AMERICAN LUNG ASSOCIATION®

STATE OF THE AIR 2010

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Acknowledgments

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Finally, we dedicate this report to a colleague and long-time advocate for clean, healthy air who passed away in February: A. Blakeman Early. Blake's dedication, knowledge, and sense of humor are sorely missed.

The American Lung Association assumes sole responsibility for the content of the *American Lung Association State of the Air 2010.*

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State of the Air 2010 shows that

cleaning up air pollution produces healthier air

across the nation.

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The number of cities reporting their lowest levels of year-round particle pollution ever.

The *State of the Air 2010* shows that the air quality in many places has improved, but that over 175 million people—roughly 58 percent—still suffer pollution levels that are too often dangerous to breathe. Unhealthy air remains a threat to the lives and health of millions of people in the United States, despite great progress. Even as the nation explores the complex challenges of global warming and energy, air pollution lingers as a widespread and dangerous reality.

The *State of the Air 2010* report looks at levels of ozone and particle pollution found in monitoring sites across the United States in 2006, 2007, and 2008. The report uses the most current quality-assured nationwide data available for these analyses. For particle pollution, the report examines fine particulate matter ($PM_{2.5}$) in two different ways: averaged year-round (annual average) and over short-term levels (24-hour). For both ozone and short-term particle pollution, the analysis used a weighted average number of days that allows recognition of places with higher levels of pollution. For the year-round particle pollution rankings, the report uses averages calculated and reported by the U.S. Environmental Protection Agency. For comparison, the *State of the Air 2009* report covered data from 2005, 2006 and 2007.[1]

The strongest improvement came in the year-round (annual) particle pollution levels, but most of the cities with the highest ozone and short-term particle levels improved as well. These results show that cleaning up major sources of air pollution produces healthier air. However, the continuing problem demonstrates that more remains to be done, especially in cleaning up coal-fired power plants and existing diesel engines. The results also show the need for stronger limits on national air pollution levels—a fight that the American Lung Association has long led as a key to healthier air.

For the first time, the *State of the Air 2010* report includes population estimates for another at-risk group, people living in poverty. As discussed under Health Effects, people who have low incomes face higher risk of harm from air pollution. The population estimates here are based in the poverty definition used by the U.S. Census Bureau.

Year-round particle pollution

The *State of the Air 2010* finds great progress in cutting year-round particle pollution, compared to the 2009 report. Thanks to reductions in emissions from coal-fired power plants and the transition to cleaner diesel fuels and engines, cleaner air shows up repeatedly in the monitoring data, especially in the eastern U.S.

Twenty of the 25 metropolitan areas with the worst year-round pollution reported much lower levels of particle pollution in *State of the Air 2010* compared to the 2009 report. Sixteen metropolitan areas reported their lowest levels ever: Pittsburgh-New Castle, PA; Cincinnati-Middletown-Wilmington, OH-KY-IN; St Louis-St. Charles-Farmington, MO-IL; Charleston, WV; Detroit-Warren-Flint, MI; Weirton-Steubenville, WV-OH; Louisville-Jefferson County-Elizabethtown-Scottsburg, KY-IN; Atlanta-Sandy Springs-Gainesville, GA-AL; Huntington-Ashland, WV-KY-OH; Cleveland-Akron-Elyria, OH; Macon-Warner Robins-Fort Valley, GA; Hagerstown-Martinsburg, MD-WV; Knoxville-Sevierville-La Follette, TN; Indianapolis-Anderson-Columbus, IN; Parkersburg-Marietta, WV-OH; and York-Hanover-Gettysburg, PA.

1 A complete discussion of the sources of data and the methodology is included in Appendix: Methodology.

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The number of cities averaging fewer days of unhealthy particle pollution from 2006 to 2008.

The other cities that improved over the 2009 report were: Birmingham-Hoover-Cullman, AL (which equaled its lowest level ever); Hanford-Corcoran, CA; Houston-Baytown-Huntsville, TX; and Augusta-Richmond County, GA.

A new city moved to the top of the most-polluted by year-round particle levels list. Phoenix-Mesa-Scottsdale, AZ, moved up after new monitoring data in Pinal County reported the highest readings in the nation. Pinal County and Maricopa County comprise the Phoenix-Mesa-Scottsdale, AZ metropolitan area.

Some cities on this list had higher levels of pollution compared to the 2009 report. Most of the areas with worse year-round levels of particle pollution were in California, with even Los Angeles showing a slightly higher level. Those cities include: Phoenix-Mesa-Scottsdale, AZ; Bakersfield, CA; Los Angeles-Long Beach-Riverside, CA; Visalia-Porterville, CA; Fresno-Madera, CA; and Modesto, CA.

For the first time, six cities on the most-polluted list received passing grades, meaning they met the current, but inadequate, standard for year-round particulate matter, set at 15 micrograms per cubic meter. Those cities are: Hagerstown-Martinsburg, MD-WV; Knoxville-Sevierville-La Follette, TN; Augusta-Richmond County, GA; Indianapolis-Anderson-Columbus, IN; Parkersburg-Marietta, WV-OH; and York-Hanover-Gettysburg, PA. The EPA is reviewing the substantial evidence that the standard is much too lenient and, consequently, fails to provide adequate protection for public health. The Lung Association won a court decision in 2009 requiring EPA to review that evidence. EPA is promising to propose a standard in November 2010.

Short-term particle pollution

Seventeen of the 25 metropolitan areas on this list of the most polluted experienced fewer days of unhealthy levels of particle pollution on average in the *State of the Air 2010* report compared to the 2009 report. Improvements occurred all across the nation. Improving were: Pittsburgh-New Castle, PA; Los Angeles-Long Beach-Riverside, CA; Birmingham-Hoover-Cullman, AL; Sacramento-Arden-Arcade-Yuba City, CA-NV; Salt Lake City-Ogden-Clearfield, UT; Hanford-Corcoran, CA; Merced, CA; Chicago-Naperville-Michigan City, IL-IN-WI; San Diego-Carlsbad-San Marcos, CA; Washington-Baltimore-Northern VA, DC-MD-VA; New York City-Newark-Bridgeport, NY-NJ-CT-PA; Logan, UT-ID; Eugene-Springfield, OR; Harrisburg-Carlisle-Lebanon, PA; San Jose-San Francisco-Oakland, CA; Indianapolis-Anderson-Columbus, IN; and Allentown-Bethlehem-Easton, PA-NJ.

Seven of the most polluted cities reported more days of unhealthy levels on average than in the previous report, while one—Philadelphia-Camden-Vineland, PA-NJ-DE-MD—remained unchanged. The metro areas with worse pollution scores were: Bakersfield, Fresno-Madera, Visalia-Porterville, Modesto, and Stockton—all in California—as well as Provo-Orem, UT and Phoenix-Mesa-Scottsdale, AZ.

Bakersfield, CA ranked as the city most polluted by short-term levels of particle pollution, its first time atop this list. Last year's previous number one—Pittsburgh—improved enough to drop to third place.

Ozone

Fourteen of the 25 most polluted metropolitan areas reported fewer days of unhealthy ozone levels on average in the 2010 report compared to the 2009 report. Ten metropolitan areas had higher averages and one remained unchanged.

Improving were cities across the nation: Sacramento-Arden-Arcade-Yuba City, CA-NV; Houston-Baytown-Huntsville, TX; Charlotte-Gastonia-Salisbury, NC; Phoenix-Mesa-Scottsdale, AZ; Dallas-Fort Worth, TX; El Centro, CA; New York City-Newark-Bridgeport, NY-NJ-CT-PA; Washington-Baltimore-Northern VA, DC-MD-VA; Cincinnati-Middletown-Wilmington, OH-KY-IN; Atlanta-Sandy Springs-Gainesville, GA-AL; Birmingham-Hoover-Cullman, AL; Las Vegas-Paradise-

175.3 Million

The number of people in the US who live in counties where the outdoor air got an F.

Pahrump, NV; Philadelphia-Camden-Vineland, PA-NJ-DE-MD; and Baton Rouge-Pierre Part, LA.

All of the cities seeing a higher average number of days were all in California, including; Los Angeles-Long Beach-Riverside; Bakersfield; Visalia-Porterville; Fresno-Madera; Hanford-Corcoran; San Diego-Carlsbad-San Marcos; San Luis Obispo-Paso Robles; Merced; Modesto; and Chico.

Los Angeles-Long Beach-Riverside, CA remains firmly atop the list of cities most polluted by ozone pollution. Los Angeles experienced a slight increase in the weighted average number of days, though still marked its second-best level since the first *State of the Air* reported on ozone levels for 1996 to 1999.

Cleanest cities

Fargo-Wahpeton, ND-MN and Lincoln, NE, emerged as the cleanest cities in the U.S, the only cities to appear on all three lists of cleanest cities. Twelve cities ranked cleanest for both particle pollution measures, though not for ozone: Amarillo, TX; Bangor, ME; Billings, MT; Cape Coral-Ft. Myers, FL; Cheyenne, WY; Ft. Collins-Loveland, CO; Pueblo, CO; Salinas, CA; San Luis Obispo-Paso Robles, CA; Santa Fe-Espanola, NM; Sarasota-Bradenton-Punta Gorda, FL; and Tucson, AZ. Five were among the cleanest cities for ozone and for one of the two particle pollution measures: Bismarck, ND; Brownsville-Harlingen-Raymondville, TX; Duluth, MN-WI; Honolulu, HI; and Port St. Lucie-Sebastian-Vero Beach, FL.

23.8 Million

The number of people in the US who live in counties where the outdoor air failed all three tests.

People at risk

Looking at the nation as a whole, the ***American Lung Association State of the Air 2010*** finds—

- **Nearly six of ten people (58%) in the United States lives in counties that have unhealthful levels of either ozone or particle pollution.**

  Almost 175.3 million Americans live in the 445 counties where they are exposed to unhealthful levels of air pollution in the form of either ozone or short-term or year-round levels of particles.

- **Over half the people in the United States (56%) live in areas with unhealthful levels of ozone.**

  Counties that were graded F for ozone levels have a combined population of almost 167.3 million. These people live in the 414 counties where the monitored air quality places them at risk for decreased lung function, respiratory infection, lung inflammation and aggravation of respiratory illness. The actual number who breathe unhealthy levels of ozone is likely much larger, since this number does not include people who live in adjacent counties in metropolitan areas where no monitors exist.

- **Nearly one-quarter (23%) of people in the United States live in an area with unhealthful short-term levels of particle pollution.**

  Nearly 70.4 million Americans live in 94 counties that experienced too many days with unhealthy spikes in particle pollution, a decrease from the last report. Short-term spikes in particle pollution can last from hours to several days and can increase the risk of heart attacks, strokes and emergency-room visits for asthma and cardiovascular disease, and most importantly, can increase the risk of early death.

- **Roughly one in ten (9.6%) people in the United States live in an area with unhealthful year-round levels of particle pollution.**

  Almost 28.9 million U.S. residents live in areas where chronic levels are regularly a threat to their health. Even when levels are fairly low, exposure to particles over time can increase risk of hospitalization for asthma, damage to the lungs and, significantly, increase the risk of premature death.

- **Roughly one in 13 people—some 23.8 million in the United States—live in 18 counties with unhealthful levels of all three: ozone and short-term and year-round particle pollution.**

With the risks from airborne pollution so great, the American Lung Association seeks to inform people who may be in danger. Many people are at greater risk because of their age or because they have asthma or other chronic lung, cardiovascular disease or diabetes. Here are the numbers of people in each at-risk group.

- **People with Asthma**—Approximately 3.9 million children and over 10.7 million adults with asthma live in parts of the United States with very high levels of ozone. Nearly 4.6 million adults and nearly 1.7 million children with asthma live in areas with high levels of short-term particle pollution. Nearly 1.8 million adults and over 721,000 children with asthma live in counties with unhealthful levels of year-round particle pollution.
- **Older and Younger**—Over 19.8 million adults age 65 and over and nearly 41.7 million children age 18 and under live in counties with unhealthful ozone levels. Nearly 8.2 million seniors and over 17.6 million children live in counties with unhealthful short-term levels of particle pollution. Over 3.1 million seniors and nearly 7.7 million children live in counties with unhealthful levels of year-round particle pollution.
- **Chronic Bronchitis and Emphysema**—Over 5.4 million people with chronic bronchitis and nearly 2.1 million with emphysema live in counties with unhealthful ozone levels. Nearly 2.3 million people with chronic bronchitis and over 845,000 with emphysema live in counties with unhealthful levels of short-term particle pollution. Nearly 1.0 million people with chronic bronchitis and more than 330,000 with emphysema live in counties with unhealthful year-round levels of particle pollution.
- **Cardiovascular Disease**—Nearly 18.6 million people with cardiovascular diseases live in counties with unhealthful levels of short-term particle pollution; nearly 7.4 million live in counties with unhealthful levels of year-round particle pollution. Cardiovascular diseases include coronary heart disease, heart attacks, strokes, hypertension and angina pectoris.
- **Diabetes**—Nearly 4.5 million people with diabetes live in counties with unhealthful levels of short-term particle pollution; nearly 1.9 million live in counties with unhealthful levels of year-round particle pollution. Research indicates that because diabetics are already at higher risk of cardiovascular disease, they may face increased risk due to the impact of particle pollution on their cardiovascular systems.
- **Poverty**—Over 20.8 million people with incomes meeting the federal poverty definition live in counties with unhealthful levels of ozone. Over 9.8 million people in poverty live in counties with unhealthful levels of short-term particle pollution, and nearly 4.4 million live in counties with unhealthful year-round levels of particle pollution. Evidence shows that people who have low incomes may face higher risk from air pollution.

What needs to be done to get healthy air

Many major challenges require the Administration and Congress to take steps to protect the health of the public. Here are a few that the American Lung Association calls for to improve the air we all breathe.

- **Clean up dirty power plants.** Coal-fired power plants are among the largest contributors to particulate pollution, ozone, mercury, and global warming. The EPA should immediately take action to reduce emissions and expand clean-up requirements for power plants nationwide. Congress should also pass the Clean Air Act Amendments of 2010, S. 2995, a bill that will cut life-threatening emissions from power plants.
- **Clean up the existing fleet of dirty diesel** vehicles and heavy equipment. Rules EPA put in effect over the past several years mean that new diesel vehicles and equipment must be much cleaner. Still, the vast majority of diesel trucks, buses and heavy equipment (such as bulldozers) will likely be in use for thousands more miles, spewing dangerous diesel exhaust into communities and

neighborhoods. The good news is that affordable technology exists to cut emissions by 90 percent. Congress needs to fund EPA's diesel cleanup ("retrofit") program. Congress should also require that clean diesel equipment should be used in federally-funded construction programs.

- **Strengthen the ozone standards.** The Lung Association urges the EPA to adopt a much tighter, more protective national air quality standard for ozone, set at 60 parts per billion. The EPA is currently considering strengthening the standard adopted in March 2008, which they now believe was not strong enough to protect health against the widespread harm from ozone smog. The 2008 decision set 75 ppb as the standard, despite the unanimous recommendations of EPA's official science advisors that such a level would allow too much ozone to meet the requirements of the Clean Air Act. The American Lung Association challenged the 2008 decision in court, along with several states, public health and environmental groups. In January 2010, the EPA proposed a range for the new standard that met the earlier recommendations of the expert panel and the nation's leading public health organizations. EPA will announce the decision on the new standard in August 2010.
- **Strengthen the particle pollution standards.** In 2006, EPA failed to strengthen the annual standard for fine particles, despite the near unanimous recommendation by their official science advisors. EPA lowered the 24-hour standard, though not to the level the Lung Association recommended. EPA can save thousands of lives each year by dramatically strengthening the annual average and the 24-hour standards. In 2009, the Lung Association challenged that 2006 standard in the U.S. Circuit Court and won. EPA will issue a new proposal for the particle pollution standards in November 2010.
- **Clean up harmful emissions from tailpipes in cars.** EPA needs to set new pollution standards for cars and automobile fuels to reduce nitrogen oxides, hydrocarbons, and particle pollution emissions.

What you can do

Individual citizens can do a great deal to help reduce air pollution outdoors as well. Simple, but effective ways include—

- **Drive less.** Combine trips, walk, bike, carpool or vanpool, and use buses, subways or other alternatives to driving. Vehicle emissions are a major source of air pollution. Support community plans that provide ways to get around that don't require a car, such as more sidewalks, bike trails and transit systems.
- **Don't burn wood or trash.** Burning firewood and trash are among the largest sources of particles in many parts of the country. If you must use a fireplace or stove for heat, convert your woodstoves to natural gas, which has far fewer polluting emissions. Compost and recycle as much as possible and dispose of other waste properly; don't burn it. Support efforts in your community to ban outdoor burning of construction and yard wastes. Avoid the use of outdoor hydronic heaters, also called outdoor wood boilers, which are often much more polluting than woodstoves.
- **Make sure your local school system requires clean school buses,** which includes replacing or retrofitting old school buses with filters and other equipment to reduce emissions. Make sure your local schools don't idle their buses, a step that can immediately reduce emissions.
- **Get involved.** Participate in your community's review of its air pollution plans and support state and local efforts to clean up air pollution. To find your local air pollution control agency, go to www.4cleanair.org.
- **Use less electricity.** Turn out the lights and use energy-efficient appliances. Generating electricity is one of the biggest sources of pollution, particularly in the eastern United States.
- **Send a message to decision makers.** Send an email or fax to urge Congress to support the steps to strengthen the Clean Air Act to clean up power plants. Log on at www.lungusa.org to see how easy that can be.

People at Risk from Short-term Particle Pollution (24-Hour $PM_{2.5}$)

	Chronic Diseases							Age Groups			
In Counties where the Grades were:	**Adult Asthma**	**Pediatric Asthma**	**Chronic Bronchitis**	**Emphysema**	**CV Disease**	**Diabetes**	**Poverty**	**Under 18**	**65 and Over**	**Total Population**	**Number of Counties**
Grade A (0.0)	1,431,045	538,770	753,544	288,600	6,250,128	1,512,821	3,228,313	5,723,307	2,860,846	23,087,491	114
Grade B (0.3-0.9)	2,691,951	960,511	1,362,344	524,175	11,332,037	2,660,422	4,596,285	10,203,451	5,128,559	41,428,716	174
Grade C (1.0-2.0)	3,147,072	1,098,267	1,644,294	643,300	13,785,258	3,259,333	5,798,918	11,666,775	6,391,419	49,173,334	145
Grade D (2.1-3.2)	1,424,175	539,427	747,274	279,599	6,136,573	1,558,701	2,972,611	5,730,283	2,651,199	22,976,485	46
Grade F (3.3+)	4,563,627	1,659,325	2,270,972	845,600	18,591,429	4,451,899	9,817,153	17,626,836	8,160,951	70,364,400	94
National Population in Counties with $PM_{2.5}$ Monitors	13,732,816	4,976,063	7,033,360	2,683,455	58,254,368	13,977,830	27,511,690	52,860,236	26,265,620	214,763,357	644

People at Risk from Year-Round Particle Pollution (Annual $PM_{2.5}$)

	Chronic Diseases							Age Groups			
In Counties where the Grades were:	**Adult Asthma**	**Pediatric Asthma**	**Chronic Bronchitis**	**Emphysema**	**CV Disease**	**Diabetes**	**Poverty**	**Under 18**	**65 and Over**	**Total Population**	**Number of Counties**
Pass	9,769,611	3,461,755	4,994,517	1,924,368	41,564,886	9,851,469	18,406,379	36,773,916	18,930,906	151,315,340	483
Fail	1,789,925	721,700	907,245	330,935	7,357,186	1,884,302	4,387,525	7,666,525	3,133,109	28,856,635	23
National Population in Counties with $PM_{2.5}$ Monitors	13,732,816	4,976,063	7,033,360	2,683,455	58,254,368	13,977,830	27,511,690	52,860,236	26,265,620	214,763,357	644

People at Risk from Ozone

		Chronic Diseases					Age Groups			
		Adult Asthma	**Pediatric Asthma**	**Chronic Bronchitis**	**Emphysema**	**Poverty**	**Under 18**	**65 and Over**	**Total Population**	**Number of Counties**
Grade A	(0.0)	536,586	186,444	282,356	110,483	967,871	1,980,576	1,111,564	8,440,255	49
Grade B	(0.3-0.9)	590,051	229,608	317,863	123,585	1,243,600	2,439,097	1,239,771	9,729,598	60
Grade C	(1.0-2.0)	1,094,162	385,679	596,341	240,468	2,200,951	4,097,001	2,504,508	17,649,385	111
Grade D	(2.1-3.2)	646,298	222,060	341,007	136,108	1,193,926	2,358,921	1,393,883	10,116,082	56
Grade F	(3.3+)	10,749,030	3,924,615	5,442,903	2,053,967	20,809,913	41,690,791	19,815,294	167,254,009	414
National Population in Counties with Ozone Monitors		14,126,196	5,108,044	7,239,827	2,765,142	27,436,753	54,262,212	27,076,958	220,847,465	749

Note: The State of the Air 2010 covers the period 2006-2008. The Appendix provides a full discussion of the methodology.

People at Risk In 25 U.S. Cities Most Polluted by Short-term Particle Pollution (24-hour $PM_{2.5}$)

2010 Rank[1]	Metropolitan Statistical Areas	Total Population[2]	Under 18[3]	65 and Over[3]	Pediatric Asthma[4,8]	Adult Asthma[5,8]	Chronic Bronchitis[6,8]	Emphysema[7,8]	CV Disease[9]	Diabetes[10]	Poverty[11]
1	Bakersfield, CA	800,458	238,789	71,678	22,479	46,597	23,265	7,790	181,207	44,207	156,128
2	Fresno-Madera, CA	1,057,486	311,788	104,922	29,351	62,100	31,280	10,965	248,680	60,964	222,540
3	Pittsburgh-New Castle, PA	2,441,464	500,897	420,508	47,153	178,047	88,152	38,601	780,756	180,882	285,428
4	Los Angeles-Long Beach-Riverside, CA	17,786,419	4,695,757	1,900,610	442,040	1,094,827	556,680	200,338	4,484,079	1,104,703	2,394,160
5	Birmingham-Hoover-Cullman, AL	1,198,932	290,401	157,265	27,338	70,565	39,978	15,778	336,620	102,410	151,234
6	Sacramento--Arden-Arcade--Yuba City, CA-NV	2,417,404	591,377	293,951	55,670	153,359	78,640	29,653	647,176	160,164	285,352
7	Salt Lake City-Ogden-Clearfield, UT	1,717,261	518,277	150,699	48,788	100,197	50,204	16,978	393,363	74,859	141,927
8	Visalia-Porterville, CA	426,276	135,427	40,821	12,749	24,202	12,169	4,249	96,539	23,644	90,369
9	Modesto, CA	510,694	145,476	53,728	13,695	30,520	15,491	5,581	124,778	30,713	72,561
10	Hanford-Corcoran, CA	149,518	40,715	11,487	3,833	8,930	4,349	1,308	32,288	7,759	22,566
11	Merced, CA	246,117	76,722	24,433	7,222	14,091	7,080	2,490	56,327	13,791	52,005
12	Philadelphia-Camden-Vineland, PA-NJ-DE-MD	6,398,896	1,528,290	846,470	143,868	443,728	214,554	84,875	1,808,716	412,970	712,300
13	Provo-Orem, UT	540,820	188,783	34,748	17,771	29,278	13,810	3,948	100,258	18,511	62,642
14	Phoenix-Mesa-Scottsdale, AZ	4,281,899	1,168,524	493,850	110,000	304,097	133,169	49,604	1,089,057	234,900	564,558
15	Stockton, CA	672,388	194,385	68,391	18,299	39,916	20,227	7,204	162,098	39,865	108,919
16	Chicago-Naperville-Michigan City, IL-IN-WI	9,793,036	2,504,341	1,087,551	235,751	580,310	314,388	115,977	2,564,659	605,408	1,139,254
17	San Diego-Carlsbad-San Marcos, CA	3,001,072	744,470	337,004	70,082	188,661	95,863	34,760	774,396	190,719	364,576
18	Washington-Baltimore-Northern Virginia, DC-MD-VA-WV	8,249,194	1,984,957	894,778	186,856	585,428	271,393	99,323	2,208,468	520,827	624,420
18	New York-Newark-Bridgeport, NY-NJ-CT-PA	22,154,752	5,178,014	2,889,985	487,436	1,472,232	743,282	290,311	6,225,658	1,409,941	2,585,219
18	Logan, UT-ID	125,070	39,979	10,051	3,764	7,117	3,411	1,065	25,688	4,849	14,174
21	Eugene-Springfield, OR	346,560	69,455	49,662	6,538	23,760	12,190	4,864	103,115	19,293	53,423
22	Harrisburg-Carlisle-Lebanon, PA	660,042	145,638	97,953	13,710	47,390	22,934	9,456	197,208	45,243	59,172
23	San Jose-San Francisco-Oakland, CA	7,354,555	1,657,339	889,331	156,016	480,165	248,277	93,911	2,050,091	509,263	662,858
23	Indianapolis-Anderson-Columbus, IN	2,035,327	532,625	232,310	50,140	137,759	65,257	24,517	537,022	142,759	234,047
23	Allentown-Bethlehem-Easton, PA-NJ	808,210	182,515	120,493	17,181	57,072	27,849	11,508	239,635	55,042	72,641

Notes:
1. Cities are ranked using the highest weighted average for any county within that Combined or Metropolitan Statistical Area.
2. **Total Population** represents the at-risk populations for all counties within the respective Combined or Metropolitan Statistical Area.
3. Those **18 & under** and **65 & over** are vulnerable to $PM_{2.5}$ and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2008 based on national rates (NHIS) applied to county population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2008 based on state rates (BRFSS) applied to county population estimates (U.S. Census).
6. **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2008, based on national rates (NHIS) applied to county population estimates (U.S. Census).
7. **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to county population estimates (U.S. Census).
8. Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
9. **CV disease** estimates are based on National Heart Lung and Blood Institute (NHLBI) estimates of cardiovascular disease applied to county population estimates (U.S. Census).
10. **Diabetes** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to county population estimates (U.S. Census).
11. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.

People at Risk In 25 U.S. Cities Most Polluted by Year-Round Particle Pollution (Annual $PM_{2.5}$)

2010 Rank[1]	Metropolitan Statistical Areas	Total Population[2]	Under 18[3]	65 and Over[3]	Pediatric Asthma[4,8]	Adult Asthma[5,8]	Chronic Bronchitis[6,8]	Emphysema[7,8]	CV Disease[9]	Diabetes[10]	Poverty[11]
1	Phoenix-Mesa-Scottsdale, AZ	4,281,899	1,168,524	493,850	110,000	304,097	133,169	49,604	1,089,057	234,900	564,558
2	Bakersfield, CA	800,458	238,789	71,678	22,479	46,597	23,265	7,790	181,207	44,207	156,128
3	Los Angeles-Long Beach-Riverside, CA	17,786,419	4,695,757	1,900,610	442,040	1,094,827	556,680	200,338	4,484,079	1,104,703	2,394,160
3	Visalia-Porterville, CA	426,276	135,427	40,821	12,749	24,202	12,169	4,249	96,539	23,644	90,369
5	Pittsburgh-New Castle, PA	2,441,464	500,897	420,508	47,153	178,047	88,152	38,601	780,756	180,882	285,428
6	Fresno-Madera, CA	1,057,486	311,788	104,922	29,351	62,100	31,280	10,965	248,680	60,964	222,540
7	Birmingham-Hoover-Cullman, AL	1,198,932	290,401	157,265	27,338	70,565	39,978	15,778	336,620	102,410	151,234
8	Hanford-Corcoran, CA	149,518	40,715	11,487	3,833	8,930	4,349	1,308	32,288	7,759	22,566
9	Cincinnati-Middletown-Wilmington, OH-KY-IN	2,198,337	549,333	264,870	51,712	157,199	72,080	27,598	598,538	159,753	244,738
9	St. Louis-St. Charles-Farmington, MO-IL	2,903,894	697,769	378,775	65,686	183,117	97,327	38,410	819,824	200,971	327,896
11	Charleston, WV	303,944	66,579	47,792	6,267	22,796	10,760	4,586	94,143	28,970	47,793
11	Detroit-Warren-Flint, MI	5,354,225	1,308,684	656,566	123,194	395,818	178,282	69,051	1,489,633	371,145	742,617
11	Weirton-Steubenville, WV-OH	122,054	23,865	23,413	2,247	9,324	4,528	2,075	41,043	11,747	18,869
14	Louisville-Jefferson County-Elizabethtown-Scottsburg, KY-IN	1,380,591	334,788	174,598	31,519	100,030	46,144	18,053	387,276	104,392	175,744
14	Modesto, CA	510,694	145,476	53,728	13,695	30,520	15,491	5,581	124,778	30,713	72,561
16	Atlanta-Sandy Springs-Gainesville, GA-AL	5,729,304	1,539,475	489,978	144,921	352,973	177,744	59,961	1,394,748	405,484	677,521
16	Houston-Baytown-Huntsville, TX	5,829,620	1,636,150	485,730	154,019	305,885	177,361	59,438	1,387,414	399,750	790,893
16	Huntington-Ashland, WV-KY-OH	284,234	61,064	45,266	5,749	21,366	9,953	4,194	86,407	24,878	51,840
19	Cleveland-Akron-Elyria, OH	2,887,492	674,060	415,419	63,454	210,320	99,014	40,752	851,201	228,028	370,946
19	Macon-Warner Robins-Fort Valley, GA	390,674	101,778	46,661	9,580	24,200	12,584	4,808	104,349	30,300	63,795
21	Hagerstown-Martinsburg, MD-WV	263,753	62,949	34,072	5,925	19,009	8,708	3,366	72,491	19,603	26,016
21	Knoxville-Sevierville-La Follette, TN	1,041,955	229,952	154,126	21,647	72,575	35,954	14,714	307,808	86,888	151,230
23	Augusta-Richmond County, GA-SC	534,218	135,645	65,742	12,769	33,240	17,488	6,776	146,046	41,759	91,978
24	Indianapolis-Anderson-Columbus, IN	2,035,327	532,625	232,310	50,140	137,759	65,257	24,517	537,022	142,759	234,047
25	Parkersburg-Marietta, WV-OH	160,678	34,222	26,995	3,221	12,066	5,742	2,499	50,725	14,845	25,740
25	York-Hanover-Gettysburg, PA	525,702	119,487	73,383	11,248	37,477	18,007	7,258	153,182	35,016	40,986

Notes:
1. Cities are ranked using the highest design value for any county within that Combined or Metropolitan Statistical Area.
2. **Total Population** represents the at-risk populations for all counties within the respective Combined or Metropolitan Statistical Area.
3. Those **18 & under** and **65 & over** are vulnerable to $PM_{2.5}$ and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2008 based on national rates (NHIS) applied to county population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2008 based on state rates (BRFSS) applied to county population estimates (U.S. Census).
6. **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2008, based on national rates (NHIS) applied to county population estimates (U.S. Census).
7. **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to county population estimates (U.S. Census).
8. Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
9. **CV disease** estimates are based on National Heart Lung and Blood Institute (NHLBI) estimates of cardiovascular disease applied to county population estimates (U.S. Census).
10. **Diabetes** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to county population estimates (U.S. Census).
11. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.

People at Risk In 25 Most Ozone-Polluted Cities

2010 Rank[1]	Metropolitan Statistical Areas	Total Population[2]	Under 18[3]	65 and Over[3]	Pediatric Asthma[4,8]	Adult Asthma[5,8]	Chronic Bronchitis[6,8]	Emphysema[7,8]	Poverty[9]
1	Los Angeles-Long Beach-Riverside, CA	17,786,419	4,695,757	1,900,610	442,040	1,094,827	556,680	200,338	2,394,160
2	Bakersfield, CA	800,458	238,789	71,678	22,479	46,597	23,265	7,790	156,128
3	Visalia-Porterville, CA	426,276	135,427	40,821	12,749	24,202	12,169	4,249	90,369
4	Fresno-Madera, CA	1,057,486	311,788	104,922	29,351	62,100	31,280	10,965	222,540
5	Sacramento--Arden-Arcade--Yuba City, CA-NV	2,417,404	591,377	293,951	55,670	153,359	78,640	29,653	285,352
6	Hanford-Corcoran, CA	149,518	40,715	11,487	3,833	8,930	4,349	1,308	22,566
7	Houston-Baytown-Huntsville, TX	5,829,620	1,636,150	485,730	154,019	305,885	177,361	59,438	790,893
8	San Diego-Carlsbad-San Marcos, CA	3,001,072	744,470	337,004	70,082	188,661	95,863	34,760	364,576
9	San Luis Obispo-Paso Robles, CA	265,297	49,431	38,323	4,653	18,160	9,359	3,670	30,243
10	Charlotte-Gastonia-Salisbury, NC-SC	2,338,289	597,972	247,933	56,291	133,010	75,049	27,301	281,161
11	Phoenix-Mesa-Scottsdale, AZ	4,281,899	1,168,524	493,850	110,000	304,097	133,169	49,604	564,558
12	Merced, CA	246,117	76,722	24,433	7,222	14,091	7,080	2,490	52,005
13	Dallas-Fort Worth, TX	6,622,032	1,831,927	579,393	172,450	348,930	201,876	68,125	820,338
14	Knoxville-Sevierville-La Follette, TN	1,041,955	229,952	154,126	21,647	72,575	35,954	14,714	151,230
15	El Centro, CA	163,972	47,801	17,493	4,500	9,663	4,855	1,732	32,833
16	New York-Newark-Bridgeport, NY-NJ-CT-PA	22,154,752	5,178,014	2,889,985	487,436	1,472,232	743,282	290,311	2,585,219
16	Washington-Baltimore-Northern Virginia, DC-MD-VA-WV	8,249,194	1,984,957	894,778	186,856	585,428	271,393	99,323	624,420
18	Cincinnati-Middletown-Wilmington, OH-KY-IN	2,198,337	549,333	264,870	51,712	157,199	72,080	27,598	244,738
19	Atlanta-Sandy Springs-Gainesville, GA-AL	5,729,304	1,539,475	489,978	144,921	352,973	177,744	59,961	677,521
19	Birmingham-Hoover-Cullman, AL	1,198,932	290,401	157,265	27,338	70,565	39,978	15,778	151,234
21	Las Vegas-Paradise-Pahrump, NV	1,910,121	501,919	207,091	47,248	119,491	60,364	22,013	212,098
22	Modesto, CA	510,694	145,476	53,728	13,695	30,520	15,491	5,581	72,561
22	Philadelphia-Camden-Vineland, PA-NJ-DE-MD	6,398,896	1,528,290	846,470	143,868	443,728	214,554	84,875	712,300
24	Chico, CA	220,337	45,934	33,068	4,324	14,641	7,514	2,996	44,569
25	Baton Rouge-Pierre Part, LA	797,208	202,763	82,256	19,088	48,156	25,357	9,029	122,432

Notes:
1. Cities are ranked using the highest weighted average for any county within that Combined or Metropolitan Statistical Area.
2. Total Population represents the at-risk populations for all counties within the respective Combined or Metropolitan Statistical Area.
3. Those **18 & under** and **65 & over** are vulnerable to $PM_{2.5}$ and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2008 based on national rates (NHIS) applied to county population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2008 based on state rates (BRFSS) applied to county population estimates (U.S. Census).
6. **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2008, based on national rates (NHIS) applied to county population estimates (U.S. Census).
7. **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to county population estimates (U.S. Census).
8. Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
9. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.

People at Risk in 25 Counties Most Polluted by Short-term Particle Pollution (24-hour $PM_{2.5}$)

				At-Risk Groups									High $PM_{2.5}$ Days in Unhealthy Ranges, 2006–2008	
2010 Rank[1]	County	ST	Total Population[2]	Under 18[3]	65 and Over[3]	Pediatric Asthma[4,8]	Adult Asthma[5,8]	Chronic Bronchitis[6,8]	Emphysema[7,8]	CV Disease[9]	Diabetes[10]	Poverty[11]	Weighted Avg.[12]	Grade[13]
1	Kern	CA	800,458	238,789	71,678	22,479	46,597	23,265	7,790	181,207	44,207	156,128	55.2	F
2	Fresno	CA	909,153	270,512	89,615	25,465	53,191	26,798	9,390	213,027	52,230	197,265	53.3	F
3	Allegheny	PA	1,215,103	250,672	204,705	23,597	88,545	43,690	18,952	385,161	89,099	145,977	45.5	F
4	Riverside	CA	2,100,516	583,297	241,428	54,909	126,317	63,620	23,196	513,861	125,986	260,109	27.3	F
5	Jefferson	AL	659,503	157,990	89,377	14,873	38,956	22,217	8,909	188,555	57,398	88,637	25.0	F
6	Los Angeles	CA	9,862,049	2,549,168	1,054,932	239,969	611,881	311,413	112,035	2,508,754	618,355	1,482,051	19.7	F
7	Sacramento	CA	1,394,154	362,492	158,340	34,124	86,442	44,138	16,274	359,465	88,749	182,573	19.5	F
8	Salt Lake	UT	1,022,651	302,184	89,440	28,446	60,222	30,200	10,192	236,479	44,953	89,216	18.2	F
9	Tulare	CA	426,276	135,427	40,821	12,749	24,202	12,169	4,249	96,539	23,644	90,369	15.3	F
10	Stanislaus	CA	510,694	145,476	53,728	13,695	30,520	15,491	5,581	124,778	30,713	72,561	13.0	F
11	Kings	CA	149,518	40,715	11,487	3,833	8,930	4,349	1,308	32,288	7,759	22,566	12.7	F
12	San Bernardino	CA	2,015,355	590,810	170,130	55,617	118,301	59,184	19,520	458,534	111,974	288,756	11.2	F
12	Merced	CA	246,117	76,722	24,433	7,222	14,091	7,080	2,490	56,327	13,791	52,005	11.2	F
14	Philadelphia	PA	1,447,395	361,859	185,962	34,064	100,391	46,961	18,156	390,839	88,611	331,349	11.0	F
15	Utah	UT	530,837	185,393	33,761	17,452	28,728	13,536	3,851	98,073	18,088	61,648	10.7	F
16	Pinal	AZ	327,301	85,283	42,819	8,028	23,791	10,272	3,936	84,882	18,309	43,350	10.2	F
17	San Joaquin	CA	672,388	194,385	68,391	18,299	39,916	20,227	7,204	162,098	39,865	108,919	9.2	F
18	Cook	IL	5,294,664	1,313,534	624,187	123,651	311,719	171,660	64,274	1,408,857	329,408	767,182	8.7	F
19	San Diego	CA	3,001,072	744,470	337,004	70,082	188,661	95,863	34,760	774,396	190,719	364,576	8.5	F
20	Union	NJ	523,249	129,721	65,627	12,211	33,748	17,336	6,769	145,343	33,320	45,220	8.3	F
20	Baltimore City	MD	636,919	153,154	75,404	14,417	45,370	20,875	7,808	171,278	41,126	116,585	8.3	F
20	Cache	UT	112,616	35,915	8,563	3,381	6,381	3,047	922	22,639	4,237	13,020	8.3	F
23	Orange	CA	3,010,759	765,649	342,841	72,075	188,534	96,726	35,888	790,757	195,691	294,758	8.2	F
24	Lane	OR	346,560	69,455	49,662	6,538	23,760	12,190	4,864	103,115	19,293	53,423	8.0	F
25	Dauphin	PA	256,562	59,937	35,138	5,642	18,135	8,797	3,564	75,118	17,200	27,090	7.3	F
25	Washington	PA	206,407	41,852	35,648	3,940	15,099	7,464	3,264	66,055	15,299	20,690	7.3	F
25	Plumas	CA	20,275	3,525	4,041	332	1,440	778	360	7,082	1,791	2,408	7.3	F

Notes:

1. Counties are ranked by weighted average. See note 12 below.
2. **Total Population** represents the at-risk populations in counties with $PM_{2.5}$ monitors.
3. Those **18 & under** and **65 & over** are vulnerable to $PM_{2.5}$ and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2008 based on national rates (NHIS) applied to county population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2008 based on state rates (BRFSS) applied to county population estimates (U.S. Census).
6. **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2008, based on national rates (NHIS) applied to county population estimates (U.S. Census).
7. **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to county population estimates (U.S. Census).
8. Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
9. **CV disease** estimates are based on National Heart Lung and Blood Institute (NHLBI) estimates of cardiovascular disease applied to county population estimates (U.S. Census).
10. **Diabetes** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to county population estimates (U.S. Census).
11. Poverty estimates come from the U.S. Census Bureau and are for all ages.
12. The **Weighted Average** was derived by counting the number of days in each unhealthful range (orange, red, purple, maroon) in each year (2006-2008), multiplying the total in each range by the assigned standard weights (i.e., 1 for orange, 1.5 for red, 2.0 for purple, 2.5 for maroon), and calculating the average.
13. **Grade** is assigned by weighted average as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.

