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Air Pollution Impacts on Children: Why Young Children are More Susceptible to Air Pollution's Effects?

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Dear Editor,

Health-threatening levels of air pollution are one of the most important problems of our century. Children are one of the easiest affected group from environmental deterioration and detrimental factors. Because they have biological and behavioral differences that the reason they are more affected on environmental factors (1).

At babies lungs, immune system, and brain are immature and until approximately age six continue to rapidly develop. Compared to adults, children make more ventilation and breathe more air in relation to their body weight. Due to children's lungs are not mature enough to defense against any harmful effects they are more susceptible to air pollution's effects (2).These air pollutants can cause acute illnesses, such as vomiting, chronic diseases such as cancer, as well as immunological, neurological, reproductive, developmental, and respiratory diseases (1). Also an increasing number of studies have proposed an association between environmental factors, namely air pollution, and fatty changes in the liver. Given the susceptibility of children and adolescents to the harmful effects of air pollutants, including their effects on oxidative stress and insulin resistance documented even in moderate levels of air pollution, similar effects of air pollutants on pediatric non-alcoholic fatty liver disease can be expected (3). Additionally, children tend to spend more time outdoors doing strenuous activities, such as playing sports, so they are breathing more outdoor air compared to adults, who spend in average about 90% of their time indoors. For this reason indoor air pollution is also important (2). Environmental tobacco smoke (ETS) is often cited as a key factor in indoor air quality and public health. ETS is one of the most important and widespread toxic exposures to be found in the indoor environment of children. Children are especially sensitive to the respiratory effects of ETS exposure. ETS exposure is a significant avoidable risk factor for respiratory diseases among

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children. ETS is a wide-spread environmental pollutant that has been long linked with respiratory problems. In children of all ages ETS exposure has been found to be associated with increased respiratory symptoms such as wheeze and cough (4). Indoor air quality is an important factor for good sleep. Many studies have found a positive relationship between exposure to environmental tobacco smoke and sleep disruption in pregnant women, children with asthma etc. (5).

Deterioration of the environment because of pollution is a very important matter that concerning directly every part of society and future generations. Despite the important differences between children and adults, many environmental regulations have adult standards and norms. In addition, scientific data on the effects of many chemicals on children is limited (1). The most important factor in bringing environmental consciousness, environmental education should be expanded to reach all segments of society. Environmental education must be given within a specific program to people of every age and profession.

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