard population. Rates based on 5 or fewer cases are not calculated. Cancer mortality site groupings are defined by National Center for Health Statistics and based on ICD-10 classification. Cause of death before 1999 was coded according to ICD-9; beginning with deaths in 1999, ICD-10 was used. Comparability ratios were applied to pre-1999 mortality rates (except testis and thyroid) to allow for continuity in trends.

Vermont/U.S. Comparison

U.S. incidence and mortality rates for whites, rather than those for all races, are used for comparison because racial minority groups were estimated to make up 3.1 percent of the total Vermont population, compared with the total U.S. non-white population of 19.6 percent in 2004. Nationwide, whites have a higher risk compared to people of other races for female breast, melanoma, and bladder cancer incidence. Whites have a lower risk compared to other races for prostate, colorectal, and cervical cancer. The much smaller populations of Vermont residents of other races may have very different risks of these cancers. Combining data over many years will be required to determine cancer rates.

Rate Comparisons

To determine if there is a statistically significant difference between cancer incidence in Vermont compared to the U.S., the Vermont rate is compared to the U.S. SEER rate. If the SEER rate falls within the confidence interval for the state rate, it suggests that the rates are not statistically different from one another. For example, the Vermont female lung cancer incidence rate is 52.3 (48.9, 55.9) per 100,000 population, and the SEER rate is 53.5. Since the SEER rate is found within the confidence interval (48.9, 55.9) of the Vermont rate, no statistical difference exists between the two rates.

Small Numbers

With very small counts, it is often difficult to distinguish between

random fluctuation and actual health issues. According to the National Center for Health Statistics, considerable caution must be observed in interpreting the data when the number of events is small (perhaps less than 100) and the probability of such an event is small (such as being diagnosed with a rare disease).

The limited number of years of data in the registry and the small population of the state require policies and procedures to prevent the unintentional identification of individuals. To protect patient privacy, county-specific data are published only for commonly diagnosed cancer sites. Data on rare cancer sites, race, and other variables that could potentially identify individuals are not published.

U.S. Mortality Rates

The U.S. Public Use Database Vital Statistical System maintains the U.S. mortality rates. Based on the U.S. Public Use Database Vital Statistical System, the U.S. cancer mortality rates are 1997-2001 white population rates. Rates presented in this report are for the U.S. white population and were obtained using CDC Wonder.

U.S. Incidence Rates

The National Cancer Institute funds a network of Surveillance, Epidemiology and End Results (SEER) registries. The SEER Program currently collects and publishes cancer incidence and survival data from 14 population-based cancer registries and three supplemental registries covering approximately 26 percent of the US population. These rates are used to estimate the U.S. cancer incidence rates. U.S. incidence is based on the SEER 9 Registries white rates.

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Suggested Citation:

Cancer in Vermont: A report of 1997-2001 cancer incidence data from the Vermont Cancer Registry, Vermont Department of Health, Burlington, VT, 2005. This report can be made available in other accessible formats.

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MORE INFORMATION

U.S.

- American Cancer Society, www.cancer.org, 1-800-ACS-2345
- American Society of Clinical Oncology (ASCO) and People Living With Cancer www.oncology.com
- Centers for Disease Control and Prevention, www.cdc.gov/cancer
- National Center for Health Statistics, www.cdc.gov/nchswww/default.htm, 301-458-4636
- National Program of Cancer Registries, www.cdc.gov/cancer/npcr/index.htm 1-888-842-6355
- United States Cancer Statistics: 2001 Incidence, www.cdc.gov/cancer/npcr/uscs/index.htm
- Harvard Center for Cancer Prevention Your Cancer Risk, www.yourdiseaserisk.harvard.edu
- National Cancer Institute, www.cancer.gov/cancerinformation, 1-800-4CANCER
- Surveillance Epidemiology and End Results (SEER) Program, www.seer.cancer.gov
- North American Association of Central Cancer Registries, www.naaccr.org, 217-698-0800
- State Cancer Profiles, www.statecancerprofiles.cancer.gov
- U.S. Department of Health and Human Services Agency for Healthcare Research and Quality www.preventiveservices.ahrq.gov

Vermont

- Vermont Vital Statistics http://www.healthyvermonters.info/hs/vital/vitalhome.shtml 802-863-7300
- Cancer Registration in Vermont, a detailed explanation of data collection standards and methods. www.state.vt.us/health/CancerRegistration.pdf

