Children's Health Protection Advisory Committee

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August 8, 2005

Stephen L. Johnson, Administrator
United States Environmental Protection Agency
1200 Pennsylvania Avenue
Washington, D.C.

RE: Particulate matter National Ambient Air Quality Standards

Dear Administrator Johnson:

The Children's Health Protection Advisory Committee (CHPAC) is writing to urge the Agency to revise the National Ambient Air Quality Standards (NAAQS) for particulate matter downwards to a level that would significantly reduce health effects in infants and children. There is an enormous body of scientific literature on health effects of particulate air pollution, much of which is summarized in the January 2005 version of EPA's *Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information*. We commend EPA for their efforts in evaluating the health effects of particulate pollution in the criteria document, which provides an excellent summary of the health effects information including impacts on children. In writing today, it is the CHPAC's intent to provide timely input for your deliberation regarding revision of the particulate matter NAAQS. We note that the EPA's Clean Air Scientific Advisory Committee (CASAC) has completed its review of the existing staff report. In their letter to you dated June 6, 2005, CASAC notes that the majority of the Panel members agreed that the $PM_{2.5}$ 24-hour and annual standards should be modified to provide increased public health protection, and that it is appropriate to set a 24-hour NAAQS for $PM_{2.5-10}$.

While much of the research focus over the years has been on the impacts of particulate matter air pollution on cardiovascular and pulmonary morbidity and mortality in older adults, many studies have evaluated health impacts in children. These health effects, which are experienced at current ambient levels and many of which are measurable below current ambient standards, include exacerbation and possible induction of asthma, increased asthma hospitalizations,

decreased lung function and lung growth, and increased respiratory tract infections (including bronchitis and pneumonia).[1,2,3] Asthma exacerbations and increased respiratory illness in children result in missed school days and decreased activity days. These consequences impact a child's quality of life, and have economic repercussions for families, caregivers and schools. [4] Reduced attained lung function at age 18 is a consequence of long-term exposure to air pollution [5] (including particulate air pollution) and is irreversible, as lung growth is essentially complete by 18 years of age. Reduced attained lung function may impact children later in life. Lung function is a strong risk factor for complications and death from disease in later adulthood[6,7].

We recognize that a lower NAAQS is primarily based on protecting a different vulnerable population, older adults, from cardiovascular morbidity and mortality. However tightening the NAAQS for particulate matter will also protect children from the above-mentioned health effects. When considering health benefits to children, the benefits of tightening the particulate matter NAAQS are much greater than if the Agency considers only older adults' health effects.

The adverse health consequences in children of exposure to airborne particulate matter can be reduced by mitigating sources of particulate air pollution. To this end, we urge EPA to tighten the NAAQS for particulate matter pollution in view of these serious health effects on children. In so doing, please consider that health effects in children from exposure to particulate matter have been documented in both urban and rural settings, and ensure that the revised NAAQS protects all children, both rural and urban. Thank you for considering our view and the health of America's children as you proceed with deliberations about revising the particulate matter NAAQS.

Sincerely,

Melanie A. Marty, Ph.D., Chair
Children's Health Protection Advisory Committee

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[1] American Academy of Pediatrics (2004) Policy Statement, Ambient Air Pollution: Health Hazards to Children. Pediatrics 114(6):1699-1707.
[2] Schwartz J. (2004) Air Pollution and Children's Health. Pediatrics 113(4)1037-1043.
[3] U.S. Environmental Protection Agency, *Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information*, January 2005.
[4] American Lung Association, Trends in Asthma Morbidity and Mortality, March 2003, Table 4, 17. See http://www2.lungusa.org/data/asthma/ASTHMAdt.pdf
[5] Gauderman WJ, Avol, E, Gilliland, F, et al. (2004) The effect of air pollution on lung development from 10 to 18 years of age. N Engl J Med 351:1057-67.
[6] Schuneman HJ, Dorn J, Grant BJ et al. (2000) Pulmonary function is a long-term predictor of mortality in the general population: 29-year followup of the Buffalo Health Study. Chest 118:656-664.
[7] Hole DJ, Watt GC, Davey Smith G, et al. (1996) Impaired lung function and mortality risk in men and women: findings from the Renfrow and Paisley prospective population study. BMJ 313:711-715.

Cc: Jeffrey Holmstead, Assistant Administrator, Office of Air and Radiation
Mr. Tim Oppelt, Acting Assistant Administrator, Office of Research and Development
Dr. William Sanders, Acting Director, Office of Children's Health Protection
Ms. Joanne Rodman, Associate Director, Office of Children's Health Protection