People at Risk in 25 Counties Most Polluted by Year-Round Particle Pollution (Annual $PM_{2.5}$)

2010 Rank[1]	County	ST	Total Population[2]	At-Risk Groups									$PM_{2.5}$ Annual, 2006–2008	
				Under 18[3]	65 and Over[3]	Pediatric Asthma[4,8]	Adult Asthma[5,8]	Chronic Bronchitis[6,8]	Emphysema[7,8]	CV Disease[9]	Diabetes[10]	Poverty[11]	Design Value[12]	Grade[13]
1	Pinal	AZ	327,301	85,283	42,819	8,028	23,791	10,272	3,936	84,882	18,309	43,350	21.6	FAIL
2	Kern	CA	800,458	238,789	71,678	22,479	46,597	23,265	7,790	181,207	44,207	156,128	21.5	FAIL
3	Riverside	CA	2,100,516	583,297	241,428	54,909	126,317	63,620	23,196	513,861	125,986	260,109	19.7	FAIL
3	Tulare	CA	426,276	135,427	40,821	12,749	24,202	12,169	4,249	96,539	23,644	90,369	19.7	FAIL
5	Allegheny	PA	1,215,103	250,672	204,705	23,597	88,545	43,690	18,952	385,161	89,099	145,977	18.3	FAIL
6	Fresno	CA	909,153	270,512	89,615	25,465	53,191	26,798	9,390	213,027	52,230	197,265	17.7	FAIL
7	Jefferson	AL	659,503	157,990	89,377	14,873	38,956	22,217	8,909	188,555	57,398	88,637	17.3	FAIL
7	San Bernardino	CA	2,015,355	590,810	170,130	55,617	118,301	59,184	19,520	458,534	111,974	288,756	17.3	FAIL
9	Kings	CA	149,518	40,715	11,487	3,833	8,930	4,349	1,308	32,288	7,759	22,566	17	FAIL
10	Hamilton	OH	851,494	206,018	114,701	19,394	61,384	28,595	11,457	242,599	64,838	113,411	15.7	FAIL
10	Madison	IL	268,078	61,931	37,811	5,830	16,217	9,045	3,628	76,653	18,072	32,953	15.7	FAIL
12	Los Angeles	CA	9,862,049	2,549,168	1,054,932	239,969	611,881	311,413	112,035	2,508,754	618,355	1,482,051	15.6	FAIL
13	Wayne	MI	1,949,929	507,861	234,544	47,808	141,145	63,463	24,562	529,981	131,973	393,147	15.4	FAIL
13	Kanawha	WV	191,018	41,029	31,892	3,862	14,381	6,848	2,991	60,630	18,639	29,656	15.4	FAIL
13	Brooke	WV	23,520	4,396	4,588	414	1,825	883	406	8,018	2,459	2,674	15.4	FAIL
16	Clark	IN	106,673	25,813	13,601	2,430	7,416	3,540	1,377	29,603	7,886	11,286	15.3	FAIL
16	Stanislaus	CA	510,694	145,476	53,728	13,695	30,520	15,491	5,581	124,778	30,713	72,561	15.3	FAIL
18	Clayton	GA	273,718	80,762	18,664	7,603	16,334	8,035	2,517	61,071	17,757	39,619	15.2	FAIL
18	Harris	TX	3,984,349	1,145,274	316,399	107,812	206,787	119,643	39,499	929,844	267,659	603,105	15.2	FAIL
18	Cabell	WV	94,631	19,658	15,551	1,851	7,157	3,313	1,396	28,724	8,822	18,725	15.2	FAIL
21	Cobb	GA	698,158	182,460	59,274	17,176	43,312	22,154	7,564	175,077	50,882	62,563	15.1	FAIL
21	Cuyahoga	OH	1,283,925	301,457	195,113	28,378	93,253	44,264	18,682	385,175	103,383	199,694	15.1	FAIL
21	Bibb	GA	155,216	41,727	20,251	3,928	9,484	4,994	1,990	42,225	12,257	32,923	15.1	FAIL
24	Loudon	TN	46,445	9,901	9,661	932	3,262	1,666	788	15,289	4,269	5,106	14.9	PASS
24	Beaver	PA	172,476	35,214	31,681	3,315	12,565	6,308	2,850	56,769	13,220	19,600	14.9	PASS
24	Berkeley	WV	102,044	26,497	11,108	2,494	7,294	3,261	1,199	26,568	8,215	11,253	14.9	PASS

Notes:

1. Counties are ranked by design value. See note 12 below.
2. **Total Population** represents the at-risk populations in counties with $PM_{2.5}$ monitors.
3. Those **18 & under** and **65 & over** are vulnerable to $PM_{2.5}$ and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2008 based on national rates (NHIS) applied to county population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2008 based on state rates (BRFSS) applied to county population estimates (U.S. Census).
6. **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2008, based on national rates (NHIS) applied to county population estimates (U.S. Census).
7. **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to county population estimates (U.S. Census).
8. Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
9. **CV disease** estimates are based on National Heart Lung and Blood Institute (NHLBI) estimates of cardiovascular disease applied to county population estimates (U.S. Census).
10. **Diabetes** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to county population estimates (U.S. Census).
11. Poverty estimates come from the U.S. Census Bureau and are for all ages.
12. The **Design Value** is the calculated concentration of a pollutant based on the form of the National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality in a county meets the standard. Design values for the annual $PM_{2.5}$ concentrations by county were collected from data previously summarized by the EPA and were downloaded on December 1, 2009 from EPA's website at http://www.epa.gov/air/airtrends/values.html.
13. **Grades** are based on EPA's determination of meeting or failure to meet the NAAQS for annual PM2.5 levels during 2006-2008. Counties meeting the NAAQS received grades of Pass; counties not meeting the NAAQS received grades of Fail.

People at Risk in 25 Most Ozone-Polluted Counties

2010 Rank[1]	County	ST	Total Population[2]	At-Risk Groups							High Ozone Days in Unhealthy Ranges, 2006–2008	
				Under 18[3]	65 and Over[3]	Pediatric Asthma[4,8]	Adult Asthma[5,8]	Chronic Bronchitis[6,8]	Emphysema[7,8]	Poverty[9]	Weighted Avg.[10]	Grade[11]
1	San Bernardino	CA	2,015,355	590,810	170,130	55,617	118,301	59,184	19,520	288,756	141.8	F
2	Riverside	CA	2,100,516	583,297	241,428	54,909	126,317	63,620	23,196	260,109	132.8	F
3	Kern	CA	800,458	238,789	71,678	22,479	46,597	23,265	7,790	156,128	115.7	F
4	Tulare	CA	426,276	135,427	40,821	12,749	24,202	12,169	4,249	90,369	110.2	F
5	Los Angeles	CA	9,862,049	2,549,168	1,054,932	239,969	611,881	311,413	112,035	1,482,051	92.3	F
6	Fresno	CA	909,153	270,512	89,615	25,465	53,191	26,798	9,390	197,265	66.2	F
7	El Dorado	CA	176,075	37,896	19,950	3,567	11,707	6,118	2,301	13,692	48.3	F
8	Nevada	CA	97,118	17,384	17,481	1,636	6,832	3,661	1,624	8,848	46.7	F
9	Sacramento	CA	1,394,154	362,492	158,340	34,124	86,442	44,138	16,274	182,573	44.7	F
10	Kings	CA	149,518	40,715	11,487	3,833	8,930	4,349	1,308	22,566	40.0	F
11	Placer	CA	341,945	74,348	52,148	6,999	22,569	11,699	4,776	22,873	39.3	F
12	Harris	TX	3,984,349	1,145,274	316,399	107,812	206,787	119,643	39,499	603,105	35.7	F
13	Mariposa	CA	17,976	3,112	3,377	293	1,265	669	296	2,388	34.2	F
14	San Diego	CA	3,001,072	744,470	337,004	70,082	188,661	95,863	34,760	364,576	33.8	F
15	San Luis Obispo	CA	265,297	49,431	38,323	4,653	18,160	9,359	3,670	30,243	32.0	F
16	Ventura	CA	797,740	206,833	91,279	19,470	49,794	25,737	9,699	68,486	31.3	F
17	Rowan	NC	139,225	32,568	19,841	3,066	8,067	4,711	1,911	21,042	30.0	F
18	Maricopa	AZ	3,954,598	1,083,241	451,031	101,972	280,306	122,897	45,668	521,208	29.0	F
19	Merced	CA	246,117	76,722	24,433	7,222	14,091	7,080	2,490	52,005	28.2	F
20	Tarrant	TX	1,750,091	493,382	149,164	46,445	91,590	53,034	17,837	208,934	27.5	F
21	Sevier	TN	84,835	18,967	12,886	1,785	5,887	2,933	1,219	11,097	26.3	F
22	Mecklenburg	NC	890,515	237,056	73,754	22,316	49,226	27,682	9,234	95,508	26.2	F
23	Imperial	CA	163,972	47,801	17,493	4,500	9,663	4,855	1,732	32,833	24.7	F
24	Fairfield	CT	895,030	223,180	118,119	21,009	57,917	29,990	12,062	71,553	24.2	F
24	Harford	MD	240,351	59,315	28,123	5,584	16,965	7,957	3,033	13,606	24.2	F

Notes:
1. Counties are ranked by weighted average. See note 10 below.
2. **Total Population** represents the at-risk populations in counties with ozone monitors.
3. Those **18 & under** and **65 & over** are vulnerable to ozone and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2008 based on national rates (NHIS) applied to county population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2008 based on state rates (BRFSS) applied to county population estimates (U.S. Census).
6. **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2008, based on national rates (NHIS) applied to county population estimates (U.S. Census).
7. **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to county population estimates (U.S. Census).
8. Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
9. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.
10. The **Weighted Average** was derived by counting the number of days in each unhealthful range (orange, red, purple) in each year (2006-2008), multiplying the total in each range by the assigned standard weights (i.e., 1 for orange, 1.5 for red, 2.0 for purple), and calculating the average.
11. **Grade** is assigned by weighted average as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.

Cleanest U.S. Cities for Short-term Particle Pollution (24-hour $PM_{2.5}$)[1]

Metropolitan Statistical Area	Population
Alexandria, LA	153,105
Amarillo, TX	243,838
Athens-Clarke County, GA	189,264
Austin-Round Rock, TX	1,652,602
Bangor, ME	148,651
Billings, MT	152,005
Bloomington-Normal, IL	165,298
Brownsville-Harlingen-Raymondville, TX	413,336
Cape Coral-Fort Myers, FL	593,136
Champaign-Urbana, IL	224,191
Cheyenne, WY	87,542
Claremont-Lebanon, NH-VT	213,995
Colorado Springs, CO	617,714
Corpus Christi-Kingsville, TX	446,503
Fargo-Wahpeton, ND-MN	218,305
Farmington, NM	122,500
Fayetteville, NC	356,105
Fort Collins-Loveland, CO	292,825
Grand Junction, CO	143,171
Gulfport-Biloxi-Pascagoula, MS	387,725
Hattiesburg, MS	140,781
Jackson-Yazoo City, MS	565,749
Lafayette-Acadiana, LA	542,509
Lincoln, NE	295,486
Longview-Marshall, TX	268,340
McAllen-Edinburg-Pharr, TX	726,604
Oklahoma City-Shawnee, OK	1,275,758
Pueblo, CO	156,737
Salinas, CA	408,238
San Luis Obispo-Paso Robles, CA	265,297
Santa Fe-Espanola, NM	184,629
Sarasota-Bradenton-Punta Gorda, FL	837,883
Springfield, IL	207,389
Springfield, MO	426,144
St. Joseph, MO-KS	126,359
Syracuse-Auburn, NY	723,617
Topeka, KS	229,619
Tucson, AZ	1,012,018

Note:
1. This list represents cities with the lowest levels of short term $PM_{2.5}$ air pollution. Monitors in these cities reported no days with unhealthful $PM_{2.5}$ levels.

Top 25 Cleanest U.S. Cities for Year-Round Particle Pollution (Annual $PM_{2.5}$)[1]

Rank[2]	Design Value[3]	Metropolitan Statistical Area	Population
1	4.4	Cheyenne, WY	87,542
2	4.8	Santa Fe-Espanola, NM	184,629
3	5.2	Honolulu, HI	905,034
4	5.6	Anchorage, AK	364,701
4	5.6	Great Falls, MT	82,026
6	5.8	Tucson, AZ	1,012,018
7	6.3	Amarillo, TX	243,838
8	6.7	Albuquerque, NM	845,913
9	6.8	Flagstaff, AZ	128,558
10	6.9	Bismarck, ND	104,944
11	7.1	Salinas, CA	408,238
12	7.3	Fort Collins-Loveland, CO	292,825
13	7.6	Duluth, MN-WI	274,571
14	7.7	Pueblo, CO	156,737
15	7.8	Cape Coral-Fort Myers, FL	593,136
16	7.9	Palm Bay-Melbourne-Titusville, FL	536,521
16	7.9	Sarasota-Bradenton-Punta Gorda, FL	837,883
18	8.0	Billings, MT	152,005
18	8.0	Fargo-Wahpeton, ND-MN	218,305
18	8.0	Port St. Lucie-Sebastian-Vero Beach, FL	536,083
21	8.1	Lincoln, NE	295,486
21	8.1	San Luis Obispo-Paso Robles, CA	265,297
23	8.3	Bangor, ME	148,651
23	8.3	Burlington-South Burlington, VT	208,460
23	8.3	Midland-Odessa, TX	261,435

Notes:
1. This list represents cities with the lowest levels of annual $PM_{2.5}$ air pollution.
2. Cities are ranked by using the highest design value for any county within that metropolitan area.
3. The **Design Value** is the calculated concentration of a pollutant based on the form of the National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality in a county meets the standard. Design values for the annual $PM_{2.5}$ concentrations by county were collected from data previously summarized by the EPA and were downloaded on December 1, 2009 from EPA's website at http://www.epa.gov/air/airtrends/values.html.

Cleanest U.S. Cities for Ozone Air Pollution[1]

Metropolitan Statistical Area	Population
Bismarck, ND	104,944
Brownsville-Harlingen-Raymondville, TX	413,336
Coeur d'Alene, ID	137,475
Duluth, MN-WI	274,571
Fargo-Wahpeton, ND-MN	218,305
Fayetteville-Springdale-Rogers, AR-MO	443,976
Honolulu, HI	905,034
Laredo, TX	236,941
Lincoln, NE	295,486
Port St. Lucie-Sebastian-Vero Beach, FL	536,083
Rochester, MN	182,924
Sioux Falls, SD	232,930

Note:
1. This list represents cities with no monitored ozone air pollution in unhealthful ranges using the Air Quality Index based on the 2008 ozone NAAQS.

Cleanest Counties for Short-term Particle Pollution (24-hour $PM_{2.5}$)[1]

COUNTY	ST
Anchorage Municipality	AK
Baldwin	AL
Arkansas	AR
Ashley	AR
Faulkner	AR
Polk	AR
Sebastian	AR
Cochise	AZ
Pima	AZ
Humboldt	CA
Mendocino	CA
Monterey	CA
San Luis Obispo	CA
Santa Cruz	CA
Boulder	CO
El Paso	CO
Elbert	CO
Larimer	CO
Mesa	CO
Pueblo	CO
Citrus	FL
Lee	FL
Sarasota	FL
Clarke	GA
Maui	HI
Montgomery	IA
Van Buren	IA
Adams	IL
Champaign	IL
Jersey	IL
Lake	IL
Lasalle	IL
Mclean	IL
Sangamon	IL
St. Clair	IL
Johnson	KS
Linn	KS
Shawnee	KS
Sumner	KS
Campbell	KY
Lafayette Parish	LA
Rapides Parish	LA
Tangipahoa Parish	LA
Middlesex	MA
Aroostook	ME
Cumberland	ME
Hancock	ME
Kennebec	ME
Penobscot	ME
Genesee	MI
Manistee	MI
Missaukee	MI
Buchanan	MO
Cass	MO
Clay	MO
Greene	MO
Jackson	MO
Ste. Genevieve	MO
Bolivar	MS
Forrest	MS
Harrison	MS
Hinds	MS
Jackson	MS
Jones	MS
Lee	MS
Yellowstone	MT
Cumberland	NC
Duplin	NC
Haywood	NC
Orange	NC
Watauga	NC
Billings	ND
Cass	ND
Mercer	ND
Hall	NE
Lancaster	NE
Scotts Bluff	NE
Belknap	NH
Grafton	NH
Rockingham	NH
Sullivan	NH
Grant	NM
Santa Fe	NM
Chaves	NM
Lea	NM
San Juan	NM
Onondaga	NY
St. Lawrence	NY
Medina	OH
Caddo	OK
Mayes	OK
Oklahoma	OK
Ottawa	OK
Josephine	OR
Umatilla	OR
Oconee	SC
Brown	SD
Roane	TN
Brewster	TX
Cameron	TX
Dallas	TX
Harrison	TX
Hidalgo	TX
Nueces	TX
Potter	TX
Travis	TX
Page	VA
Bennington	VT
Campbell	WY
Converse	WY
Fremont	WY
Laramie	WY
Sheridan	WY
Teton	WY

Notes:
1. This list represents counties with the lowest levels of short term $PM_{2.5}$ air pollution. Monitors in these counties reported no days with unhealthful $PM_{2.5}$ levels.

Top 25 Cleanest Counties for Year-Round Particle Pollution (Annual $PM_{2.5}$)[1]

2010 Rank[2]	County	ST	Design Value[3]
1	Elbert	CO	4.4
1	Laramie	WY	4.4
3	Santa Fe	NM	4.8
3	Billings	ND	4.8
3	Sandoval	NM	4.8
6	Maui	HI	4.9
7	Hancock	ME	5.1
7	Essex	NY	5.1
9	Honolulu	HI	5.2
10	Lake	CA	5.3
11	Jackson	SD	5.4
12	Custer	SD	5.5
13	Anchorage Municipality	AK	5.6
13	Cascade	MT	5.6
15	Pima	AZ	5.8
16	St. Lawrence	NY	6.0
17	Douglas	CO	6.3
17	Ashland	WI	6.3
17	Potter	TX	6.3
20	Inyo	CA	6.4
20	Chaves	NM	6.4
22	Mendocino	CA	6.5
22	Mercer	ND	6.5
22	Scotts Bluff	NE	6.5
25	Tooele	UT	6.7
25	Santa Cruz	CA	6.7
25	Bernalillo	NM	6.7

Notes:
1. This list represents counties with the lowest levels of monitored long term $PM_{2.5}$ air pollution.
2. Counties are ranked by design value.
3. The Design Value is the calculated concentration of a pollutant based on the form of the National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality in a county meets the standard. Design values for the annual $PM_{2.5}$ concentrations by county were collected from data previously summarized by the EPA and were downloaded on December 1, 2009 from EPA's website at http://www.epa.gov/air/airtrends/values.html.

Cleanest Counties for Ozone Air Pollution[1]

County	State	
Washington	AR	Fayetteville-Springdale-Rogers, AR-MO
Humboldt	CA	
Lake	CA	
Marin	CA	San Jose-San Francisco-Oakland, CA
Mendocino	CA	
San Francisco	CA	San Jose-San Francisco-Oakland, CA
San Mateo	CA	San Jose-San Francisco-Oakland, CA
Santa Cruz	CA	San Jose-San Francisco-Oakland, CA
Siskiyou	CA	
Sonoma	CA	San Jose-San Francisco-Oakland, CA
St. Lucie	FL	Port St. Lucie-Sebastian-Vero Beach, FL
Honolulu	HI	Honolulu, HI
Palo Alto	IA	
Polk	IA	Des Moines-Newton-Pella, IA
Butte	ID	
Kootenai	ID	Coeur d'Alene, ID
Becker	MN	
Carlton	MN	Duluth, MN-WI
Lyon	MN	
Olmsted	MN	Rochester, MN
Scott	MN	Minneapolis-St. Paul-St. Cloud, MN-WI
St. Louis	MN	Duluth, MN-WI
Flathead	MT	
Swain	NC	
Billings	ND	
Burke	ND	
Burleigh	ND	Bismarck, ND
Cass	ND	Fargo-Wahpeton, ND-MN
Dunn	ND	
Mckenzie	ND	
Mercer	ND	
Oliver	ND	
Douglas	NE	Omaha-Council Bluffs-Fremont, NE-IA
Lancaster	NE	Lincoln, NE
Grant	NM	
Luna	NM	
Columbia	OR	Portland-Vancouver-Beaverton, OR-WA
Jackson	SD	
Minnehaha	SD	Sioux Falls, SD
Brewster	TX	
Cameron	TX	Brownsville-Harlingen-Raymondville, TX
Webb	TX	Laredo, TX
San Juan	UT	
Clallam	WA	
Clark	WA	Portland-Vancouver-Beaverton, OR-WA
Ashland	WI	
Washington	WI	Milwaukee-Racine-Waukesha, WI
Waukesha	WI	Milwaukee-Racine-Waukesha, WI
Sweetwater	WY	

Note:
1. This list represents counties with no monitored ozone air pollution in unhealthful ranges using the Air Quality Index based on 2008 ozone NAAQS.

Health Effects of Ozone and Particle Pollution

Ozone and particle pollution are the most widespread air pollutants—and among the most dangerous. Recent research has revealed new insights into how they can harm the body—including taking the lives of infants and altering the lungs of children. All in all, the evidence shows that the risks are greater than we once thought.

Recent findings provide more evidence about the health impacts of these pollutants:

- **Reducing air pollution has extended life expectancy.** Thanks to a drop in particle pollution between 1980 and 2000, life expectancy in 51 U.S. cities increased by 5 months on average, according to a recent analysis.[1]
- **The annual death toll from particle pollution may be even greater than previously understood.** The California Air Resources Board recently tripled the estimate of premature deaths in California from particle pollution to 18,000 annually.[2]
- **Long term exposure to air pollution—especially from highway traffic—harms women, even while in their 50s.** Exposure to particle pollution appears to increase women's risk of lower lung function, developing chronic obstructive pulmonary disease (COPD), and dying prematurely.[3]
- **Busy highways are high risk zones.** Pollution from heavy highway traffic contributes to higher risks for heart attack, allergies, premature births and the death of infants around the time they are born.[4] New studies looking at the impact of traffic pollution, even in cities with generally "cleaner" air, expanded the concern over the health effects of chronic exposure to exhaust from heavy traffic.
- **Ozone pollution can shorten life, a conclusion confirmed by the latest scientific review by the National Research Council.**[5] New evidence appeared that some segments of the population may face higher risks from dying prematurely because of ozone pollution, including communities with high unemployment or high public transit use and large Black/African American populations.[6]
- **Truck drivers, dockworkers and railroad workers may face higher risk of death from lung cancer and COPD from breathing diesel emissions on the job.** Studies found that these workers who inhaled diesel exhaust on the job were much more likely to die from lung cancer, COPD and heart disease.[7]
- **Lower levels of ozone and particle pollution pose bigger threat than previously thought.** Lower levels of these all-too-common pollutants triggered asthma attacks and increased the risk of emergency room visits and hospital admissions for asthma in one study.[8] Another study found that low levels of these pollutants increased the risk of hospital treatment for pneumonia and COPD.[9]

Two types of air pollution dominate the problem in the U.S.: ozone and particle pollution. They aren't the only serious air pollutants: others include carbon monoxide, lead, nitrogen dioxide, and sulfur dioxide, as well as hundreds of toxic substances. However, ozone and particle pollution represent the most widespread.

Ozone

Ozone (O_3) is an extremely reactive gas molecule composed of three oxygen atoms. It is the primary ingredient of smog air pollution and is very harmful to breathe. Ozone attacks lung tissue by reacting chemically with it.

News about ozone can be confusing. Some days you hear that ozone levels are too high and other days that we need to prevent ozone depletion. Basically, the ozone layer found high in the upper atmosphere (the stratosphere) is beneficial because it

shields us from much of the sun's ultraviolet radiation. However, ozone air pollution at ground level where we can breathe it (in the troposphere) is harmful. It causes serious health problems.

Where Does Ozone Come From?

What you see coming out of the tailpipe on a car or a truck isn't ozone, but the raw ingredients for making ozone. Ozone is formed by chemical reactions in the atmosphere from two raw gases that do come out of tailpipes, smokestacks and many other sources. These essential raw ingredients for ozone are nitrogen oxides (NO_x) and hydrocarbons, also called volatile organic compounds (VOCs). They are produced primarily when fossil fuels like gasoline, oil or coal are burned or when some chemicals, like solvents, evaporate.

When NO_x and VOCs come in contact with both heat and sunlight, they combine and form ozone smog. NO_x is emitted from power plants, motor vehicles and other sources of high-heat combustion. VOCs are emitted from motor vehicles, chemical plants, refineries, factories, gas stations, paint and other sources. The formula for ozone is simple, and like any formula, the ingredients must all be present and in the right proportions to make the final product.

You may have wondered why "ozone action day" warnings are sometimes followed by recommendations to avoid activities such as mowing your lawn or refilling your gas tank during daylight hours. Lawn mower exhaust and gasoline vapors are VOCs that could turn into ozone in the heat and sun. Take away the sunlight and ozone doesn't form, so refilling your gas tank after dark is better on high ozone days. Since we can't control sunlight and heat, we must reduce the chemical raw ingredients if we want to reduce ozone.

Who are at risk from breathing ozone?

Five groups of people are especially vulnerable to the effects of breathing ozone:

- children and teens;
- anyone 65 and older;
- people who work or exercise outdoors;
- people with existing lung diseases, such as asthma and chronic obstructive pulmonary disease (also known as COPD, which includes emphysema and chronic bronchitis); and
- "responders" who are otherwise healthy but for some reason react more strongly to ozone.

The impact on your health can depend on many factors, however, not just whether you are part of one of these groups. For example, the risks would be greater if ozone levels are higher, if you are breathing faster because you're working outdoors or if you spend more time outdoors.

Lifeguards in Galveston, Texas, provided evidence of the impact of even short-term exposure to ozone on healthy, active adults in a study published in 2008. Testing the breathing capacity of these outdoor workers several times a day, researchers found that many lifeguards had greater obstruction in their airways when ozone levels were high. Because of this research, Galveston became the first city in the nation to install an air quality warning flag system on the beach.[10]

How Ozone Pollution Harms Your Health

Scientists have studied the effects of ozone on health for decades. Hundreds of research studies have confirmed that ozone harms people at levels currently found in the United States. In the last few years, we've learned that it can also be deadly.

Breathing ozone may shorten your life. Strong evidence arrived late in 2004, when two large multi-city investigations

documented that short-term exposure to ozone can shorten lives, building on numerous earlier studies. One of them looked at 95 cities across the United States over a 14-year period. That study compared the impact of ozone on death patterns during several days after the ozone measurements. Even on days when ozone levels were low, the researchers found that the risk of premature death increased with higher levels of ozone. They estimated that over 3,700 deaths annually could be attributed to a 10-parts-per-billion increase in ozone levels.[11] Another study, published the same week, looked at 23 European cities and found similar effects on mortality from short-term exposure to ozone.[12]

Confirmation came in the summer of 2005. Three groups of researchers working independently reviewed and analyzed the research around deaths associated with short-term exposures to ozone. The three teams—at Harvard, Johns Hopkins and New York University—used different approaches but all came to similar conclusions. All three studies reported a small, but robust association between daily ozone levels and increased deaths.[13] Writing a commentary on these reviews, the late David Bates, MD, explained how these premature deaths could occur:

> "Ozone is capable of causing inflammation in the lung at lower concentrations than any other gas. Such an effect would be a hazard to anyone with heart failure and pulmonary congestion, and would worsen the function of anyone with advanced lung disease."[14]

In 2008 a committee of the National Research Council, a division of the National Academy of Sciences, reviewed the evidence again and concluded that "short-term exposure to ambient ozone is likely to contribute to premature deaths." They recommended that preventing early death be included in any future estimates of the benefits of reducing ozone.[15]

Other immediate risks from breathing high levels of ozone. Many areas in the United States produce enough ground-level ozone during the summer months to cause health problems that can be felt right away. Immediate problems—in addition to increased risk of premature death—include:

- shortness of breath;
- chest pain when inhaling;
- wheezing and coughing;
- asthma attacks;
- increased susceptibility to respiratory infections;
- increased susceptibility to pulmonary inflammation; and
- increased need for people with lung diseases, like asthma or chronic obstructive pulmonary disease (COPD), to receive medical treatment and to go to the hospital.[16]

Breathing ozone for longer periods can alter the lungs' ability to function. Two studies published in 2005 explored ozone's ability to reduce the lung's ability to work efficiently, a term called "lung function." Each study looked at otherwise healthy groups who were exposed to ozone for long periods: outdoor postal workers in Taiwan and college freshmen who were lifelong residents of Los Angeles or the San Francisco Bay area. Both studies found that the long exposure to elevated ozone levels had decreased their lung function.[17]

Other effects of long-term exposure to ozone. Inhaling ozone may affect the heart as well as the lungs. One recent study linked exposures to high ozone levels for as little as one hour to a particular type of cardiac arrhythmia that itself increases the risk of premature death and stroke.[18] A French study found that exposure to elevated ozone levels for one to two days increased the risk of heart attacks for middle-aged adults without heart disease. [19]

Breathing other pollutants in the air may make your lungs more responsive to ozone—and breathing ozone may increase your body's response to other pollutants. For example, research warns that breathing sulfur dioxide and nitrogen oxide—two pollutants common in the eastern U.S.—can make the lungs

react more strongly than to just breathing ozone alone.[20] Breathing ozone may also increase the response to allergens in people with allergies. A large study published in 2009 found that children were more likely to suffer from hay fever and respiratory allergies when ozone and $PM_{2.5}$ levels were high.[21]

Low levels of ozone may be deadly. A large study of 48 U.S. cities looked at the association between ozone and all-cause mortality during the summer months. Ozone concentrations by city in the summer months ranged from 16 percent to 80 percent lower than EPA currently considers safe. Researchers found that ozone at those lower levels was associated with deaths from cardiovascular disease, strokes, and respiratory causes. [22]

Particle Pollution

Ever look at dirty truck exhaust?

The dirty, smoky part of that stream of exhaust is made of particle pollution. Overwhelming evidence shows that particle pollution—like that coming from that exhaust smoke—can kill. Particle pollution can increase the risk of heart disease, lung cancer and asthma attacks and can interfere with the growth and work of the lungs.

What Is Particle Pollution?

Particle pollution refers to a mix of very tiny solid and liquid particles that are in the air we breathe. But nothing about particle pollution is simple. First of all, the particles themselves are different sizes. Some are one-tenth the diameter of a strand of hair. Many are even tinier; some are so small they can only be seen with an electron microscope. Because of their size, you can't see the individual particles. You can only see the haze that forms when millions of particles blur the spread of sunlight. You may not be able to tell when you're breathing particle pollution. Yet it is so dangerous it can shorten your life.

The differences in size make a big difference in how they affect us. Our natural defenses help us to cough or sneeze larger particles out of our bodies. But those defenses don't keep out smaller particles, those that are smaller than 10 microns (or micrometers) in diameter, or about one-seventh the diameter of a single human hair. These particles get trapped in the lungs, while the smallest are so minute that they can pass through the lungs into the blood stream, just like the essential oxygen molecules we need to survive.

Researchers categorize particles according to size, grouping them as coarse, fine and ultrafine. Coarse particles fall between 2.5 microns and 10 microns in diameter and are called $PM_{10\text{-}2.5}$. Fine particles are 2.5 microns in diameter or smaller and are called $PM_{2.5}$. Ultrafine particles are smaller than 0.1 micron in diameter[23] and are small enough to pass through the lung tissue into the blood stream, circulating like the oxygen molecules themselves. No matter what the size, particles can be harmful to your health.

Because particles are formed in so many different ways, they can be composed of many different compounds. Although we often think of particles as solids, not all are. Some are completely liquid; some are solids suspended in liquids. As the U.S. Environmental Protection Agency puts it, particles are really "a mixture of mixtures." [24] The mixtures differ between the eastern and western United States and in different times of the year. For example, the Midwest, Southeast and Northeast states have more sulfate particles than the West in the summer, largely due to the high levels of sulfur dioxide emitted by large, coal-fired power plants. By contrast, nitrate particles from motor vehicle exhaust form a larger proportion of the unhealthful mix in the winter in the Northeast, Southern California, the Northwest, and North Central U.S.[25]

Where Does Particle Pollution Come From?

Particle pollution is produced through two separate processes—mechanical and chemical.

Mechanical processes break down bigger bits into smaller bits with the material remaining essentially the same, only becoming smaller. Mechanical processes primarily create coarse particles.[26] Dust storms, construction and demolition, mining operations, and agriculture are among the activities that produce coarse particles.

By contrast, chemical processes in the atmosphere create most of the tiniest fine and ultrafine particles. Combustion sources burn fuels and emit gases. These gases can vaporize and then condense to become a particle of the same chemical compound. Or, they can react with other gases or particles in the atmosphere to form a particle of a different chemical compound. Particles formed by this latter process come from the reaction of elemental carbon (soot), heavy metals, sulfur dioxide (SO_2), nitrogen oxides (NO_x) and volatile organic compounds with water and other compounds in the atmosphere.[27] Burning fossil fuels in factories, power plants, steel mills, smelters, diesel- and gasoline-powered motor vehicles (cars and trucks) and equipment generate a large part of the raw materials for fine particles. So does burning wood in residential fireplaces and wood stoves or burning agricultural fields or forests.

What Can Particles Do to Your Health?

Particle pollution can be very dangerous to breathe. Breathing particle pollution may trigger illness, hospitalization and premature death, risks showing up in new studies that validate earlier research.[28]

Good news came last year from researchers who looked at the impact of the drop in year-round levels of particle pollution between 1980 and 2000 in 51 US cities. Thanks to reductions in particle pollution, people living in these cities had 5 months added to their life expectancy on average.[29] This study added to the growing research that cleaning up air pollution improves life and health. Other researchers estimated that reductions in air pollution can be expected to produce rapid improvements in public health, with fewer deaths occurring within the first two years after reductions.[30]

Researchers these days are exploring possible differences in health effects of the three sizes of particles and particles from different sources, such as diesel particles from trucks and buses or sulfates from coal-fired power plants. So far, the evidence remains clear that all particles from all sources are dangerous.[31]

Particle pollution can damage the body in ways similar to cigarette smoking. A recent review of the research on how particles cause harm found that the body responds to particles in similar ways to its response to cigarette smoke. These findings help explain why particle pollution can cause heart attacks and strokes.[32]

Short-Term Exposure Can Be Deadly

First and foremost, short-term exposure to particle pollution can kill. Peaks or spikes in particle pollution can last for hours to days. Deaths can occur on the very day that particle levels are high, or within one to two months afterward. Particle pollution does not just make people die a few days earlier than they might otherwise—these are deaths that would not have occurred if the air were cleaner.[33]

Researchers from Harvard University recently tripled the estimated risk of premature death following a review of the newer evidence from fine particle monitors ($PM_{2.5}$) in 27 US cities.[34] As mentioned earlier, scientists at the California Air Resources Board also tripled their estimate of the number of deaths occurring each year from particle pollution. They now put the range between 5,600 to 32,000 deaths a year in that state alone.[35]

Particle pollution also diminishes lung function, causes greater use of asthma medications and increased rates of school absen-

teeism, emergency room visits and hospital admissions. Other adverse effects can be coughing, wheezing, cardiac arrhythmias and heart attacks. According to the findings from some of the latest studies, short-term increases in particle pollution have been linked to:

- death from respiratory and cardiovascular causes, including strokes;[36,37,38,39]
- increased mortality in infants and young children;[40]
- increased numbers of heart attacks, especially among the elderly and in people with heart conditions;[41]
- inflammation of lung tissue in young, healthy adults;[42]
- increased hospitalization for cardiovascular disease, including strokes and congestive heart failure;[43,44,45]
- increased emergency room visits for patients suffering from acute respiratory ailments;[46]
- increased hospitalization for asthma among children;[47,48,49] and
- increased severity of asthma attacks in children.[50]

Again, the impact of even short-term exposure to particle pollution on healthy adults showed up in the Galveston lifeguard study, in addition to the harmful effects of ozone pollution. Lifeguards had reduced lung volume at the end of the day when fine particle levels were high.[51]

Year-Round Exposure

Breathing high levels of particle pollution day in and day out also can be deadly, as landmark studies in the 1990s conclusively showed.[52] Chronic exposure to particle pollution can shorten life by one to three years.[53] Other impacts range from premature births to serious respiratory disorders, even when the particle levels are very low.

