

How Can Pregnant Women Reduce the Teratogenicity of Air Pollution?

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Dear editor,

The term “teratogen” refers to any environmental or congenital factor causing damage to the fetus and its growth during the prenatal period.¹ The severity of damage depends on factors such as the amount of teratogen, maternal age and inheritance; e.g., in the pre-implantation period, teratogens rarely have an effect, and if they do, they lead to the death of the embryo. In the embryonic period, the effect of teratogens is very high.² Teratogens include not only drugs, but also environmental factors which can have important effects during this period of pregnancy. Despite avoiding drugs such as lithium, tranquilizers, anti-epileptic drugs, and smoking, pregnant mothers should be in an environment with an acceptable quality index in order to avoid the harmful effects of pollutants on the fetus, including low birth weight, respiratory failure, cleft palate, heart failure, spina bifida, and cancer.² Apart from congenital or environmental teratogens, of importance is the awareness of pregnant women about the risk factors and preventive measures in the face of known teratogens. Prevention of the effect of teratogens can reduce the number of children with congenital disease, decrease material and psychological costs, and create a healthy society. Therefore, it is necessary for policy makers, and especially parents, to pay attention to this matter. For instance, mercury, a common teratogen which is found in polluted air and is widely used in the preparation of fungicides, herbicides, antibiotics, dental amalgams, and paints, can affect the kidney, liver, muscles, brain, and blood of the fetus. Other mercury compounds, such as methylmercury, inhibit the natural migration of cells towards the cerebral cortex, and thus can cause brain development disorders. In a study by Tan et al., stillbirth, birth defects, infertility, and fetal macrosomia are some of the outcomes after exposure to polluted air

in pregnant women.³ We know that the contaminated environment can contain many teratogens. Mercury and its derivatives such as mercury chloride, cadmium, lead, insecticides, and certain copper compounds, such as copper chloride, are environmental pollutants.^{4,5} Mercury is not the only teratogen in the air, and there are many known and unknown pollutants that require further study. Among these, cadmium and lead can also be mentioned. A high exposure to lead causes prematurity, low birth weight, brain damage, and various physical defects. Even exposure to a small amount of lead in the prenatal period can be dangerous.⁶ Therefore, in response to the question “How can a pregnant woman reduce the teratogenicity of air pollution?”, checking the quality of the air by specific indicators is of great means in this regard. Use of air purifiers in case of low-quality air is useful. Avoiding outside environmental exposure when the quality of air is less than optimal, should be considered. The fundamental way to keep away from harmful exposures is learning about the effect of air pollution on fetal health. In this case, pregnant women can

adopt new and proven methods to distance themselves from the effects of pollutants. It should be noted that being obsessive in this case can also be problematic.

CONFLICT OF INTEREST

Nothing do declare.

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