

# Lung Cancer

*Lung cancer was the leading cause of cancer deaths.*

- Lung cancer was the third most commonly diagnosed cancer in the county.
- Blacks were most likely to be diagnosed with lung cancer.
- White females were more likely to be diagnosed with lung cancer than county females overall.
- African Americans and whites were more likely to die of lung cancer than county residents overall.
- Most new lung cancer cases and deaths were among whites.

## Deaths

Between 2005–2007, lung cancer was the most common cause of cancer death in Contra Costa, accounting for 23.7% of all cancer deaths and 5.9% of all deaths in the county. During this time, 1,218 Contra Costa residents died of lung cancer. This means that on average 406 Contra Costa residents died from lung cancer each year.

The age-adjusted death rate from lung cancer in Contra Costa (38.8 per 100,000) was similar to California’s age-adjusted rate (41.1 per 100,000) and met the Healthy People 2010 objective (43.3 per 100,000).

**Table 1 ■ Lung cancer deaths by race/ethnicity**

Contra Costa County, 2005–2007

	Deaths	Percent	Rate	
White	944	77.5%	43.9*	In this report, a lung cancer case is defined as a primary malignant tumor that originated in the lung rather than spread to the lung from another location.
African American	120	9.9%	52.2*	
Asian/Pacific Islander	93	7.6%	27.3**	
Hispanic	45	3.7%	13.2**	
<b>Total</b>	<b>1,218</b>	<b>100.0%</b>	<b>38.8</b>	

These are age-adjusted rates per 100,000 residents.

Total includes racial/ethnic groups not listed above.

\* Significantly higher rate than the county overall.

\*\* Significantly lower rate than the county overall.

The greatest number of lung cancer deaths in the county occurred among whites (944), followed by African Americans (120), Asians/Pacific Islanders (93) and Hispanics (45).

African Americans (52.5 per 100,000) and whites (43.9 per 100,000) had significantly higher lung cancer death rates than the county overall (38.8 per 100,000). Hispanics (13.2 per 100,000) had the lowest rate of lung cancer death compared to the county overall and all other racial/ethnic groups

listed in the table. Asians/Pacific Islanders (27.3 per 100,000) had a significantly lower lung cancer death rate than the county overall.

**Table 2 ■ Male lung cancer deaths**

Contra Costa County, 2005–2007

	Deaths	Percent	Rate
White	438	74.7%	48.2
African American	63	10.8%	64.3
Asian/Pacific Islander	49	8.4%	32.7
Hispanic	28	4.8%	18.6 **
<b>Total</b>	<b>586</b>	<b>100.0%</b>	<b>43.8</b>

These are age-adjusted rates per 100,000 male residents.

Total includes racial/ethnic groups not listed above.

\*\* Significantly lower rate than county males overall.

Slightly more than half the number of the deaths from lung cancer (51.9%) occurred among females (632), yet males (43.8 per 100,000) had a higher rate of lung cancer death than females (35.5 per 100,000).

Among males, Hispanics (18.6 per 100,000) had a lower lung cancer death rate than county males overall (43.8 per 100,000). Among females, Asians/Pacific Islanders (23.3 per 100,000) had a lower rate of lung cancer death than county females overall (35.5 per 100,000).

**Table 3 ■ Female lung cancer deaths**

Contra Costa County, 2005–2007

	Deaths	Percent	Rate
White	506	80.1%	41.5
African American	57	9.0%	43.4
Asian/Pacific Islander	44	7.0%	23.3**
Hispanic	17	2.7%	NA
<b>Total</b>	<b>632</b>	<b>100.0%</b>	<b>35.5</b>

These are age-adjusted rates per 100,000 female residents.

Total includes racial/ethnic groups not listed above.

\*\* Significantly lower rate than county females overall.

The highest number of deaths from lung cancer occurred among residents of Walnut Creek (175), Concord (156), Richmond (126) and Antioch (122).