Year-round exposure to particle pollution has also been linked to:

- increased hospitalization for asthma attacks for children living near roads with heavy truck or trailer traffic;[54,55]
- slowed lung function growth in children and teenagers;[56,57]
- significant damage to the small airways of the lungs;[58]
- increased risk of dying from lung cancer; and[59]
- increased risk of death from cardiovascular disease.[60]

Alarmingly, the risks may be even greater than previously thought. Earlier studies of the long-term health risks of air pollution relied on estimates of the average exposure to people in the community. New evidence from studies published since 2005 suggests that those estimates may be far too low. California just completed a review of this research and tripled the estimated number of people killed each year by particle pollution: 18,000 premature deaths annually, with a range of 5,600 to 32,000 deaths.[61]

Research into risks to the health of 65,000 women over age 50 found that those who lived in areas with higher levels of particle pollution faced a much greater risk of dying from heart disease than had been previously estimated. Even women who lived within the same city faced differing risks depending on the annual levels of pollution in their neighborhood.[62]

The Environmental Protection Agency released the most thorough review of the current research on particle pollution in December 2009.[63] The Agency had engaged a panel of expert scientists, the Clean Air Scientific Advisory Committee, to help them assess the evidence, in particular research published between 2002 and May 2009. EPA concluded in the published Integrated Science Assessment that particle pollution caused multiple, serious threats to health. Their findings are highlighted in the box below.

EPA Concludes Fine Particle Pollution Poses Serious Health Threats

- Causes early death (both short-term and long-term exposure)
- Causes cardiovascular harm (e.g. heart attacks, strokes, heart disease, congestive heart failure)
- Likely to cause respiratory harm (e.g. worsened asthma, worsened COPD, inflammation)
- May cause cancer
- May cause reproductive and developmental harm

—U.S. Environmental Protection Agency, *Integrated Science Assessment for Particulate Matter,* December 2009. EPA 600/R-08/139F.

Who Is at Risk?

Anyone living in an area with a high level of particle pollution is at risk (you can take a look at levels in your state in this report). People at the greatest risk from particle pollution exposure include those with lung disease such as asthma and chronic obstructive pulmonary disease (COPD), which includes chronic bronchitis and emphysema; people with sensitive airways, where exposure to particle pollution can cause wheezing, coughing and respiratory irritation; the elderly; people with heart disease; and children. New research points to ever-larger groups at higher risk, including diabetics, and most recently, women over 50.[64]

Researchers are identifying increased risk for workers whose jobs expose them to heavy diesel exhaust as a routine part of their job. The risk of dying from lung cancer and heart disease is markedly higher in truck drivers than in the general population in the U.S., according to a study by Harvard University researchers.[65] This study of over 50,000 members of the Teamsters Union employed from 1985 to 2000 looked at the cause of death of workers classified by job category. Truckers are exposed to traffic pollution and diesel engine emissions, while dockworkers are exposed to exhaust from forklifts and trucks in the shipyard. The study found that death rates for heart disease were 49 percent higher among truck drivers, and 32 percent higher among dockworkers than in the general U.S. population. Lung cancer death rates were 10 percent higher in both the drivers and the dockworkers. Railroad workers have also faced higher risks of death from lung cancer and COPD, according to two studies looking at historical data for those workers.[66]

Focusing on Children's Health

Children may look like miniature adults, but they're not. Air pollution is especially dangerous to them because their lungs are growing and because they are so active.

Just like the arms and legs, the largest portion of a child's lungs will grow long after he or she is born. Eighty percent of their tiny air sacs develop after birth. Those sacs, called the alveoli, are where the life-sustaining transfer of oxygen to the blood takes place. The lungs and their alveoli aren't fully grown until children become adults.[67] In addition, the body's defenses that help adults fight off infections are still developing in young bodies.[68] Children have more respiratory infections than adults, which also seems to increase their susceptibility to air pollution.[69]

Furthermore, children don't behave like adults, and their behavior also affects their vulnerability. They are outside for longer periods and are usually more active when outdoors. Consequently, they inhale more polluted outdoor air than adults typically do.[70]

Major Reviews Confirm Harm to Children

Two major analyses recently concluded that air pollution is especially harmful to children. They found that air pollution is so dangerous that it can even threaten children's lives.

The World Health Organization (WHO) published an in-depth look at the research on children's health and air pollution. Most importantly, the scientists concluded that particle pollution caused infant deaths. In addition, they found that air pollution caused a host of harmful effects on children, including:

- short-term and long-term decreased lung function rates and lower lung function levels, critical measures of how well the child will breathe throughout his or her life (due primarily to exposure to particle pollution and traffic-related pollution);
- worsening of asthma (from exposure to particle as well as ozone pollution);
- increased prevalence and incidence of cough and bronchitis (primarily from particle pollution); and
- increased risk of upper and lower respiratory infections.[71]

The American Academy of Pediatrics issued a statement on the dangers of outdoor air pollution on children's health, pointing out the special differences for children.[72] The Academy reported many of the health effects cited by the WHO study, but also focused on the sources common to many children. Both the WHO monograph and the Academy statement highlighted recent studies showing how children living near heavily traveled highways appear to be particularly harmed by traffic-related pollution. The Academy statement highlighted the specific concern over diesel school buses, citing a pilot study that showed children riding inside a school bus may be exposed to four times more diesel exhaust than if they were riding in a car.[73]

Research on Prenatal Exposure to Air Pollution

Several studies published in 2005 found prenatal exposure to air pollution can harm children. A study of pregnant women in four Pennsylvania counties found an increased risk of preterm births linked to chronic exposure to high levels of air pollution during the last six weeks of pregnancy.[74] A study of three low-income neighborhoods in New York City found that infants born to nonsmoking mothers faced a possible increased risk of cancer from living in areas with elevated urban area air pollutants.[75] A third study in the Czech Republic found evidence that the mother's exposure to air pollution may even alter the immune systems of the fetus.[76]

Air Pollution Linked to Increased Risk to Newborns and Infants

As the World Health Organization concluded, evidence shows that air pollution, especially particle pollution, increases the risk of infant death. A study looking at the infant deaths in the US from 1999 to 2002 confirmed the risk from particle pollution and found evidence that ozone may also increase the risk of sudden infant death syndrome, or SIDS.[77]

Researchers from Yale University looked at the records of over 350,000 babies born in Connecticut and Massachusetts with low birth weights to see if they could identify any relationships with outdoor air pollutants. The researchers concluded that air pollution may increase the risk of babies being born with low birth weight, even though almost all the air pollutants were at levels that were officially listed as safe by the Environmental Protection Agency.[78]

Air Pollution Linked to Asthma Attacks, New Onset of Asthma

A 2003 study followed children with asthma by having their mothers track their symptoms on a daily basis. The study found that children with asthma were particularly vulnerable to ozone even at levels then officially considered safe.[79] An accompanying editorial warned, "Air pollution is one of the most under-appreciated contributors to asthma exacerbation."[80]

A recent study suggests that year-round exposure to ozone may be associated with an increased risk of the development of asthma. While more research is needed to confirm this finding, researchers tracking 3,500 students in Southern California found an increased onset of asthma in children who were taking part in three or more outdoor activities in communities with high levels of ozone.[81]

Air Pollution Increases Risk of Underdeveloped Lungs

Another finding from the Southern California Children's

Health study looked at the long-term effects of particle pollution on teenagers. Tracking 1,759 children between ages 10 and 18, researchers found that those who grew up in more polluted areas face the increased risk of having underdeveloped lungs, which may never recover to their full capacity. The average drop in lung function was 20 percent below what was expected for the child's age, similar to the impact of growing up in a home with parents who smoked.[82]

Community health studies are pointing to less obvious, but serious effects from year-round exposure to ozone, especially for children. Scientists followed 500 Yale University students and determined that living just four years in a region with high levels of ozone and related co-pollutants was associated with diminished lung function and frequent reports of respiratory symptoms.[83] A much larger study of 3,300 school children in Southern California found reduced lung function in girls with asthma and boys who spent more time outdoors in areas with high levels of ozone.[84]

Cleaning Up Pollution Can Reduce Risk to Children

There is also real-world evidence that reducing air pollution can help protect children. Two studies published in 2005 added more weight to the argument.

Changes in air pollution from the reunification of Germany proved a real-life laboratory. Both East and West Germany had different levels and sources of particles. Outdoor particle levels were much higher in East Germany, where they came from factories and homes. West Germany had higher concentrations of traffic-generated particles. After reunification, emissions from the factories and homes dropped, but traffic increased. A German study explored the impact on the lungs of six-year olds from both East and West Germany. Total lung capacity improved with the lower particle levels. However, for those children living near busy roads, the increased pollution from the increased traffic kept them from benefiting from the overall cleaner air.[85]

In Switzerland, particle pollution dropped during a period in the 1990s. Researchers there tracked 9,000 children over a nine-year period, following their respiratory symptoms. After taking other factors such as family characteristics and indoor air pollution into account, the researchers noted that during the years with less pollution, the children had fewer episodes of chronic cough, bronchitis, common cold, and conjunctivitis symptoms.[86]

In this country, the 1996 Olympics in Atlanta, Georgia remain one of the most interesting cases. Atlanta is a prime example of an urban area with a history of serious ozone problems. The determined efforts of the city to reduce traffic during the Olympics succeeded in not just reducing congestion, but in improving the health of children with asthma. Concerned with an expected traffic nightmare, the city brought in more buses, more subway cars, and encouraged ridesharing and telecommuting during the Summer Olympic Games. These measures created a prolonged period of low ozone pollution that resulted in significantly lower rates of childhood asthma events for children aged 1–16. The number of asthma acute care events (e.g., treatment and hospitalization) decreased 42 percent in the Georgia Medicaid claims files. Pediatric emergency departments also saw significant reductions, as did the Georgia Hospital Discharge Database and a health maintenance organization database. It is important to note researchers determined that weather was not the determining factor in the reduced ozone levels.[87]

Disparities in the Impact of Air Pollution

The burden of air pollution is not evenly shared. Poorer people and some racial and ethnic groups are among those who often face higher exposure to pollutants and who may experience greater responses to such pollution. Many studies have explored the differences in harm from air pollution to racial or ethnic groups and people who are in a low socioeconomic position,

have less education, or live nearer to major sources,[88] including a workshop the American Lung Association held in 2001 that focused on urban air pollution and health inequities.[89]

Many studies have looked at differences in the impact on premature death. Results have varied widely, particularly for effects between racial groups. Some studies have found no differences among races,[90] while others found greater responsiveness for Whites and Hispanics, but not Blacks/African-Americans,[91] or for Blacks/African-Americans but not other races or ethnic groups.[92] Other researchers have found greater risk for Blacks/African-Americans from air toxics, including those pollutants that also come from traffic sources.[93]

Socioeconomic position has been more consistently associated with greater harm from air pollution. Recent studies show evidence of that link. Low socioeconomic status consistently increased the risk of premature death from fine particle pollution among 13.2 million Medicare recipients studied in the largest examination of particle pollution mortality nationwide.[94] In the 2008 study that found greater risk for premature death for Blacks/African-Americans, researchers also found greater risk for people living in areas with higher unemployment or higher use of public transportation.[95] A 2008 study of Washington, DC found that while poor air quality and worsened asthma went hand-in-hand in areas where Medicaid enrollment was high, the areas with the highest Medicaid enrollment did not always have the strongest association of high air pollution and asthma attacks.[96] However, two other recent studies in France have found no association with lower income and asthma attacks.[97]

Scientists have speculated that there are three broad reasons why disparities may exist. First, groups may face greater exposure to pollution because of factors ranging from racism to class bias to housing market dynamics and land costs. For example, pollution sources may be located near disadvantaged communities, increasing exposure to harmful pollutants. Second, low social position may make some groups more susceptible to health threats because of factors related to their disadvantage. Lack of access to health care, grocery stores and good jobs, poorer job opportunities, dirtier workplaces or higher traffic exposure are among the factors that could handicap groups and increase the risk of harm. Finally, existing health conditions, behaviors, or traits may predispose some groups to greater risk. For example, diabetics are among the groups most at risk from air pollutants and the elderly, Blacks/African Americans, Mexican Americans and people living near a central city have higher incidence of diabetes.[98]

Living Near Highways May Be Especially Dangerous

Being in heavy traffic, or living near a road may be even more dangerous than being in other places in a community. Several studies have found that the vehicle emissions coming directly from those highways may be higher than in the community as a whole, increasing the risk of harm to people who live or work near busy roads.

Children and teenagers are among the most vulnerable—though not the only ones at risk. A new European study found infants and young children exposed to air pollution from traffic faced a greater risk of wheezing.[99] In Southern California, a 2007 study found that air pollution can limit the capacity of the lungs in ten- to eighteen-year-olds who live within about one-third of a mile of a freeway. Changes such as that can reduce their capacity to breathe for the rest of their lives and increase their risk of developing serious lung diseases. Other recent research found that children who live near freeways had a higher risk of being diagnosed with asthma.[100,101] However, children are not the only ones at risk. Studies have found increased risk of premature death from living near a major highway or an urban road.[102] Another study found an increase in risk of heart attacks from being in traffic, whether driving or taking public transportation.[103]

The Health Effects Institute published an extensive review of research on risks from traffic exposure in January, 2010. The

review concluded that being within 300 to 500 meters of traffic can worsen asthma in children, and may even cause children's asthma. The review also found evidence of premature death, cardiovascular disease, respiratory symptoms, and other health effects.[104]

How to Protect Yourself from Ozone, Particle Pollution

To minimize your exposure to ozone and particle pollution:

- Pay attention to forecasts for high air pollution days to know when to take precautions;
- Avoid exercising near high-traffic areas;
- Avoid exercising outdoors when pollution levels are high, or substitute an activity that requires less exertion;
- Do not let anyone smoke indoors and support measures to make all places smokefree; and
- Reduce the use of fireplaces and wood-burning stoves.

Bottom line: Help yourself and everyone else breathe easier. Support national, state and local efforts to clean up sources of pollution. Your life and the life of someone you love may depend on it.

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Description of Methodology

Statistical Methodology: The Air Quality Data

Data Sources

The data on air quality throughout the United States were obtained from the U.S. Environmental Protection Agency's Air Quality System (AQS), formerly called Aerometric Information Retrieval System (AIRS) database. The American Lung Association contracted with Dr. Allen S. Lefohn, A.S.L. & Associates, Helena, Montana, to characterize the hourly averaged ozone concentration information and the 24-hour averaged $PM_{2.5}$ concentration information for the 3-year period for 2006-2008 for each monitoring site.

Design values for the annual $PM_{2.5}$ concentrations by county were collected from data previously summarized by the U.S. Environmental Protection Agency (EPA) and were downloaded on December 1, 2009 from EPA's website at http://www.epa.gov/air/airtrends/values.html.

Ozone Data Analysis

The 2006, 2007, and 2008 AQS hourly ozone data were used to calculate the daily 8-hour maximum concentration for each ozone-monitoring site. The data were considered for a 3-year period for the same reason that EPA uses 3 years of data to determine compliance with the ozone: to prevent a situation in any single year, where anomalies of weather or other factors create air pollution levels, which inaccurately reflect the normal conditions. The highest 8-hour daily maximum concentration in each county for 2006, 2007, and 2008, based on the EPA-defined ozone season, was identified.

On March 12, 2008, the EPA lowered the national ambient air quality standard for ozone to 0.075 ppm measured over 8-hours and adjusted the Air Quality Index to reflect the tighter standard. Using these results, A.S.L. & Associates prepared a table by county that summarized, for each of the 3 years, the number of days the ozone level was within the ranges identified by EPA based on the EPA Air Quality Index:

8-hour Ozone Concentration	Air Quality Index Levels
0.000 – 0.059 ppm	Good (Green)
0.060 – 0.075 ppm	Moderate (Yellow)
0.076 – 0.095 ppm	Unhealthy for Sensitive Groups (Orange)
0.096 – 0.115 ppm	Unhealthy (Red)
0.116 – 0.374 ppm	Very Unhealthy (Purple)
>0.374 ppm	Hazardous (Maroon)

The goal of this report was to identify the number of days that 8-hour daily maximum concentrations occurred within the defined ranges, not just those days that would fall under the requirements for attaining the national ambient air quality standards. Therefore, no data capture criteria were applied to eliminate monitoring sites or to require a number of valid days for the ozone season. All valid days of data within the ozone season were used in the analysis. However, for computing an 8-hour average, at least 75 percent of the hourly concentrations (i.e., 6-8 hours) had to be available for the 8-hour period. In addition, an 8-hour daily maximum average was identified if valid 8-hour averages were available for at least 75 percent of possible hours in the day (i.e., at least 18 of the possible 24 8-hour averages). Because the EPA includes days with inadequate data if the standard value is exceeded, our data capture methodology may result at times in underestimations of the number of 8-hour averages within the higher concentration ranges. However, our experience is that underestimates are infrequent.

Following receipt of the above information, the American Lung Association identified the number of days each county,

with at least one ozone monitor, experienced air quality designated as orange (Unhealthy for Sensitive Groups), red (Unhealthy), or purple (Very Unhealthy).

Short-term Particle Pollution Data Analysis

A.S.L. & Associates identified the maximum daily 24-hour AQS $PM_{2.5}$ concentration for each county in 2006, 2007, and 2008 with monitoring information. Using these results, A.S.L. & Associates prepared a table by county that summarized, for each of the 3 years, the number of days the maximum of the ***daily*** $PM_{2.5}$ concentration was within the ranges identified by EPA based on the EPA Air Quality Index, adjusted by the American Lung Association as discussed below:

24-hour $PM_{2.5}$ Concentration	**Air Quality Index Levels**
from 0.0 $\mu g/m^3$ to 15.4 $\mu g/m^3$	Good (Green)
from 15.5 $\mu g/m^3$ to 35.0 $\mu g/m^3$	Moderate (Yellow)
from 35.1 $\mu g/m^3$ to 65.4 $\mu g/m^3$	Unhealthy for Sensitive Groups (Orange)
from 65.5 $\mu g/m^3$ to 150.4 $\mu g/m^3$	Unhealthy (Red)
from 150.5 $\mu g/m^3$ to 250.4 $\mu g/m^3$	Very Unhealthy (Purple)
greater than or equal to 250.5 $\mu g/m^3$	Hazardous (Maroon)

On September 21, 2006, the EPA announced a revised 24-hour National Ambient Air Quality standard for $PM_{2.5}$, changing the standard to 35 $\mu g/m^3$ from 65 $\mu g/m^3$. As of December 2009, the EPA had not yet announced changes to the Air Quality Index based on the new standard. The Lung Association adjusted the level of the category "Unhealthy for Sensitive Groups" to include the new standard, making that category range from 35.1 $\mu g/m^3$ to 65.4 $\mu g/m^3$.

The goal of this report was to identify the number of days that the maximum in each county of the ***daily*** $PM_{2.5}$ concentration occurred within the defined ranges, not just those days that would fall under the requirements for attaining the national ambient air quality standards. Therefore, no data capture criteria were used to eliminate monitoring sites. Only 24-hour averaged PM data were used. Included in the analysis are data collected using only FRM and FEM methods, which reported 24-hour averaged data. As instructed by the Lung Association, A.S.L. & Associates included the exceptional and natural events that were identified in the database and identified for the Lung Association the dates and monitoring sites that experienced such events.

Following receipt of the above information, the American Lung Association identified the number of days each county, with at least one $PM_{2.5}$ monitor, experienced air quality designated as orange (Unhealthy for Sensitive Groups), red (Unhealthy), purple (Very Unhealthy) or maroon (Hazardous).

Description of County Grading System

Ozone and short-term particle pollution (24-hour $PM_{2.5}$)

The grades for ozone and short-term particle pollution (24-hour $PM_{2.5}$) were based on a weighted average for each county. To determine the weighted average, the Lung Association followed these steps:

1. First, assigned weighting factors to each category of the Air Quality Index. The number of orange days experienced by each county received a factor of 1; red days a factor of 1.5; purple days a factor of 2; and maroon days a factor of 2.5. This allowed days where the air pollution levels were higher to receive greater weight.
2. Next, multiplied the total number of days within each category by their assigned factor, then summed all the categories to calculate a total.
3. Finally, divided the total by three to determine the weighted average, since the monitoring data were collected over a three-year period.

The weighted average determined each county's grades for ozone and 24-hour $PM_{2.5}$.

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Grading System		
Grade	Weighted Average	Approximate Number of Allowable Orange/Red/Purple/Maroon days
A	0.0	None
B	0.3 to 0.9	1 to 2 orange days with no red
C	1.0 to 2.0	3 to 6 days over the standard: 3 to 5 orange with no more than 1 red OR 6 orange with no red
D	2.1 to 3.2	7 to 9 days over the standard: 7 total (including up to 2 red) to 9 orange with no red
F	3.3 or higher	9 days or more over the standard: 10 orange days or 9 total including at least 1 or more red, purple or maroon

Weighted averages allow comparisons to be drawn based on severity of air pollution. For example, if one county had 9 orange days and 0 red days, it would earn a weighted average of 3.0 and a D grade. However, another county which had only 8 orange days but also 2 red days, which signify days with more serious air pollution, would receive an F. That second county would have a weighted average of 3.7.

Note that this system differs significantly from the methodology EPA uses to determine violations of both the ozone standard and the 24-hour $PM_{2.5}$. EPA determines whether a county violates the standard based on the 4th maximum daily 8-hour ozone reading each year averaged over three years. Multiple days of unhealthy air beyond the highest four in each year are not considered. By contrast, the system used in this report recognizes when a community's air quality repeatedly results in unhealthy air throughout the three years. Consequently, some counties will receive grades of "F" in this report, showing repeated instances of unhealthy air, while still meeting EPA's 2008 or 1997 ozone standard. EPA is currently reconsidering the 2008 standard based on evidence that that standard failed to protect the health of the public.

Counties were ranked by weighted average. Metropolitan areas were ranked by the highest weighted average among the counties within a given Metropolitan Statistical Area as of 2008 as defined by the White House Office of Management and Budget (OMB). In 2003, the OMB published revised definitions for the nation's Metropolitan Statistical Areas. Therefore, comparisons between MSAs in the State of the Air reports from 2000 to 2003 and the State of the Air reports from 2004 and later should be made with caution.

Year-round particle pollution (Annual $PM_{2.5}$)

Since no comparable Air Quality Index exists for year-round particle pollution (annual $PM_{2.5}$), the grading was based on EPA's determination of violations of the national ambient air quality standard for annual $PM_{2.5}$ of 15 $\mu g/m^3$, as reported online and downloaded from the www.epa.gov/airtrends/values.html on December 1, 2009. Counties that EPA listed as being in attainment of the standard were given grades of "Pass." Counties EPA listed as being in nonattainment were given grades of "Fail." Where insufficient data existed for EPA to determine attainment or nonattainment, those counties received a grade of "Incomplete."

Design value is the calculated concentration of a pollutant based on the form of the national ambient air quality standard and is used by EPA to determine whether or not the air quality in a county meets the standard. Counties were ranked by design value. Metropolitan areas were ranked by the highest design value among the counties within a given Metropolitan Statistical Area as of 2008 as defined by the OMB. In 2003, the OMB published revised definitions for the nation's Metropolitan Statistical Areas. Therefore, comparisons between MSAs in the *State of the Air* reports from 2000 to 2003 and the *State of the Air* reports from 2004 and later should be made with caution.

The Lung Association received critical assistance from members of the National Association of Clean Air Administrators, formerly known as the State and Territorial Air Pollution Control Administrators and the Association of Local Air Pollution Control Administrators. With their assistance, all state and local agencies were provided the opportunity to review and comment on the data in draft tabular form. The Lung Association reviewed all discrepancies with the agencies and, if needed, with Dr. Lefohn at A.S.L. and Associates. Questions about the annual PM design values were referred to Mr. Schmidt of EPA, who reviewed and had final decision on those determinations. The American Lung Association wishes to express its continued appreciation to the state and local air directors for their willingness to assist in ensuring that the characterized data used in this report are correct.

Calculations of Populations-at-Risk

Presently, county-specific measurements of the number of persons with chronic lung disease and other chronic conditions are not generally available. In order to assess the magnitude of lung disease and other chronic conditions at the state and county levels, we have employed a synthetic estimation technique originally developed by the U.S. Census Bureau. This method uses age-specific national estimates of self-reported lung disease and other conditions to project disease prevalence to the county level. The primary exceptions to this are asthma and diabetes, as state-specific estimates for adult asthma and diabetes are available through one national survey discussed below, and poverty, for which estimates are available at the county level.

Population Estimates

The U.S. Census Bureau estimated data on the total population of each county in the United States for 2008. The Census Bureau also estimated the age specific breakdown of the population and the number of individuals living in poverty by county. These estimates are the best information on population demographics available between decennial censuses.

Poverty estimates came from the Census Bureau's Small Area Income and Poverty Estimates (SAIPE) program. SAIPE was created to provide accurate income and poverty estimates between decennial censuses. The program does not use direct counts or estimates from sample surveys, as these methods would not provide sufficient data for all counties. Instead, a model based on estimates of income or poverty from the Annual Social and Economic Supplement (ASEC) to the Current Population Survey (CPS) is used to develop estimates for all states and counties.

Prevalence Estimates

Chronic Bronchitis, Emphysema, and Pediatric Asthma. In 2008, the National Health Interview Survey (NHIS) estimated the nationwide annual prevalence of diagnosed chronic bronchitis at 9.8 million; the nationwide lifetime prevalence of diagnosed emphysema was estimated at 3.8 million. The NHIS estimated the prevalence of diagnosed pediatric asthma (under age 18) to be over 7.0 million.

Due to the revision of the NHIS questionnaire, prevalence estimates from the *American Lung Association State of the Air 2000* cannot be compared to later publications. Estimates for chronic bronchitis and emphysema can be compared to the *State of the Air* reports for 2001 through 2009. Furthermore, estimates for chronic bronchitis and emphysema should not be combined as they represent different types of prevalence estimates.

Pediatric asthma prevalence estimates from this year's report can only be compared to those in the *State of the Air* reports since 2004 and not the *State of the Air* reports from 2000 through 2003 due to a change of the NHIS.

Local area prevalence of chronic bronchitis, emphysema, and pediatric asthma are estimated by applying age-specific national prevalence rates from the 2008 NHIS to age-specific county-level resident populations obtained from the U.S. Census Bureau web site. Prevalence estimates for chronic bronchitis and emphysema are calculated for those 18-44, 45-64 and 65+. The prevalence estimate for pediatric asthma is calculated for those under age 18.

Adult Asthma and Diabetes. In 2008, the Behavioral Risk Factor Surveillance System (BRFSS) survey indicated that approximately 8.4% of adults residing in the United States reported currently having asthma. The information on adult asthma obtained from the Behavioral Risk Factor Surveillance System survey cannot be compared with pediatric asthma estimates that are derived from the NHIS. The BRFSS indicated that 8.8% of adults in the United States had ever been diagnosed with diabetes in 2008.

The prevalence estimate for adult asthma and diabetes is calculated for those 18-44, 45-64 and 65+. Local area prevalence of adult asthma and diabetes is estimated by applying age-specific state prevalence rates from the 2008 BRFSS to age-specific county-level resident populations obtained from the U.S. Census Bureau web site.

Cardiovascular Disease Estimates. All cardiovascular disease estimates are based on the 2005 National Health and Nutrition Examination Survey and were obtained from the National Heart Lung and Blood Institute (NHBLI). According to their estimate, 79.8 million Americans suffer from one or more types of cardiovascular disease, including coronary heart disease, hypertension, stroke and heart failure. Local area prevalence of cardiovascular disease is estimated by applying age-specific prevalence rates for those 18-44, 45-64 and 65+, provided by NHLBI, to age-specific county-level resident populations obtained from the U.S. Census Bureau web site.

Limitations of Estimates. Since the statistics presented by the NHIS, BRFSS and NHANES are based on a sample, they will differ (due to random sampling variability) from figures that would be derived from a complete census or case registry of people in the U.S. with these diseases. The results are also subject to reporting, non-response and processing errors. These types of errors are kept to a minimum by methods built into the survey.

Additionally, a major limitation of both surveys is that the information collected represents self-reports of medically diagnosed conditions, which may underestimate disease prevalence since not all individuals with these conditions have been properly diagnosed. However, the NHIS is the best available source that depicts the magnitude of chronic disease on the national level and the BRFSS is the best available source for state-specific adult asthma and diabetes information. The conditions

covered in the survey may vary considerably in the accuracy and completeness with which they are reported.

Local estimates of chronic diseases are scaled in direct proportion to the base population of the county and its age distribution. No adjustments are made for other factors that may affect local prevalence (e.g. local prevalence of cigarette smokers or occupational exposures) since the health surveys that obtain such data are rarely conducted on the county level. Because the estimates do not account for geographic differences in the prevalence of chronic and acute diseases, the sum of the estimates for each of the counties in the United States may not exactly reflect the national estimate derived by the NHIS or state estimates derived by the BRFSS.

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State Table Notes

A full explanation of the sources of data and methodology is in the Appendix: Methodology.

Notes for all state data tables

1. **Total Population** is based on 2008 US Census and represents the at-risk populations in counties with ozone or $PM_{2.5}$ pollution monitors; it does not represent the entire state's sensitive populations.
2. Those **18 & under** and **65 & over** are vulnerable to ozone and $PM_{2.5}$. Do not use them as population denominators for disease estimates—that will lead to incorrect estimates.
3. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2008 based on national rates (NHIS) applied to county population estimates (US Census).
4. **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2008 based on state rates (BRFSS) applied to county population estimates (US Census).
5. **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed within 2008 based on national rates (NHIS) applied to county population estimates (US Census).
6. **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).
7. **CV disease** estimates are for adults 18 and over, based on national rates (2005 NHANES, provided by NHLBI) applied to county population estimates (US Census). CV disease includes coronary heart disease, hypertension, stroke, and heart failure.
8. **Diabetes** estimates are for adults 18 and over who have been diagnosed within their lifetime based on state rates (BRFSS) applied to county population estimates (US Census).
9. **Poverty** estimates include all ages and come from the U.S. Census Bureau's Small Area Estimates Branch, 2008.
10. Adding across rows does not produce valid estimates. For example, because of differences in the surveys used to gather the information, adding pediatric and adult asthma does not produce an accurate estimate of total population with asthma. Adding emphysema and chronic bronchitis will double-count people with both diseases.

Notes for all state grades tables

1. Not all counties have monitors for either ozone or particle pollution. If a county does not have a monitor, that county's name is not on the list in these tables. The decision about monitors in the county is made by the state and the U.S. Environmental Protection Agency, not by the American Lung Association.
2. **Asterisk (*)** indicates that monitoring is underway for that pollutant in that county, but that the data are incomplete for all three years. Those counties are not graded or received an Incomplete.
3. **DNC (Data Not Collected)** indicates that data on that particular pollutant is not collected in that county.
4. The **Weighted Average (Wgt. Avg)** was derived by adding the three years of individual level data (2006-2008), multiplying the sums of each level by the assigned standard weights (i.e. 1=orange, 1.5=red, 2.0=purple and 2.5=maroon) and calculating the average. Grades are assigned based on the weighted averages as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.
5. The **Design Value** is the calculated concentration of a pollutant based on the form of the National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality in a county meets the standard. Design values for the annual $PM_{2.5}$ concentrations by county were collected from data previously summarized by the U.S. Environmental Protection Agency (EPA) and were downloaded on December 1, 2009 from EPA's website at http://www.epa.gov/air/airtrends/values.html. The numbers refer to micrograms per cubic meter, or $\mu g/m^3$. Counties with design values of 15 or lower received a grade of "Pass." Counties with design values of 15.1 or higher received a grade of "Fail."

ALABAMA

American Lung Association in Alabama

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AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Baldwin	174,439	40,755	28,539	3,837	10,405	5,965	2,561	52,214	15,753	17,110
Clay	13,809	2,910	2,542	274	849	492	220	4,398	1,324	2,288
Colbert	54,663	11,938	9,196	1,124	3,325	1,926	836	16,974	5,136	6,861
Dekalb	68,515	16,947	10,004	1,595	4,010	2,274	934	19,486	5,892	12,690
Elmore	78,106	19,207	9,020	1,808	4,573	2,526	933	20,593	6,252	8,171
Escambia	37,490	8,616	5,497	811	2,245	1,276	522	10,919	3,308	8,490
Etowah	103,303	23,724	16,672	2,233	6,192	3,559	1,520	31,096	9,401	16,923
Houston	98,488	24,499	14,867	2,306	5,754	3,302	1,388	28,633	8,673	14,641
Jefferson	659,503	157,990	89,377	14,873	38,956	22,217	8,909	188,555	57,398	88,637
Lawrence	34,166	7,785	4,699	733	2,049	1,168	468	9,903	3,014	5,068
Madison	319,510	77,290	40,320	7,276	18,808	10,616	4,121	88,703	27,010	35,200
Mobile	406,309	106,825	49,885	10,056	23,252	13,170	5,131	110,280	33,617	74,067
Montgomery	224,810	57,541	27,354	5,417	12,989	7,283	2,793	60,477	18,392	37,511
Morgan	115,959	27,622	16,595	2,600	6,865	3,932	1,611	33,708	10,245	14,284
Russell	50,504	12,767	7,283	1,202	2,934	1,678	693	14,433	4,378	11,599
Shelby	187,784	49,941	17,285	4,701	10,682	5,936	2,080	47,415	14,560	10,728
Sumter	13,266	3,081	2,155	290	793	449	190	3,896	1,171	4,249
Talladega	80,279	18,666	11,323	1,757	4,788	2,726	1,103	23,216	7,051	14,305
Tuscaloosa	179,448	41,266	19,871	3,885	10,728	5,834	2,076	46,716	14,150	29,379
Walker	68,970	15,576	11,308	1,466	4,155	2,391	1,026	20,937	6,328	11,839
Totals	**2,969,321**	**724,946**	**393,792**	**68,244**	**174,349**	**98,720**	**39,115**	**832,552**	**253,051**	**424,040**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Baldwin	23	0	0	7.7	F
Clay	*	*	*	*	*
Colbert	9	0	0	3.0	D
Dekalb	DNC	DNC	DNC	DNC	DNC
Elmore	3	0	0	1.0	C
Escambia	DNC	DNC	DNC	DNC	DNC
Etowah	4	0	0	1.3	C
Houston	2	0	0	0.7	B
Jefferson	55	8	0	22.3	F
Lawrence	*	*	*	*	*
Madison	16	1	0	5.8	F
Mobile	31	0	0	10.3	F
Montgomery	10	0	0	3.3	F
Morgan	19	0	0	6.3	F
Russell	8	0	0	2.7	D
Shelby	38	3	0	14.2	F
Sumter	2	0	0	0.7	B
Talladega	*	*	*	*	*
Tuscaloosa	14	0	0	4.7	F
Walker	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Baldwin	0	0	0	0.0	A	10.5	PASS
Clay	3	0	0	1.0	C	12.2	PASS
Colbert	2	0	0	0.7	B	12.2	PASS
Dekalb	1	0	0	0.3	B	12.9	PASS
Elmore	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Escambia	*	*	*	*	*	*	INC
Etowah	11	0	0	3.7	F	14.0	PASS
Houston	2	1	0	1.2	C	12.0	PASS
Jefferson	75	0	0	25.0	F	17.3	FAIL
Lawrence	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Madison	4	0	0	1.3	C	12.9	PASS
Mobile	1	0	0	0.3	B	11.4	PASS
Montgomery	8	1	0	3.2	D	13.3	PASS
Morgan	3	0	0	1.0	C	12.7	PASS
Russell	8	2	0	3.7	F	14.5	PASS
Shelby	5	0	0	1.7	C	13.2	PASS
Sumter	*	*	*	*	*	*	INC
Talladega	1	0	0	0.3	B	*	INC
Tuscaloosa	3	0	0	1.0	C	12.7	PASS
Walker	5	0	0	1.7	C	13.2	PASS

ALASKA

American Lung Association in Alaska

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AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Anchorage Municipality	279,243	72,681	19,705	6,842	19,478	8,719	2,777	66,864	13,625	19,638
Fairbanks North Star Borough	97,970	26,616	5,645	2,506	6,793	2,905	838	21,330	4,380	7,004
Juneau City And Borough	30,988	6,914	2,488	651	2,238	1,054	360	8,360	1,682	2,047
Matanuska-Susitna Borough	85,458	22,025	6,454	2,073	5,976	2,697	881	20,912	4,263	7,808
Yukon-Koyukuk Borough	5,701	1,494	482	141	392	185	65	1,485	300	1,410
Totals	**499,360**	**129,730**	**34,774**	**12,213**	**34,878**	**15,560**	**4,921**	**118,951**	**24,250**	**37,907**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Anchorage Municipality	DNC	DNC	DNC	DNC	DNC
Fairbanks North Star Borough	DNC	DNC	DNC	DNC	DNC
Juneau City and Borough	DNC	DNC	DNC	DNC	DNC
Matanuska-Susitna Borough	DNC	DNC	DNC	DNC	DNC
Yukon-Koyukuk Borough	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Anchorage Municipality	0	0	0	0.0	A	5.6	PASS
Fairbanks North Star Borough	11	1	0	4.2	F	11.2	PASS
Juneau City and Borough	7	0	0	2.3	D	7.4	PASS
Matanuska-Susitna Borough	5	0	0	1.7	C	*	INC
Yukon-Koyukuk Borough	DNC	DNC	DNC	DNC	DNC	DNC	DNC