Breast Cancer

- National Cancer Institute - Breast Cancer Home Page, www.cancer.gov/cancer_information/cancer_type/breast/
- Vermont Department of Health - Disease Control Bulletin Chronic Disease in Vermont: Breast Cancer Screening, www.healthyvermonters.info/dcb/092002.shtml#2

Cervical Cancer

- National Cancer Institute - Cervical Cancer Home Page, www.cancer.gov/cancerinfo/types/cervical

MORE INFORMATION

Colorectal Cancer

- National Cancer Institute - Colon and Rectal Cancer Home Page, www.cancer.gov/cancertopics/types/colon-and-rectal

Lung Cancer

- American Lung Association, www.lungusa.org
- National Cancer Institute Lung Cancer Home Page, www.cancer.gov/cancer_information/cancer_type/lung/ National Lung Screening Trial, www.nci.nih.gov/NLST

Melanoma

- National Cancer Institute - Melanoma Home Page www.cancer.gov/cancer_information/cancer_type/melanoma/

Non-Hodgkin Lymphoma

- American Society of Hematology, www.hematology.org
- Leukemia and Lymphoma Society, www.leukemia-lymphoma.org
- National Cancer Institute - Lymphoma Home Page, www.cancer.gov/cancer_information/cancer_type/lymphoma/

Prostate Cancer

- Prostate Cancer Foundation, www.prostatecancerfoundation.org
- Centers for Disease Control and PreventionProstate Cancer Screening: A Decision Guide www.cdc.gov/cancer/prostate/decisionguide/index.htm
- National Cancer Institute Prostate Cancer Home Page, www.cancer.gov/cancer_information/cancer_type/prostate/

How to Request Copies of this Report:

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e-mail: VTCancerRegistry@vdh.state.vt.us

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Age Adjusted Cancer Incidence Rates, 1997-2001

per 100,000 population by site and gender

	Total U.S. Rate	Total VT Rate	(95% CI)	VT New Cases per year	Male U.S. Rate	Male VT Rate	Female U.S. Rate	Female VT Rate
All Sites	487.7	499.2 ✗	(491.3, 507.1)	3,064	568.3	580.9	435.1	446.8 ✗
Oral Cavity/Throat	10.8	9.9	(8.9, 11.1)	62	15.9	14.9	6.6	5.9
Esophagus	4.7	5.7 ✗	(4.9, 6.6)	35	8.1	9.6	2.0	2.7
Stomach	6.9	6.0	(5.2, 7.0)	37	10.2	8.9	4.5	3.6
Colon and Rectum	54.4	58.8 ✗	(56.1, 61.6)	359	64.4	67.0	46.8	53.1 ✗
Liver	4.4	3.5 ★	(2.8, 4.2)	21	6.7	5.6	2.6	1.7 ★
Pancreas	10.9	11.1	(10.0, 12.4)	68	12.6	13.3	9.5	9.4
Larynx	3.9	4.5	(3.8, 5.4)	28	6.8	7.9	1.5	1.9
Lung	65.4	69.0 ✗	(66.1, 72.0)	421	82.3	92.8 ✗	53.5	52.3
Melanoma of the Skin	21.4	25.3 ✗	(23.6, 27.2)	157	26.3	30.1 ✗	18.1	22.5 ✗
Breast (female)	n/a	n/a	n/a	n/a	1.2	1.9	143.2	138.6
Cervix	n/a	n/a	n/a	n/a	n/a	n/a	7.8	9.7 ✗
Uterus	n/a	n/a	n/a	n/a	n/a	n/a	26.6	30.8 ✗
Ovary	n/a	n/a	n/a	n/a	n/a	n/a	15.0	14.2
Prostate	n/a	n/a	n/a	n/a	171.2	164.5	n/a	n/a
Testis	n/a	n/a	n/a	n/a	6.5	7.8	n/a	n/a
Bladder	23.2	25.3 ✗	(23.6, 27.2)	154	41.2	43.6	10.2	12.6 ✗
Kidney	11.9	11.7	(10.5, 12.9)	72	16.5	16.3	8.2	7.9
Brain/Nervous System	7.3	6.6	(5.8, 7.6)	41	8.8	8.3	6.1	5.1
Thyroid	7.6	6.9	(6.0, 7.9)	43	4.1	3.6	11.1	10.1
Hodgkin Lymphoma	3.0	3.3	(2.7, 4.0)	20	3.3	3.4	2.7	3.3
Non-Hodgkin Lymphoma	20.3	20.6	(19.0, 22.3)	126	24.5	23.2	16.9	18.6
Myeloma	5.3	4.1 ★	(3.5, 4.9)	25	6.7	5.8	4.2	2.9 ★
Leukemia	13.0	13.1	(11.9, 14.5)	80	17.0	17.7	10.1	9.8