Two cities had significantly higher lung cancer death rates than the county overall (38.8 per 100,000): San Pablo (73.2 per 100,000) and Antioch (57.1 per 100,000). El Cerrito had a significantly lower lung cancer death rate (25.1 per 100,000) than the county overall.

**Table 4 ■ Lung cancer deaths by selected cities**

Contra Costa County, 2005–2007

	Deaths	Percent	Rate
Walnut Creek	175	14.4%	42.6
Concord	156	12.8%	44.5
Richmond	126	10.3%	46.2
Antioch	122	10.0%	57.1*
Pittsburg	70	5.7%	49.1
Martinez	50	4.1%	43.7
San Pablo	49	4.0%	73.2*
Pleasant Hill	47	3.9%	40.6
Brentwood	39	3.2%	33.6
Oakley	34	2.8%	60.4
El Cerrito	29	2.4%	25.1**
Hercules	25	2.1%	39.3
Pinole	20	1.6%	28.8
Bay Point	13	1.1%	NA
<b>Contra Costa</b>	<b>1,218</b>	<b>100.0%</b>	<b>38.8</b>

These are age-adjusted rates per 100,000 residents.

Contra Costa total includes cities not listed above.

\* Significantly higher rate than the county overall.

\*\* Significantly lower rate than the county overall.

## New Cases

To understand the impact of lung cancer on the community’s health it is important to assess both lung cancer diagnoses and deaths. Information about lung cancer deaths indicates the ultimate toll this disease takes on people’s lives, but more people develop lung cancer than die from it. Information about new lung cancer cases provides a sense of how much and among whom the disease is being diagnosed and can highlight the need for prevention, screening and treatment programs.

Between 2003–2007, 2,704 new cases of invasive lung cancer were diagnosed in Contra Costa—an average of 541 new cases per year. Lung cancer was the third most frequently diagnosed cancer in the

county, representing 11.7% of all new invasive cancer cases. The age-adjusted rate of new lung cancer cases for this period was similar in Contra Costa (55.1 per 100,000) and California (53.7 per 100,000).

Slightly more than half of all new lung cancer cases in the county were among females (53.1%). Males experienced a significantly higher rate (59.7 per 100,000) of new lung cancer cases compared to females (52.6 per 100,000).

**Table 5 ■ New invasive lung cancer cases by gender**

Contra Costa County, 2003–2007

	Cases	Percent	Rate
Females	1,436	53.1%	52.6
Males	1,268	46.9%	59.7*
<b>Total</b>	<b>2,704</b>	<b>100.0%</b>	<b>55.1</b>

Invasive lung cancer is cancer that has spread beyond the tissue where it developed to surrounding, healthy tissue.

These are age-adjusted rates per 100,000 residents.

\* Significantly higher rate than females.

The greatest number of new invasive lung cancer cases in Contra Costa occurred among whites (2,045) followed by blacks (269), Asians/Pacific Islanders (215) and Hispanics (152). Although whites accounted for most new lung cancer cases, blacks had the highest rate of new cases (70.7 per 100,000); significantly higher than the county overall (55.1 per 100,000) and the other racial/ethnic groups listed in the table. Asians/Pacific Islanders (36.9 per 100,000) and Hispanics (32.3 per 100,000) had significantly lower rates than the county overall.

**Table 6 ■ New invasive lung cancer cases by race/ethnicity**

Contra Costa County, 2003–2007

	Cases	Percent	Rate
White	2,045	75.6%	59.2
Black	269	9.9%	70.7*
Asian/Pacific Islander	215	8.0%	36.9**
Hispanic	152	5.6%	32.3**
<b>Total</b>	<b>2,704</b>	<b>100.0%</b>	<b>55.1</b>

These are age-adjusted rates per 100,000 residents.

Total includes racial/ethnic groups not listed above.

\* Significantly higher rate than the county overall.

\*\* Significantly lower rate than the county overall.