ARIZONA

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AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Cochise	129,006	30,821	23,064	2,901	9,144	4,457	2,009	39,992	8,918	19,628
Coconino	128,558	32,928	10,572	3,100	9,381	4,063	1,353	31,731	6,761	20,099
Gila	52,166	11,959	11,440	1,126	3,663	1,873	925	17,603	3,979	8,224
La Paz	20,086	3,601	6,756	339	1,449	800	471	8,245	1,905	5,162
Maricopa	3,954,598	1,083,241	451,031	101,972	280,306	122,897	45,668	1,004,175	216,591	521,208
Navajo	112,757	33,574	13,882	3,161	7,648	3,436	1,343	28,749	6,255	25,447
Pima	1,012,018	239,325	154,281	22,529	73,719	34,066	14,133	293,183	64,420	153,040
Pinal	327,301	85,283	42,819	8,028	23,791	10,272	3,936	84,882	18,309	43,350
Santa Cruz	42,923	12,963	5,619	1,220	2,843	1,329	543	11,369	2,499	7,905
Yavapai	215,503	42,732	49,972	4,023	15,841	7,993	3,956	75,130	16,958	27,395
Yuma	194,322	54,752	36,804	5,154	13,242	6,205	2,882	56,264	12,509	40,456
Totals	**6,189,238**	**1,631,179**	**806,240**	**153,553**	**441,028**	**197,391**	**77,219**	**1,651,323**	**359,104**	**871,914**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Cochise	1	0	0	0.3	B
Coconino	4	0	0	1.3	C
Gila	34	0	0	11.3	F
La Paz	7	0	0	2.3	D
Maricopa	84	2	0	29.0	F
Navajo	1	0	0	0.3	B
Pima	11	0	0	3.7	F
Pinal	39	0	0	13.0	F
Santa Cruz	DNC	DNC	DNC	DNC	DNC
Yavapai	*	*	*	*	*
Yuma	14	0	0	4.7	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Cochise	0	0	0	0.0	A	6.8	PASS
Coconino	1	0	0	0.3	B	6.8	PASS
Gila	*	*	*	*	*	*	INC
La Paz	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Maricopa	1	1	0	0.8	B	12.0	PASS
Navajo	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pima	0	0	0	0.0	A	5.8	PASS
Pinal	29	1	0	10.2	F	21.6	FAIL
Santa Cruz	4	1	0	1.8	C	13.7	PASS
Yavapai	*	*	*	*	*	*	INC
Yuma	*	*	*	*	*	*	INC

ARKANSAS

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AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Arkansas	19,236	4,458	3,199	420	1,221	673	295	5,973	1,535	3,791
Ashley	22,233	5,305	3,316	499	1,399	760	318	6,587	1,690	4,022
Crittenden	52,554	15,573	5,494	1,466	3,059	1,611	600	13,214	3,380	10,616
Faulkner	106,823	26,283	10,506	2,474	6,592	3,351	1,136	26,245	6,643	16,448
Garland	97,465	21,062	20,725	1,983	6,237	3,496	1,675	32,307	8,268	15,406
Jackson	16,936	3,563	2,557	335	1,100	590	242	5,052	1,291	3,697
Newton	8,298	1,697	1,510	160	545	303	136	2,717	698	1,915
Phillips	21,603	6,362	3,269	599	1,258	691	301	6,102	1,566	7,420
Polk	20,257	4,798	3,880	452	1,267	706	327	6,422	1,646	3,899
Pope	59,952	14,099	8,405	1,327	3,757	1,991	791	16,772	4,273	8,940
Pulaski	376,797	96,790	45,615	9,111	23,181	12,351	4,794	103,309	26,474	60,677
Sebastian	122,274	32,268	15,872	3,038	7,431	3,977	1,586	33,658	8,618	20,814
Union	43,213	10,171	7,045	957	2,726	1,496	650	13,199	3,387	8,340
Washington	195,803	52,248	18,779	4,918	11,765	6,000	2,048	47,163	11,953	28,162
White	74,845	17,598	10,750	1,657	4,687	2,489	998	21,061	5,365	11,857
Totals	**1,238,289**	**312,275**	**160,922**	**29,396**	**76,225**	**40,485**	**15,897**	**339,781**	**86,787**	**206,004**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Arkansas	DNC	DNC	DNC	DNC	DNC
Ashley	DNC	DNC	DNC	DNC	DNC
Crittenden	25	3	0	9.8	F
Faulkner	DNC	DNC	DNC	DNC	DNC
Garland	DNC	DNC	DNC	DNC	DNC
Jackson	DNC	DNC	DNC	DNC	DNC
Newton	4	0	0	1.3	C
Phillips	DNC	DNC	DNC	DNC	DNC
Polk	6	0	0	2.0	C
Pope	DNC	DNC	DNC	DNC	DNC
Pulaski	24	0	0	8.0	F
Sebastian	DNC	DNC	DNC	DNC	DNC
Union	DNC	DNC	DNC	DNC	DNC
Washington	0	0	0	0.0	A
White	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Arkansas	0	0	0	0.0	A	11.8	PASS
Ashley	0	0	0	0.0	A	12.1	PASS
Crittenden	3	0	0	1.0	C	12.4	PASS
Faulkner	0	0	0	0.0	A	11.7	PASS
Garland	1	0	0	0.3	B	11.6	PASS
Jackson	2	0	0	0.7	B	11.4	PASS
Newton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Phillips	1	0	0	0.3	B	11.5	PASS
Polk	0	0	0	0.0	A	11.4	PASS
Pope	1	0	0	0.3	B	12.1	PASS
Pulaski	2	0	0	0.7	B	12.6	PASS
Sebastian	0	0	0	0.0	A	11.5	PASS
Union	1	0	0	0.3	B	11.8	PASS
Washington	*	*	*	*	*	*	INC
White	1	0	0	0.3	B	11.2	PASS

CALIFORNIA

American Lung Association in California

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AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Alameda	1,474,368	347,294	160,789	32,693	94,756	48,721	17,779	395,838	98,066	150,203
Amador	38,238	6,228	7,462	586	2,723	1,438	641	12,816	3,212	3,333
Butte	220,337	45,934	33,068	4,324	14,641	7,514	2,996	63,315	15,671	44,569
Calaveras	46,843	8,464	8,523	797	3,278	1,745	771	15,524	3,905	5,336
Colusa	21,204	6,105	2,450	575	1,264	645	242	5,288	1,305	2,816
Contra Costa	1,029,703	249,240	124,036	23,463	65,998	34,368	13,216	286,262	71,348	96,183
El Dorado	176,075	37,896	19,950	3,567	11,707	6,118	2,301	50,538	12,618	13,692
Fresno	909,153	270,512	89,615	25,465	53,191	26,798	9,390	213,027	52,230	197,265
Glenn	28,237	7,759	3,461	730	1,719	882	338	7,301	1,807	4,713
Humboldt	129,000	26,222	16,670	2,468	8,642	4,447	1,690	36,746	9,107	24,794
Imperial	163,972	47,801	17,493	4,500	9,663	4,855	1,732	38,843	9,511	32,833
Inyo	17,136	3,702	2,779	348	1,150	614	266	5,417	1,365	1,964
Kern	800,458	238,789	71,678	22,479	46,597	23,265	7,790	181,207	44,207	156,128
Kings	149,518	40,715	11,487	3,833	8,930	4,349	1,308	32,288	7,759	22,566
Lake	64,866	13,981	10,479	1,316	4,325	2,278	968	19,868	4,976	11,462
Los Angeles	9,862,049	2,549,168	1,054,932	239,969	611,881	311,413	112,035	2,508,754	618,355	1,482,051
Madera	148,333	41,276	15,307	3,886	8,910	4,482	1,575	35,653	8,734	25,275
Marin	248,794	47,992	39,344	4,518	17,228	9,250	3,960	81,284	20,524	17,007
Mariposa	17,976	3,112	3,377	293	1,265	669	296	5,948	1,492	2,388
Mendocino	86,221	19,013	13,091	1,790	5,722	3,025	1,267	26,228	6,579	15,032
Merced	246,117	76,722	24,433	7,222	14,091	7,080	2,490	56,327	13,791	52,005
Monterey	408,238	111,869	41,550	10,531	24,728	12,506	4,412	99,791	24,517	49,360
Napa	133,433	30,039	19,339	2,828	8,750	4,567	1,856	38,965	9,720	11,511
Nevada	97,118	17,384	17,481	1,636	6,832	3,661	1,624	32,666	8,239	8,848
Orange	3,010,759	765,649	342,841	72,075	188,534	96,726	35,888	790,757	195,691	294,758
Placer	341,945	74,348	52,148	6,999	22,569	11,699	4,776	99,841	24,827	22,873

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Plumas	20,275	3,525	4,041	332	1,440	778	360	7,082	1,791	2,408
Riverside	2,100,516	583,297	241,428	54,909	126,317	63,620	23,196	513,861	125,986	260,109
Sacramento	1,394,154	362,492	158,340	34,124	86,442	44,138	16,274	359,465	88,749	182,573
San Benito	54,699	15,905	4,925	1,497	3,256	1,668	585	13,325	3,295	5,628
San Bernardino	2,015,355	590,810	170,130	55,617	118,301	59,184	19,520	458,534	111,974	288,756
San Diego	3,001,072	744,470	337,004	70,082	188,661	95,863	34,760	774,396	190,719	364,576
San Francisco	808,976	118,957	119,205	11,198	57,919	29,704	11,458	246,762	61,055	89,423
San Joaquin	672,388	194,385	68,391	18,299	39,916	20,227	7,204	162,098	39,865	108,919
San Luis Obispo	265,297	49,431	38,323	4,653	18,160	9,359	3,670	78,385	19,440	30,243
San Mateo	712,690	160,197	95,081	15,080	46,848	24,544	9,759	207,653	51,894	45,990
Santa Barbara	405,396	95,684	52,593	9,007	25,952	13,259	5,055	109,506	27,044	49,422
Santa Clara	1,764,499	427,432	192,846	40,237	112,189	57,444	20,880	465,457	115,075	131,334
Santa Cruz	253,137	54,445	26,749	5,125	16,736	8,638	3,121	69,965	17,366	32,460
Shasta	180,214	39,783	27,484	3,745	11,887	6,209	2,564	53,356	13,314	31,309
Siskiyou	44,542	8,675	8,444	817	3,074	1,649	750	14,885	3,755	7,182
Solano	407,515	102,651	45,748	9,663	25,664	13,234	4,926	108,476	26,912	35,393
Sonoma	466,741	103,187	61,269	9,714	30,821	16,139	6,371	136,104	34,007	47,726
Stanislaus	510,694	145,476	53,728	13,695	30,520	15,491	5,581	124,778	30,713	72,561
Sutter	92,207	24,502	11,586	2,307	5,676	2,903	1,111	24,023	5,936	14,048
Tehama	61,550	14,766	9,413	1,390	3,949	2,052	849	17,626	4,387	10,009
Tulare	426,276	135,427	40,821	12,749	24,202	12,169	4,249	96,539	23,644	90,369
Tuolumne	55,644	9,339	10,919	879	3,946	2,091	940	18,729	4,702	6,350
Ventura	797,740	206,833	91,279	19,470	49,794	25,737	9,699	212,173	52,697	68,486
Yolo	197,658	45,119	19,143	4,247	12,612	6,249	2,051	48,192	11,706	27,807
Totals	**36,579,326**	**9,324,002**	**4,092,673**	**877,727**	**2,283,373**	**1,165,464**	**426,540**	**9,461,862**	**2,335,582**	**4,752,046**

CALIFORNIA

American Lung Association in California

424 Pendleton Way
Oakland, CA 94621
(510)638-5864
www.lungusa.org/california

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Alameda	15	3	0	6.5	F
Amador	42	7	0	17.5	F
Butte	57	3	0	20.5	F
Calaveras	49	7	0	19.8	F
Colusa	2	0	0	0.7	B
Contra Costa	24	0	0	8.0	F
El Dorado	104	26	1	48.3	F
Fresno	148	31	2	66.2	F
Glenn	2	0	0	0.7	B
Humboldt	0	0	0	0.0	A
Imperial	71	2	0	24.7	F
Inyo	31	0	0	10.3	F
Kern	228	74	4	115.7	F
Kings	103	10	1	40.0	F
Lake	0	0	0	0.0	A
Los Angeles	169	60	9	92.3	F
Madera	40	2	0	14.3	F
Marin	0	0	0	0.0	A
Mariposa	95	5	0	34.2	F
Mendocino	0	0	0	0.0	A
Merced	69	9	1	28.2	F
Monterey	1	0	0	0.3	B
Napa	2	0	0	0.7	B
Nevada	122	12	0	46.7	F
Orange	37	4	0	14.3	F
Placer	97	14	0	39.3	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Alameda	8	0	0	2.7	D	9.6	PASS
Amador	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Butte	11	4	0	5.7	F	13.4	PASS
Calaveras	2	0	0	0.7	B	8.4	PASS
Colusa	3	0	0	1.0	C	*	INC
Contra Costa	17	0	0	5.7	F	9.0	PASS
El Dorado	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fresno	139	14	0	53.3	F	17.7	FAIL
Glenn	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Humboldt	0	0	0	0.0	A	7.5	PASS
Imperial	8	2	0	3.7	F	12.0	PASS
Inyo	6	0	1	2.7	D	6.4	PASS
Kern	128	25	0	55.2	F	21.5	FAIL
Kings	35	2	0	12.7	F	17.0	FAIL
Lake	1	1	0	0.8	B	5.3	PASS
Los Angeles	53	4	0	19.7	F	15.6	FAIL
Madera	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Marin	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mariposa	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mendocino	0	0	0	0.0	A	6.5	PASS
Merced	32	1	0	11.2	F	*	INC
Monterey	0	0	0	0.0	A	7.1	PASS
Napa	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Nevada	5	2	0	2.7	D	7.2	PASS
Orange	23	1	0	8.2	F	*	INC
Placer	3	0	0	1.0	C	9.6	PASS

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Plumas	*	*	*	*	*
Riverside	242	87	13	132.8	F
Sacramento	92	24	3	44.7	F
San Benito	21	0	0	7.0	F
San Bernardino	227	107	19	141.8	F
San Diego	91	7	0	33.8	F
San Francisco	0	0	0	0.0	A
San Joaquin	39	5	0	15.5	F
San Luis Obispo	93	2	0	32.0	F
San Mateo	0	0	0	0.0	A
Santa Barbara	18	0	0	6.0	F
Santa Clara	15	2	0	6.0	F
Santa Cruz	0	0	0	0.0	A
Shasta	30	1	0	10.5	F
Siskiyou	0	0	0	0.0	A
Solano	17	2	0	6.7	F
Sonoma	0	0	0	0.0	A
Stanislaus	51	7	2	21.8	F
Sutter	43	3	0	15.8	F
Tehama	65	1	0	22.2	F
Tulare	253	49	2	110.2	F
Tuolumne	43	5	0	16.8	F
Ventura	85	6	0	31.3	F
Yolo	23	1	0	8.2	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Plumas	13	6	0	7.3	F	12.6	PASS
Riverside	76	4	0	27.3	F	19.7	FAIL
Sacramento	54	3	0	19.5	F	*	INC
San Benito	*	*	*	*	*	*	INC
San Bernardino	26	5	0	11.2	F	17.3	FAIL
San Diego	21	3	0	8.5	F	13.2	PASS
San Francisco	8	0	0	2.7	D	9.4	PASS
San Joaquin	26	1	0	9.2	F	13.5	PASS
San Luis Obispo	0	0	0	0.0	A	8.1	PASS
San Mateo	1	1	0	0.8	B	9.0	PASS
Santa Barbara	1	0	0	0.3	B	10.0	PASS
Santa Clara	21	0	0	7.0	F	11.0	PASS
Santa Cruz	0	0	0	0.0	A	6.7	PASS
Shasta	2	2	1	2.3	D	9.6	PASS
Siskiyou	*	*	*	*	*	*	INC
Solano	13	0	0	4.3	F	9.8	PASS
Sonoma	1	0	0	0.3	B	8.4	PASS
Stanislaus	36	2	0	13.0	F	15.3	FAIL
Sutter	12	6	0	7.0	F	10.1	PASS
Tehama	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tulare	43	2	0	15.3	F	19.7	FAIL
Tuolumne	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ventura	4	0	0	1.3	C	10.9	PASS
Yolo	9	0	0	3.0	D	*	INC

COLORADO

American Lung Association in Colorado

5600 Greenwood Plaza Blvd., Suite 100
Greenwood Village, CO 80111-2316
(303) 388-4327
www.lungusa.org/colorado

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Adams	430,836	123,803	34,523	11,654	24,742	12,774	4,152	98,437	17,051	51,042
Arapahoe	554,282	139,765	58,337	13,157	33,168	18,053	6,619	147,150	25,716	53,625
Archuleta	12,648	2,533	1,970	238	802	457	192	3,969	702	1,424
Boulder	293,161	61,778	25,555	5,816	18,609	9,854	3,292	77,091	13,361	29,232
Delta	30,923	6,607	6,158	622	1,915	1,109	516	10,101	1,807	3,640
Denver	598,707	148,235	62,198	13,954	36,161	19,015	6,680	151,477	26,430	105,987
Douglas	280,621	80,180	15,666	7,548	16,200	8,379	2,520	62,779	10,773	8,708
El Paso	596,053	154,267	57,160	14,522	35,455	18,871	6,601	150,405	26,196	61,423
Elbert	22,929	5,065	1,939	477	1,430	801	285	6,487	1,126	1,258
Garfield	55,426	14,975	4,980	1,410	3,248	1,730	598	13,726	2,387	4,041
Gunnison	15,147	2,725	1,084	257	1,006	505	149	3,738	642	1,717
Jefferson	533,339	119,848	62,521	11,282	32,966	18,496	7,125	154,575	27,097	40,139
La Plata	50,482	9,944	5,267	936	3,251	1,745	617	13,989	2,437	5,295
Larimer	292,825	62,736	31,675	5,906	18,457	9,794	3,473	78,441	13,689	33,125
Mesa	143,171	32,891	21,779	3,096	8,768	4,839	1,991	41,467	7,340	14,876
Montezuma	25,384	6,046	4,135	569	1,531	872	378	7,681	1,364	4,068
Pueblo	156,737	37,693	23,486	3,548	9,465	5,227	2,152	44,806	7,931	25,632
San Miguel	7,552	1,327	327	125	504	260	73	1,906	325	613
Weld	249,775	67,466	20,065	6,351	14,705	7,526	2,405	57,541	9,957	29,374
Totals	**4,349,998**	**1,077,884**	**438,825**	**101,468**	**262,383**	**140,307**	**49,818**	**1,125,766**	**196,331**	**475,219**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Adams	7	0	0	2.3	D
Arapahoe	16	0	0	5.3	F
Archuleta	DNC	DNC	DNC	DNC	DNC
Boulder	21	0	0	7.0	F
Delta	DNC	DNC	DNC	DNC	DNC
Denver	6	0	0	2.0	C
Douglas	36	0	0	12.0	F
El Paso	8	0	0	2.7	D
Elbert	DNC	DNC	DNC	DNC	DNC
Garfield	*	*	*	*	*
Gunnison	DNC	DNC	DNC	DNC	DNC
Jefferson	48	2	0	17.0	F
La Plata	2	0	0	0.7	B
Larimer	40	1	0	13.8	F
Mesa	*	*	*	*	*
Montezuma	2	0	0	0.7	B
Pueblo	DNC	DNC	DNC	DNC	DNC
San Miguel	DNC	DNC	DNC	DNC	DNC
Weld	11	0	0	3.7	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Adams	4	0	0	1.3	C	10.0	PASS
Arapahoe	2	0	0	0.7	B	7.6	PASS
Archuleta	0	0	0	0.0	A	*	INC
Boulder	0	0	0	0.0	A	8.2	PASS
Delta	*	*	*	*	*	*	INC
Denver	8	0	0	2.7	D	9.1	PASS
Douglas	1	0	0	0.3	B	6.3	PASS
El Paso	0	0	0	0.0	A	*	INC
Elbert	0	0	0	0.0	A	4.4	PASS
Garfield	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Gunnison	*	*	*	*	*	*	INC
Jefferson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
La Plata	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Larimer	0	0	0	0.0	A	7.3	PASS
Mesa	0	0	0	0.0	A	9.4	PASS
Montezuma	*	*	*	*	*	*	INC
Pueblo	0	0	0	0.0	A	7.7	PASS
San Miguel	*	*	*	*	*	*	INC
Weld	3	0	0	1.0	C	9.3	PASS

CONNECTICUT

American Lung Association in Connecticut

45 Ash Street
East Hartford, CT 06108-3272
(860) 838-4376
www.lungusa.org/connecticut

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Fairfield	895,030	223,180	118,119	21,009	57,917	29,990	12,062	255,174	46,563	71,553
Hartford	877,312	201,868	125,157	19,003	58,420	30,028	12,237	256,779	46,979	88,314
Litchfield	187,745	40,206	27,670	3,785	12,569	6,696	2,791	58,019	10,634	10,399
Middlesex	164,794	35,836	23,813	3,373	11,090	5,778	2,369	49,607	9,078	8,791
New Haven	846,101	195,441	116,806	18,398	56,656	28,648	11,448	242,533	44,270	89,679
New London	264,519	60,434	35,528	5,689	17,770	8,984	3,554	75,722	13,798	17,431
Tolland	148,406	29,404	16,441	2,768	10,529	5,110	1,833	41,174	7,400	9,076
Totals	**3,383,907**	**786,369**	**463,534**	**74,025**	**224,952**	**115,234**	**46,294**	**979,008**	**178,722**	**295,243**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Fairfield	54	11	1	24.2	F
Hartford	13	6	0	7.3	F
Litchfield	35	1	1	12.8	F
Middlesex	26	5	0	11.2	F
New Haven	27	6	0	12.0	F
New London	21	3	0	8.5	F
Tolland	27	6	0	12.0	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Fairfield	10	0	0	3.3	F	12.4	PASS
Hartford	5	0	0	1.7	C	10.1	PASS
Litchfield	3	0	0	1.0	C	7.3	PASS
Middlesex	DNC	DNC	DNC	DNC	DNC	DNC	DNC
New Haven	21	0	0	7.0	F	12.2	PASS
New London	6	0	0	2.0	C	10.1	PASS
Tolland	DNC	DNC	DNC	DNC	DNC	DNC	DNC

CONNECTICUT

DELAWARE

American Lung Association in Delaware

1021 Gilpin Avenue, Suite 202
Wilmington, DE 19806-3280
(302) 655-7258
www.lungusa.org/delaware

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Kent	155,415	39,423	20,254	3,711	11,108	5,045	1,974	42,244	9,516	16,237
New Castle	529,641	126,166	63,371	11,877	38,653	17,651	6,717	146,215	32,898	49,595
Sussex	188,036	40,640	38,063	3,826	13,506	6,715	3,145	61,354	14,046	22,146
Totals	**873,092**	**206,229**	**121,688**	**19,414**	**63,267**	**29,411**	**11,836**	**249,813**	**56,460**	**87,978**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Kent	22	0	0	7.3	F
New Castle	36	1	1	13.2	F
Sussex	35	0	0	11.7	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Kent	2	0	0	0.7	B	11.8	PASS
New Castle	19	0	0	6.3	F	14.2	PASS
Sussex	2	0	0	0.7	B	12.7	PASS

DISTRICT OF COLUMBIA

American Lung Association in the District of Columbia

1-800-LUNG USA
www.lungusa.org/districtofcolumbia

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
District of Columbia	591,833	112,016	70,648	10,545	45,670	20,145	7,171	161,178	37,950	95,232
Totals	**591,833**	**112,016**	**70,648**	**10,545**	**45,670**	**20,145**	**7,171**	**161,178**	**37,950**	**95,232**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
District Of Columbia	47	4	0	17.7	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
District Of Columbia	13	1	0	4.8	F	13.1	PASS

DISTRICT OF COLUMBIA

FLORIDA

American Lung Association in Florida

6852 Belfort Oaks Place
Jacksonville, FL 32216
(904) 743-2933
www.lungusa.org/florida

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Alachua	241,364	45,171	25,458	4,252	12,828	8,071	2,691	62,669	14,482	45,946
Baker	26,164	6,441	2,802	606	1,290	843	303	6,795	1,622	3,628
Bay	163,946	37,568	23,976	3,537	8,301	5,655	2,336	48,692	11,930	19,051
Brevard	536,521	106,610	110,037	10,036	28,411	19,743	9,266	180,788	44,527	56,466
Broward	1,751,234	405,592	253,835	38,181	88,385	60,021	24,680	515,535	126,050	208,162
Citrus	141,416	23,003	43,393	2,165	7,906	5,610	3,110	55,934	13,779	22,058
Collier	315,258	64,221	83,410	6,046	16,710	11,689	6,155	113,332	27,777	31,866
Columbia	69,092	15,568	10,508	1,466	3,519	2,350	965	20,123	4,853	11,615
Duval	850,962	218,123	91,984	20,533	41,406	27,529	10,173	225,072	54,472	101,194
Escambia	302,939	67,754	45,932	6,378	15,459	10,418	4,307	89,590	21,760	44,908
Highlands	100,011	18,399	32,239	1,732	5,464	3,850	2,206	39,014	9,539	16,494
Hillsborough	1,180,784	289,608	142,324	27,263	58,391	38,774	14,745	320,797	77,410	161,731
Holmes	19,328	4,077	3,216	384	1,004	669	282	5,793	1,392	3,678
Lake	307,243	59,803	89,451	5,630	16,518	11,507	6,290	113,635	27,685	31,061
Lee	593,136	123,320	136,033	11,609	31,152	21,523	10,594	201,480	49,224	62,235
Leon	264,063	53,930	23,506	5,077	13,714	8,692	2,798	66,658	15,546	46,763
Manatee	315,766	66,785	72,146	6,287	16,508	11,465	5,662	107,579	26,374	37,815
Marion	329,628	65,693	81,751	6,184	17,535	12,109	6,138	114,992	28,019	51,494

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Miami-Dade	2,398,245	535,239	369,432	50,385	122,505	82,172	34,023	706,622	170,968	388,934
Orange	1,072,801	267,809	105,719	25,211	52,615	34,240	11,965	272,579	64,938	143,902
Osceola	263,676	68,014	30,693	6,403	12,820	8,350	3,091	68,081	16,176	30,965
Palm Beach	1,265,293	263,530	279,830	24,808	66,354	46,034	22,369	428,508	105,112	145,947
Pasco	471,028	99,038	99,053	9,323	24,615	16,824	7,938	154,088	37,474	61,285
Pinellas	910,260	171,115	192,193	16,108	48,857	34,392	16,379	317,698	78,877	96,869
Polk	580,594	139,886	101,822	13,168	29,069	19,589	8,633	173,401	41,924	86,702
Santa Rosa	150,053	34,207	18,014	3,220	7,586	5,114	1,959	42,542	10,393	15,552
Sarasota	372,057	59,946	113,273	5,643	20,829	14,918	8,264	148,862	36,896	36,035
Seminole	410,854	92,623	47,670	8,719	20,826	14,060	5,332	116,496	28,515	37,905
St. Lucie	265,108	59,663	52,566	5,616	13,582	9,211	4,251	83,384	20,191	33,941
Volusia	498,036	96,782	103,769	9,111	26,528	18,273	8,561	166,977	40,865	62,490
Wakulla	31,089	6,490	4,118	611	1,613	1,070	413	8,904	2,144	3,773
Totals	**16,197,949**	**3,566,008**	**2,790,153**	**335,692**	**832,301**	**564,765**	**245,879**	**4,976,620**	**1,210,916**	**2,100,465**

FLORIDA

American Lung Association in Florida

6852 Belfort Oaks Place
Jacksonville, FL 32216
(904) 743-2933
www.lungusa.org/florida

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Alachua	8	0	0	2.7	D
Baker	2	0	0	0.7	B
Bay	14	0	0	4.7	F
Brevard	6	0	0	2.0	C
Broward	5	0	0	1.7	C
Citrus	DNC	DNC	DNC	DNC	DNC
Collier	1	0	0	0.3	B
Columbia	2	0	0	0.7	B
Duval	14	0	0	4.7	F
Escambia	37	0	0	12.3	F
Highlands	7	0	0	2.3	D
Hillsborough	33	2	0	12.0	F
Holmes	2	0	0	0.7	B
Lake	8	0	0	2.7	D
Lee	3	0	0	1.0	C
Leon	6	0	0	2.0	C
Manatee	10	0	0	3.3	F
Marion	5	0	0	1.7	C

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Alachua	5	0	0	1.7	C	9.0	PASS
Baker	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bay	1	0	0	0.3	B	10.9	PASS
Brevard	1	0	0	0.3	B	7.9	PASS
Broward	7	0	0	2.3	D	8.1	PASS
Citrus	0	0	0	0.0	A	8.4	PASS
Collier	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Columbia	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Duval	5	3	0	3.2	D	9.9	PASS
Escambia	1	0	0	0.3	B	10.6	PASS
Highlands	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hillsborough	1	2	0	1.3	C	9.6	PASS
Holmes	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lake	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lee	0	0	0	0.0	A	7.8	PASS
Leon	2	1	0	1.2	C	11.7	PASS
Manatee	*	*	*	*	*	*	INC
Marion	*	*	*	*	*	*	INC

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Miami-Dade	11	1	0	4.2	F
Orange	16	0	0	5.3	F
Osceola	6	0	0	2.0	C
Palm Beach	4	0	0	1.3	C
Pasco	12	0	0	4.0	F
Pinellas	7	0	0	2.3	D
Polk	13	0	0	4.3	F
Santa Rosa	32	0	0	10.7	F
Sarasota	13	0	0	4.3	F
Seminole	8	0	0	2.7	D
St. Lucie	0	0	0	0.0	A
Volusia	2	0	0	0.7	B
Wakulla	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Miami-Dade	4	0	0	1.3	C	8.8	PASS
Orange	2	1	0	1.2	C	8.6	PASS
Osceola	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Palm Beach	3	0	0	1.0	C	7.2	PASS
Pasco	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pinellas	2	1	0	1.2	C	9.1	PASS
Polk	1	0	0	0.3	B	8.9	PASS
Santa Rosa	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sarasota	0	0	0	0.0	A	7.9	PASS
Seminole	0	1	0	0.5	B	8.8	PASS
St. Lucie	1	0	0	0.3	B	8.0	PASS
Volusia	2	1	0	1.2	C	*	INC
Wakulla	DNC	DNC	DNC	DNC	DNC	DNC	DNC

GEORGIA

American Lung Association in Georgia

2452 Spring Road
Smyrna, GA 30080-3862
(770) 434-5864
www.lungusa.org/georgia

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Bibb	155,216	41,727	20,251	3,928	9,484	4,994	1,990	42,225	12,257	32,923
Chatham	251,120	64,054	31,445	6,030	15,700	8,098	3,114	67,255	19,527	40,699
Chattooga	26,801	5,997	3,940	565	1,744	906	365	7,676	2,228	4,470
Clarke	114,737	22,621	9,846	2,129	7,933	3,587	1,036	26,093	7,587	32,560
Clayton	273,718	80,762	18,664	7,603	16,334	8,035	2,517	61,071	17,757	39,619
Cobb	698,158	182,460	59,274	17,176	43,312	22,154	7,564	175,077	50,882	62,563
Columbia	110,627	29,884	10,144	2,813	6,755	3,522	1,254	28,380	8,246	7,287
Coweta	122,924	34,427	11,480	3,241	7,463	3,751	1,300	29,747	8,643	11,675
Dawson	22,006	5,535	2,571	521	1,384	709	264	5,805	1,686	2,320
Dekalb	739,956	177,921	63,940	16,749	47,358	23,853	7,994	186,713	54,267	113,247
Dougherty	95,754	25,778	12,604	2,427	5,863	3,052	1,210	25,705	7,462	23,375
Douglas	127,932	36,663	9,266	3,451	7,713	3,826	1,225	29,360	8,536	12,544
Fayette	106,465	24,339	12,585	2,291	6,802	3,720	1,457	31,368	9,109	4,981
Floyd	95,980	23,829	13,797	2,243	6,042	3,156	1,281	26,867	7,798	16,862
Fulton	1,014,932	253,320	82,006	23,847	64,183	32,288	10,655	251,177	73,012	146,956
Glynn	75,884	19,071	11,007	1,795	4,736	2,526	1,045	21,749	6,312	12,767

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Gwinnett	789,499	229,440	50,390	21,599	47,272	23,564	7,374	179,401	52,168	75,096
Hall	184,814	53,062	18,757	4,995	11,132	5,550	1,963	44,315	12,873	25,805
Henry	191,502	57,052	14,428	5,371	11,397	5,575	1,781	42,649	12,398	15,418
Houston	133,161	35,886	14,200	3,378	8,166	4,199	1,540	34,184	9,929	14,773
Lowndes	104,583	27,406	10,194	2,580	6,547	3,199	1,083	25,025	7,271	18,956
Murray	40,304	11,124	3,778	1,047	2,458	1,242	433	9,874	2,869	5,472
Muscogee	186,984	50,574	22,961	4,761	11,426	5,948	2,305	49,618	14,406	32,952
Paulding	133,135	40,982	8,561	3,858	7,850	3,744	1,118	27,816	8,089	10,100
Richmond	199,486	52,044	24,195	4,899	12,371	6,386	2,438	52,876	15,353	45,383
Rockdale	83,222	22,309	8,037	2,100	5,104	2,643	948	21,337	6,199	10,534
Sumter	32,449	8,662	4,240	815	1,997	1,030	404	8,624	2,504	8,757
Walker	64,799	15,213	9,398	1,432	4,142	2,188	892	18,692	5,425	9,623
Washington	21,006	4,918	2,822	463	1,347	702	276	5,894	1,711	4,560
Wilkinson	10,026	2,559	1,467	241	622	333	139	2,873	834	1,908
Totals	**6,207,180**	**1,639,619**	**566,248**	**154,348**	**384,637**	**194,480**	**66,965**	**1,539,446**	**447,338**	**844,185**

GEORGIA

American Lung Association in Georgia

2452 Spring Road
Smyrna, GA 30080-3862
(770) 434-5864
www.lungusa.org/georgia

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Bibb	27	2	0	10.0	F
Chatham	1	0	0	0.3	B
Chattooga	12	1	0	4.5	F
Clarke	33	0	0	11.0	F
Clayton	DNC	DNC	DNC	DNC	DNC
Cobb	43	1	0	14.8	F
Columbia	9	0	0	3.0	D
Coweta	25	1	0	8.8	F
Dawson	13	0	0	4.3	F
Dekalb	51	8	2	22.3	F
Dougherty	DNC	DNC	DNC	DNC	DNC
Douglas	46	4	0	17.3	F
Fayette	35	6	0	14.7	F
Floyd	DNC	DNC	DNC	DNC	DNC
Fulton	45	8	2	20.3	F
Glynn	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Bibb	17	1	0	6.2	F	15.1	FAIL
Chatham	3	0	0	1.0	C	12.7	PASS
Chattooga	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clarke	0	0	0	0.0	A	*	INC
Clayton	5	0	0	1.7	C	15.2	FAIL
Cobb	7	1	0	2.8	D	15.1	FAIL
Columbia	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Coweta	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dawson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dekalb	11	1	0	4.2	F	14.3	PASS
Dougherty	6	1	0	2.5	D	13.9	PASS
Douglas	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fayette	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Floyd	13	0	0	4.3	F	*	INC
Fulton	15	2	0	6.0	F	*	INC
Glynn	2	0	0	0.7	B	11.0	PASS

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Gwinnett	49	4	1	19.0	F
Hall	DNC	DNC	DNC	DNC	DNC
Henry	39	10	0	18.0	F
Houston	DNC	DNC	DNC	DNC	DNC
Lowndes	DNC	DNC	DNC	DNC	DNC
Murray	23	0	0	7.7	F
Muscogee	12	0	0	4.0	F
Paulding	24	1	0	8.5	F
Richmond	16	0	0	5.3	F
Rockdale	46	9	0	19.8	F
Sumter	8	0	0	2.7	D
Walker	DNC	DNC	DNC	DNC	DNC
Washington	DNC	DNC	DNC	DNC	DNC
Wilkinson	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Gwinnett	1	0	0	0.3	B	14.5	PASS
Hall	2	0	0	0.7	B	13.0	PASS
Henry	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Houston	4	2	0	2.3	D	*	INC
Lowndes	0	1	0	0.5	B	11.5	PASS
Murray	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Muscogee	5	1	0	2.2	D	14.4	PASS
Paulding	3	0	0	1.0	C	13.4	PASS
Richmond	3	0	0	1.0	C	14.8	PASS
Rockdale	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sumter	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Walker	3	0	0	1.0	C	*	INC
Washington	2	0	0	0.7	B	14.2	PASS
Wilkinson	3	0	0	1.0	C	*	INC

HAWAII

American Lung Association in Hawaii

630 Iwilei Road, Suite 575
Honolulu, HI 96817
(808) 537-5966
www.lungusa.org/hawaii

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Honolulu	905,034	199,268	138,930	18,758	67,174	30,963	12,726	265,169	59,018	74,601
Maui	143,574	32,328	17,393	3,043	10,723	4,866	1,849	40,283	8,939	12,798
Totals	**1,048,608**	**231,596**	**156,323**	**21,801**	**77,896**	**35,829**	**14,575**	**305,452**	**67,958**	**87,399**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Honolulu	0	0	0	0.0	A
Maui	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Honolulu	1	0	0	0.3	B	5.2	PASS
Maui	0	0	0	0.0	A	4.9	PASS

HAWAII

IDAHO

American Lung Association in Idaho

1412 W. Idaho St. Suite 100
Boise, ID 83702
(208) 345-5864
www.lungusa.org/idaho

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Ada	380,920	100,462	38,529	9,457	24,776	12,012	4,289	96,576	18,901	33,406
Bannock	80,812	23,134	8,364	2,178	5,080	2,467	893	19,943	3,913	11,065
Benewah	9,352	2,227	1,577	210	637	329	147	2,952	620	1,380
Butte	2,751	711	455	67	183	96	43	863	182	407
Canyon	183,939	57,714	19,223	5,433	11,010	5,316	1,920	42,801	8,345	27,003
Franklin	12,454	4,064	1,488	383	736	364	143	3,049	612	1,154
Gem	16,513	4,044	2,973	381	1,097	564	255	5,069	1,061	2,412
Idaho	15,448	3,089	3,066	291	1,103	579	272	5,320	1,133	2,788
Kootenai	137,475	33,733	19,680	3,175	9,164	4,595	1,881	39,345	8,019	12,800
Lemhi	7,808	1,584	1,461	149	559	293	135	2,669	567	1,195
Shoshone	12,913	2,609	2,453	246	922	482	223	4,401	934	2,307
Totals	**860,385**	**233,371**	**99,269**	**21,970**	**55,266**	**27,097**	**10,201**	**222,988**	**44,288**	**95,917**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Ada	20	0	0	6.7	F
Bannock	DNC	DNC	DNC	DNC	DNC
Benewah	DNC	DNC	DNC	DNC	DNC
Butte	0	0	0	0.0	A
Canyon	*	*	*	*	*
Franklin	DNC	DNC	DNC	DNC	DNC
Gem	DNC	DNC	DNC	DNC	DNC
Idaho	DNC	DNC	DNC	DNC	DNC
Kootenai	0	0	0	0.0	A
Lemhi	DNC	DNC	DNC	DNC	DNC
Shoshone	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Ada	1	0	0	0.3	B	*	INC
Bannock	*	*	*	*	*	*	INC
Benewah	2	0	0	0.7	B	9.6	PASS
Butte	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Canyon	1	0	0	0.3	B	*	INC
Franklin	5	0	0	1.7	C	*	INC
Gem	*	*	*	*	*	*	INC
Idaho	3	0	0	1.0	C	*	INC
Kootenai	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lemhi	*	*	*	*	*	*	INC
Shoshone	10	0	0	3.3	F	11.7	PASS