★ statistically lower than the U.S. SEER white rate
✗ statistically higher than the U.S. SEER white rate

All rates are age-adjusted to the 2000 U.S. standard population and exclude basal cell and squamous cell skin cancers, and in situ (malignant but non-invasive) carcinomas except urinary bladder. Rates based on 5 or fewer are not individually calculated. The U.S. incidence rates are based on the SEER Cancer Incidence Public Use Database. U.S. SEER rates are 1997-2001 white population incidence rates. Male and female incidence tables that include confidence intervals (95% CI) and Vermont cases per year can be found on pages 6 & 7.

Age Adjusted Cancer Mortality Rates, 1997-2001

per 100,000 population by site and gender

	Total U.S. Rate	Total VT Rate	(95% CI)	VT Deaths per year	Male U.S. Rate	Male VT Rate	Female U.S. Rate	Female VT Rate
All Sites	197.8	203.1 ✗	(198.1, 208.3)	1236	245.9	253.3	166.6	171.4
Oral Cavity/Throat	2.6	2.5	(1.9, 3.1)	15	3.9	3.8	1.6	1.6
Esophagus	4.2	4.6	(3.9, 5.5)	28	7.4	7.9	1.7	2.1
Stomach	4.1	3.7	(3.1, 4.5)	23	5.8	5.1	2.8	2.5
Colon and Rectum	20.4	22.1	(20.4, 23.8)	135	24.6	25.7	17.2	19.9 ✗
Liver	4.1	3.2 ★	(2.6, 4.0)	20	6.0	4.9	2.7	2.0
Pancreas	10.3	10.8	(9.7, 12.1)	66	12.0	13.5	9.0	8.9
Larynx	1.3	1.4	(1.0, 1.9)	9	2.3	2.5	0.5	0.5
Lung	55.9	55.4	(52.7, 58.1)	340	76.2	78.2	41.5	39.4
Melanoma of the Skin	3.0	3.0	(2.5, 3.8)	19	4.3	4.8	2.0	1.6
Breast (female)	n/a	n/a	n/a	n/a	n/a	n/a	26.5	27.7
Cervix	n/a	n/a	n/a	n/a	n/a	n/a	2.6	3.0
Uterus	n/a	n/a	n/a	n/a	n/a	n/a	3.9	5.0 ✗
Ovary	n/a	n/a	n/a	n/a	n/a	n/a	9.2	8.5
Prostate	n/a	n/a	n/a	n/a	28.9	30.4	n/a	n/a
Testis	n/a	n/a	n/a	n/a	0.3	n/a	n/a	n/a
Bladder	4.5	5.3	(4.5, 6.2)	32	7.9	8.3	2.3	3.5 ✗
Kidney	4.3	4.2	(3.5, 5.1)	26	6.2	7.1	2.8	2.1
Brain/Nervous System	4.9	4.4	(3.6, 5.2)	27	5.9	5.4	4.0	3.5
Thyroid	0.5	0.5	(0.3, 0.9)	3	0.5	2.0	0.5	2.0
Hodgkin Lymphoma	0.5	0.4	(0.2, 0.8)	3	0.6	n/a	0.4	0.5
Non-Hodgkin Lymphoma	8.7	9.3	(8.2, 10.5)	57	10.8	11.5	7.1	7.7
Myeloma	3.7	3.6	(3.0, 4.4)	22	4.6	3.9	3.1	3.3
Leukemia	7.9	7.8	(6.8, 8.9)	47	10.4	11.0	6.0	5.7

★ statistically lower than the U.S. white rate
✗ statistically higher than the U.S. white rate

All rates are age-adjusted to the 2000 U.S. standard population and exclude basal cell and squamous cell skin cancers. Rates based on 5 or fewer deaths are not individually calculated. The U.S. rates are based on the Vital Statistics System of the Unites States Public use database. U.S. rates are 1997-2001 white population mortality rates. Male and female mortality tables that include 95% CI and Vermont deaths per year can be found on page 8 and 9.