The greatest number of new invasive male lung cancer cases in Contra Costa occurred among white males (924), followed by black (135), Asian/Pacific Islander (110) and Hispanic (85) males. Although white males accounted for most new male lung cancer cases, black males had the highest rate of new male cases (83.9 per 100,000); significantly higher than men in the county overall (59.7 per 100,000) and all other racial/ethnic groups listed in the table. Asian/Pacific Islander (45.7 per 100,000) and Hispanic (43.4 per 100,000) males had lower rates of new lung cancer cases than males in the county overall.

**Table 7 ■ New invasive male lung cancer cases by race/ethnicity**  
Contra Costa County, 2003–2007

	Cases	Percent	Rate
White	924	72.9%	61.0
Black	135	10.6%	83.9*
Asian/Pacific Islander	110	8.7%	45.7**
Hispanic	85	6.7%	43.4**
<b>Total</b>	<b>1,268</b>	<b>100.0%</b>	<b>59.7</b>

These are age-adjusted rates per 100,000 male residents.  
Total includes males in racial/ethnic groups not listed above.  
\* Significantly higher rate than county males overall.  
\*\* Significantly lower rate than county males overall.

The greatest number of new invasive female lung cancer cases in Contra Costa occurred among white females (1,121) followed by black (134), Asian/Pacific Islander (105) and Hispanic (67) females. White females had a higher rate of new cases (58.9 per 100,000) than females in the county overall (52.6 per 100,000). Asian/Pacific Islander (31.1 per 100,000) and Hispanic (25.0 per 100,000) females had lower rates of new lung cancer cases than females in the county overall. *(Note: Although the rate for black females appears higher than that for Contra Costa females overall, due to small numbers it was not statistically significantly higher.)*

**Table 8 ■ New invasive female lung cancer cases by race/ethnicity**  
Contra Costa County, 2003–2007

	Cases	Percent	Rate
White	1,121	78.1%	58.9*
Black	134	9.3%	61.4
Asian/Pacific Islander	105	7.3%	31.1**
Hispanic	67	4.7%	25.0**
<b>Total</b>	<b>1,436</b>	<b>100.0%</b>	<b>52.6</b>

These are age-adjusted rates per 100,000 female residents.  
Total includes females in racial/ethnic groups not listed above.  
\* Significantly higher rate than county females overall.  
\*\* Significantly lower rate than county females overall.

### What is lung cancer?

According to the National Cancer Institute, lung cancer is “cancer that forms in the tissues of the lung, usually in the cells lining the air passages. The two main types are small cell lung cancer and non-small cell lung cancer. These types are diagnosed based on how cells look under a microscope.”<sup>1</sup> In this report, the term “lung cancer” refers to cancer of the lung and bronchus.

### Why is it important?

Lung cancer is the leading cause of cancer death for both males and females in Contra Costa<sup>2</sup> and California.<sup>3</sup> It is also the second most commonly diagnosed cancer among males and females in the county and the state.<sup>4</sup>

### Who is most impacted?

In Contra Costa, males are more likely to be diagnosed with and die from lung cancer than females.<sup>2,4</sup> Locally, black males are most likely to be diagnosed with the disease among males and white females are more likely to be diagnosed than females overall.<sup>4</sup> African American and white residents in the county are more likely to die from lung cancer than county residents overall.<sup>2</sup> Nationally black males are most likely to die from lung cancer among males, and white females are most likely to die from the disease among females.<sup>5</sup>

Smoking tobacco is the most important risk factor for lung cancer.<sup>6,7</sup> Approximately 85% of lung cancer deaths are caused by smoking.<sup>8</sup> Compared to people who have never smoked, the risk of developing lung cancer is 23 times higher in males smokers and 13 times higher in female smokers.<sup>7</sup> Other factors that can increase the likelihood of developing lung cancer include a history of tuberculosis and exposure to environmental hazards including secondhand smoke, air pollution, radon, radiation, asbestos and some metals and organic chemicals.<sup>7</sup> Genetics can also play a role in developing lung cancer, particularly among people who are diagnosed with the disease early in life.<sup>7</sup>