ILLINOIS

American Lung Association in Illinois

3000 Kelly Lane
Springfield, IL 62711
(217) 787-5864
www.lungusa.org/illinois

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Adams	66,897	15,086	11,803	1,420	4,103	2,320	1,023	20,565	4,882	7,985
Champaign	193,636	38,473	19,124	3,622	12,007	6,233	1,978	47,265	10,476	32,595
Clark	16,834	3,742	2,964	352	1,037	588	259	5,214	1,240	2,014
Cook	5,294,664	1,313,534	624,187	123,651	311,719	171,660	64,274	1,408,857	329,408	767,182
Dupage	930,528	230,196	100,835	21,670	54,905	30,785	11,479	253,078	60,111	52,767
Effingham	34,275	8,527	5,214	803	2,032	1,143	480	9,901	2,347	3,643
Hamilton	8,267	1,681	1,712	158	524	301	142	2,757	660	1,046
Jersey	22,622	4,875	3,471	459	1,399	783	323	6,720	1,587	2,137
Kane	507,579	149,130	43,543	14,039	27,904	15,147	5,136	119,009	27,553	44,955
Lake	712,453	195,723	68,863	18,425	40,395	22,380	8,028	180,638	42,529	53,114
Lasalle	112,474	25,932	17,977	2,441	6,836	3,855	1,636	33,565	7,965	11,409
Macon	108,328	24,654	17,437	2,321	6,619	3,764	1,613	32,967	7,873	14,164
Macoupin	48,138	10,398	8,071	979	2,984	1,685	725	14,766	3,507	5,870
Madison	268,078	61,931	37,811	5,830	16,217	9,045	3,628	76,653	18,072	32,953
Mchenry	318,641	85,173	32,125	8,018	18,247	10,064	3,623	81,274	19,056	16,437
Mclean	165,298	37,593	16,322	3,539	9,922	5,284	1,767	41,128	9,351	17,484
Peoria	183,655	45,056	25,586	4,241	10,903	6,078	2,442	51,540	12,145	26,464
Randolph	32,641	6,618	4,937	623	2,047	1,137	459	9,654	2,267	4,163
Rock Island	146,886	33,097	23,243	3,116	8,982	5,052	2,126	43,807	10,379	17,017
Sangamon	194,925	45,570	27,236	4,290	11,767	6,639	2,691	56,638	13,474	21,830
St. Clair	262,291	66,660	33,180	6,275	15,355	8,520	3,306	71,095	16,709	39,322
Will	681,097	192,551	57,505	18,126	37,988	20,509	6,834	159,846	36,835	43,879
Winnebago	300,252	74,672	39,417	7,029	17,723	9,862	3,879	82,824	19,504	40,840
Totals	**10,610,459**	**2,670,872**	**1,222,563**	**251,427**	**621,614**	**342,834**	**127,851**	**2,809,761**	**657,929**	**1,259,270**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Adams	4	0	0	1.3	C
Champaign	1	0	0	0.3	B
Clark	2	0	0	0.7	B
Cook	23	2	0	8.7	F
Dupage	1	0	0	0.3	B
Effingham	4	0	0	1.3	C
Hamilton	4	0	0	1.3	C
Jersey	6	0	0	2.0	C
Kane	3	0	0	1.0	C
Lake	9	0	0	3.0	D
Lasalle	DNC	DNC	DNC	DNC	DNC
Macon	6	0	0	2.0	C
Macoupin	1	0	0	0.3	B
Madison	35	1	0	12.2	F
Mchenry	2	0	0	0.7	B
Mclean	5	0	0	1.7	C
Peoria	7	0	0	2.3	D
Randolph	9	0	0	3.0	D
Rock Island	1	0	0	0.3	B
Sangamon	2	0	0	0.7	B
St. Clair	8	2	0	3.7	F
Will	2	0	0	0.7	B
Winnebago	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Adams	0	0	0	0.0	A	*	INC
Champaign	0	0	0	0.0	A	11.7	PASS
Clark	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cook	26	0	0	8.7	F	*	INC
Dupage	3	0	0	1.0	C	12.6	PASS
Effingham	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hamilton	2	0	0	0.7	B	12.3	PASS
Jersey	0	0	0	0.0	A	11.6	PASS
Kane	3	0	0	1.0	C	12.5	PASS
Lake	0	0	0	0.0	A	10.6	PASS
Lasalle	0	0	0	0.0	A	*	INC
Macon	2	0	0	0.7	B	12.7	PASS
Macoupin	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Madison	10	0	0	3.3	F	15.7	FAIL
Mchenry	1	0	0	0.3	B	11.2	PASS
Mclean	0	0	0	0.0	A	11.5	PASS
Peoria	2	0	0	0.7	B	12.1	PASS
Randolph	1	0	0	0.3	B	12.0	PASS
Rock Island	1	0	0	0.3	B	11.2	PASS
Sangamon	0	0	0	0.0	A	11.9	PASS
St. Clair	0	0	0	0.0	A	14.2	PASS
Will	3	0	0	1.0	C	12.8	PASS
Winnebago	2	0	0	0.7	B	11.8	PASS

INDIANA

American Lung Association in Indiana

115 W. Washington Street, Suite 1180 South
Indianapolis, IN 46204
(317) 819-1181
www.lungusa.org/indiana

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Allen	350,523	94,318	41,146	8,879	23,517	11,210	4,296	93,135	24,806	39,724
Boone	55,027	14,421	6,483	1,358	3,734	1,788	688	14,897	3,974	3,480
Carroll	19,864	4,550	2,995	428	1,409	688	288	5,958	1,596	1,663
Clark	106,673	25,813	13,601	2,430	7,416	3,540	1,377	29,603	7,886	11,286
Delaware	114,685	23,390	16,813	2,202	8,319	3,930	1,550	32,960	8,743	18,404
Dubois	41,449	10,238	6,008	964	2,868	1,391	575	11,976	3,204	3,044
Elkhart	199,137	56,365	22,491	5,306	13,068	6,172	2,321	50,769	13,481	24,654
Floyd	73,780	17,462	9,518	1,644	5,189	2,508	994	21,196	5,669	8,269
Gibson	32,666	7,612	4,905	717	2,304	1,121	468	9,698	2,597	3,813
Greene	32,577	7,419	5,096	698	2,312	1,127	477	9,808	2,627	4,361
Hamilton	269,785	79,486	21,492	7,483	17,439	8,090	2,712	63,355	16,744	11,263
Hancock	67,282	16,866	8,438	1,588	4,629	2,215	864	18,553	4,947	3,778
Hendricks	137,240	35,734	13,896	3,364	9,292	4,348	1,551	34,942	9,255	6,866
Henry	47,162	10,320	7,766	971	3,388	1,660	715	14,581	3,910	5,588
Howard	83,381	20,222	12,669	1,904	5,814	2,844	1,204	24,782	6,645	10,903
Huntington	37,570	8,741	5,658	823	2,648	1,285	535	11,098	2,969	3,886
Jackson	42,193	10,406	6,129	980	2,914	1,405	577	12,049	3,217	4,359

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Johnson	139,158	35,725	16,033	3,363	9,468	4,467	1,669	36,644	9,727	10,153
Knox	38,057	8,036	6,308	756	2,747	1,328	563	11,547	3,084	5,949
Lake	493,800	127,626	64,372	12,014	33,680	16,257	6,504	137,886	36,854	81,485
Laporte	110,888	25,448	15,450	2,396	7,847	3,781	1,522	32,135	8,582	13,130
Madison	131,501	29,819	20,896	2,807	9,329	4,535	1,920	39,457	10,557	18,268
Marion	880,380	236,434	96,052	22,257	58,985	27,808	10,270	227,001	60,257	141,836
Morgan	70,668	17,322	8,376	1,631	4,910	2,354	904	19,598	5,231	7,361
Perry	18,929	3,886	2,817	366	1,379	663	269	5,647	1,507	2,059
Porter	162,181	38,139	19,205	3,590	11,405	5,447	2,072	45,149	12,036	13,728
Posey	26,079	5,791	3,407	545	1,877	916	368	7,804	2,094	2,587
Shelby	44,186	10,584	5,826	996	3,089	1,486	590	12,558	3,354	4,695
Spencer	20,111	4,576	3,034	431	1,432	702	295	6,103	1,638	1,856
St. Joseph	266,680	67,369	34,647	6,342	18,271	8,732	3,436	73,380	19,551	36,910
Tippecanoe	164,237	35,280	15,715	3,321	11,638	5,189	1,645	39,346	10,229	27,085
Vanderburgh	174,729	40,419	25,619	3,805	12,310	5,927	2,422	50,685	13,527	28,309
Vigo	105,968	23,217	14,516	2,186	7,557	3,578	1,393	29,866	7,931	18,942
Warrick	57,656	13,801	7,099	1,299	4,045	1,955	765	16,439	4,398	4,379
Totals	**4,616,202**	**1,166,835**	**564,476**	**109,844**	**316,227**	**150,447**	**57,799**	**1,250,605**	**332,825**	**584,073**

INDIANA

American Lung Association in Indiana

115 W. Washington Street, Suite 1180 South
Indianapolis, IN 46204
(317) 819-1181
www.lungusa.org/indiana

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Allen	11	0	0	3.7	F
Boone	15	0	0	5.0	F
Carroll	5	0	0	1.7	C
Clark	35	0	0	11.7	F
Delaware	10	0	0	3.3	F
Dubois	DNC	DNC	DNC	DNC	DNC
Elkhart	10	0	0	3.3	F
Floyd	22	3	0	8.8	F
Gibson	DNC	DNC	DNC	DNC	DNC
Greene	20	0	0	6.7	F
Hamilton	27	0	0	9.0	F
Hancock	15	0	0	5.0	F
Hendricks	10	0	0	3.3	F
Henry	DNC	DNC	DNC	DNC	DNC
Howard	DNC	DNC	DNC	DNC	DNC
Huntington	6	0	0	2.0	C
Jackson	11	0	0	3.7	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Allen	3	0	0	1.0	C	12.3	PASS
Boone	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carroll	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clark	20	0	0	6.7	F	15.3	FAIL
Delaware	3	0	0	1.0	C	12.3	PASS
Dubois	10	0	0	3.3	F	13.7	PASS
Elkhart	5	1	0	2.2	D	*	INC
Floyd	6	0	0	2.0	C	13.6	PASS
Gibson	*	*	*	*	*	*	INC
Greene	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hamilton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hancock	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hendricks	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Henry	1	0	0	0.3	B	*	INC
Howard	2	0	0	0.7	B	12.4	PASS
Huntington	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jackson	DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Johnson	22	0	0	7.3	F
Knox	DNC	DNC	DNC	DNC	DNC
Lake	21	0	0	7.0	F
Laporte	12	0	0	4.0	F
Madison	8	0	0	2.7	D
Marion	29	0	0	9.7	F
Morgan	21	0	0	7.0	F
Perry	19	0	0	6.3	F
Porter	12	0	0	4.0	F
Posey	14	0	0	4.7	F
Shelby	22	0	0	7.3	F
Spencer	DNC	DNC	DNC	DNC	DNC
St. Joseph	6	0	0	2.0	C
Tippecanoe	DNC	DNC	DNC	DNC	DNC
Vanderburgh	39	0	0	13.0	F
Vigo	10	0	0	3.3	F
Warrick	23	0	0	7.7	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Johnson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Knox	4	0	0	1.3	C	12.9	PASS
Lake	8	0	0	2.7	D	13.3	PASS
Laporte	3	0	0	1.0	C	11.5	PASS
Madison	5	0	0	1.7	C	12.6	PASS
Marion	21	0	0	7.0	F	14.7	PASS
Morgan	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Perry	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Porter	2	0	0	0.7	B	12.2	PASS
Posey	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Shelby	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Spencer	3	0	0	1.0	C	13.0	PASS
St. Joseph	5	0	0	1.7	C	12.0	PASS
Tippecanoe	3	0	0	1.0	C	12.2	PASS
Vanderburgh	3	0	0	1.0	C	13.7	PASS
Vigo	5	0	0	1.7	C	13.2	PASS
Warrick	DNC	DNC	DNC	DNC	DNC	DNC	DNC

IOWA

American Lung Association in Iowa

2530 73rd Street
Des Moines, IA 50322
(515) 309-9507
www.lungusa.org/iowa

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Black Hawk	128,347	28,782	17,978	2,709	7,718	4,330	1,713	36,429	6,755	18,112
Bremer	23,690	5,023	4,048	473	1,431	833	360	7,312	1,382	1,579
Clinton	48,942	11,450	8,115	1,078	2,847	1,702	744	15,061	2,863	5,797
Delaware	17,301	4,119	2,808	388	999	601	262	5,314	1,011	1,613
Harrison	15,222	3,522	2,622	332	887	533	237	4,756	907	1,612
Johnson	128,094	26,882	10,417	2,531	8,102	4,083	1,237	30,450	5,299	18,812
Lee	35,408	7,813	5,846	735	2,084	1,264	553	11,199	2,134	4,916
Linn	208,574	51,914	26,754	4,887	12,110	6,841	2,667	57,231	10,604	18,880
Montgomery	10,870	2,473	2,192	233	629	392	187	3,631	703	1,508
Muscatine	42,504	11,032	5,203	1,039	2,412	1,396	547	11,737	2,186	5,000
Palo Alto	9,345	1,965	1,978	185	558	340	163	3,144	607	1,022
Polk	424,778	113,063	47,435	10,643	24,184	13,483	5,019	110,456	20,279	41,185
Pottawattamie	89,647	22,188	12,314	2,089	5,173	2,995	1,213	25,533	4,777	10,128
Scott	164,690	41,973	20,670	3,951	9,411	5,437	2,142	45,801	8,533	19,090
Story	86,754	15,909	8,935	1,498	5,701	2,836	902	21,506	3,759	13,524
Van Buren	7,676	1,733	1,449	163	450	272	125	2,463	472	1,083
Warren	45,059	10,466	6,032	985	2,666	1,520	600	12,797	2,379	2,940
Woodbury	102,559	28,333	13,339	2,667	5,705	3,280	1,316	27,835	5,195	14,147
Wright	12,903	2,948	2,724	278	742	470	230	4,411	859	1,291
Totals	**1,602,363**	**391,588**	**200,859**	**36,864**	**93,811**	**52,608**	**20,217**	**437,066**	**80,701**	**182,239**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Black Hawk	DNC	DNC	DNC	DNC	DNC
Bremer	2	0	0	0.7	B
Clinton	2	0	0	0.7	B
Delaware	DNC	DNC	DNC	DNC	DNC
Harrison	3	0	0	1.0	C
Johnson	DNC	DNC	DNC	DNC	DNC
Lee	DNC	DNC	DNC	DNC	DNC
Linn	5	0	0	1.7	C
Montgomery	2	0	0	0.7	B
Muscatine	DNC	DNC	DNC	DNC	DNC
Palo Alto	0	0	0	0.0	A
Polk	0	0	0	0.0	A
Pottawattamie	DNC	DNC	DNC	DNC	DNC
Scott	1	0	0	0.3	B
Story	3	0	0	1.0	C
Van Buren	3	0	0	1.0	C
Warren	1	0	0	0.3	B
Woodbury	DNC	DNC	DNC	DNC	DNC
Wright	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Black Hawk	5	0	0	1.7	C	10.9	PASS
Bremer	*	*	*	*	*	*	INC
Clinton	11	0	0	3.7	F	11.7	PASS
Delaware	*	*	*	*	*	*	INC
Harrison	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Johnson	8	0	0	2.7	D	11.3	PASS
Lee	*	*	*	*	*	*	INC
Linn	4	0	0	1.3	C	10.4	PASS
Montgomery	0	0	0	0.0	A	9.5	PASS
Muscatine	14	0	0	4.7	F	12.9	PASS
Palo Alto	2	0	0	0.7	B	9.0	PASS
Polk	1	0	0	0.3	B	10.0	PASS
Pottawattamie	2	0	0	0.7	B	10.8	PASS
Scott	15	0	0	5.0	F	13.9	PASS
Story	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Van Buren	0	0	0	0.0	A	10.0	PASS
Warren	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Woodbury	3	0	0	1.0	C	10.3	PASS
Wright	2	0	0	0.7	B	9.8	PASS

KANSAS

American Lung Association in Kansas

2400 Troost Avenue, #4300
Kansas City, MO 64108
(816) 842-5242
www.lungusa.org/kansas

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Douglas	114,748	21,721	10,552	2,045	8,283	3,727	1,148	27,927	5,852	18,815
Johnson	534,093	138,780	55,674	13,064	34,327	17,155	6,264	139,510	30,611	24,255
Leavenworth	74,276	18,222	7,644	1,715	4,878	2,419	870	19,528	4,271	5,616
Linn	9,616	2,128	1,804	200	633	344	158	3,112	708	1,121
Sedgwick	482,863	133,469	55,511	12,564	30,281	15,168	5,745	125,237	27,579	58,602
Shawnee	174,709	42,886	24,252	4,037	11,322	5,848	2,373	49,903	11,133	20,786
Sumner	23,616	5,745	3,432	541	1,523	810	340	7,040	1,585	2,654
Trego	2,882	581	636	55	192	109	54	1,027	237	295
Wyandotte	154,287	44,343	16,063	4,174	9,558	4,744	1,739	38,605	8,458	29,188
Totals	**1,571,090**	**407,875**	**175,568**	**38,395**	**100,996**	**50,324**	**18,691**	**411,889**	**90,434**	**161,332**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Douglas	*	*	*	*	*
Johnson	6	0	0	2.0	C
Leavenworth	9	0	0	3.0	D
Linn	4	0	0	1.3	C
Sedgwick	2	0	0	0.7	B
Shawnee	*	*	*	*	*
Sumner	8	0	0	2.7	D
Trego	4	0	0	1.3	C
Wyandotte	12	1	0	4.5	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Douglas	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Johnson	0	0	0	0.0	A	9.7	PASS
Leavenworth	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Linn	0	0	0	0.0	A	10.1	PASS
Sedgwick	3	0	0	1.0	C	9.5	PASS
Shawnee	0	0	0	0.0	A	*	INC
Sumner	0	0	0	0.0	A	9.0	PASS
Trego	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wyandotte	1	0	0	0.3	B	11.2	PASS

KENTUCKY

American Lung Association in Kentucky

4100 Churchman Avenue
Louisville, KY 40215
(502) 363-2652
www.lungusa.org/kentucky

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Bell	29,055	6,452	4,393	607	2,175	1,005	416	8,653	2,344	8,870
Boone	115,231	31,617	10,387	2,976	8,046	3,556	1,224	28,137	7,522	6,971
Boyd	48,560	10,319	7,704	971	3,693	1,725	732	15,049	4,090	8,394
Bullitt	75,028	17,826	7,701	1,678	5,518	2,467	883	19,875	5,334	6,992
Campbell	87,038	20,614	11,393	1,941	6,406	2,930	1,156	24,678	6,669	9,749
Carter	27,454	6,470	3,660	609	2,016	917	360	7,691	2,074	5,566
Christian	79,820	25,516	8,362	2,402	5,179	2,293	834	18,522	4,950	15,145
Daviess	94,418	23,138	13,892	2,178	6,870	3,184	1,325	27,501	7,459	12,559
Edmonson	12,085	2,580	1,860	243	913	421	174	3,626	982	2,481
Fayette	282,114	62,607	30,205	5,894	21,037	9,304	3,282	74,293	19,858	41,512
Franklin	48,844	10,723	6,450	1,009	3,686	1,692	668	14,270	3,861	6,196
Greenup	37,388	7,885	6,451	742	2,846	1,341	589	11,893	3,239	6,264
Hancock	8,663	2,180	1,093	205	627	288	114	2,431	658	1,131
Hardin	98,546	25,459	11,680	2,397	7,053	3,207	1,230	26,668	7,195	11,672
Henderson	45,462	10,521	6,440	990	3,377	1,564	640	13,409	3,637	6,627
Jefferson	713,877	172,448	96,731	16,234	52,292	24,086	9,705	204,985	55,513	102,122
Jessamine	46,716	11,760	4,919	1,107	3,357	1,494	536	12,026	3,221	5,429

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Kenton	157,629	40,737	17,050	3,835	11,299	5,108	1,899	41,899	11,287	17,152
Larue	13,722	3,056	2,319	288	1,025	479	208	4,222	1,147	2,327
Laurel	57,586	13,973	7,332	1,315	4,195	1,905	739	15,901	4,287	11,436
Livingston	9,591	1,895	1,683	178	743	350	154	3,103	845	1,284
Madison	82,192	18,366	8,888	1,729	6,080	2,660	922	21,028	5,597	12,413
McCracken	65,109	14,624	10,574	1,377	4,883	2,297	995	20,257	5,517	10,657
Ohio	23,789	5,582	3,635	525	1,751	810	339	7,006	1,899	4,481
Oldham	56,874	13,401	4,791	1,262	4,230	1,893	651	15,041	4,042	3,050
Perry	29,241	6,756	3,886	636	2,172	998	397	8,439	2,284	7,855
Pike	65,331	13,995	8,750	1,317	4,969	2,286	908	19,343	5,238	16,151
Pulaski	60,851	13,672	10,289	1,287	4,529	2,114	917	18,607	5,053	14,460
Simpson	17,019	4,102	2,375	386	1,243	570	230	4,851	1,312	2,387
Trigg	13,418	2,874	2,529	271	1,013	479	218	4,320	1,177	1,849
Warren	105,862	24,470	11,836	2,304	7,787	3,450	1,237	27,736	7,417	17,199
Totals	**2,608,513**	**625,618**	**329,258**	**58,893**	**191,010**	**86,873**	**33,682**	**725,460**	**195,710**	**380,381**

KENTUCKY

American Lung Association in Kentucky

4100 Churchman Avenue
Louisville, KY 40215
(502) 363-2652
www.lungusa.org/kentucky

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Bell	19	0	0	6.3	F
Boone	6	0	0	2.0	C
Boyd	11	0	0	3.7	F
Bullitt	11	0	0	3.7	F
Campbell	21	0	0	7.0	F
Carter	2	0	0	0.7	B
Christian	28	0	0	9.3	F
Daviess	21	0	0	7.0	F
Edmonson	15	0	0	5.0	F
Fayette	7	0	0	2.3	D
Franklin	DNC	DNC	DNC	DNC	DNC
Greenup	17	0	0	5.7	F
Hancock	23	0	0	7.7	F
Hardin	16	0	0	5.3	F
Henderson	16	0	0	5.3	F
Jefferson	36	1	0	12.5	F
Jessamine	18	0	0	6.0	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Bell	1	1	0	0.8	B	13.8	PASS
Boone	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Boyd	5	0	0	1.7	C	13.4	PASS
Bullitt	5	0	0	1.7	C	14.0	PASS
Campbell	0	0	0	0.0	A	*	INC
Carter	2	0	0	0.7	B	11.5	PASS
Christian	5	0	0	1.7	C	12.8	PASS
Daviess	4	0	0	1.3	C	13.1	PASS
Edmonson	*	*	*	*	*	*	INC
Fayette	5	0	0	1.7	C	13.4	PASS
Franklin	4	0	0	1.3	C	12.5	PASS
Greenup	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hancock	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hardin	4	0	0	1.3	C	13.3	PASS
Henderson	4	0	0	1.3	C	13.2	PASS
Jefferson	18	0	0	6.0	F	14.5	PASS
Jessamine	DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Kenton	17	0	0	5.7	F
Larue	*	*	*	*	*
Laurel	DNC	DNC	DNC	DNC	DNC
Livingston	7	0	0	2.3	D
Madison	DNC	DNC	DNC	DNC	DNC
McCracken	9	0	0	3.0	D
Ohio	*	*	*	*	*
Oldham	32	0	0	10.7	F
Perry	4	0	0	1.3	C
Pike	9	0	0	3.0	D
Pulaski	4	0	0	1.3	C
Simpson	19	0	0	6.3	F
Trigg	20	0	0	6.7	F
Warren	7	0	0	2.3	D

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Kenton	2	0	0	0.7	B	13.1	PASS
Larue	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Laurel	*	*	*	*	*	*	INC
Livingston	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Madison	2	0	0	0.7	B	12.0	PASS
McCracken	5	0	0	1.7	C	13.1	PASS
Ohio	2	0	0	0.7	B	13.0	PASS
Oldham	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Perry	3	0	0	1.0	C	*	INC
Pike	3	0	0	1.0	C	12.7	PASS
Pulaski	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Simpson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Trigg	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Warren	7	0	0	2.3	D	*	INC

LOUISIANA

American Lung Association in Louisiana

2325 Severn Avenue, Suite 8
Metairie, LA 70001-6918
(504) 828-5864
www.lungusa.org/louisiana

AT-RISK GROUPS

				Lung Diseases						
Parish	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Ascension Parish	101,789	29,423	8,349	2,770	5,915	3,041	1,010	23,675	6,895	9,995
Bossier Parish	110,250	29,996	12,944	2,824	6,450	3,465	1,311	28,566	8,371	14,715
Caddo Parish	252,895	63,910	34,877	6,016	15,030	8,306	3,344	70,526	20,757	48,885
Calcasieu Parish	185,618	47,702	23,246	4,490	11,015	6,031	2,345	50,409	14,831	27,833
Concordia Parish	19,064	4,770	3,031	449	1,122	642	276	5,631	1,665	4,629
East Baton Rouge Parish	428,360	106,487	45,403	10,024	26,065	13,732	4,918	110,460	32,284	71,714
Iberville Parish	32,545	7,716	3,730	726	2,002	1,067	393	8,694	2,546	6,310
Jefferson Parish	436,181	103,450	59,609	9,738	26,292	14,864	6,018	126,852	37,565	55,909
Lafayette Parish	206,976	53,354	21,126	5,023	12,435	6,567	2,340	52,734	15,429	29,691
Lafourche Parish	92,572	22,558	11,090	2,124	5,620	3,035	1,147	25,028	7,347	14,452
Livingston Parish	120,256	32,932	11,037	3,100	7,117	3,683	1,259	29,024	8,456	13,666
Orleans Parish	311,853	64,171	38,344	6,041	19,754	10,908	4,162	90,566	26,749	69,159
Ouachita Parish	150,051	39,586	18,686	3,726	8,871	4,768	1,831	39,553	11,581	31,928
Pointe Coupee Parish	22,401	5,383	3,303	507	1,340	763	318	6,602	1,955	4,637
Rapides Parish	133,131	34,206	18,175	3,220	7,864	4,354	1,753	36,971	10,887	23,265
St. Bernard Parish	37,722	7,613	3,323	717	2,418	1,322	460	10,569	3,132	7,597
St. Charles Parish	51,547	13,494	5,054	1,270	3,052	1,665	604	13,525	3,994	5,921
St. James Parish	21,231	5,431	2,685	511	1,258	696	273	5,847	1,725	3,314
St. John the Baptist Parish	46,994	13,344	4,024	1,256	2,725	1,445	498	11,463	3,366	6,834
St. Tammany Parish	228,456	59,124	26,731	5,566	13,491	7,469	2,871	62,223	18,382	22,529
Tangipahoa Parish	117,001	30,920	12,872	2,911	6,977	3,655	1,325	29,520	8,605	25,235
Terrebonne Parish	108,576	29,135	11,744	2,743	6,396	3,429	1,262	27,953	8,201	16,907
West Baton Rouge Parish	22,553	5,732	2,392	540	1,354	728	265	5,910	1,736	3,543
Totals	**3,238,022**	**810,437**	**381,775**	**76,292**	**194,563**	**105,635**	**39,983**	**872,301**	**256,459**	**518,668**

HIGH OZONE DAYS 2006–2008

Parish	Orange	Red	Purple	Wgt. Avg	Grade
Ascension Parish	29	2	0	10.7	F
Bossier Parish	18	0	0	6.0	F
Caddo Parish	20	0	0	6.7	F
Calcasieu Parish	14	1	0	5.2	F
Concordia Parish	DNC	DNC	DNC	DNC	DNC
East Baton Rouge Parish	37	5	0	14.8	F
Iberville Parish	51	2	0	18.0	F
Jefferson Parish	22	1	0	7.8	F
Lafayette Parish	14	0	0	4.7	F
Lafourche Parish	16	1	0	5.8	F
Livingston Parish	21	0	0	7.0	F
Orleans Parish	*	*	*	*	*
Ouachita Parish	4	0	0	1.3	C
Pointe Coupee Parish	30	2	0	11.0	F
Rapides Parish	DNC	DNC	DNC	DNC	DNC
St. Bernard Parish	*	*	*	*	*
St. Charles Parish	11	0	0	3.7	F
St. James Parish	12	0	0	4.0	F
St. John The Baptist Parish	17	0	0	5.7	F
St. Tammany Parish	*	*	*	*	*
Tangipahoa Parish	DNC	DNC	DNC	DNC	DNC
Terrebonne Parish	DNC	DNC	DNC	DNC	DNC
West Baton Rouge Parish	18	2	0	7.0	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
Parish	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Ascension Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bossier Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Caddo Parish	4	0	0	1.3	C	12.6	PASS
Calcasieu Parish	2	0	0	0.7	B	10.0	PASS
Concordia Parish	*	*	*	*	*	*	INC
East Baton Rouge Parish	5	0	0	1.7	C	12.5	PASS
Iberville Parish	1	0	0	0.3	B	12.2	PASS
Jefferson Parish	4	0	0	1.3	C	11.5	PASS
Lafayette Parish	0	0	0	0.0	A	10.1	PASS
Lafourche Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Livingston Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Orleans Parish	*	*	*	*	*	*	INC
Ouachita Parish	2	0	0	0.7	B	10.9	PASS
Pointe Coupee Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rapides Parish	0	0	0	0.0	A	10.1	PASS
St. Bernard Parish	3	0	0	1.0	C	*	INC
St. Charles Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. James Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. John The Baptist Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Tammany Parish	*	*	*	*	*	*	INC
Tangipahoa Parish	0	0	0	0.0	A	11.3	PASS
Terrebonne Parish	0	1	0	0.5	B	10.0	PASS
West Baton Rouge Parish	2	1	0	1.2	C	12.9	PASS

MAINE

American Lung Association in Maine

122 State Street
Augusta, ME 04330
(207) 624-0308
www.lungusa.org/maine

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Androscoggin	106,877	24,177	15,471	2,276	8,507	3,677	1,503	31,489	6,720	13,547
Aroostook	71,676	14,029	12,934	1,321	5,829	2,649	1,185	23,726	5,128	10,597
Cumberland	276,047	59,301	38,306	5,582	22,169	9,743	3,951	83,290	17,708	27,789
Hancock	53,137	10,240	8,822	964	4,343	1,966	852	17,355	3,728	5,588
Kennebec	120,959	24,895	18,026	2,344	9,817	4,325	1,790	37,315	7,965	13,864
Knox	40,686	7,931	7,297	747	3,311	1,506	672	13,474	2,911	5,253
Oxford	56,741	11,492	9,201	1,082	4,594	2,063	887	18,130	3,891	7,853
Penobscot	148,651	30,208	20,590	2,844	12,210	5,243	2,085	44,334	9,413	22,543
Piscataquis	16,961	3,230	2,989	304	1,381	637	284	5,708	1,231	2,707
Sagadahoc	36,332	8,218	5,054	774	2,860	1,276	525	10,999	2,341	3,540
Washington	32,499	6,565	6,048	618	2,620	1,194	542	10,769	2,334	6,335
York	201,686	43,543	29,499	4,099	16,105	7,168	2,979	62,014	13,233	18,720
Totals	**1,162,252**	**243,829**	**174,237**	**22,955**	**93,747**	**41,447**	**17,255**	**358,603**	**76,604**	**138,336**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Androscoggin	8	0	0	2.7	D
Aroostook	3	0	0	1.0	C
Cumberland	6	1	0	2.5	D
Hancock	18	1	0	6.5	F
Kennebec	7	0	0	2.3	D
Knox	7	1	0	2.8	D
Oxford	2	0	0	0.7	B
Penobscot	3	0	0	1.0	C
Piscataquis	DNC	DNC	DNC	DNC	DNC
Sagadahoc	4	1	0	1.8	C
Washington	4	0	0	1.3	C
York	15	1	0	5.5	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Androscoggin	1	0	0	0.3	B	8.8	PASS
Aroostook	0	0	0	0.0	A	7.5	PASS
Cumberland	0	0	0	0.0	A	9.9	PASS
Hancock	0	0	0	0.0	A	5.1	PASS
Kennebec	0	0	0	0.0	A	8.7	PASS
Knox	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Oxford	1	0	0	0.3	B	9.4	PASS
Penobscot	0	0	0	0.0	A	8.3	PASS
Piscataquis	*	*	*	*	*	*	INC
Sagadahoc	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washington	DNC	DNC	DNC	DNC	DNC	DNC	DNC
York	DNC	DNC	DNC	DNC	DNC	DNC	DNC

MARYLAND

American Lung Association in Maryland

1-800-LUNG USA
www.lungusa.org/maryland

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Anne Arundel	512,790	122,494	58,384	11,531	36,633	17,048	6,383	140,236	33,883	24,662
Baltimore City	636,919	153,154	75,404	14,417	45,370	20,875	7,808	171,278	41,126	116,585
Baltimore	785,618	174,324	114,215	16,410	56,871	27,024	10,986	230,627	56,050	60,539
Calvert	88,698	21,833	9,093	2,055	6,296	2,911	1,057	23,632	5,700	4,931
Carroll	169,353	40,617	20,520	3,824	12,050	5,686	2,195	47,465	11,532	9,350
Cecil	99,926	24,412	11,488	2,298	7,088	3,254	1,207	26,599	6,383	7,125
Charles	140,764	36,962	12,057	3,479	9,827	4,413	1,490	34,659	8,252	8,665
Frederick	225,721	57,641	23,224	5,426	15,823	7,272	2,632	58,893	14,159	12,032
Garrett	29,698	6,398	5,053	602	2,152	1,041	450	9,148	2,234	4,337
Harford	240,351	59,315	28,123	5,584	16,965	7,957	3,033	66,007	15,997	13,606
Kent	20,151	3,756	3,949	354	1,506	733	330	6,555	1,601	2,262
Montgomery	950,680	228,648	118,538	21,524	67,493	32,089	12,580	269,876	65,760	54,321
Prince George's	820,852	201,473	77,368	18,966	58,516	26,440	9,153	209,837	50,079	53,210
Washington	145,384	32,931	20,243	3,100	10,489	4,867	1,915	40,811	9,816	12,819
Worcester	49,274	9,168	11,249	863	3,647	1,834	890	17,043	4,201	5,072
Totals	**4,916,179**	**1,173,126**	**588,908**	**110,433**	**350,727**	**163,444**	**62,109**	**1,352,666**	**326,773**	**389,516**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Anne Arundel	44	2	1	16.3	F
Baltimore City	5	0	0	1.7	C
Baltimore	41	6	0	16.7	F
Calvert	25	0	0	8.3	F
Carroll	34	2	0	12.3	F
Cecil	45	4	1	17.7	F
Charles	32	2	0	11.7	F
Frederick	32	0	0	10.7	F
Garrett	5	0	0	1.7	C
Harford	62	7	0	24.2	F
Kent	39	2	0	14.0	F
Montgomery	30	2	0	11.0	F
Prince George's	58	7	0	22.8	F
Washington	17	0	0	5.7	F
Worcester	*	*	*	*	*

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Anne Arundel	4	0	0	1.3	C	13.3	PASS
Baltimore City	25	0	0	8.3	F	14.0	PASS
Baltimore	17	0	0	5.7	F	13.6	PASS
Calvert	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carroll	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cecil	1	0	0	0.3	B	12.1	PASS
Charles	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Frederick	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Garrett	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Harford	1	0	0	0.3	B	11.7	PASS
Kent	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montgomery	2	0	0	0.7	B	11.3	PASS
Prince George's	7	0	0	2.3	D	11.9	PASS
Washington	2	0	0	0.7	B	12.2	PASS
Worcester	DNC	DNC	DNC	DNC	DNC	DNC	DNC

MASSACHUSETTS

American Lung Association in Massachusetts

460 Totten Pond Road, Suite 400
Waltham, MA 02451-1991
(781) 314-9006
www.lungusa.org/massachusetts

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Barnstable	221,049	38,609	53,032	3,635	17,279	8,518	4,246	80,447	16,396	17,569
Berkshire	129,395	24,816	23,662	2,336	9,957	4,752	2,114	42,388	8,459	15,415
Bristol	545,823	122,838	74,700	11,564	40,419	18,573	7,363	156,629	30,624	61,702
Dukes	15,527	2,936	2,360	276	1,203	575	241	4,992	983	1,139
Essex	736,457	172,265	101,390	16,216	53,919	25,149	10,172	214,459	42,035	67,698
Hampden	460,840	108,871	64,235	10,249	33,617	15,491	6,222	131,424	25,760	68,255
Hampshire	154,983	24,825	19,393	2,337	12,459	5,536	2,009	44,740	8,619	14,810
Middlesex	1,482,478	320,756	191,243	30,195	111,122	50,832	19,631	423,697	82,417	115,388
Norfolk	659,909	148,031	91,744	13,935	48,923	22,855	9,251	195,007	38,221	38,958
Plymouth	492,066	117,842	62,848	11,093	35,801	16,660	6,588	140,676	27,446	33,963
Suffolk	732,684	144,497	78,499	13,602	56,330	24,122	8,079	187,532	35,694	124,624
Worcester	783,806	184,830	96,504	17,399	57,314	26,233	10,073	218,160	42,380	63,457
Totals	**6,415,017**	**1,411,116**	**859,610**	**132,837**	**478,342**	**219,296**	**85,989**	**1,840,151**	**359,033**	**622,978**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Barnstable	23	4	0	9.7	F
Berkshire	16	1	0	5.8	F
Bristol	13	2	0	5.3	F
Dukes	12	5	0	6.5	F
Essex	25	2	0	9.3	F
Hampden	29	5	1	12.8	F
Hampshire	30	5	0	12.5	F
Middlesex	17	0	0	5.7	F
Norfolk	25	0	0	8.3	F
Plymouth	DNC	DNC	DNC	DNC	DNC
Suffolk	11	0	0	3.7	F
Worcester	31	2	0	11.3	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Barnstable	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Berkshire	3	0	0	1.0	C	9.7	PASS
Bristol	1	0	0	0.3	B	8.8	PASS
Dukes	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Essex	2	0	0	0.7	B	9.1	PASS
Hampden	5	0	0	1.7	C	11.4	PASS
Hampshire	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Middlesex	0	0	0	0.0	A	8.7	PASS
Norfolk	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Plymouth	1	0	0	0.3	B	9.3	PASS
Suffolk	6	0	0	2.0	C	11.4	PASS
Worcester	2	0	0	0.7	B	10.7	PASS

