

*The evidence is overwhelming:*

## **EPA Must Set a Much Stronger Ozone Air Quality Standard**



### **Overview**

On June 21, 2007 the U.S. Environmental Protection Agency (EPA) proposed to strengthen the official “limit” on ground level ozone smog. Unfortunately, EPA’s proposal fails to follow the law and protect public health adequately from this widespread and dangerous air pollutant. Overwhelming scientific evidence, including reviews by independent scientists, confirm that public health is seriously at risk and needs much more protection. EPA will take comments until October 9, including at five public hearings in August and September. The American Lung Association and many other medical societies, public health and environmental groups are urging EPA to adopt standards that provide much more protection.

### **What is ozone?**

Ozone (O<sub>3</sub>), commonly known as smog, forms when hydrocarbon vapors and nitrogen oxides react in the presence of sunlight and heat. Nitrogen oxides are emitted from combustion sources such as power plants, industrial boilers, motor vehicles, locomotives, and ships. Hydrocarbon vapors are emitted from motor vehicles, small engines, chemical plants, refineries, factories, gas stations, paint and other sources.

### **Why is ozone harmful?**

Ozone reacts chemically (“oxidizes”) with internal body tissues, such as those in the lung. Some have described it as a strong “sunburn” on the lungs. It acts as a powerful respiratory irritant at the levels frequently found across the nation during the summer months. Ozone exposure may lead to:

- premature death<sup>1</sup>
- shortness of breath, chest pain, wheezing and coughing<sup>2</sup>
- inflammation and damage to the lining of the lung
- increased asthma attacks, greater need for medical treatment and for hospitalization for people with lung diseases, such as asthma or chronic obstructive pulmonary disease (COPD)
- long-term, repeated exposure to high levels of ozone may also lead to reduced lung capacity<sup>3</sup>

### **Who are most at risk?**

- people with lung disease, especially chronic lung diseases such as asthma and COPD<sup>4</sup>
- children, because their airways are smaller, their respiratory defenses are not fully developed, and their higher breathing rates increase their exposure<sup>5</sup>
- people who work or exercise outdoors<sup>6</sup>
- senior citizens<sup>7</sup>
- otherwise healthy individuals who respond to lower levels of exposure than the average person.

### **What is the ozone standard?**

- The Clean Air Act requires EPA to set and regularly review air pollution limits, called National Ambient Air Quality Standards (NAAQS). EPA must follow the latest scientific evidence to set them where they protect public health, including the health of sensitive populations, with an adequate margin of safety.
- The standards help inform the public when the air is unhealthy and drive the clean up of air pollution.
- The last time the EPA revised the standard for ozone air pollution was 1997, when the Agency set an 8-hour average standard of 0.08 parts per million. This current standard is effectively 0.084 ppm due to a loophole that allows states to round down ozone concentrations
- The Clean Air Act requires that the EPA set the standard to protect public health “with an adequate margin of safety” to protect sensitive populations that respond at lower concentrations than healthy adults. In 2002, the Supreme Court unanimously ruled that protecting health was the *only* basis for the standard.

### **How is EPA proposing to change the ozone standard?**

- Overwhelming evidence shows that the ozone standard must be much stronger than EPA has proposed to protect public health from serious harm
- EPA has concluded that new scientific studies show that the current standards fail to protect public health, particularly for those with lung diseases, like asthma or emphysema.
- EPA has proposed to set the health standard to a level within the range of 0.070-0.075 ppm (70 -75 ppb) and to drop the rounding loophole. This is a modest improvement but it is weaker than EPA's science advisors have recommended.
- **Importantly, EPA is considering keeping the current weak standard of 0.084 ppm, a move that polluters are pushing . EPA could set a final standard that does nothing.**

### **What did EPA's independent science advisors recommend?**

The Clean Air Scientific Advisory Committee (CASAC) is a group of expert scientists appointed under the Clean Air Act to advise the EPA Administrator on the review of the NAAQS. After reviewing the 2,000-page summary of the scientific research and extensive additional analysis by the EPA staff, the 23 ozone scientists **unanimously** concluded:<sup>9</sup>

