

PRENATAL EXPOSURE TO AIR POLLUTANTS LINKED TO GROWTH DELAYS

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Researchers have found an association between exposure to air pollution during pregnancy and delays in physical growth in the early years after birth.

The study, published in the journal *Environment International*, analysed data from more than 1,700 mother—child pairs from four cities of Spain. “This prospective study suggests that exposure to air pollution during pregnancy may be associated with delays in physical growth in the first years of life,” said study lead author Serena Fossati from Barcelona Institute for Global Health (ISGlobal) in Spain. “The implication of our findings is that prenatal exposure to air pollutants has a lasting effect on growth after birth and that this parameter should be followed up at later ages,” Fossati added.

For the results, the researchers estimated the exposure to nitrogen dioxide (NO₂) and fine particulate matter (PM_{2.5})—two of the most common traffic—related air pollutants in cities—during the first trimester of pregnancy, using models based on levels of these pollutants measured in the study area. The evolution of the children’s body mass index (BMI) from birth to age four years was recorded. Height and weight were measured at four years of age.

The results showed that greater exposure to particulate matter during the first trimester of pregnancy was associated with a higher risk of lower weight and body mass index at four years of age. Results for NO₂ exposure were similar but did not reach statistical significance. “The hypotheses we are considering include oxidative stress and inflammation, interference with thyroid hormones, induction of cell death due to DNA damage, and an increased risk of respiratory diseases and other health problems that could delay growth,” said study researcher Martine Vrijheid.

“What is clear is that the adverse effects of air pollution begin in the prenatal phase, so pregnant women should be considered a priority group in public health policies aimed at reducing the population’s exposure to air pollution,” Vrijheid added.

—IANS

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