### What can we do about it?

Although lung cancer survival has improved during the last 40 years, the five-year survival rate after being diagnosed with lung cancer, all stages combined, is only 16%.<sup>8</sup> Five-year survival increases to 52% if diagnosed early, before the cancer has spread beyond the lungs or bronchus.<sup>8</sup> Unfortunately, there are no generally accepted screening tests for lung cancer, so preventing lung cancer is critical.<sup>9</sup> Quitting smoking can reduce the chance of developing lung cancer dramatically. Fifteen years after quitting, former smokers are only slightly more likely to develop lung cancer compared to people who have never smoked.<sup>8</sup> Encouraging smokers to quit and discouraging others from starting to smoke are important individual-level prevention strategies and can also reduce the risk of lung cancer for others in the community by decreasing exposure to secondhand smoke.<sup>8</sup>

Since the 1988 passage of the *California Tobacco Tax*, rates of smoking and of new lung cancer cases have declined in California.<sup>8,10</sup> Much of this success is considered to be the result of California’s tobacco control efforts, which focus on social norm change to create an environment in which tobacco is “less desirable, less acceptable and less accessible.”<sup>8,10</sup> Despite this progress, there were approximately 3.6

million adult smokers in California in 2008.<sup>11</sup> In California, smoking is most common among African Americans, men and young adults.<sup>11</sup>

Providing cessation services and developing and implementing policies and programs that attempt to counter pro-tobacco influences in the community, limit exposure to secondhand smoke, and reduce tobacco availability are important strategies to reduce smoking and prevent lung cancer.<sup>10</sup> Changes to the built environment can also limit the community's exposure to other environmental risk factors for lung cancer.

## Data Sources: Lung Cancer

### TABLES

Tables 1–8: Data presented for Hispanics include Hispanic residents of any race. Data presented for whites, Asians/Pacific Islanders and African Americans/blacks include non-Hispanic residents. Not all race/ethnicities are shown but all are included in totals for the county, by gender and by city. Rates were not calculated for any group with fewer than 20 cases due to unstable estimates.

Tables 1–4: These tables include total deaths and age-adjusted average annual death rates per 100,000 residents for 2005 through 2007. Mortality data from the California Department of Public Health (CDPH), <http://www.cdph.ca.gov/>, Center for Health Statistics' Death Statistical Master File, 2005–2007. Any analyses or interpretations of the data were reached by the Community Health Assessment, Planning and Evaluation (CHAPE) Unit of Contra Costa Health Services and not the CDPH.

ICD10 coding for malignant neoplasm of trachea, bronchus and lung (ICD C33-C34) from the Centers for Disease Control and Prevention National Center for Health Statistics, available online at: [http://www.cdc.gov/nchs/data/nvsr/nvsr50/nvsr50\\_16.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr50/nvsr50_16.pdf).

Population estimates for Contra Costa and its subpopulations (by age, gender, race/ethnicity, city/census place) for 2005–2007 were provided by the Urban Strategies Council, Oakland, CA. January, 2010. Data sources used to create these estimates included: U.S. Census 2000, Nielsen Claritas 2009, Association of Bay Area Governments (ABAG) 2009 Projections, and California Department of Finance Population Estimates for Cities, Counties and the State 2001-2009, with 2000 Benchmark.

California Population estimate for state level rate from the State of California, Department of Finance, E-4 Population Estimates for Cities, Counties and the State, 2001–2009, with 2000 Benchmark. Sacramento, California, May 2009.