MASSACHUSETTS

MICHIGAN

American Lung Association in Michigan

25900 Greenfield Road, Suite 401
Oak Park, MI 48237
(248) 784-2000
www.lungusa.org/michigan

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Allegan	112,975	28,452	13,492	2,678	8,283	3,710	1,424	30,863	7,681	12,855
Bay	107,495	23,688	16,818	2,230	8,099	3,779	1,602	32,947	8,240	13,585
Benzie	17,396	3,785	3,384	356	1,304	619	285	5,607	1,399	1,773
Berrien	159,481	38,411	24,818	3,616	11,691	5,464	2,334	47,815	11,956	27,370
Cass	50,185	11,229	6,813	1,057	3,780	1,753	709	14,975	3,754	6,886
Clinton	69,726	16,830	8,601	1,584	5,164	2,347	916	19,698	4,920	5,506
Dickinson	26,812	5,688	5,240	535	2,011	978	456	8,946	2,246	3,199
Genesee	428,790	108,517	55,612	10,215	31,251	14,169	5,627	119,728	29,833	70,368
Huron	32,805	6,540	7,102	616	2,490	1,221	590	11,349	2,846	4,245
Ingham	277,528	60,873	28,647	5,730	21,586	9,101	3,137	71,885	17,635	47,203
Iron	12,001	2,030	2,848	191	940	468	232	4,408	1,107	1,752
Kalamazoo	245,912	56,402	29,555	5,309	18,706	8,132	3,024	66,491	16,409	37,744
Kent	605,213	162,410	63,610	15,289	43,752	19,042	6,921	154,320	38,174	86,929
Leelanau	21,783	4,194	4,486	395	1,665	826	393	7,630	1,922	1,829
Lenawee	100,801	23,017	14,181	2,167	7,580	3,442	1,389	29,290	7,292	12,592
Macomb	830,663	192,932	114,137	18,162	62,241	28,125	11,245	238,225	59,255	76,979
Manistee	24,640	4,862	4,834	458	1,893	902	414	8,169	2,041	3,177
Mason	28,782	6,034	5,557	568	2,174	1,043	480	9,466	2,370	4,457

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Missaukee	15,001	3,414	2,406	321	1,122	517	220	4,506	1,122	2,169
Monroe	152,949	35,880	19,069	3,378	11,446	5,170	2,009	43,273	10,789	15,370
Muskegon	174,344	43,156	22,482	4,063	12,839	5,753	2,256	48,278	11,994	30,156
Oakland	1,202,174	284,493	147,886	26,781	89,400	41,032	16,094	345,511	86,554	102,769
Ottawa	260,364	66,909	29,176	6,299	19,109	8,300	3,054	67,571	16,685	20,238
Schoolcraft	8,220	1,642	1,759	155	623	306	147	2,842	713	1,256
St. Clair	168,894	39,752	22,763	3,742	12,585	5,730	2,293	48,599	12,119	18,618
Washtenaw	347,376	74,386	32,516	7,002	27,303	11,383	3,770	88,396	21,651	44,592
Wayne	1,949,929	507,861	234,544	47,808	141,145	63,463	24,562	529,981	131,973	393,147
Totals	**7,432,239**	**1,813,387**	**922,336**	**170,705**	**550,182**	**246,775**	**95,583**	**2,060,769**	**512,680**	**1,046,764**

MICHIGAN

American Lung Association in Michigan

25900 Greenfield Road, Suite 401
Oak Park, MI 48237
(248) 784-2000
www.lungusa.org/michigan

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Allegan	28	5	0	11.8	F
Bay	DNC	DNC	DNC	DNC	DNC
Benzie	16	1	0	5.8	F
Berrien	18	1	0	6.5	F
Cass	11	0	0	3.7	F
Clinton	7	0	0	2.3	D
Dickinson	DNC	DNC	DNC	DNC	DNC
Genesee	14	0	0	4.7	F
Huron	16	1	0	5.8	F
Ingham	5	0	0	1.7	C
Iron	DNC	DNC	DNC	DNC	DNC
Kalamazoo	10	0	0	3.3	F
Kent	19	1	0	6.8	F
Leelanau	7	1	0	2.8	D
Lenawee	10	0	0	3.3	F
Macomb	27	2	0	10.0	F
Manistee	18	2	0	7.0	F
Mason	17	3	0	7.2	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Allegan	3	0	0	1.0	C	10.9	PASS
Bay	1	0	0	0.3	B	9.7	PASS
Benzie	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Berrien	1	0	0	0.3	B	10.8	PASS
Cass	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clinton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dickinson	*	*	*	*	*	*	INC
Genesee	0	0	0	0.0	A	10.6	PASS
Huron	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ingham	1	0	0	0.3	B	10.9	PASS
Iron	*	*	*	*	*	*	INC
Kalamazoo	1	0	0	0.3	B	12.0	PASS
Kent	4	0	0	1.3	C	11.8	PASS
Leelanau	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lenawee	*	*	*	*	*	*	INC
Macomb	1	0	0	0.3	B	11.3	PASS
Manistee	0	0	0	0.0	A	*	INC
Mason	DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Missaukee	9	0	0	3.0	D
Monroe	DNC	DNC	DNC	DNC	DNC
Muskegon	26	3	0	10.2	F
Oakland	17	0	0	5.7	F
Ottawa	18	1	0	6.5	F
Schoolcraft	16	2	0	6.3	F
St. Clair	18	1	0	6.5	F
Washtenaw	10	0	0	3.3	F
Wayne	23	1	0	8.2	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Missaukee	0	0	0	0.0	A	7.4	PASS
Monroe	2	0	0	0.7	B	12.4	PASS
Muskegon	2	0	0	0.7	B	10.5	PASS
Oakland	5	0	0	1.7	C	12.1	PASS
Ottawa	1	0	0	0.3	B	11.5	PASS
Schoolcraft	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Clair	7	0	0	2.3	D	11.9	PASS
Washtenaw	3	0	0	1.0	C	12.2	PASS
Wayne	18	0	0	6.0	F	15.4	FAIL

MINNESOTA

American Lung Association in Minnesota

490 Concordia Avenue
St. Paul, MN 55103-2441
(651) 227-8014
www.lungusa.org/minnesota

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Anoka	327,090	85,016	28,237	8,003	19,243	10,438	3,594	82,818	13,098	18,811
Becker	32,000	7,343	5,432	691	1,874	1,113	488	9,851	1,651	3,654
Carlton	33,933	7,551	5,081	711	2,026	1,171	482	10,054	1,661	3,532
Cass	28,732	6,278	5,544	591	1,685	1,024	471	9,282	1,574	4,120
Crow Wing	62,172	14,012	11,181	1,319	3,624	2,156	957	19,166	3,224	6,987
Dakota	392,755	103,648	33,756	9,757	22,991	12,484	4,308	99,165	15,691	18,044
Goodhue	45,897	10,439	7,143	983	2,722	1,595	676	13,902	2,311	3,084
Hennepin	1,140,988	267,430	125,014	25,175	68,646	38,088	14,049	311,286	50,065	122,354
Lake	10,609	1,969	2,194	185	650	401	189	3,687	628	1,008
Lyon	24,844	5,797	3,705	546	1,455	834	341	7,128	1,176	2,472
Mille Lacs	26,377	6,212	4,333	585	1,527	891	380	7,767	1,294	3,165
Olmsted	141,360	35,970	17,036	3,386	8,192	4,590	1,754	38,063	6,176	10,517
Ramsey	501,428	121,768	65,196	11,463	29,412	16,666	6,545	139,973	22,860	65,375
Scott	128,937	38,355	8,694	3,611	7,201	3,758	1,168	28,463	4,392	5,552
St. Louis	196,864	38,541	30,989	3,628	12,165	7,074	2,949	61,142	10,128	26,873
Stearns	147,076	33,301	17,853	3,135	8,800	4,836	1,782	39,330	6,329	14,148
Washington	229,173	59,556	20,379	5,606	13,491	7,374	2,585	59,008	9,372	10,096
Wright	119,701	34,184	10,403	3,218	6,729	3,598	1,213	28,182	4,437	6,631
Totals	**3,589,936**	**877,370**	**402,170**	**82,593**	**212,434**	**118,091**	**43,931**	**968,267**	**156,068**	**326,423**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Anoka	2	0	0	0.7	B
Becker	0	0	0	0.0	A
Carlton	0	0	0	0.0	A
Cass	DNC	DNC	DNC	DNC	DNC
Crow Wing	3	0	0	1.0	C
Dakota	DNC	DNC	DNC	DNC	DNC
Goodhue	3	0	0	1.0	C
Hennepin	DNC	DNC	DNC	DNC	DNC
Lake	1	0	0	0.3	B
Lyon	0	0	0	0.0	A
Mille Lacs	4	0	0	1.3	C
Olmsted	0	0	0	0.0	A
Ramsey	DNC	DNC	DNC	DNC	DNC
Scott	0	0	0	0.0	A
St. Louis	0	0	0	0.0	A
Stearns	1	0	0	0.3	B
Washington	5	0	0	1.7	C
Wright	5	0	0	1.7	C

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Anoka	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Becker	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carlton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cass	1	0	0	0.3	B	*	INC
Crow Wing	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dakota	2	0	0	0.7	B	9.3	PASS
Goodhue	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hennepin	3	0	0	1.0	C	9.9	PASS
Lake	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lyon	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mille Lacs	2	0	0	0.7	B	*	INC
Olmsted	2	0	0	0.7	B	*	INC
Ramsey	3	0	0	1.0	C	11.0	PASS
Scott	2	0	0	0.7	B	9.1	PASS
St. Louis	1	0	0	0.3	B	7.6	PASS
Stearns	2	0	0	0.7	B	8.4	PASS
Washington	*	*	*	*	*	*	INC
Wright	DNC	DNC	DNC	DNC	DNC	DNC	DNC

MISSISSIPPI

American Lung Association in Mississippi

P.O. Box 2178
Ridgeland, MS 39158
(601) 206-5810
www.lungusa.org/mississippi

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Adams	31,307	7,470	5,430	703	1,684	1,095	492	9,826	3,057	8,220
Bolivar	37,195	9,728	4,259	916	1,920	1,179	438	9,639	2,987	12,388
Desoto	154,748	44,964	15,054	4,233	7,670	4,676	1,657	37,446	11,610	14,427
Forrest	79,425	19,895	8,743	1,873	4,138	2,476	870	19,673	6,065	17,922
Grenada	22,995	5,804	3,323	546	1,207	761	313	6,530	2,026	4,790
Hancock	40,140	9,437	5,725	888	2,168	1,392	579	12,048	3,756	6,923
Harrison	178,460	47,425	20,582	4,464	9,204	5,760	2,203	47,856	14,888	27,768
Hinds	247,650	66,692	27,304	6,278	12,678	7,841	2,917	64,239	19,948	55,043
Jackson	130,694	34,430	14,990	3,241	6,770	4,254	1,632	35,421	11,031	17,201
Jones	67,198	17,246	9,736	1,623	3,503	2,198	903	18,827	5,835	14,687
Lauderdale	78,180	20,425	11,050	1,923	4,053	2,546	1,041	21,771	6,752	15,313
Lee	81,139	21,884	10,315	2,060	4,157	2,598	1,023	21,840	6,779	14,135
Lowndes	59,284	15,917	7,658	1,498	3,047	1,916	764	16,218	5,039	13,020
Webster	9,887	2,395	1,619	225	527	336	145	2,953	916	2,034
Totals	**1,218,302**	**323,712**	**145,788**	**30,471**	**62,725**	**39,028**	**14,977**	**324,287**	**100,687**	**223,871**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Adams	6	0	0	2.0	C
Bolivar	11	0	0	3.7	F
Desoto	28	2	0	10.3	F
Forrest	DNC	DNC	DNC	DNC	DNC
Grenada	DNC	DNC	DNC	DNC	DNC
Hancock	DNC	DNC	DNC	DNC	DNC
Harrison	26	0	0	8.7	F
Hinds	5	0	0	1.7	C
Jackson	23	0	0	7.7	F
Jones	DNC	DNC	DNC	DNC	DNC
Lauderdale	6	0	0	2.0	C
Lee	7	0	0	2.3	D
Lowndes	DNC	DNC	DNC	DNC	DNC
Webster	*	*	*	*	*

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Adams	1	0	0	0.3	B	10.7	PASS
Bolivar	0	0	0	0.0	A	11.9	PASS
Desoto	1	0	0	0.3	B	11.9	PASS
Forrest	0	0	0	0.0	A	13.7	PASS
Grenada	*	*	*	*	*	*	INC
Hancock	*	*	*	*	*	*	INC
Harrison	0	0	0	0.0	A	11.0	PASS
Hinds	0	0	0	0.0	A	12.3	PASS
Jackson	0	0	0	0.0	A	11.0	PASS
Jones	0	0	0	0.0	A	14.0	PASS
Lauderdale	1	0	0	0.3	B	12.5	PASS
Lee	0	0	0	0.0	A	12.4	PASS
Lowndes	3	0	0	1.0	C	12.5	PASS
Webster	DNC	DNC	DNC	DNC	DNC	DNC	DNC

MISSOURI

American Lung Association in Missouri

1118 Hampton Avenue
St. Louis, MO 63139-3196
(314) 645-5505
www.lungusa.org/missouri

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Boone	154,365	34,332	14,498	3,232	9,829	4,944	1,616	38,109	9,477	24,438
Buchanan	89,408	20,981	13,075	1,975	5,745	3,003	1,222	25,610	6,307	12,706
Cass	98,429	25,736	11,352	2,423	6,091	3,162	1,194	26,076	6,476	7,047
Cedar	13,652	3,105	2,871	292	900	484	233	4,482	1,090	2,773
Clay	215,707	55,753	23,449	5,248	13,378	6,920	2,548	56,442	14,045	15,670
Clinton	21,094	4,935	3,169	465	1,367	721	300	6,226	1,536	2,162
Greene	266,944	59,307	37,041	5,583	17,310	8,962	3,504	74,915	18,458	39,236
Jackson	668,417	170,392	82,351	16,040	41,929	21,906	8,517	183,273	45,483	94,390
Jefferson	217,679	54,416	23,187	5,123	13,706	7,115	2,617	58,080	14,491	17,697
Lincoln	52,775	14,182	5,336	1,335	3,202	1,639	581	13,116	3,262	5,438
Monroe	9,127	2,097	1,610	197	597	318	141	2,833	694	1,214
Perry	18,743	4,500	2,988	424	1,202	633	269	5,518	1,355	2,266
St. Charles	349,407	90,702	37,201	8,538	21,636	11,187	4,094	91,001	22,662	17,286
St. Louis City	354,361	87,970	40,164	8,281	22,304	11,559	4,306	94,770	23,564	81,148
St. Louis	991,830	228,054	143,155	21,468	65,043	34,509	14,325	298,247	73,903	87,531
Ste. Genevieve	17,720	3,893	2,688	366	1,173	620	259	5,366	1,325	1,794
Totals	**3,539,658**	**860,355**	**444,135**	**80,990**	**225,411**	**117,682**	**45,726**	**984,064**	**244,128**	**412,796**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Boone	DNC	DNC	DNC	DNC	DNC
Buchanan	DNC	DNC	DNC	DNC	DNC
Cass	8	0	0	2.7	D
Cedar	7	0	0	2.3	D
Clay	45	3	0	16.5	F
Clinton	28	0	0	9.3	F
Greene	7	0	0	2.3	D
Jackson	DNC	DNC	DNC	DNC	DNC
Jefferson	28	0	0	9.3	F
Lincoln	26	2	0	9.7	F
Monroe	6	0	0	2.0	C
Perry	26	0	0	8.7	F
St. Charles	47	2	0	16.7	F
St. Louis City	27	2	0	10.0	F
St. Louis	42	5	0	16.5	F
Ste. Genevieve	20	1	0	7.2	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Boone	*	*	*	*	*	*	INC
Buchanan	0	0	0	0.0	A	12.0	PASS
Cass	0	0	0	0.0	A	10.3	PASS
Cedar	*	*	*	*	*	*	INC
Clay	0	0	0	0.0	A	10.6	PASS
Clinton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greene	0	0	0	0.0	A	11.1	PASS
Jackson	0	0	0	0.0	A	11.9	PASS
Jefferson	6	0	0	2.0	C	*	INC
Lincoln	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Monroe	*	*	*	*	*	*	INC
Perry	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Charles	2	0	0	0.7	B	*	INC
St. Louis City	10	0	0	3.3	F	13.6	PASS
St. Louis	3	0	0	1.0	C	12.3	PASS
Ste. Genevieve	0	0	0	0.0	A	12.2	PASS

MONTANA

American Lung Association in Montana

825 Helena Avenue
Helena, MT 59601-3459
(406) 442-6556
www.lungusa.org/montana

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Cascade	82,026	20,256	12,694	1,907	5,873	2,792	1,196	24,466	4,197	10,866
Flathead	88,473	20,800	11,523	1,958	6,492	3,034	1,213	25,771	4,344	10,545
Gallatin	89,824	19,610	7,830	1,846	6,813	2,925	951	22,550	3,641	9,145
Lewis and Clark	60,925	13,777	7,817	1,297	4,529	2,120	844	17,981	3,025	6,399
Lincoln	18,971	3,752	3,809	353	1,433	717	340	6,622	1,160	3,762
Missoula	107,320	22,622	11,320	2,130	8,181	3,613	1,273	28,874	4,744	17,682
Ravalli	40,664	8,863	7,261	834	3,009	1,467	662	13,208	2,291	5,528
Sanders	11,034	2,118	2,236	199	839	419	198	3,859	676	1,912
Silver Bow	32,803	7,205	5,531	678	2,427	1,162	508	10,282	1,773	4,899
Yellowstone	142,348	34,423	19,658	3,240	10,316	4,801	1,946	40,966	6,942	15,036
Totals	**674,388**	**153,426**	**89,679**	**14,442**	**49,912**	**23,050**	**9,131**	**194,579**	**32,791**	**85,774**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Cascade	DNC	DNC	DNC	DNC	DNC
Flathead	0	0	0	0.0	A
Gallatin	DNC	DNC	DNC	DNC	DNC
Lewis and Clark	DNC	DNC	DNC	DNC	DNC
Lincoln	DNC	DNC	DNC	DNC	DNC
Missoula	DNC	DNC	DNC	DNC	DNC
Ravalli	DNC	DNC	DNC	DNC	DNC
Sanders	DNC	DNC	DNC	DNC	DNC
Silver Bow	DNC	DNC	DNC	DNC	DNC
Yellowstone	*	*	*	*	*

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Cascade	5	0	0	1.7	C	5.6	PASS
Flathead	1	2	0	1.3	C	9.4	PASS
Gallatin	4	2	0	2.3	D	8.6	PASS
Lewis and Clark	5	0	0	1.7	C	*	INC
Lincoln	7	0	0	2.3	D	13.7	PASS
Missoula	11	1	0	4.2	F	9.2	PASS
Ravalli	4	1	0	1.8	C	8.0	PASS
Sanders	1	1	0	0.8	B	7.1	PASS
Silver Bow	14	1	0	5.2	F	10.5	PASS
Yellowstone	0	0	0	0.0	A	8.0	PASS

NEBRASKA

American Lung Association in Nebraska

8990 W. Dodge Road, Suite 226
Omaha, NE 68114
(402) 502-4250
www.lungusa.org/nebraska

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Douglas	502,032	135,189	53,874	12,726	26,151	15,776	5,772	128,197	26,929	59,511
Hall	56,401	15,537	7,766	1,463	2,882	1,808	739	15,470	3,276	6,889
Lancaster	278,728	66,495	28,900	6,260	15,229	8,908	3,094	70,563	14,738	28,086
Sarpy	150,467	43,136	12,426	4,061	7,718	4,498	1,488	34,950	7,285	7,971
Scotts Bluff	36,554	9,017	6,290	849	1,925	1,246	554	11,108	2,366	5,002
Sioux	1,287	240	192	23	73	48	20	419	89	167
Washington	19,812	4,597	2,756	433	1,073	677	274	5,773	1,223	1,296
Totals	**1,045,281**	**274,211**	**112,204**	**25,815**	**55,051**	**32,961**	**11,941**	**266,480**	**55,904**	**108,922**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Douglas	0	0	0	0.0	A
Hall	DNC	DNC	DNC	DNC	DNC
Lancaster	0	0	0	0.0	A
Sarpy	DNC	DNC	DNC	DNC	DNC
Scotts Bluff	DNC	DNC	DNC	DNC	DNC
Sioux	*	*	*	*	*
Washington	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Douglas	2	0	0	0.7	B	9.3	PASS
Hall	0	0	0	0.0	A	7.8	PASS
Lancaster	0	0	0	0.0	A	8.1	PASS
Sarpy	2	0	0	0.7	B	9.4	PASS
Scotts Bluff	0	0	0	0.0	A	6.5	PASS
Sioux	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washington	2	0	0	0.7	B	8.6	PASS

NEVADA

American Lung Association in Nevada

3552 W. Cheyenne Avenue, Suite 130
North Las Vegas NV 89032
(702) 431-6333
www.lungusa.org/nevada

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Carson City	54,867	12,614	9,002	1,187	3,624	1,896	817	16,643	4,164	5,837
Churchill	24,896	6,759	3,714	636	1,557	813	345	7,082	1,770	2,614
Clark	1,865,746	492,906	196,956	46,400	116,473	58,741	21,217	474,395	115,568	205,121
Lyon	53,022	12,809	7,552	1,206	3,423	1,763	713	14,991	3,706	5,042
Washoe	410,443	99,789	49,246	9,394	26,628	13,611	5,203	112,993	27,902	49,627
White Pine	9,199	1,854	1,462	175	625	324	134	2,786	691	1,074
Totals	**2,418,173**	**626,731**	**267,932**	**58,998**	**152,330**	**77,148**	**28,429**	**628,890**	**153,801**	**269,315**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Carson City	3	0	0	1.0	C
Churchill	*	*	*	*	*
Clark	65	1	0	22.2	F
Lyon	*	*	*	*	*
Washoe	8	1	0	3.2	D
White Pine	5	0	0	1.7	C

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Carson City	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Churchill	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clark	1	0	0	0.3	B	9.5	PASS
Lyon	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washoe	3	1	0	1.5	C	8.6	PASS
White Pine	DNC	DNC	DNC	DNC	DNC	DNC	DNC

NEVADA

NEW HAMPSHIRE

American Lung Association in New Hampshire

20 Warren Street, Suite 4
Concord, NH 03301
(603) 410-5108
www.lungusa.org/newhampshire

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Belknap	61,281	12,359	9,757	1,163	4,970	2,214	939	19,326	3,823	5,466
Cheshire	77,170	15,355	11,205	1,445	6,353	2,737	1,103	23,280	4,581	7,532
Coos	31,971	6,108	6,224	575	2,585	1,196	551	10,869	2,176	4,059
Grafton	85,921	16,046	13,348	1,511	7,178	3,082	1,259	26,350	5,205	8,407
Hillsborough	402,042	97,611	46,099	9,189	31,479	13,479	5,139	111,967	21,788	27,632
Merrimack	148,161	31,963	19,097	3,009	11,973	5,158	2,020	43,356	8,478	12,073
Rockingham	297,350	69,153	34,969	6,510	23,455	10,263	3,991	86,195	16,776	14,020
Sullivan	42,591	9,156	6,729	862	3,395	1,514	645	13,243	2,621	4,146
Totals	**1,146,487**	**257,751**	**147,428**	**24,264**	**91,387**	**39,643**	**15,647**	**334,586**	**65,449**	**83,335**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Belknap	3	0	0	1.0	C
Cheshire	3	0	0	1.0	C
Coos	13	0	0	4.3	F
Grafton	3	0	0	1.0	C
Hillsborough	24	0	0	8.0	F
Merrimack	3	0	0	1.0	C
Rockingham	17	1	0	6.2	F
Sullivan	6	0	0	2.0	C

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Belknap	0	0	0	0.0	A	6.8	PASS
Cheshire	1	0	0	0.3	B	11.0	PASS
Coos	*	*	*	*	*	*	INC
Grafton	0	0	0	0.0	A	7.8	PASS
Hillsborough	2	0	0	0.7	B	9.6	PASS
Merrimack	1	0	0	0.3	B	9.3	PASS
Rockingham	0	0	0	0.0	A	8.6	PASS
Sullivan	0	0	0	0.0	A	8.9	PASS

NEW HAMPSHIRE

NEW JERSEY

American Lung Association in New Jersey

1031 Route 22 West Suite 203
Bridgewater, NJ 08807-2919
(908) 685-8040
www.lungusa.org/newjersey

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Atlantic	270,681	64,306	38,486	6,054	17,629	9,099	3,688	77,519	17,819	29,498
Bergen	894,840	195,873	133,079	18,439	59,631	31,416	13,047	271,347	62,832	47,293
Camden	517,234	127,537	64,433	12,006	33,434	17,077	6,614	142,551	32,608	56,871
Cumberland	156,830	38,301	19,750	3,606	10,172	5,085	1,931	41,944	9,516	19,360
Essex	770,675	195,592	91,035	18,412	49,420	24,965	9,445	206,022	46,912	108,608
Gloucester	287,860	66,479	33,799	6,258	19,044	9,629	3,610	79,196	18,034	19,438
Hudson	595,419	130,338	64,943	12,270	40,148	19,542	6,849	155,394	34,804	87,699
Hunterdon	129,031	29,349	14,724	2,763	8,574	4,506	1,743	37,794	8,729	4,596
Mercer	364,883	83,686	44,510	7,878	24,166	12,194	4,608	100,566	22,889	30,973
Middlesex	789,102	182,324	96,163	17,163	52,149	26,216	9,871	215,742	49,033	54,644
Monmouth	642,448	152,017	84,371	14,310	41,993	22,027	8,851	187,540	43,329	37,480
Morris	487,548	115,208	63,116	10,845	31,898	16,697	6,669	141,760	32,725	19,263
Ocean	569,111	131,789	118,817	12,406	36,700	19,828	9,447	182,497	42,717	48,172
Passaic	490,948	126,893	60,125	11,945	31,240	15,862	6,105	131,928	30,110	66,753
Union	523,249	129,721	65,627	12,211	33,748	17,336	6,769	145,343	33,320	45,220
Warren	109,876	26,075	14,641	2,455	7,174	3,725	1,489	31,596	7,275	7,303
Totals	**7,599,735**	**1,795,488**	**1,007,619**	**169,021**	**497,121**	**255,204**	**100,736**	**2,148,739**	**492,651**	**683,171**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Atlantic	12	0	0	4.0	F
Bergen	*	*	*	*	*
Camden	58	5	0	21.8	F
Cumberland	26	1	0	9.2	F
Essex	DNC	DNC	DNC	DNC	DNC
Gloucester	38	3	0	14.2	F
Hudson	29	0	0	9.7	F
Hunterdon	42	1	0	14.5	F
Mercer	37	4	0	14.3	F
Middlesex	45	5	0	17.5	F
Monmouth	30	1	0	10.5	F
Morris	52	4	0	19.3	F
Ocean	45	3	0	16.5	F
Passaic	21	0	0	7.0	F
Union	DNC	DNC	DNC	DNC	DNC
Warren	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Atlantic	3	1	0	1.5	C	11.1	PASS
Bergen	6	0	0	2.0	C	12.2	PASS
Camden	15	0	0	5.0	F	12.7	PASS
Cumberland	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Essex	7	0	0	2.3	D	*	INC
Gloucester	1	0	0	0.3	B	*	INC
Hudson	18	0	0	6.0	F	14.1	PASS
Hunterdon	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mercer	10	0	0	3.3	F	11.9	PASS
Middlesex	2	0	0	0.7	B	11.3	PASS
Monmouth	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Morris	2	0	0	0.7	B	10.3	PASS
Ocean	6	0	0	2.0	C	10.2	PASS
Passaic	7	0	0	2.3	D	12.3	PASS
Union	25	0	0	8.3	F	13.6	PASS
Warren	4	0	0	1.3	C	11.8	PASS

NEW JERSEY

NEW MEXICO

American Lung Association in New Mexico

5911 Jefferson Street, NE
Albuquerque, NM 87109
(505) 265-0732
www.lungusa.org/newmexico

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Bernalillo	635,139	157,512	79,191	14,828	40,409	20,778	7,994	172,744	37,280	89,607
Chaves	63,060	16,635	9,540	1,566	3,939	2,049	860	17,722	3,830	12,926
Dona Ana	201,603	55,315	24,572	5,207	12,360	6,202	2,331	50,827	10,877	45,531
Eddy	51,360	13,416	7,006	1,263	3,218	1,689	688	14,441	3,133	7,744
Grant	29,844	6,653	5,866	626	1,977	1,063	496	9,698	2,111	5,535
Lea	59,155	16,936	7,002	1,594	3,570	1,821	694	15,061	3,242	8,869
Luna	27,227	7,329	5,721	690	1,698	901	439	8,378	1,813	7,530
San Juan	122,500	33,903	13,350	3,192	7,486	3,821	1,414	31,210	6,725	17,372
Sandoval	122,298	31,278	13,270	2,944	7,691	3,939	1,449	32,115	6,930	13,435
Santa Fe	143,937	30,141	19,802	2,837	9,649	5,101	2,053	43,441	9,452	17,328
Totals	**1,456,123**	**369,118**	**185,320**	**34,747**	**91,995**	**47,364**	**18,418**	**395,637**	**85,394**	**225,877**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Bernalillo	6	0	0	2.0	C
Chaves	DNC	DNC	DNC	DNC	DNC
Dona Ana	17	0	0	5.7	F
Eddy	6	0	0	2.0	C
Grant	0	0	0	0.0	A
Lea	3	0	0	1.0	C
Luna	0	0	0	0.0	A
San Juan	22	0	0	7.3	F
Sandoval	2	0	0	0.7	B
Santa Fe	*	*	*	*	*

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Bernalillo	1	0	0	0.3	B	6.7	PASS
Chaves	0	0	0	0.0	A	6.4	PASS
Dona Ana	14	0	0	4.7	F	10.5	PASS
Eddy	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Grant	0	0	0	0.0	A	*	INC
Lea	0	0	0	0.0	A	*	INC
Luna	DNC	DNC	DNC	DNC	DNC	DNC	DNC
San Juan	0	0	0	0.0	A	*	INC
Sandoval	1	0	0	0.3	B	4.8	PASS
Santa Fe	0	0	0	0.0	A	4.8	PASS

NEW MEXICO

NEW YORK

American Lung Association in New York

155 Washington Ave., Suite 210
Albany, NY 12210
(518) 465-2013
www.lungusa.org/newyork

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Albany	298,130	59,938	40,881	5,642	20,772	10,380	4,046	86,801	20,106	34,703
Bronx	1,391,903	388,071	148,116	36,532	87,811	42,381	15,198	340,437	77,682	367,883
Chautauqua	133,789	28,235	21,351	2,658	9,164	4,692	1,970	40,646	9,510	22,604
Chemung	87,813	18,933	13,467	1,782	5,986	3,059	1,268	26,350	6,159	13,254
Dutchess	292,878	64,400	37,654	6,062	19,950	10,021	3,881	83,663	19,408	23,978
Erie	909,845	195,594	141,691	18,412	62,054	31,878	13,340	275,942	64,621	118,925
Essex	37,826	6,939	6,435	653	2,679	1,378	586	12,013	2,816	4,572
Franklin	50,521	9,286	6,792	874	3,599	1,775	674	14,642	3,373	7,179
Hamilton	5,021	817	1,110	77	362	197	95	1,831	437	526
Herkimer	62,200	13,039	10,065	1,227	4,267	2,199	932	19,149	4,490	8,562
Jefferson	118,046	28,538	13,506	2,686	7,823	3,735	1,331	29,859	6,784	15,999
Kings	2,556,598	641,638	314,368	60,401	167,139	82,356	31,204	678,947	156,373	532,939
Madison	69,766	14,423	9,277	1,358	4,829	2,414	935	20,137	4,664	8,049
Monroe	732,762	164,904	99,525	15,523	49,507	25,048	9,949	211,570	49,234	92,057
Nassau	1,351,625	306,021	202,778	28,808	90,953	47,494	20,028	413,661	97,371	64,667
New York	1,634,795	277,378	210,296	26,111	118,596	57,267	20,841	462,720	105,661	267,745
Niagara	214,464	45,783	33,035	4,310	14,662	7,549	3,152	65,312	15,304	25,504
Oneida	231,590	48,818	37,349	4,596	15,861	8,113	3,414	70,342	16,454	30,851

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Onondaga	452,633	103,313	62,222	9,726	30,438	15,373	6,125	129,970	30,231	51,683
Orange	379,647	100,082	38,266	9,421	24,510	12,032	4,316	97,007	22,272	35,826
Oswego	121,395	26,827	14,579	2,525	8,270	4,108	1,542	33,796	7,803	18,429
Putnam	99,244	22,977	11,520	2,163	6,678	3,421	1,321	28,629	6,683	4,800
Queens	2,293,007	491,620	305,926	46,279	157,128	78,352	30,375	653,456	151,227	278,546
Rensselaer	155,261	33,256	20,328	3,131	10,649	5,339	2,070	44,578	10,335	15,555
Richmond	487,407	113,910	59,168	10,723	32,644	16,322	6,220	135,264	31,315	49,544
Saratoga	217,191	47,244	26,806	4,447	14,856	7,436	2,834	61,633	14,274	15,661
Schenectady	151,427	34,203	23,426	3,220	10,182	5,232	2,195	45,342	10,620	17,072
St. Lawrence	109,701	22,008	15,011	2,072	7,645	3,778	1,454	31,359	7,233	16,865
Steuben	96,573	21,315	15,010	2,007	6,538	3,365	1,413	29,182	6,839	12,844
Suffolk	1,512,224	366,574	197,500	34,508	99,949	50,952	20,294	431,465	100,656	83,346
Ulster	181,670	36,728	25,327	3,457	12,639	6,421	2,559	54,348	12,665	21,001
Wayne	91,564	21,410	12,372	2,015	6,118	3,140	1,268	26,773	6,262	8,922
Westchester	953,943	228,123	135,833	21,475	63,180	32,478	13,358	279,142	65,352	78,557
Totals	**17,482,459**	**3,982,345**	**2,310,990**	**374,881**	**1,177,437**	**589,685**	**230,188**	**4,935,966**	**1,144,215**	**2,348,648**

NEW YORK

American Lung Association in New York

155 Washington Ave., Suite 210
Albany, NY 12210
(518) 465-2013
www.lungusa.org/newyork

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Albany	10	0	0	3.3	F
Bronx	16	1	0	5.8	F
Chautauqua	35	0	0	11.7	F
Chemung	3	0	0	1.0	C
Dutchess	14	0	0	4.7	F
Erie	24	0	0	8.0	F
Essex	18	2	0	7.0	F
Franklin	5	0	0	1.7	C
Hamilton	3	0	0	1.0	C
Herkimer	4	0	0	1.3	C
Jefferson	11	0	0	3.7	F
Kings	DNC	DNC	DNC	DNC	DNC
Madison	8	0	0	2.7	D
Monroe	17	0	0	5.7	F
Nassau	DNC	DNC	DNC	DNC	DNC
New York	*	*	*	*	*
Niagara	19	0	0	6.3	F
Oneida	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Albany	5	0	0	1.7	C	*	INC
Bronx	21	0	0	7.0	F	14.3	PASS
Chautauqua	1	0	0	0.3	B	8.7	PASS
Chemung	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dutchess	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Erie	8	0	0	2.7	D	11.1	PASS
Essex	1	0	0	0.3	B	5.1	PASS
Franklin	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hamilton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Herkimer	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kings	6	0	0	2.0	C	12.9	PASS
Madison	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Monroe	1	0	0	0.3	B	9.5	PASS
Nassau	3	0	0	1.0	C	10.9	PASS
New York	12	0	0	4.0	F	*	INC
Niagara	2	0	0	0.7	B	10.3	PASS
Oneida	DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Onondaga	9	0	0	3.0	D
Orange	16	3	0	6.8	F
Oswego	10	0	0	3.3	F
Putnam	19	0	0	6.3	F
Queens	14	0	0	4.7	F
Rensselaer	10	0	0	3.3	F
Richmond	17	4	0	7.7	F
Saratoga	20	0	0	6.7	F
Schenectady	4	0	0	1.3	C
St. Lawrence	DNC	DNC	DNC	DNC	DNC
Steuben	4	0	0	1.3	C
Suffolk	34	6	1	15.0	F
Ulster	6	0	0	2.0	C
Wayne	11	0	0	3.7	F
Westchester	28	5	0	11.8	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Onondaga	0	0	0	0.0	A	8.7	PASS
Orange	4	0	0	1.3	C	10.0	PASS
Oswego	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Putnam	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Queens	12	0	0	4.0	F	11.3	PASS
Rensselaer	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Richmond	5	0	0	1.7	C	12.4	PASS
Saratoga	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Schenectady	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Lawrence	0	0	0	0.0	A	6.0	PASS
Steuben	3	0	0	1.0	C	8.1	PASS
Suffolk	1	0	0	0.3	B	10.5	PASS
Ulster	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wayne	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Westchester	4	0	0	1.3	C	11.2	PASS