- **There is no scientific justification to keep the current primary standard**
- **The rounding loophole must be eliminated**
- **The 8-hour ozone standard should be set in the range of 0.060 to 0.070 ppm**
- **The ozone health standard must explicitly include the "margin of safety" required by the Clean Air Act .**

### **Why does the current standard need strengthening?**

New epidemiological and clinical studies have shown that breathing ozone can harm health at concentrations lower than the current standard. This has prompted not only the CASAC, but the World Health Organization, the American Academy of Pediatrics, the American Thoracic Society, the State of California, EPA's Children's Health Protection Advisory Committee, the American Medical Association and others to recommend much stricter ozone standards.

- Clinical studies of healthy adults show decreased lung function, increased respiratory symptoms, inflammation, and increased susceptibility to respiratory infection at the current standard of 0.08 ppm, and studies showing adverse lung function effects and symptoms at 0.06 ppm.<sup>8</sup>
- Breathing ozone can kill. Short-term increases in ozone were found to increase deaths from cardiovascular and respiratory causes in a large 14-year study in 95 U.S. cities.<sup>9</sup> The relationship between mortality and ozone was evident even on days when pollution levels were below concentrations of 0.06 ppm.<sup>10</sup>
- Due to a loophole, communities can round down their measurements and still meet the ozone standard. This means that some large metropolitan areas don't have to clean up their air. Newer monitoring technology has eliminated the original reason for this practice.

### **What is the timetable for EPA action?**

- August 30, 2007 -- public hearings in **Philadelphia** and **Los Angeles**
- September 5, 2007 -- public hearings in **Atlanta, Chicago** and **Houston**
- October 9, 2007 -- deadline for written comments
- March 12, 2008 -- EPA announces final standards

### **What does the American Lung Association Recommend that EPA do?**

- The existing standard fails to protect public health, so EPA must strengthen it.
- **EPA should set an 8-hour primary standard for ozone of 0.060 ppm to protect public health with a margin of safety.**
- **EPA must eliminate the rounding loophole.**

## Public Hearings

**Sign up to speak** at the public hearings by contacting Tricia Crabtree of EPA at [crabtree.tricia@epa.gov](mailto:crabtree.tricia@epa.gov), or 919-541-5688.

1. **Philadelphia:** Thursday, August 30, 2007. Crystal Ballroom, Radisson Plaza— Warwick Hotel Philadelphia, 1701 Locust Street, Philadelphia, PA 19103, Telephone: (215) 735-6000.
2. **Los Angeles:** Thursday, August 30, 2007. Garden West Room, Wilshire Grand Los Angeles, 930 Wilshire Boulevard, Los Angeles, CA 90017, Telephone: (213) 688-7777.
3. **Atlanta:** Wednesday, September 5, 2007. AFC Conference Center, 2nd Floor— Conference Room B, Atlanta Federal Center, 61 Forsyth Street, SW., Atlanta, GA 30303, Telephone: (404) 562-9077. [Bring a driver's license or other proof of ID.]
4. **Chicago:** Wednesday, September 5, 2007. Governor's Suite, The Westin Michigan Avenue Chicago, 909 North Michigan Avenue, Chicago, Illinois 60611, Telephone: (312) 943-7200.
5. **Houston:** Wednesday, September 5, 2007. Emerald Rooms 4 & 5, Houston Marriott West Loop by the Galleria, 1750 West Loop South, Houston, Texas 77027, Telephone: (713) 960-0111.

## Written Comments

**Send written comments** to EPA by **October 9, 2007** via email to: [a-and-r-docket@epa.gov](mailto:a-and-r-docket@epa.gov). Reference Docket ID No. EPA-HQ-OAR-2005-0172. Send copies to your elected officials and Members of Congress.