Healthy People 2010 objectives from the US Department of Health and Human Services' Office of Disease Prevention and Health Promotion, available online at <http://www.healthypeople.gov/>

Tables 5–8: These tables include five-year case counts and age-adjusted average annual new case rates per 100,000 residents for 2003 through 2007. New case data from the California Cancer Registry. (2009). Cancer Incidence Rates in California. Based on October 2009 Quarterly Extract (Released October 08, 2009). Retrieved (12/5/09) from <http://www.cancer-rates.info/ca>. [Note: The count for Hispanic males not publicly available due to small sample size, but was obtained via email from Mark Allen at the California Cancer Registry on 1/5/10.] Veterans Health Administration hospitals did not report cancer cases to the California Cancer Registry (CCR) in 2005, 2006 and 2007. Therefore, new case counts and rates for adult males for 2005–2007 are underestimates and should be interpreted with caution. Although there is no way to know how many unreported cancer cases were diagnosed in these facilities, historically VHA-reported cases

have accounted for approximately 4% of all new male cancers reported to the California Cancer Registry. (For information in the undercount see [www.ccrca.org/publications/Vatechnotes](http://www.ccrca.org/publications/Vatechnotes)). International Classification of Diseases for Oncology, Third Edition (ICD-O-3) coding for new lung and bronchus cancer cases: C340–C349, excluding histology types 9590–9989, and sometimes 9050–9055, 9140+. (For information on ICD-O-3 codes see: [http://seer.cancer.gov/siterecode/icdo3\\_d01272003/](http://seer.cancer.gov/siterecode/icdo3_d01272003/)). Note: This section includes data for invasive cancer only. All new lung cancer cases reported by the California Cancer Registry for this period were invasive.

#### TEXT

1. National Cancer Institute, U.S. National Institutes of Health. (n.d.) *Cancer Topics: Lung Cancer*. Retrieved June 12, 2010 from: <http://www.cancer.gov/cancertopics/types/lung>
2. California Department of Public Health, Center for Health Statistics' Death Statistical Master File, 2005-2007.
3. Morris CR, Epstein J, Nassere K, Hofer BM, Rico J, Bates JH, Snipes KP. (2010) *Trends in Cancer Incidence, Mortality, Risk Factors and Health Behaviors in California*. Sacramento, CA: California Department of Public Health, Cancer Surveillance Section, January 2010.
4. California Cancer Registry. (2009) Incidence data for 2003-07, based on October 2009 Quarterly Extract, released October 08, 2009.
5. U.S. Cancer Statistics Working Group.(2010) *United States Cancer Statistics: 1999–2006 Incidence and Mortality Web-based Report*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute. Data for 2006 retrieved August 23, 2010 from [www.cdc.gov/uscs](http://www.cdc.gov/uscs).
6. Stewart, S., Cardinez, C., Richardson, L. (2008) *Surveillance for Cancers Associated with Tobacco Use — United States, 1999–2004*. MMWR. September 5, 2008 / 57(SS08);1-33. Department of Health and Human Services. Retrieved June 18, 2010 from the CDC website: <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5708a1.htm>
7. American Cancer Society. (2010) *Cancer Facts & Figures 2010*. Atlanta: American Cancer Society.
8. American Cancer Society, California Department Public Health, California Cancer Registry (2009). *California Cancer Facts and Figures 2010*. Oakland, CA: American Cancer Society, California Division, September 2009.
9. National Cancer Institute, U.S. National Institutes of Health. (2007) *What You Need To Know About Lung Cancer*. Retrieved June 12, 2010 from: <http://www.cancer.gov/cancertopics/wyntk/lung>
10. California Department of Public Health, California Tobacco Control Program (2009) *California Tobacco Control Update 2009: 20 Years of Tobacco Control in California*: Sacramento, CA. Retrieved December 14, 2010 from <http://www.cdph.ca.gov/programs/tobacco/Documents/CTCPUpdate2009.pdf>.
11. California Department of Public Health Tobacco Control Program. (2010) *Adult Smoking Prevalence Fact Sheet*. <http://cdph.ca.gov/programs/Tobacco>.