NORTH CAROLINA

American Lung Association in North Carolina

1-800-LUNG USA
www.lungusa.org/northcarolina

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Alamance	148,053	35,255	20,417	3,319	8,515	4,935	1,966	41,679	10,851	22,864
Alexander	36,537	8,172	4,996	769	2,147	1,252	498	10,583	2,763	4,474
Avery	17,884	3,193	3,141	301	1,106	644	272	5,581	1,454	2,706
Buncombe	229,047	49,212	35,695	4,633	13,631	8,041	3,371	69,680	18,270	31,032
Caldwell	80,059	17,944	12,283	1,689	4,709	2,779	1,164	24,074	6,313	12,097
Caswell	23,248	4,661	3,605	439	1,412	836	349	7,240	1,902	4,133
Catawba	157,079	37,463	20,980	3,527	9,046	5,260	2,084	44,358	11,567	21,344
Chatham	63,077	14,341	8,702	1,350	3,681	2,135	847	18,008	4,690	6,438
Cumberland	312,696	86,675	29,285	8,159	17,019	9,617	3,349	76,457	19,697	46,331
Davidson	158,166	37,182	21,516	3,500	9,167	5,364	2,152	45,539	11,907	22,702
Davie	40,971	9,440	6,088	889	2,389	1,404	581	12,090	3,166	4,388
Duplin	53,362	13,845	6,865	1,303	2,982	1,722	674	14,418	3,748	10,835
Durham	262,715	64,759	24,384	6,096	14,858	8,296	2,793	64,892	16,618	34,855
Edgecombe	52,682	13,157	6,330	1,239	3,004	1,762	688	14,796	3,875	11,621
Forsyth	343,028	84,170	43,381	7,923	19,575	11,349	4,417	94,941	24,732	49,702
Franklin	58,927	14,293	6,268	1,345	3,366	1,917	691	15,483	4,003	8,107
Gaston	206,679	49,879	26,681	4,695	11,863	6,895	2,704	57,893	15,095	30,755
Graham	7,825	1,765	1,374	166	460	276	123	2,461	649	1,369
Granville	57,044	13,031	6,161	1,227	3,314	1,880	673	15,126	3,903	6,818
Guilford	472,216	111,748	57,003	10,520	27,216	15,657	5,925	129,237	33,556	62,528
Haywood	56,590	11,377	11,316	1,071	3,432	2,068	960	18,825	4,969	8,098
Jackson	36,739	7,073	5,128	666	2,232	1,279	494	10,631	2,753	5,698
Johnston	163,428	44,686	14,828	4,207	8,935	5,029	1,723	39,693	10,207	20,423
Lenoir	56,826	13,669	9,391	1,287	3,283	1,969	867	17,494	4,615	13,054
Lincoln	74,746	17,937	9,064	1,689	4,299	2,490	954	20,688	5,388	9,187

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Martin	23,398	5,361	3,953	505	1,372	823	363	7,317	1,930	5,469
Mcdowell	43,843	9,569	6,921	901	2,594	1,526	641	13,223	3,462	6,188
Mecklenburg	890,515	237,056	73,754	22,316	49,226	27,682	9,234	216,219	55,591	95,508
Mitchell	15,784	3,065	3,176	289	966	584	271	5,321	1,406	2,680
Montgomery	27,358	6,839	3,792	644	1,554	909	369	7,761	2,029	5,179
New Hanover	192,538	41,378	25,982	3,895	11,402	6,573	2,557	54,896	14,261	26,306
Onslow	165,938	45,878	12,127	4,319	8,933	4,816	1,439	35,696	8,967	20,551
Orange	126,532	24,019	12,616	2,261	7,701	4,311	1,458	33,809	8,670	16,061
Person	37,438	8,652	5,180	814	2,185	1,286	522	10,986	2,880	5,063
Pitt	156,081	37,283	15,438	3,510	8,899	4,951	1,680	38,812	9,920	32,859
Robeson	129,123	35,377	14,104	3,330	7,065	4,032	1,486	32,860	8,502	37,898
Rockingham	92,282	20,551	14,553	1,935	5,447	3,235	1,376	28,254	7,427	14,749
Rowan	139,225	32,568	19,841	3,066	8,067	4,711	1,911	40,157	10,487	21,042
Swain	13,512	3,103	2,393	292	790	472	211	4,212	1,109	2,128
Union	193,255	53,761	16,180	5,061	10,484	5,861	1,948	45,640	11,698	16,396
Wake	866,410	226,070	67,625	21,281	48,192	26,953	8,763	208,193	53,385	78,017
Watauga	45,196	6,824	5,531	642	2,869	1,596	558	12,648	3,231	7,564
Wayne	113,671	29,178	14,539	2,747	6,397	3,728	1,472	31,410	8,199	20,125
Yancey	18,503	3,699	3,662	348	1,125	679	314	6,170	1,630	3,387
Totals	**6,460,226**	**1,595,158**	**716,249**	**150,165**	**366,907**	**209,584**	**76,892**	**1,705,451**	**441,476**	**868,729**

NORTH CAROLINA

American Lung Association in North Carolina

1-800-LUNG USA
www.lungusa.org/northcarolina

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Alamance	DNC	DNC	DNC	DNC	DNC
Alexander	23	0	0	7.7	F
Avery	2	0	0	0.7	B
Buncombe	5	0	0	1.7	C
Caldwell	9	0	0	3.0	D
Caswell	23	0	0	7.7	F
Catawba	DNC	DNC	DNC	DNC	DNC
Chatham	5	0	0	1.7	C
Cumberland	14	0	0	4.7	F
Davidson	DNC	DNC	DNC	DNC	DNC
Davie	37	0	0	12.3	F
Duplin	DNC	DNC	DNC	DNC	DNC
Durham	19	0	0	6.3	F
Edgecombe	15	0	0	5.0	F
Forsyth	44	1	0	15.2	F
Franklin	14	0	0	4.7	F
Gaston	DNC	DNC	DNC	DNC	DNC
Graham	21	0	0	7.0	F
Granville	21	1	0	7.5	F
Guilford	37	1	0	12.8	F
Haywood	22	0	0	7.3	F
Jackson	*	*	*	*	*
Johnston	13	0	0	4.3	F
Lenoir	7	0	0	2.3	D
Lincoln	36	2	0	13.0	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Alamance	3	0	0	1.0	C	12.9	PASS
Alexander	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Avery	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Buncombe	1	0	0	0.3	B	11.2	PASS
Caldwell	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Caswell	1	0	0	0.3	B	12.3	PASS
Catawba	2	0	0	0.7	B	14.2	PASS
Chatham	0	1	0	0.5	B	11.8	PASS
Cumberland	0	0	0	0.0	A	13.0	PASS
Davidson	2	0	0	0.7	B	14.5	PASS
Davie	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Duplin	0	0	0	0.0	A	10.5	PASS
Durham	2	0	0	0.7	B	*	INC
Edgecombe	1	0	0	0.3	B	11.8	PASS
Forsyth	4	0	0	1.3	C	13.3	PASS
Franklin	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Gaston	1	0	0	0.3	B	13.3	PASS
Graham	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Granville	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Guilford	2	1	0	1.2	C	*	INC
Haywood	0	0	0	0.0	A	*	INC
Jackson	1	0	0	0.3	B	11.5	PASS
Johnston	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lenoir	1	0	0	0.3	B	10.4	PASS
Lincoln	DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Martin	5	0	0	1.7	C
Mcdowell	DNC	DNC	DNC	DNC	DNC
Mecklenburg	63	9	1	26.2	F
Mitchell	DNC	DNC	DNC	DNC	DNC
Montgomery	DNC	DNC	DNC	DNC	DNC
New Hanover	3	0	0	1.0	C
Onslow	DNC	DNC	DNC	DNC	DNC
Orange	DNC	DNC	DNC	DNC	DNC
Person	14	0	0	4.7	F
Pitt	14	0	0	4.7	F
Robeson	DNC	DNC	DNC	DNC	DNC
Rockingham	22	0	0	7.3	F
Rowan	78	8	0	30.0	F
Swain	0	0	0	0.0	A
Union	30	2	0	11.0	F
Wake	35	0	0	11.7	F
Watauga	DNC	DNC	DNC	DNC	DNC
Wayne	DNC	DNC	DNC	DNC	DNC
Yancey	13	0	0	4.3	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Martin	1	1	0	0.8	B	10.6	PASS
Mcdowell	1	0	0	0.3	B	13.0	PASS
Mecklenburg	6	0	0	2.0	C	13.9	PASS
Mitchell	2	0	0	0.7	B	11.9	PASS
Montgomery	1	1	0	0.8	B	11.6	PASS
New Hanover	1	0	0	0.3	B	*	INC
Onslow	*	*	*	*	*	*	INC
Orange	0	0	0	0.0	A	*	INC
Person	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pitt	2	1	0	1.2	C	11.3	PASS
Robeson	2	0	0	0.7	B	12.3	PASS
Rockingham	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rowan	1	0	0	0.3	B	13.6	PASS
Swain	1	0	0	0.3	B	12.1	PASS
Union	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wake	5	1	0	2.2	D	12.8	PASS
Watauga	0	0	0	0.0	A	10.7	PASS
Wayne	2	0	0	0.7	B	12.3	PASS
Yancey	DNC	DNC	DNC	DNC	DNC	DNC	DNC

NORTH DAKOTA

American Lung Association in North Dakota

212 N. 2nd Street
Bismarck, ND 58501
(701) 223-5613
www.lungusa.org/northdakota

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Billings	811	147	139	14	51	31	14	279	56	92
Burke	1,820	335	437	32	112	73	38	709	147	190
Burleigh	78,689	17,111	10,610	1,611	4,894	2,665	1,033	22,203	4,451	6,706
Cass	139,918	31,914	13,640	3,004	8,712	4,466	1,488	34,703	6,819	13,457
Dunn	3,318	699	575	66	202	122	55	1,094	222	397
Mckenzie	5,674	1,303	903	123	339	201	87	1,779	360	806
Mercer	7,854	1,548	1,211	146	481	297	129	2,634	530	554
Oliver	1,695	307	291	29	105	67	31	610	123	173
Totals	**239,779**	**53,364**	**27,806**	**5,025**	**14,896**	**7,922**	**2,875**	**64,011**	**12,709**	**22,375**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Billings	0	0	0	0.0	A
Burke	0	0	0	0.0	A
Burleigh	0	0	0	0.0	A
Cass	0	0	0	0.0	A
Dunn	0	0	0	0.0	A
Mckenzie	0	0	0	0.0	A
Mercer	0	0	0	0.0	A
Oliver	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Billings	0	0	0	0.0	A	4.8	PASS
Burke	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Burleigh	1	0	0	0.3	B	6.9	PASS
Cass	0	0	0	0.0	A	8.0	PASS
Dunn	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mckenzie	*	*	*	*	*	*	INC
Mercer	0	0	0	0.0	A	6.5	PASS
Oliver	DNC	DNC	DNC	DNC	DNC	DNC	DNC

OHIO

American Lung Association in Ohio

1950 Arlingate Lane
Columbus, OH 43228-4102
(614) 279-1700
www.lungusa.org/ohio

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Allen	105,168	25,559	15,600	2,406	7,554	3,541	1,471	30,533	8,178	14,749
Ashtabula	100,648	23,621	14,912	2,224	7,314	3,450	1,436	29,816	7,993	15,304
Athens	63,255	10,524	6,539	991	5,025	2,106	664	15,905	4,143	16,134
Butler	360,765	89,645	40,885	8,439	25,840	11,685	4,321	95,405	25,320	41,659
Clark	139,859	32,595	22,337	3,068	10,167	4,817	2,061	42,151	11,316	18,870
Clermont	195,385	50,803	21,648	4,782	13,790	6,305	2,357	51,818	13,780	16,994
Clinton	43,200	10,605	5,585	998	3,100	1,420	553	11,874	3,163	4,608
Cuyahoga	1,283,925	301,457	195,113	28,378	93,253	44,264	18,682	385,175	103,383	199,694
Delaware	165,026	45,164	14,067	4,252	11,460	5,038	1,680	39,285	10,341	7,877
Franklin	1,129,067	289,631	110,221	27,265	80,146	35,590	12,386	282,692	74,649	166,917
Geauga	94,753	22,552	14,225	2,123	6,861	3,314	1,417	29,087	7,827	6,467
Greene	159,190	34,550	20,395	3,252	11,866	5,433	2,086	45,139	12,017	16,162
Hamilton	851,494	206,018	114,701	19,394	61,384	28,595	11,457	242,599	64,838	113,411
Jefferson	68,526	13,428	13,173	1,264	5,207	2,531	1,158	22,908	6,183	11,879
Knox	59,324	13,689	8,467	1,289	4,333	1,996	802	16,916	4,515	7,336
Lake	234,030	51,648	35,012	4,862	17,327	8,219	3,431	71,178	19,096	19,629
Lawrence	62,573	14,358	9,346	1,352	4,575	2,133	879	18,311	4,899	11,257
Licking	157,721	38,445	20,421	3,619	11,350	5,261	2,074	44,299	11,825	15,727

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Lorain	304,373	72,471	41,139	6,822	22,051	10,246	4,092	86,765	23,179	36,331
Lucas	440,456	109,399	56,583	10,298	31,496	14,528	5,695	121,916	32,515	80,006
Madison	41,861	9,395	5,147	884	3,092	1,403	529	11,553	3,070	4,091
Mahoning	237,978	51,393	40,767	4,838	17,673	8,497	3,739	75,454	20,314	38,690
Medina	171,210	41,836	20,475	3,938	12,333	5,714	2,202	47,660	12,711	9,764
Miami	101,085	23,381	15,150	2,201	7,377	3,484	1,455	30,152	8,085	7,901
Montgomery	534,626	125,714	80,165	11,834	38,804	18,216	7,580	157,243	42,124	77,813
Portage	155,991	33,044	18,381	3,111	11,719	5,290	1,947	43,095	11,432	17,385
Preble	41,643	9,458	6,221	890	3,056	1,443	601	12,479	3,346	3,443
Scioto	76,587	17,558	11,847	1,653	5,595	2,599	1,079	22,364	5,982	14,675
Stark	379,214	86,105	59,606	8,106	27,805	13,215	5,626	115,444	31,000	45,898
Summit	542,562	127,431	76,162	11,996	39,462	18,517	7,545	158,425	42,408	66,372
Trumbull	211,317	45,982	35,911	4,329	15,663	7,531	3,308	66,825	17,989	32,109
Warren	207,353	54,257	20,948	5,108	14,612	6,545	2,329	52,532	13,902	13,204
Washington	61,567	12,940	10,649	1,218	4,605	2,204	967	19,535	5,256	10,063
Wood	125,340	26,220	14,974	2,468	9,442	4,231	1,548	34,338	9,097	11,863
Totals	**8,907,072**	**2,120,876**	**1,196,772**	**199,652**	**645,336**	**299,361**	**119,157**	**2,530,871**	**675,875**	**1,174,282**

OHIO

American Lung Association in Ohio

1950 Arlingate Lane
Columbus, OH 43228-4102
(614) 279-1700
www.lungusa.org/ohio

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Allen	10	0	0	3.3	F
Ashtabula	25	3	0	9.8	F
Athens	*	*	*	*	*
Butler	46	3	0	16.8	F
Clark	17	1	0	6.2	F
Clermont	24	0	0	8.0	F
Clinton	34	0	0	11.3	F
Cuyahoga	28	1	0	9.8	F
Delaware	14	0	0	4.7	F
Franklin	41	0	0	13.7	F
Geauga	7	0	0	2.3	D
Greene	15	0	0	5.0	F
Hamilton	63	3	0	22.5	F
Jefferson	22	0	0	7.3	F
Knox	9	0	0	3.0	D
Lake	26	0	0	8.7	F
Lawrence	15	0	0	5.0	F
Licking	8	0	0	2.7	D

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Allen	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ashtabula	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Athens	2	0	0	0.7	B	11.8	PASS
Butler	8	0	0	2.7	D	14.4	PASS
Clark	5	0	0	1.7	C	13.5	PASS
Clermont	1	0	0	0.3	B	12.8	PASS
Clinton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cuyahoga	12	0	0	4.0	F	15.1	FAIL
Delaware	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Franklin	7	0	0	2.3	D	13.7	PASS
Geauga	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greene	1	0	0	0.3	B	12.3	PASS
Hamilton	14	0	0	4.7	F	15.7	FAIL
Jefferson	10	0	0	3.3	F	14.8	PASS
Knox	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lake	4	0	0	1.3	C	12.3	PASS
Lawrence	4	0	0	1.3	C	*	INC
Licking	DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Lorain	7	0	0	2.3	D
Lucas	16	1	0	5.8	F
Madison	20	0	0	6.7	F
Mahoning	12	0	0	4.0	F
Medina	4	0	0	1.3	C
Miami	5	0	0	1.7	C
Montgomery	11	0	0	3.7	F
Portage	10	0	0	3.3	F
Preble	4	0	0	1.3	C
Scioto	DNC	DNC	DNC	DNC	DNC
Stark	49	1	0	16.8	F
Summit	33	1	0	11.5	F
Trumbull	32	0	0	10.7	F
Warren	54	1	0	18.5	F
Washington	29	0	0	9.7	F
Wood	8	0	0	2.7	D

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Lorain	1	0	0	0.3	B	11.9	PASS
Lucas	5	0	0	1.7	C	13.1	PASS
Madison	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mahoning	7	0	0	2.3	D	13.6	PASS
Medina	0	0	0	0.0	A	12.1	PASS
Miami	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montgomery	7	0	0	2.3	D	14.2	PASS
Portage	2	0	0	0.7	B	12.6	PASS
Preble	2	0	0	0.7	B	12.7	PASS
Scioto	5	0	0	1.7	C	13.5	PASS
Stark	2	0	0	0.7	B	*	INC
Summit	7	0	0	2.3	D	14.0	PASS
Trumbull	6	0	0	2.0	C	13.3	PASS
Warren	*	*	*	*	*	*	INC
Washington	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wood	DNC	DNC	DNC	DNC	DNC	DNC	DNC

OKLAHOMA

American Lung Association in Oklahoma

11212 N. May Ave Suite 405
Oklahoma City, OK 73120
(405) 748-4674
www.lungusa.org/oklahoma

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Adair	21,811	6,347	2,578	597	1,375	671	258	5,571	1,519	4,899
Caddo	29,024	7,566	4,188	712	1,897	950	393	8,173	2,235	5,924
Canadian	106,079	26,738	11,104	2,517	7,073	3,436	1,249	27,884	7,604	8,772
Carter	47,979	12,069	7,480	1,136	3,166	1,609	687	14,055	3,850	7,672
Cherokee	45,733	11,155	5,691	1,050	3,082	1,474	553	12,085	3,287	11,184
Cleveland	239,760	53,554	22,349	5,041	16,703	7,813	2,615	60,996	16,549	26,269
Comanche	111,772	31,269	12,395	2,944	7,179	3,445	1,272	28,071	7,640	18,507
Cotton	6,191	1,534	954	144	411	209	89	1,819	498	1,006
Creek	69,822	16,859	10,557	1,587	4,673	2,373	998	20,594	5,642	8,776
Dewey	4,389	946	892	89	300	161	77	1,487	409	545
Jefferson	6,219	1,450	1,205	136	418	218	101	1,981	544	1,303
Kay	45,632	11,621	7,483	1,094	2,988	1,548	682	13,754	3,775	7,642
Lincoln	32,153	7,771	4,766	732	2,152	1,093	457	9,461	2,592	4,523
Love	9,155	2,170	1,577	204	613	317	141	2,831	777	1,279
Mayes	39,912	9,888	6,180	931	2,650	1,335	564	11,593	3,172	6,780
Mcclain	32,365	7,945	4,328	748	2,165	1,074	427	9,065	2,477	3,218
Muskogee	71,278	17,336	11,288	1,632	4,760	2,397	1,018	20,875	5,712	13,338
Oklahoma	706,617	186,249	89,342	17,533	46,222	22,645	8,815	189,205	51,626	110,764
Ottawa	31,849	7,687	5,519	724	2,125	1,087	481	9,656	2,646	6,034
Pittsburg	45,115	9,897	7,970	932	3,099	1,578	694	13,975	3,828	7,209
Sequoyah	41,034	10,357	5,874	975	2,713	1,360	559	11,663	3,190	8,387
Tulsa	591,982	156,061	71,672	14,691	38,727	19,040	7,337	158,507	43,276	78,977
Totals	**2,335,871**	**596,469**	**295,392**	**56,149**	**154,491**	**75,833**	**29,467**	**633,301**	**172,849**	**343,008**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Adair	13	0	0	4.3	F
Caddo	*	*	*	*	*
Canadian	17	0	0	5.7	F
Carter	*	*	*	*	*
Cherokee	3	1	0	1.5	C
Cleveland	14	0	0	4.7	F
Comanche	14	0	0	4.7	F
Cotton	*	*	*	*	*
Creek	17	0	0	5.7	F
Dewey	3	0	0	1.0	C
Jefferson	*	*	*	*	*
Kay	17	0	0	5.7	F
Lincoln	*	*	*	*	*
Love	*	*	*	*	*
Mayes	16	0	0	5.3	F
Mcclain	5	0	0	1.7	C
Muskogee	DNC	DNC	DNC	DNC	DNC
Oklahoma	38	0	0	12.7	F
Ottawa	6	0	0	2.0	C
Pittsburg	7	0	0	2.3	D
Sequoyah	5	0	0	1.7	C
Tulsa	32	3	0	12.2	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Adair	*	*	*	*	*	*	INC
Caddo	0	0	0	0.0	A	8.5	PASS
Canadian	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carter	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cherokee	*	*	*	*	*	*	INC
Cleveland	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Comanche	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cotton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Creek	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dewey	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kay	*	*	*	*	*	*	INC
Lincoln	*	*	*	*	*	*	INC
Love	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mayes	0	0	0	0.0	A	11.5	PASS
Mcclain	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Muskogee	1	0	0	0.3	B	11.6	PASS
Oklahoma	0	0	0	0.0	A	10.1	PASS
Ottawa	0	0	0	0.0	A	11.2	PASS
Pittsburg	2	0	0	0.7	B	11.1	PASS
Sequoyah	2	0	0	0.7	B	11.9	PASS
Tulsa	4	0	0	1.3	C	11.3	PASS

OREGON

American Lung Association in Oregon

7420 SW Bridgeport Road, Suite 200
Tigard, OR 97224-7711
(503) 924-4094
www.lungusa.org/oregon

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Clackamas	380,576	84,441	47,380	7,949	25,542	13,206	5,155	110,923	20,791	34,731
Columbia	49,408	11,080	5,975	1,043	3,301	1,700	655	14,194	2,655	5,536
Deschutes	158,456	34,935	22,347	3,289	10,594	5,440	2,180	46,115	8,633	16,424
Douglas	104,059	20,975	21,598	1,975	7,198	3,835	1,817	35,300	6,741	14,565
Harney	6,747	1,493	1,303	141	459	248	117	2,284	438	1,048
Jackson	201,138	43,144	34,448	4,061	13,627	7,134	3,116	63,056	11,932	31,611
Josephine	81,618	16,400	17,467	1,544	5,655	3,023	1,453	28,028	5,361	15,619
Klamath	66,425	15,434	10,544	1,453	4,402	2,303	988	20,190	3,817	11,023
Lake	7,239	1,410	1,486	133	507	272	129	2,503	479	1,287
Lane	346,560	69,455	49,662	6,538	23,760	12,190	4,864	103,115	19,293	53,423
Linn	115,348	27,272	17,677	2,567	7,570	3,920	1,643	33,945	6,388	15,984
Marion	314,606	83,781	38,431	7,887	19,712	10,002	3,837	82,998	15,436	48,005
Multnomah	714,567	164,021	72,679	15,440	47,099	23,799	8,495	191,636	35,456	99,035
Umatilla	73,526	19,069	9,297	1,795	4,671	2,393	939	20,097	3,755	10,576
Union	24,961	5,435	3,872	512	1,681	873	366	7,566	1,425	3,641
Washington	529,216	138,355	49,244	13,024	33,361	16,754	5,844	133,464	24,603	50,055
Totals	**3,174,450**	**736,700**	**403,410**	**69,351**	**209,138**	**107,092**	**41,598**	**895,414**	**167,204**	**412,563**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Clackamas	3	1	0	1.5	C
Columbia	0	0	0	0.0	A
Deschutes	*	*	*	*	*
Douglas	DNC	DNC	DNC	DNC	DNC
Harney	DNC	DNC	DNC	DNC	DNC
Jackson	3	0	0	1.0	C
Josephine	DNC	DNC	DNC	DNC	DNC
Klamath	DNC	DNC	DNC	DNC	DNC
Lake	DNC	DNC	DNC	DNC	DNC
Lane	6	0	0	2.0	C
Linn	DNC	DNC	DNC	DNC	DNC
Marion	5	0	0	1.7	C
Multnomah	1	0	0	0.3	B
Umatilla	*	*	*	*	*
Union	DNC	DNC	DNC	DNC	DNC
Washington	*	*	*	*	*

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Clackamas	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Columbia	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Deschutes	*	*	*	*	*	*	INC
Douglas	*	*	*	*	*	*	INC
Harney	*	*	*	*	*	*	INC
Jackson	10	0	0	3.3	F	10.0	PASS
Josephine	0	0	0	0.0	A	*	INC
Klamath	12	1	0	4.5	F	11.6	PASS
Lake	*	*	*	*	*	*	INC
Lane	24	0	0	8.0	F	11.0	PASS
Linn	*	*	*	*	*	*	INC
Marion	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Multnomah	3	0	0	1.0	C	8.8	PASS
Umatilla	0	0	0	0.0	A	*	INC
Union	1	0	0	0.3	B	7.5	PASS
Washington	2	0	0	0.7	B	*	INC

PENNSYLVANIA

American Lung Association in Pennsylvania

3001 Old Gettysburg Road
Camp Hill, PA 17011-7206
(717) 541-5864
www.lungusa.org/pennsylvania

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Adams	101,119	22,237	14,586	2,093	7,277	3,473	1,402	29,527	6,746	7,569
Allegheny	1,215,103	250,672	204,705	23,597	88,545	43,690	18,952	385,161	89,099	145,977
Armstrong	68,790	13,696	12,913	1,289	5,041	2,532	1,150	22,844	5,324	7,425
Beaver	172,476	35,214	31,681	3,315	12,565	6,308	2,850	56,769	13,220	19,600
Berks	403,595	94,949	57,472	8,938	28,462	13,636	5,534	116,275	26,595	44,207
Blair	125,174	26,402	21,648	2,485	9,063	4,461	1,952	39,460	9,136	17,353
Bucks	621,643	141,132	86,433	13,286	44,292	21,670	8,863	186,034	42,684	31,336
Cambria	144,319	27,777	26,924	2,615	10,675	5,294	2,372	47,382	11,011	20,963
Centre	144,779	23,629	16,509	2,224	11,289	4,897	1,619	37,771	8,310	18,941
Chester	491,489	119,297	61,124	11,230	34,403	16,494	6,448	138,490	31,528	27,886
Clearfield	82,896	15,942	14,730	1,501	6,144	3,011	1,315	26,589	6,152	12,351
Cumberland	229,361	46,594	35,421	4,386	16,837	8,099	3,341	69,588	15,956	16,387
Dauphin	256,562	59,937	35,138	5,642	18,135	8,797	3,564	75,118	17,200	27,090
Delaware	553,619	131,738	78,322	12,401	38,891	18,779	7,666	160,735	36,821	48,314
Erie	279,175	63,598	40,259	5,987	19,877	9,540	3,881	81,461	18,641	38,562
Franklin	143,495	32,855	24,157	3,093	10,160	4,933	2,134	43,325	10,003	11,848
Greene	39,344	7,775	6,006	732	2,909	1,398	573	11,978	2,744	6,004
Indiana	87,479	15,995	14,132	1,506	6,586	3,131	1,287	26,807	6,136	13,387

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Lackawanna	209,408	42,932	37,682	4,041	15,263	7,515	3,326	66,811	15,491	26,508
Lancaster	502,370	125,391	73,853	11,804	34,717	16,719	6,928	143,951	33,029	45,093
Lawrence	90,272	19,013	16,668	1,790	6,523	3,256	1,472	29,280	6,815	11,874
Lehigh	339,989	79,453	51,980	7,479	23,975	11,632	4,878	100,789	23,179	33,749
Luzerne	311,983	62,037	56,868	5,840	22,912	11,286	5,006	100,446	23,297	42,217
Lycoming	116,670	24,351	19,334	2,292	8,483	4,142	1,774	36,255	8,365	15,305
Mercer	116,652	24,653	20,790	2,321	8,433	4,165	1,847	37,080	8,602	15,140
Monroe	165,058	39,012	19,797	3,672	11,668	5,523	2,105	45,798	10,378	16,320
Montgomery	778,048	179,646	115,817	16,911	55,081	26,913	11,244	233,092	53,617	46,672
Northampton	294,787	64,103	43,017	6,034	21,268	10,224	4,163	87,349	19,994	24,724
Perry	45,185	10,279	5,856	968	3,224	1,557	616	13,154	3,002	4,154
Philadelphia	1,447,395	361,859	185,962	34,064	100,391	46,961	18,156	390,839	88,611	331,349
Tioga	40,574	8,342	7,223	785	2,956	1,451	638	12,856	2,978	6,175
Washington	206,407	41,852	35,648	3,940	15,099	7,464	3,264	66,055	15,299	20,690
Westmoreland	361,589	70,130	66,762	6,602	26,686	13,391	6,033	120,346	28,015	35,130
York	424,583	97,250	58,797	9,155	30,200	14,534	5,856	123,655	28,270	33,417
Totals	**10,611,388**	**2,379,742**	**1,598,214**	**224,018**	**758,030**	**366,876**	**152,209**	**3,163,070**	**726,246**	**1,223,717**

PENNSYLVANIA

American Lung Association in Pennsylvania

3001 Old Gettysburg Road
Camp Hill, PA 17011-7206
(717) 541-5864
www.lungusa.org/pennsylvania

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Adams	17	0	0	5.7	F
Allegheny	47	1	0	16.2	F
Armstrong	37	2	0	13.3	F
Beaver	25	0	0	8.3	F
Berks	31	0	0	10.3	F
Blair	5	0	0	1.7	C
Bucks	44	4	2	18.0	F
Cambria	2	0	0	0.7	B
Centre	9	0	0	3.0	D
Chester	30	1	1	11.2	F
Clearfield	7	0	0	2.3	D
Cumberland	DNC	DNC	DNC	DNC	DNC
Dauphin	33	0	0	11.0	F
Delaware	31	1	0	10.8	F
Erie	18	1	0	6.5	F
Franklin	6	0	0	2.0	C
Greene	13	0	0	4.3	F
Indiana	16	0	0	5.3	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Adams	12	0	0	4.0	F	11.9	PASS
Allegheny	129	5	0	45.5	F	18.3	FAIL
Armstrong	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Beaver	10	0	0	3.3	F	14.9	PASS
Berks	8	0	0	2.7	D	13.6	PASS
Blair	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bucks	6	0	0	2.0	C	12.6	PASS
Cambria	5	0	0	1.7	C	14.4	PASS
Centre	13	0	0	4.3	F	11.4	PASS
Chester	6	0	0	2.0	C	*	INC
Clearfield	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cumberland	14	0	0	4.7	F	13.2	PASS
Dauphin	22	0	0	7.3	F	13.8	PASS
Delaware	5	0	0	1.7	C	14.1	PASS
Erie	11	0	0	3.7	F	11.4	PASS
Franklin	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greene	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Indiana	DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2006–2008

HIGH PARTICLE POLLUTION DAYS 2006–2008

						24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Lackawanna	9	1	0	3.5	F	10	0	0	3.3	F	10.7	PASS
Lancaster	37	0	0	12.3	F	9	0	0	3.0	D	14.5	PASS
Lawrence	7	0	0	2.3	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lehigh	28	0	0	9.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Luzerne	10	0	0	3.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lycoming	12	0	0	4.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mercer	29	0	0	9.7	F	9	0	0	3.0	D	12.2	PASS
Monroe	11	0	0	3.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montgomery	41	1	0	14.2	F	6	0	0	2.0	C	12.3	PASS
Northampton	22	1	0	7.8	F	21	0	0	7.0	F	12.8	PASS
Perry	12	0	0	4.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Philadelphia	48	5	0	18.5	F	33	0	0	11.0	F	*	INC
Tioga	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washington	20	0	0	6.7	F	22	0	0	7.3	F	14.4	PASS
Westmoreland	13	0	0	4.3	F	7	0	0	2.3	D	14.1	PASS
York	29	1	0	10.2	F	9	0	0	3.0	D	14.6	PASS

RHODE ISLAND

American Lung Association in Rhode Island

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Providence, RI 02903
(401) 533-5171
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AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Kent	168,058	35,032	24,800	3,298	13,972	5,979	2,466	51,486	10,360	13,464
Providence	626,150	142,736	83,679	13,437	50,841	20,957	8,148	174,895	35,167	87,789
Washington	126,264	25,075	17,660	2,360	10,647	4,495	1,795	38,096	7,647	9,914
Totals	**920,472**	**202,843**	**126,139**	**19,095**	**75,459**	**31,431**	**12,409**	**264,477**	**53,174**	**111,167**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Kent	17	0	0	5.7	F
Providence	19	1	0	6.8	F
Washington	21	2	1	8.7	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Kent	1	0	0	0.3	B	7.7	PASS
Providence	3	0	0	1.0	C	11.4	PASS
Washington	DNC	DNC	DNC	DNC	DNC	DNC	DNC

RHODE ISLAND

SOUTH CAROLINA

American Lung Association in South Carolina

44-A Markfield Drive
Charleston, SC 29407
(843) 556-8451
www.lungusa.org/southcarolina

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Abbeville	25,404	5,695	3,980	536	1,628	883	373	7,678	2,131	4,334
Aiken	154,071	36,070	23,300	3,395	9,760	5,297	2,224	45,966	12,791	24,763
Anderson	182,825	43,340	26,943	4,080	11,512	6,210	2,570	53,469	14,826	25,830
Barnwell	22,872	5,710	3,119	538	1,420	767	312	6,560	1,829	4,976
Beaufort	150,415	36,100	29,070	3,398	9,396	5,141	2,372	46,563	12,760	14,609
Berkeley	169,327	44,011	15,394	4,143	10,302	5,359	1,851	42,512	11,762	22,817
Charleston	348,046	80,343	44,260	7,563	22,035	11,688	4,510	97,350	26,909	52,004
Cherokee	54,394	13,267	6,981	1,249	3,389	1,805	706	15,137	4,192	9,406
Chester	32,618	7,818	4,571	736	2,051	1,108	453	9,498	2,646	6,359
Chesterfield	42,882	10,378	5,596	977	2,689	1,446	576	12,246	3,416	8,721
Colleton	39,019	9,694	5,609	913	2,425	1,312	544	11,317	3,149	8,182
Darlington	67,031	16,216	9,372	1,527	4,205	2,273	930	19,491	5,434	14,400
Edgefield	25,546	5,268	2,899	496	1,669	877	320	7,130	1,974	4,391
Florence	132,800	32,918	17,232	3,099	8,244	4,413	1,747	37,227	10,341	23,565
Georgetown	60,731	13,570	10,598	1,277	3,901	2,140	948	19,052	5,291	10,805
Greenville	438,119	107,134	53,235	10,085	27,278	14,485	5,554	120,376	33,368	59,025
Greenwood	68,549	16,380	10,252	1,542	4,291	2,300	949	19,753	5,440	11,111
Horry	257,380	55,135	44,453	5,190	16,635	8,998	3,895	79,019	21,729	37,015

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Lexington	248,518	61,239	29,922	5,765	15,479	8,269	3,194	69,029	19,243	25,982
Oconee	71,274	15,284	13,389	1,439	4,623	2,541	1,152	22,859	6,323	11,407
Pickens	116,915	24,411	15,538	2,298	7,569	3,965	1,508	32,722	8,932	18,244
Richland	364,001	86,784	35,588	8,170	22,732	11,782	4,087	93,504	25,717	47,689
Spartanburg	280,738	67,058	37,710	6,313	17,605	9,400	3,732	79,348	21,957	38,448
Union	27,672	6,201	4,607	584	1,780	977	427	8,650	2,414	4,921
Williamsburg	35,090	7,966	5,233	750	2,239	1,209	500	10,413	2,889	10,048
York	217,448	54,030	23,743	5,086	13,450	7,078	2,603	57,706	15,974	25,554
Totals	**3,633,685**	**862,020**	**482,594**	**81,149**	**228,308**	**121,723**	**48,037**	**1,024,575**	**283,435**	**524,606**

SOUTH CAROLINA

American Lung Association in South Carolina

44-A Markfield Drive
Charleston, SC 29407
(843) 556-8451
www.lungusa.org/southcarolina

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Abbeville	23	0	0	7.7	F
Aiken	13	0	0	4.3	F
Anderson	*	*	*	*	*
Barnwell	*	*	*	*	*
Beaufort	DNC	DNC	DNC	DNC	DNC
Berkeley	2	0	0	0.7	B
Charleston	8	0	0	2.7	D
Cherokee	10	0	0	3.3	F
Chester	*	*	*	*	*
Chesterfield	4	0	0	1.3	C
Colleton	5	0	0	1.7	C
Darlington	11	0	0	3.7	F
Edgefield	4	0	0	1.3	C
Florence	DNC	DNC	DNC	DNC	DNC
Georgetown	DNC	DNC	DNC	DNC	DNC
Greenville	*	*	*	*	*
Greenwood	DNC	DNC	DNC	DNC	DNC
Horry	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Abbeville	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Aiken	*	*	*	*	*	*	INC
Anderson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Barnwell	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Beaufort	*	*	*	*	*	*	INC
Berkeley	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Charleston	3	1	0	1.5	C	11.0	PASS
Cherokee	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Chester	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Chesterfield	1	0	0	0.3	B	12.0	PASS
Colleton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Darlington	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Edgefield	2	0	0	0.7	B	12.5	PASS
Florence	1	0	0	0.3	B	12.1	PASS
Georgetown	*	*	*	*	*	*	INC
Greenville	3	0	0	1.0	C	14.2	PASS
Greenwood	*	*	*	*	*	*	INC
Horry	*	*	*	*	*	*	INC

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Lexington	DNC	DNC	DNC	DNC	DNC
Oconee	6	0	0	2.0	C
Pickens	23	0	0	7.7	F
Richland	33	0	0	11.0	F
Spartanburg	37	0	0	12.3	F
Union	*	*	*	*	*
Williamsburg	*	*	*	*	*
York	12	0	0	4.0	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Lexington	1	0	0	0.3	B	13.7	PASS
Oconee	0	0	0	0.0	A	10.5	PASS
Pickens	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Richland	3	0	0	1.0	C	13.3	PASS
Spartanburg	3	0	0	1.0	C	13.3	PASS
Union	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Williamsburg	DNC	DNC	DNC	DNC	DNC	DNC	DNC
York	DNC	DNC	DNC	DNC	DNC	DNC	DNC

SOUTH CAROLINA

SOUTH DAKOTA

American Lung Association in South Dakota

108 E. 38th Street, Suite 600
Sioux Falls, SD 57105
(605) 336-7222
www.lungusa.org/southdakota

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Brookings	29,668	5,698	3,131	536	1,705	978	323	7,553	1,253	3,295
Brown	35,154	7,890	5,962	743	1,952	1,227	535	10,832	1,923	3,881
Codington	26,317	6,464	3,946	608	1,419	884	369	7,645	1,346	2,686
Custer	7,811	1,627	1,421	153	443	289	132	2,614	471	776
Jackson	2,711	843	383	79	134	84	36	731	129	868
Meade	23,989	6,331	2,806	596	1,256	789	308	6,636	1,161	2,211
Minnehaha	179,180	45,470	21,880	4,280	9,526	5,805	2,219	48,116	8,318	14,896
Pennington	98,533	24,993	12,918	2,353	5,243	3,246	1,291	27,436	4,791	12,987
Totals	**403,363**	**99,316**	**52,447**	**9,348**	**21,678**	**13,302**	**5,213**	**111,563**	**19,393**	**41,600**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Brookings	DNC	DNC	DNC	DNC	DNC
Brown	DNC	DNC	DNC	DNC	DNC
Codington	DNC	DNC	DNC	DNC	DNC
Custer	2	0	0	0.7	B
Jackson	0	0	0	0.0	A
Meade	*	*	*	*	*
Minnehaha	0	0	0	0.0	A
Pennington	*	*	*	*	*