## For More Information:

[www.cleanairstandards.org](http://www.cleanairstandards.org)

<http://epa.gov/air/ozonepollution/actions.html>

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<sup>1</sup> Bell ML, Dominici F, and Samet JM. A Meta-Analysis of Time-Series Studies of Ozone and Mortality with Comparison to the National Morbidity, Mortality, and Air Pollution Study. *Epidemiology* 2005; 16:436-445. Levy JI, Chermerynski SM, Sarnat JA. Ozone Exposure and Mortality: an empiric Bayes metaregression analysis. *Epidemiology* 2005; 16:458-468. Ito K, De Leon SF, Lippmann M. Associations Between Ozone and Daily Mortality: analysis and meta-analysis. *Epidemiology* 2005; 16:446-429.

<sup>2</sup> U.S. Environmental Protection Agency, Smog—Who Does It Hurt? What You Need to Know About Ozone and Your Health, EPA-425/K-99-001, July 1999.

<sup>3</sup> Kunzli N, Lurmann F, Segal M, Ngo L, Balmes J, Tager IB. Association Between Lifetime Ambient Ozone Exposure and Pulmonary Function in College Freshmen-Results of a Pilot Study. *Environmental Research* 1997; 72: .8-23.

<sup>4</sup> Desqueyroux H, Pujet JC, Prosper M, Le Moullec Y, Momas I. Effects of Air Pollution on Adults with Chronic Obstructive Pulmonary Disease. *Arch Environ Health* 2002; 57:554-560. Höpfe P, Peters A, Rabe G, Praml G, Lindner J, Jakobi G, Fruhmans G, Nowak D. Environmental Ozone Effects in Different Population Subgroups. *Int J Hyg Environ Health* 2003; 206:505-516.

<sup>5</sup> Peters JM, Avol E, Gauderman WJ, Linn WS, Navidi W, London SJ, Margolis H, Rappaport E, Vora H, Gong H, Thomas DC. A Study of Twelve Southern California Communities with Differing Levels and Types of Air Pollution II. Effects on Pulmonary Function. *Am J Respir Crit Care Med* 1999; 159: 768-775; and Thurston GD, Lippmann M, Scott MB, Fine JM. Summertime Haze Air Pollution and Children with Asthma. *Am J Respir Crit Care Med* 1997; .155: 654-660.

<sup>6</sup> Kinney PL, Lippmann M. Respiratory Effects of Seasonal Exposures to Ozone and Particles. *Arch Environ Health* 2000; 55: 210-216.

<sup>7</sup> Delfino RJ, Murphy-Moulton AM, Becklake MR. Emergency Room Visits for Respiratory Illnesses among the Elderly in Montreal: Association with Low Level Ozone Exposure. *Environ Res* 1998; 76 (Section A): 67-77.

<sup>8</sup> Letter from Dr. Rogene Henderson, Chair, Clean Air Scientific Advisory Committee to Stephen L. Johnson, Administrator, U.S. Environmental Protection Agency, re Clean Air Scientific Advisory Committee's (CASAC) Peer Review of the Agency's 2<sup>nd</sup> Draft Ozone Staff Paper, EPA-CASAC-07-001, October 24, 2006; and Letter from Dr. Rogene Henderson, Chair, Clean Air Scientific Advisory Committee to Stephen L.

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Johnson, Administrator, U.S. Environmental Protection Agency, re Clean Air Scientific Advisory Committee's (CASAC) Review of the Agency's Final Ozone Staff Paper, EPA-CASAC-07-002, March 26, 2007.

<sup>9</sup> Bell ML, McDermott A, Zeger SL, Samet JM, Dominici F. Ozone and Short-term Mortality in 95 U.S. Urban Communities, 1987-2000. *JAMA* 2004; 292: 2372-2378.

<sup>10</sup> Bell ML, Peng RD, Dominici F. The Exposure-Response Curve for Ozone and Risk of Mortality and the Adequacy of Current Ozone Regulations. *Environ Health Perspec* 2006; 114:532-536.