Exposure to Cigarette Smoke Hurts our Children Most

Madam Chair, members of the Houston City Council Committee on Environmental and Public Health. Thank you for your ongoing efforts to make Houston and its residents healthier. I also want to heartily commend the Greater Houston Restaurant Association for announcing yesterday its support of a citywide ban on smoking in all workplaces. This is wonderful news. Working together we can make a real and lasting difference.

Drs. Willerson and LeMaistre have provided you with excellent overviews of the health effects associated with involuntary exposure to tobacco smoke. I will focus on the effects of this potent pollutant on children. I'll start with the punch line: The medical evidence is overwhelming. No child or fetus should ever be exposed to cigarette smoke. In the home, in a restaurant, in a car, at a light rail stop, at a bus stop, on the beaches, at the zoo, at a park, along the sidewalk, at an outdoor café. Period.

So. Why are children especially susceptible? Because they are innocent. Because their bodies are developing. Because they breathe more rapidly. Because they are exposed to greater amounts per body weight than are adults. Because their detoxification processes are poorly developed. We require helmets for children, we require seat belts for children, we regulate benzene emissions from gasoline and refineries, we check furnaces to be certain they aren't emitting carbon monoxide, we arrest parents and caregivers for blatant child abuse...and yet we continue to allow nearly ¼ of our residents to mainline known poisons—carbon monoxide, ultrafine particles, benzene, arsenic, lead and other extremely toxic chemicals—into our children. Everyday in the Houston area some 758,000 smokers are lighting over 19 million toxic fires—cigarettes--that release some of the most toxic substances known into our indoor and outdoor air. Why? Addiction. Peer pressure. Profits of a few. And worse, it preferentially affects low income and minority residents who are increasingly targeted by the tobacco companies. And because being poor is hard. I was raised poor, and it hurts. And sometimes smoking seems like the only small pleasure left in life. But no one, no one, if they knew, would knowingly undermine their children's health and future potential. Exposure to ETS does both.

Think about the following.

- In the U.S. 15-37% of women still smoke while pregnant, and 38% of children 2 months to 5 years of age are exposed to ETS in the home (6, 8).
- Exposure to ETS during pregnancy is associated with increased spontaneous abortions, ectopic pregnancies and premature rupture of membranes.
- Exposure to ETS is responsible for approximately 15% of all preterm births, and increases perinatal death by 150% (1).
- Exposure to ETS during pregnancy leads to a reduction in fetal breathing movements, which results in underdeveloped fetal lungs with fewer and poorly attached alveolar saccules. This is linked to reduced lung growth in children after birth, and adversely affects lung function throughout life (7). The development of COPD in adults without other risk factors has been liked to impaired lung growth during pregnancy.
- Exposure to ETS during pregnancy causes changes in the placenta and a reduction of oxygen to the fetus. This contributes to reduced weight and a smaller head circumference at birth. This is not dose dependent. Indeed, the sharpest declines in birth weight occur at low levels of exposure (5). Low birth weight is associated with an increase in heart disease, stroke, hypertension, and type 2 diabetes in adulthood (2).
- Exposure to ETS during pregnancy is also a significant risk factor for infection of the mother by group B streptococcus (2 x higher than in mothers not exposed), a leading cause of midgestational abortions (6).
- Exposure to ETS is also a major risk factor for sudden infant death syndrome (SIDS), and children who die from SIDS have higher levels of nicotine in their lung tissue compared with non-SIDS cases.
- Exposure to ETS is associated with an increased risk of respiratory illness in children, especially in the first two years of life. This may be related to the adverse effect of smoking on the proper development of cell-mediated and humoral immunity.
- Exposure to ETS in childhood is associated with a 20-50% increase in acute and chronic middle ear infections (3).
- Exposure to ETS before and after birth increases the risk of acquiring asthma and of having more severe disease. In the Houston area, one study of approximately 30,000 HISD middle-school children found that 10-12% had asthma. Wheeze, cough, phlegm and breathlessness are 20-40% more frequent in children exposed to ETS, with a clear dose-response relationship.
- Exposure to ETS during pregnancy and in early childhood is increasingly linked to subtle changes in neurodevelopment and behavior, including reduced intellectual ability. The effect of nicotine on cell development and differentiation in the brain, along with effects on serotonin receptors, may be the cause of these observations (9).

- The relationship between exposure to ETS and childhood or adult cancers remains inconclusive although a recent study from Columbia University showed that children whose mothers were exposed to second-hand tobacco smoke while pregnant had significantly more chromosome abnormalities than those who weren't, and a study in the *British Medical Journal* found that exposure to second-hand smoke during childhood increased the risk of lung cancer in adulthood, among persons who never smoked, by more than 3 times (10).
- Exposure to ETS has also been linked to increased rhinitis, sinusitis, headaches, and increased missed days from school...all of which have been linked with lowered school performance.
- Children in homes where caregivers smoke often speak of being embarrassed by the smell of their homes, clothes and cars and often discourage friends visiting.
- Last, the casual tossing of cigarette butts onto our streets and sidewalks undermines fundamental values of responsibility and respect for others that can have long-term self-esteem and behavioral effects on children and on their sense of community as a place of nurture and safety.

What is the cost of poor health and lost potential because we, the adults, knowingly poisoned our children? Researchers at Mount Sinai School of Medicine recently studied the cost to society of exposing children to known environmental pollutants. Using state-of-the-art statistical methods, they estimated that the cost of environmentally caused and preventable pediatric illnesses nationwide to be $43billion for lead poisoning, $2 billion for asthma, $0.3 billion for childhood cancer and $9 billion for neurobehavioral disorders. Thus the expense--in medical, economic, societal and human terms—is immense. And, ETS-induced disease in children is totally preventable.

Houston has an opportunity to take a stand for public health, for its children (4). Regulations work...and study after study has shown that they are an immense help for smokers wanting to quit and a cost-effective way to educate. In addition to workplaces, if we are serious about reducing ETS-related illness we also need to ban smoking in public outdoor spaces such as zoos, parks and outdoor eating areas. And we need to rigorously publicize and enforce these regulations. I would also like to suggest required pre-school screening for lead and nicotine to help make certain that exposed children and their families get the help they need.

I urge you to do the right thing for the children of the region and for Houston. Help make Houston one of the premier nonsmoking cities in the world. Make us proud.

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