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Brookings	1	0	0	0.3	B	8.5	PASS
Brown	0	0	0	0.0	A	7.9	PASS
Codington	1	0	0	0.3	B	9.5	PASS
Custer	1	0	0	0.3	B	5.5	PASS
Jackson	1	0	0	0.3	B	5.4	PASS
Meade	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Minnehaha	1	0	0	0.3	B	9.6	PASS
Pennington	2	0	0	0.7	B	8.4	PASS

SOUTH DAKOTA

TENNESSEE

American Lung Association in Tennessee

One Vantage Way, Suite B-130
Nashville, TN 37228
(615) 329-1151
www.lungusa.org/tennessee

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Anderson	74,169	16,186	12,524	1,524	5,180	2,630	1,149	23,270	6,534	11,256
Blount	121,511	26,607	18,408	2,505	8,482	4,217	1,744	36,291	10,236	12,860
Davidson	626,144	149,232	69,292	14,048	42,659	20,556	7,517	167,066	47,567	101,518
Dyer	37,600	9,172	5,323	863	2,541	1,266	518	10,848	3,062	6,566
Hamblen	62,132	14,508	9,617	1,366	4,255	2,108	881	18,208	5,132	10,256
Hamilton	332,848	74,126	48,701	6,978	23,126	11,563	4,760	99,402	28,040	45,850
Haywood	19,024	4,808	2,609	453	1,271	633	258	5,411	1,528	4,104
Jefferson	51,074	11,288	7,582	1,063	3,556	1,742	707	14,828	4,190	8,145
Knox	430,019	95,525	55,588	8,992	29,909	14,613	5,651	121,844	34,543	59,873
Lawrence	40,954	10,157	6,588	956	2,751	1,370	587	11,981	3,371	6,290
Loudon	46,445	9,901	9,661	932	3,262	1,666	788	15,289	4,269	5,106
Madison	96,376	24,062	12,134	2,265	6,466	3,166	1,231	26,465	7,500	14,300
Maury	81,938	20,077	10,136	1,890	5,532	2,710	1,047	22,596	6,406	11,283
McMinn	52,511	11,898	8,240	1,120	3,629	1,813	765	15,745	4,434	8,411
Meigs	11,790	2,728	1,547	257	810	400	158	3,366	953	2,424
Montgomery	154,756	44,047	13,482	4,146	9,906	4,650	1,565	36,393	10,430	20,017
Putnam	71,160	15,959	10,473	1,502	4,933	2,379	949	20,058	5,677	12,253
Roane	53,430	10,901	9,346	1,026	3,799	1,937	854	17,218	4,831	8,182
Rutherford	249,270	66,108	20,435	6,223	16,392	7,603	2,458	58,447	16,803	24,885
Sevier	84,835	18,967	12,886	1,785	5,887	2,933	1,219	25,298	7,132	11,097
Shelby	906,825	245,711	92,733	23,130	59,146	28,802	10,553	234,717	66,796	159,896
Sullivan	153,900	31,730	27,454	2,987	10,913	5,574	2,481	49,761	13,953	21,424
Sumner	155,474	37,929	18,628	3,570	10,513	5,161	1,977	42,894	12,167	13,355
Williamson	171,452	44,004	15,347	4,142	11,408	5,604	1,993	45,199	12,885	8,464
Wilson	109,803	27,251	11,948	2,565	7,385	3,607	1,338	29,559	8,404	9,192
Totals	**4,195,440**	**1,022,882**	**510,682**	**96,288**	**283,711**	**138,703**	**53,148**	**1,152,154**	**326,841**	**597,007**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Anderson	21	1	0	7.5	F
Blount	61	1	0	20.8	F
Davidson	20	2	0	7.7	F
Dyer	DNC	DNC	DNC	DNC	DNC
Hamblen	*	*	*	*	*
Hamilton	44	3	0	16.2	F
Haywood	12	1	0	4.5	F
Jefferson	28	1	0	9.8	F
Knox	54	0	1	18.7	F
Lawrence	*	*	*	*	*
Loudon	41	1	0	14.2	F
Madison	DNC	DNC	DNC	DNC	DNC
Maury	DNC	DNC	DNC	DNC	DNC
McMinn	DNC	DNC	DNC	DNC	DNC
Meigs	22	1	0	7.8	F
Montgomery	*	*	*	*	*
Putnam	*	*	*	*	*
Roane	DNC	DNC	DNC	DNC	DNC
Rutherford	9	1	0	3.5	F
Sevier	79	0	0	26.3	F
Shelby	45	5	0	17.5	F
Sullivan	26	3	0	10.2	F
Sumner	48	2	0	17.0	F
Williamson	23	0	0	7.7	F
Wilson	29	0	0	9.7	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Anderson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Blount	7	0	0	2.3	D	14.1	PASS
Davidson	12	0	0	4.0	F	13.2	PASS
Dyer	5	0	0	1.7	C	11.4	PASS
Hamblen	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hamilton	9	0	0	3.0	D	14.3	PASS
Haywood	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Knox	16	0	0	5.3	F	*	INC
Lawrence	3	0	0	1.0	C	11.3	PASS
Loudon	5	0	0	1.7	C	14.9	PASS
Madison	6	0	0	2.0	C	11.8	PASS
Maury	2	0	0	0.7	B	12.3	PASS
McMinn	5	0	0	1.7	C	14.1	PASS
Meigs	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montgomery	12	0	0	4.0	F	12.6	PASS
Putnam	1	0	0	0.3	B	*	INC
Roane	0	0	0	0.0	A	14.0	PASS
Rutherford	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sevier	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Shelby	10	0	0	3.3	F	12.6	PASS
Sullivan	3	0	0	1.0	C	13.3	PASS
Sumner	5	0	0	1.7	C	12.7	PASS
Williamson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wilson	DNC	DNC	DNC	DNC	DNC	DNC	DNC

TEXAS

American Lung Association in Texas

8150 Brookriver Drive, Suite S102
Dallas, TX 75247
(214) 631-5864
www.lungusa.org/texas

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Bexar	1,622,899	458,423	166,099	43,154	85,102	49,460	17,678	397,210	114,326	270,728
Bowie	92,283	21,780	12,302	2,050	5,207	3,073	1,204	25,751	7,458	16,501
Brazoria	301,044	83,989	27,714	7,906	15,864	9,224	3,194	73,153	21,090	27,778
Brewster	9,331	1,944	1,427	183	544	320	129	2,714	783	1,508
Cameron	392,736	133,499	45,175	12,567	18,974	11,045	4,227	91,283	26,225	130,014
Collin	762,010	213,197	54,788	20,070	39,836	22,932	7,276	175,260	50,342	48,336
Dallas	2,412,827	681,211	207,388	64,127	125,942	72,693	24,336	567,600	163,008	409,612
Denton	636,557	175,561	37,091	16,527	33,209	18,900	5,538	139,742	39,908	40,919
Ector	131,941	39,273	14,325	3,697	6,806	3,984	1,480	32,579	9,408	20,036
El Paso	742,062	230,018	79,048	21,653	37,507	21,870	8,063	178,045	51,293	183,824
Ellis	148,186	40,694	14,054	3,831	7,849	4,557	1,584	36,176	10,417	14,363
Galveston	288,239	74,327	30,858	6,997	15,788	9,313	3,437	76,112	22,099	33,874
Gregg	117,528	31,167	15,994	2,934	6,391	3,782	1,519	32,063	9,292	16,142
Harris	3,984,349	1,145,274	316,399	107,812	206,787	119,643	39,499	929,844	267,659	603,105
Harrison	63,594	15,424	8,207	1,452	3,572	2,121	834	17,830	5,184	9,113
Hays	149,476	36,439	11,251	3,430	8,091	4,557	1,367	33,855	9,580	19,874
Hidalgo	726,604	260,350	70,501	24,508	33,778	19,364	6,862	154,332	44,005	250,117
Hood	50,573	11,127	9,786	1,047	2,954	1,776	813	16,027	4,660	5,045
Hunt	82,805	20,193	11,202	1,901	4,621	2,724	1,074	22,884	6,620	11,566

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Jefferson	243,090	59,082	32,516	5,562	13,614	8,053	3,183	67,789	19,656	39,041
Johnson	153,630	39,913	16,145	3,757	8,338	4,870	1,755	39,302	11,347	14,139
Kaufman	100,527	27,528	9,148	2,591	5,319	3,078	1,050	24,227	6,966	9,778
Kleberg	30,739	7,763	3,527	731	1,671	964	347	7,746	2,216	7,062
Lubbock	264,418	67,140	29,979	6,320	14,358	8,290	2,985	66,644	19,088	40,067
Mclennan	230,213	59,036	28,552	5,557	12,530	7,295	2,752	59,936	17,233	44,280
Montgomery	429,953	116,894	40,955	11,004	22,909	13,344	4,670	106,337	30,682	40,127
Nueces	322,077	86,697	37,899	8,161	17,392	10,273	3,929	85,241	24,730	55,276
Orange	83,022	20,240	11,740	1,905	4,676	2,792	1,142	23,913	6,964	11,135
Parker	111,776	26,665	12,362	2,510	6,261	3,675	1,346	29,900	8,655	11,138
Potter	120,918	34,950	14,563	3,290	6,297	3,670	1,394	30,250	8,701	25,385
Rockwall	77,633	21,381	6,698	2,013	4,098	2,371	797	18,551	5,336	4,771
Smith	201,277	51,668	29,556	4,864	11,071	6,548	2,689	56,035	16,217	25,756
Tarrant	1,750,091	493,382	149,164	46,445	91,590	53,034	17,837	415,258	119,511	208,934
Travis	998,543	253,198	67,020	23,835	53,580	30,386	9,047	225,696	64,240	141,162
Victoria	86,755	23,504	11,625	2,213	4,700	2,798	1,132	23,833	6,931	13,103
Webb	236,941	88,558	19,936	8,337	10,740	6,151	2,094	48,232	13,764	62,060
Totals	**18,156,647**	**5,151,489**	**1,654,994**	**484,941**	**947,969**	**548,930**	**188,263**	**4,331,350**	**1,245,595**	**2,865,669**

TEXAS

American Lung Association in Texas

8150 Brookriver Drive, Suite S102
Dallas, TX 75247
(214) 631-5864
www.lungusa.org/texas

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Bexar	34	0	0	11.3	F
Bowie	DNC	DNC	DNC	DNC	DNC
Brazoria	40	3	1	15.5	F
Brewster	0	0	0	0.0	A
Cameron	0	0	0	0.0	A
Collin	41	2	0	14.7	F
Dallas	43	2	0	15.3	F
Denton	45	9	0	19.5	F
Ector	DNC	DNC	DNC	DNC	DNC
El Paso	30	0	0	10.0	F
Ellis	15	1	0	5.5	F
Galveston	18	3	0	7.5	F
Gregg	20	0	0	6.7	F
Harris	77	16	3	35.7	F
Harrison	7	0	0	2.3	D
Hays	3	0	0	1.0	C
Hidalgo	1	0	0	0.3	B
Hood	16	0	0	5.3	F
Hunt	8	0	0	2.7	D

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Bexar	*	*	*	*	*	*	INC
Bowie	2	0	0	0.7	B	12.3	PASS
Brazoria	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Brewster	0	0	0	0.0	A	*	INC
Cameron	0	0	0	0.0	A	*	INC
Collin	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dallas	0	0	0	0.0	A	10.9	PASS
Denton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ector	1	0	0	0.3	B	8.3	PASS
El Paso	8	0	0	2.7	D	11.9	PASS
Ellis	1	0	0	0.3	B	*	INC
Galveston	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Gregg	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Harris	9	0	0	3.0	D	15.2	FAIL
Harrison	0	0	0	0.0	A	11.0	PASS
Hays	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hidalgo	0	0	0	0.0	A	10.9	PASS
Hood	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hunt	DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Jefferson	41	0	0	13.7	F
Johnson	26	1	0	9.2	F
Kaufman	13	0	0	4.3	F
Kleberg	*	*	*	*	*
Lubbock	DNC	DNC	DNC	DNC	DNC
Mclennan	*	*	*	*	*
Montgomery	18	2	0	7.0	F
Nueces	6	0	0	2.0	C
Orange	10	0	0	3.3	F
Parker	24	2	0	9.0	F
Potter	DNC	DNC	DNC	DNC	DNC
Rockwall	18	0	0	6.0	F
Smith	21	1	0	7.5	F
Tarrant	67	9	1	27.5	F
Travis	22	0	0	7.3	F
Victoria	2	0	0	0.7	B
Webb	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Jefferson	1	0	0	0.3	B	*	INC
Johnson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kaufman	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kleberg	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lubbock	*	*	*	*	*	*	INC
Mclennan	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montgomery	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Nueces	0	0	0	0.0	A	10.8	PASS
Orange	1	0	0	0.3	B	*	INC
Parker	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Potter	0	0	0	0.0	A	6.3	PASS
Rockwall	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Smith	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tarrant	1	0	0	0.3	B	11.2	PASS
Travis	0	0	0	0.0	A	*	INC
Victoria	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Webb	DNC	DNC	DNC	DNC	DNC	DNC	DNC

UTAH

American Lung Association in Utah

1930 South 1100 East
Salt Lake City, UT 84106-2317
(801) 484-4456
www.lungusa.org/utah

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Box Elder	49,015	15,247	5,302	1,435	2,820	1,436	530	11,687	2,278	3,772
Cache	112,616	35,915	8,563	3,381	6,381	3,047	922	22,639	4,237	13,020
Davis	295,332	95,880	23,230	9,026	16,660	8,261	2,694	63,687	12,021	17,875
Salt Lake	1,022,651	302,184	89,440	28,446	60,222	30,200	10,192	236,479	44,953	89,216
San Juan	15,055	4,864	1,613	458	851	436	162	3,560	695	4,157
Tooele	56,941	19,137	4,083	1,801	3,151	1,527	470	11,457	2,141	3,994
Uintah	29,885	9,097	2,959	856	1,737	880	313	7,056	1,361	2,977
Utah	530,837	185,393	33,761	17,452	28,728	13,536	3,851	98,073	18,088	61,648
Washington	137,589	39,738	25,134	3,741	8,119	4,198	1,880	37,220	7,715	13,054
Weber	227,487	67,754	23,237	6,378	13,341	6,743	2,407	54,064	10,448	23,572
Totals	**2,477,408**	**775,209**	**217,322**	**72,974**	**142,011**	**70,264**	**23,421**	**545,922**	**103,936**	**233,285**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Box Elder	18	0	0	6.0	F
Cache	4	0	0	1.3	C
Davis	25	0	0	8.3	F
Salt Lake	46	1	0	15.8	F
San Juan	0	0	0	0.0	A
Tooele	15	0	0	5.0	F
Uintah	*	*	*	*	*
Utah	20	0	0	6.7	F
Washington	3	0	2	2.3	D
Weber	36	0	0	12.0	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Box Elder	7	0	0	2.3	D	8.2	PASS
Cache	22	2	0	8.3	F	9.2	PASS
Davis	4	2	0	2.3	D	10.1	PASS
Salt Lake	44	7	0	18.2	F	11.1	PASS
San Juan	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tooele	3	0	0	1.0	C	6.7	PASS
Uintah	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Utah	23	6	0	10.7	F	10.4	PASS
Washington	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Weber	10	1	0	3.8	F	10.5	PASS

VERMONT

American Lung Association in Vermont

372 Hurricane Lane, Suite 101
Williston, VT 05495
(802) 876-6862
www.lungusa.org/vermont

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Addison	36,617	7,676	4,478	723	2,847	1,280	490	10,649	1,786	3,265
Bennington	36,382	7,315	6,713	689	2,794	1,338	606	12,057	2,107	4,298
Chittenden	152,782	32,376	16,452	3,048	11,965	5,222	1,889	42,298	6,997	13,987
Rutland	63,331	12,230	10,478	1,151	4,943	2,329	1,003	20,489	3,537	7,087
Totals	**289,112**	**59,597**	**38,121**	**5,611**	**22,549**	**10,169**	**3,988**	**85,493**	**14,427**	**28,637**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Addison	DNC	DNC	DNC	DNC	DNC
Bennington	6	0	0	2.0	C
Chittenden	6	0	0	2.0	C
Rutland	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Addison	*	*	*	*	*	*	INC
Bennington	0	0	0	0.0	A	7.5	PASS
Chittenden	1	0	0	0.3	B	8.3	PASS
Rutland	1	0	0	0.3	B	10.6	PASS

VIRGINIA

American Lung Association in Virginia

1-800-LUNG USA
www.lungusa.org/virginia

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Albemarle	94,075	20,117	11,957	1,894	6,766	3,193	1,209	26,337	5,847	6,008
Alexandria City	143,885	29,859	15,997	2,811	10,496	4,833	1,715	38,688	8,530	11,398
Arlington	209,969	38,529	19,034	3,627	15,901	7,147	2,321	55,082	12,065	13,735
Bristol City	17,424	3,425	4,047	322	1,240	636	311	5,929	1,335	3,605
Caroline	27,632	6,653	3,380	626	1,920	903	341	7,432	1,648	2,518
Charles City	7,212	1,373	1,223	129	526	266	116	2,353	532	809
Chesterfield	303,469	76,040	23,686	7,158	21,049	9,828	3,302	77,265	17,190	17,311
Fairfax	1,015,302	246,631	100,245	23,217	70,576	34,102	12,508	278,910	62,634	48,966
Fauquier	66,839	16,019	7,276	1,508	4,658	2,238	834	18,401	4,119	4,048
Frederick	73,898	18,015	8,222	1,696	5,129	2,404	880	19,537	4,333	5,310
Hampton City	145,494	33,086	17,280	3,115	10,311	4,799	1,766	39,044	8,631	18,827
Hanover	99,716	23,470	12,355	2,209	6,953	3,392	1,326	28,499	6,399	4,518
Henrico	292,599	70,851	36,698	6,670	20,245	9,690	3,744	80,764	18,012	24,078
Loudoun	289,995	87,037	17,769	8,193	18,937	8,348	2,506	62,310	13,569	9,033
Lynchburg City	72,596	15,046	12,260	1,416	5,214	2,464	1,020	21,082	4,659	12,344
Madison	13,639	2,898	2,285	273	968	485	210	4,271	962	1,434
Norfolk City	234,220	60,226	23,564	5,669	16,075	7,172	2,429	56,058	12,211	40,407
Page	24,164	5,071	4,113	477	1,721	853	368	7,486	1,680	3,370

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Prince William	364,734	106,970	24,535	10,070	23,981	10,758	3,368	81,790	17,930	19,016
Roanoke City	92,967	20,978	16,213	1,975	6,475	3,224	1,415	28,520	6,404	16,170
Roanoke	90,867	19,900	14,388	1,873	6,404	3,223	1,379	28,252	6,380	5,757
Rockbridge	21,570	4,439	3,907	418	1,538	778	347	6,950	1,568	2,469
Rockingham	74,394	16,940	10,657	1,595	5,218	2,538	1,028	21,622	4,838	6,666
Salem City	25,449	4,769	4,340	449	1,869	915	387	7,946	1,778	2,193
Stafford	121,736	33,300	7,778	3,135	8,237	3,703	1,145	28,039	6,157	5,713
Suffolk City	82,302	21,756	9,160	2,048	5,554	2,599	958	21,174	4,691	8,727
Virginia Beach City	433,746	109,141	45,745	10,274	29,837	13,944	5,033	112,655	24,975	29,532
Wythe	28,769	5,930	5,100	558	2,055	1,024	449	9,054	2,034	3,967
Totals	**4,468,662**	**1,098,469**	**463,214**	**103,405**	**309,853**	**145,459**	**52,415**	**1,175,450**	**261,113**	**327,929**

VIRGINIA

American Lung Association in Virginia

1-800-LUNG USA
www.lungusa.org/virginia

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Albemarle	*	*	*	*	*
Alexandria City	26	1	1	9.8	F
Arlington	41	3	0	15.2	F
Bristol City	DNC	DNC	DNC	DNC	DNC
Caroline	25	0	0	8.3	F
Charles City	26	0	0	8.7	F
Chesterfield	14	2	0	5.7	F
Fairfax	60	4	2	23.3	F
Fauquier	5	0	0	1.7	C
Frederick	5	0	0	1.7	C
Hampton City	13	0	0	4.3	F
Hanover	24	1	0	8.5	F
Henrico	30	3	0	11.5	F
Loudoun	34	2	0	12.3	F
Lynchburg City	DNC	DNC	DNC	DNC	DNC
Madison	10	0	0	3.3	F
Norfolk City	DNC	DNC	DNC	DNC	DNC
Page	2	0	0	0.7	B

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Albemarle	*	*	*	*	*	*	INC
Alexandria City	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Arlington	2	0	0	0.7	B	12.9	PASS
Bristol City	1	0	0	0.3	B	12.7	PASS
Caroline	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Charles City	3	0	0	1.0	C	11.5	PASS
Chesterfield	1	0	0	0.3	B	12.4	PASS
Fairfax	10	0	0	3.3	F	12.7	PASS
Fauquier	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Frederick	*	*	*	*	*	*	INC
Hampton City	3	0	0	1.0	C	11.4	PASS
Hanover	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Henrico	8	0	0	2.7	D	12.1	PASS
Loudoun	3	0	0	1.0	C	12.2	PASS
Lynchburg City	1	0	0	0.3	B	11.9	PASS
Madison	*	*	*	*	*	*	INC
Norfolk City	8	2	0	3.7	F	12.5	PASS
Page	0	0	0	0.0	A	11.7	PASS

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Prince William	14	2	0	5.7	F
Roanoke City	DNC	DNC	DNC	DNC	DNC
Roanoke	12	0	0	4.0	F
Rockbridge	1	0	0	0.3	B
Rockingham	*	*	*	*	*
Salem City	DNC	DNC	DNC	DNC	DNC
Stafford	16	2	1	7.0	F
Suffolk City	21	0	0	7.0	F
Virginia Beach City	DNC	DNC	DNC	DNC	DNC
Wythe	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Prince William	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Roanoke City	4	0	0	1.3	C	13.4	PASS
Roanoke	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rockbridge	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rockingham	*	*	*	*	*	*	INC
Salem City	*	*	*	*	*	*	INC
Stafford	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Suffolk City	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Virginia Beach City	11	3	0	5.2	F	11.9	PASS
Wythe	DNC	DNC	DNC	DNC	DNC	DNC	DNC

WASHINGTON

American Lung Association in Washington

2625 Third Avenue
Seattle, WA 98121-1213
(206) 441-5100
www.lungusa.org/washington

AT-RISK GROUPS

				Lung Diseases						
County	**Total Population**	**Under 18**	**65 & Over**	**Pediatric Asthma**	**Adult Asthma**	**Chronic Bronchitis**	**Emphysema**	**Cardio-vascular Disease**	**Diabetes**	**Poverty Estimate All Ages**
Asotin	21,420	4,823	4,023	454	1,536	750	341	6,751	1,329	3,443
Chelan	71,540	17,495	11,769	1,647	5,007	2,429	1,056	21,411	4,198	8,453
Clallam	71,021	13,290	16,454	1,251	5,346	2,668	1,312	24,994	4,963	9,466
Clark	424,733	109,454	46,361	10,304	29,196	13,634	5,022	111,205	21,420	41,605
King	1,875,519	404,557	203,897	38,083	136,443	64,080	23,399	521,475	100,398	169,901
Kittitas	38,951	7,187	4,631	677	2,926	1,322	464	10,497	2,009	6,140
Klickitat	20,377	4,568	3,372	430	1,468	720	314	6,368	1,249	3,388
Pierce	785,639	195,284	83,691	18,383	54,659	25,432	9,226	206,007	39,616	85,886
Skagit	118,000	27,756	17,904	2,613	8,353	3,990	1,656	34,360	6,702	13,331
Snohomish	683,655	170,580	65,634	16,058	47,590	22,228	7,888	178,640	34,289	54,184
Spokane	462,677	107,635	59,072	10,132	32,867	15,466	5,965	128,744	24,917	62,224
Thurston	245,181	54,018	30,632	5,085	17,712	8,353	3,194	69,320	13,407	23,518
Whatcom	196,529	42,304	24,855	3,982	14,253	6,625	2,492	54,441	10,504	27,291
Yakima	234,564	71,281	27,085	6,710	15,105	7,079	2,714	58,731	11,358	42,875
Totals	**5,249,806**	**1,230,232**	**599,380**	**115,809**	**372,462**	**174,776**	**65,043**	**1,432,944**	**276,359**	**551,705**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Asotin	DNC	DNC	DNC	DNC	DNC
Chelan	DNC	DNC	DNC	DNC	DNC
Clallam	0	0	0	0.0	A
Clark	0	0	0	0.0	A
King	10	3	0	4.8	F
Kittitas	DNC	DNC	DNC	DNC	DNC
Klickitat	*	*	*	*	*
Pierce	7	1	0	2.8	D
Skagit	1	0	0	0.3	B
Snohomish	DNC	DNC	DNC	DNC	DNC
Spokane	1	0	0	0.3	B
Thurston	1	0	0	0.3	B
Whatcom	*	*	*	*	*
Yakima	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Asotin	*	*	*	*	*	*	INC
Chelan	*	*	*	*	*	*	INC
Clallam	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clark	*	*	*	*	*	*	INC
King	3	1	0	1.5	C	*	INC
Kittitas	*	*	*	*	*	*	INC
Klickitat	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pierce	11	1	0	4.2	F	9.7	PASS
Skagit	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Snohomish	15	1	0	5.5	F	8.8	PASS
Spokane	1	0	0	0.3	B	9.3	PASS
Thurston	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Whatcom	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Yakima	*	*	*	*	*	*	INC

WASHINGTON

WEST VIRGINIA

American Lung Association in West Virginia

415 Dickinson Street
P.O. Box 3980
Charleston, West Virginia 25339-3980
(304) 342-6600
www.lungusa.org/westvirginia

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Berkeley	102,044	26,497	11,108	2,494	7,294	3,261	1,199	26,568	8,215	11,253
Brooke	23,520	4,396	4,588	414	1,825	883	406	8,018	2,459	2,674
Cabell	94,631	19,658	15,551	1,851	7,157	3,313	1,396	28,724	8,822	18,725
Greenbrier	34,567	7,223	6,201	680	2,614	1,253	562	11,234	3,449	5,952
Hancock	30,008	6,041	5,652	569	2,292	1,114	511	10,117	3,104	4,316
Harrison	68,853	15,271	11,166	1,438	5,132	2,418	1,039	21,211	6,520	12,128
Kanawha	191,018	41,029	31,892	3,862	14,381	6,848	2,991	60,630	18,639	29,656
Marion	56,496	11,260	9,663	1,060	4,320	2,023	870	17,728	5,444	10,336
Marshall	32,766	6,596	5,500	621	2,513	1,201	524	10,639	3,272	5,397
Monongalia	88,221	16,013	9,022	1,507	6,951	2,959	970	22,811	7,062	13,178
Ohio	44,106	8,819	8,479	830	3,363	1,621	743	14,690	4,503	6,570
Raleigh	79,357	16,215	13,022	1,526	6,049	2,843	1,215	24,867	7,645	14,837
Wood	86,204	18,647	14,331	1,755	6,475	3,074	1,338	27,165	8,350	13,678
Totals	**931,791**	**197,665**	**146,175**	**18,607**	**70,367**	**32,811**	**13,764**	**284,402**	**87,486**	**148,700**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Berkeley	8	0	0	2.7	D
Brooke	DNC	DNC	DNC	DNC	DNC
Cabell	39	0	0	13.0	F
Greenbrier	4	0	0	1.3	C
Hancock	21	0	0	7.0	F
Harrison	DNC	DNC	DNC	DNC	DNC
Kanawha	21	0	0	7.0	F
Marion	DNC	DNC	DNC	DNC	DNC
Marshall	DNC	DNC	DNC	DNC	DNC
Monongalia	13	0	0	4.3	F
Ohio	20	0	0	6.7	F
Raleigh	DNC	DNC	DNC	DNC	DNC
Wood	24	0	0	8.0	F

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Berkeley	3	0	0	1.0	C	14.9	PASS
Brooke	14	0	0	4.7	F	15.4	FAIL
Cabell	6	0	0	2.0	C	15.2	FAIL
Greenbrier	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hancock	11	0	0	3.7	F	14.3	PASS
Harrison	4	0	0	1.3	C	13.4	PASS
Kanawha	18	0	0	6.0	F	15.4	FAIL
Marion	3	0	0	1.0	C	14.5	PASS
Marshall	17	0	0	5.7	F	14.2	PASS
Monongalia	5	0	0	1.7	C	13.6	PASS
Ohio	6	0	0	2.0	C	13.7	PASS
Raleigh	2	0	0	0.7	B	11.9	PASS
Wood	8	0	0	2.7	D	14.6	PASS

WEST VIRGINIA

WISCONSIN

American Lung Association in Wisconsin

13100 West Lisbon Road, Suite 700
Brookfield, WI 53005-2508
(262) 703-4200
www.lungusa.org/wisconsin

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Ashland	16,295	3,714	2,605	350	1,165	560	237	4,875	968	2,317
Brown	245,018	60,251	28,061	5,672	17,346	8,019	2,995	65,818	12,730	20,794
Columbia	55,196	12,413	8,094	1,169	3,953	1,909	786	16,409	3,227	4,009
Dane	482,705	105,929	46,799	9,972	35,876	15,939	5,445	125,622	23,966	51,941
Dodge	87,912	18,517	12,341	1,743	6,467	3,053	1,215	25,795	5,053	6,494
Door	27,771	5,083	5,902	478	2,038	1,061	507	9,828	1,984	2,406
Florence	4,652	831	946	78	342	179	84	1,651	331	574
Fond du Lac	99,453	22,268	14,161	2,096	7,163	3,419	1,384	29,137	5,719	7,650
Forest	9,846	2,132	2,150	201	704	352	170	3,269	668	1,518
Grant	49,238	10,025	8,067	944	3,657	1,725	722	14,892	2,961	5,825
Jefferson	80,792	18,268	10,592	1,720	5,849	2,732	1,063	22,839	4,458	5,836
Kenosha	164,465	42,297	18,496	3,982	11,455	5,313	1,987	43,648	8,437	15,429
Kewaunee	20,388	4,420	3,199	416	1,473	715	301	6,211	1,228	1,582
La Crosse	112,627	24,261	14,598	2,284	8,342	3,801	1,443	31,363	6,122	12,868
Manitowoc	80,641	17,434	12,924	1,641	5,789	2,863	1,226	25,091	4,961	6,825
Marathon	130,962	30,976	18,027	2,916	9,254	4,448	1,798	37,905	7,422	10,198
Milwaukee	953,328	250,167	110,423	23,550	65,930	30,589	11,570	252,500	48,969	158,153
Oneida	36,031	6,693	7,604	630	2,644	1,365	649	12,601	2,545	3,608

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Outagamie	174,993	43,282	20,810	4,074	12,332	5,744	2,182	47,525	9,218	11,889
Ozaukee	85,874	19,105	12,575	1,798	6,077	3,052	1,282	26,562	5,202	3,519
Racine	199,510	49,537	24,894	4,663	13,913	6,643	2,605	55,846	10,857	20,089
Rock	160,213	39,328	20,974	3,702	11,247	5,330	2,110	44,953	8,782	17,716
Sauk	59,013	13,838	8,888	1,303	4,176	2,015	841	17,419	3,439	4,650
Sheboygan	114,561	26,479	16,056	2,493	8,154	3,918	1,589	33,435	6,554	8,266
St. Croix	82,487	21,234	7,927	1,999	5,778	2,635	930	21,096	4,030	4,228
Taylor	19,308	4,338	3,151	408	1,375	675	291	5,929	1,177	2,299
Vernon	29,090	7,286	4,795	686	1,993	991	436	8,798	1,752	4,131
Vilas	21,919	3,848	5,813	362	1,618	851	445	8,232	1,702	2,493
Walworth	100,749	22,667	13,471	2,134	7,312	3,406	1,331	28,521	5,578	10,098
Washington	129,477	30,360	16,446	2,858	9,195	4,391	1,721	36,907	7,175	6,316
Waukesha	380,629	86,910	52,810	8,181	26,875	13,310	5,468	114,570	22,366	15,338
Totals	**4,215,143**	**1,003,891**	**533,599**	**94,503**	**299,490**	**141,003**	**54,813**	**1,179,247**	**229,581**	**429,059**

WISCONSIN

American Lung Association in Wisconsin

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HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Ashland	0	0	0	0.0	A
Brown	6	0	0	2.0	C
Columbia	5	0	0	1.7	C
Dane	5	0	0	1.7	C
Dodge	4	0	0	1.3	C
Door	24	2	0	9.0	F
Florence	2	0	0	0.7	B
Fond du Lac	2	0	0	0.7	B
Forest	1	0	0	0.3	B
Grant	DNC	DNC	DNC	DNC	DNC
Jefferson	5	0	0	1.7	C
Kenosha	17	0	0	5.7	F
Kewaunee	20	0	0	6.7	F
La Crosse	*	*	*	*	*
Manitowoc	20	1	0	7.2	F
Marathon	2	0	0	0.7	B
Milwaukee	12	0	0	4.0	F
Oneida	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Ashland	1	0	0	0.3	B	6.3	PASS
Brown	14	0	0	4.7	F	11.9	PASS
Columbia	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dane	12	0	0	4.0	F	12.6	PASS
Dodge	2	0	0	0.7	B	11.1	PASS
Door	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Florence	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fond du Lac	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Forest	1	0	0	0.3	B	7.1	PASS
Grant	7	0	0	2.3	D	12.3	PASS
Jefferson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kenosha	4	0	0	1.3	C	12.7	PASS
Kewaunee	DNC	DNC	DNC	DNC	DNC	DNC	DNC
La Crosse	4	0	0	1.3	C	12.1	PASS
Manitowoc	2	0	0	0.7	B	10.7	PASS
Marathon	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Milwaukee	12	1	0	4.5	F	14.5	PASS
Oneida	DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Outagamie	3	0	0	1.0	C
Ozaukee	14	0	0	4.7	F
Racine	9	0	0	3.0	D
Rock	7	0	0	2.3	D
Sauk	2	0	0	0.7	B
Sheboygan	27	2	0	10.0	F
St. Croix	4	0	0	1.3	C
Taylor	DNC	DNC	DNC	DNC	DNC
Vernon	2	0	0	0.7	B
Vilas	1	0	0	0.3	B
Walworth	5	0	0	1.7	C
Washington	0	0	0	0.0	A
Waukesha	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Outagamie	6	0	0	2.0	C	11.4	PASS
Ozaukee	4	0	0	1.3	C	11.9	PASS
Racine	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rock	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sauk	3	0	0	1.0	C	10.5	PASS
Sheboygan	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Croix	4	0	0	1.3	C	10.3	PASS
Taylor	1	0	0	0.3	B	9.0	PASS
Vernon	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Vilas	1	0	0	0.3	B	6.9	PASS
Walworth	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washington	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Waukesha	5	0	0	1.7	C	13.9	PASS

WYOMING

American Lung Association in Wyoming

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AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardio-vascular Disease	Diabetes	Poverty Estimate All Ages
Campbell	41,473	11,327	2,438	1,066	2,790	1,289	404	9,856	1,947	2,376
Carbon	15,624	3,532	1,935	332	1,090	544	214	4,589	924	1,450
Converse	13,267	3,140	1,673	296	914	454	180	3,844	774	1,122
Crook	6,457	1,437	1,029	135	452	227	97	1,991	404	476
Fremont	38,113	9,720	5,565	915	2,568	1,274	533	11,039	2,234	5,045
Laramie	87,542	22,418	10,682	2,110	5,975	2,847	1,097	23,708	4,762	8,582
Park	27,574	5,790	4,612	545	1,957	989	429	8,724	1,771	2,802
Sheridan	28,662	6,366	4,462	599	2,002	1,011	430	8,844	1,792	2,694
Sublette	8,456	2,029	887	191	587	283	104	2,312	463	393
Sweetwater	39,944	10,780	3,324	1,015	2,669	1,274	444	10,177	2,028	2,286
Teton	20,376	4,126	1,762	388	1,501	699	236	5,497	1,092	882
Uinta	20,617	5,834	1,739	549	1,354	646	226	5,173	1,031	1,805
Totals	**348,105**	**86,499**	**40,108**	**8,141**	**23,858**	**11,537**	**4,394**	**95,754**	**19,223**	**29,913**

HIGH OZONE DAYS 2006–2008

County	Orange	Red	Purple	Wgt. Avg	Grade
Campbell	4	0	0	1.3	C
Carbon	*	*	*	*	*
Converse	DNC	DNC	DNC	DNC	DNC
Crook	*	*	*	*	*
Fremont	*	*	*	*	*
Laramie	DNC	DNC	DNC	DNC	DNC
Park	DNC	DNC	DNC	DNC	DNC
Sheridan	DNC	DNC	DNC	DNC	DNC
Sublette	3	0	0	1.0	C
Sweetwater	0	0	0	0.0	A
Teton	1	0	0	0.3	B
Uinta	*	*	*	*	*

HIGH PARTICLE POLLUTION DAYS 2006–2008

	24 Hour					Annual	
	Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/ Fail
Campbell	0	0	0	0.0	A	*	INC
Carbon	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Converse	0	0	0	0.0	A	*	INC
Crook	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fremont	0	0	0	0.0	A	7.7	PASS
Laramie	0	0	0	0.0	A	4.4	PASS
Park	*	*	*	*	*	*	INC
Sheridan	0	0	0	0.0	A	9.1	PASS
Sublette	2	0	0	0.7	B	*	INC
Sweetwater	*	*	*	*	*	*	INC
Teton	0	0	0	0.0	A	*	INC
Uinta	DNC	DNC	DNC	DNC	DNC	DNC	DNC

WYOMING

We will breathe easier when the air over every
American city is clean and pure.
We will breathe easier when the air in our public spaces,
workplaces and children's homes is free of secondhand smoke.
We will breathe easier when Americans are free from the addictive grip
of tobacco and the debilitating effects of lung disease.
We will breathe easier when our nation's children no longer battle
airborne poisons or the fear of an asthma attack.
Until then, we are fighting for air.