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Fetal exposure to air pollution and low birth weight

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Background: Low birth weight may have a negative impact on the children's health in later life, too. Therefore risk factors contributing to low birth weight should be identified and eliminated. We studied the association between fetal exposure to some air pollutants and the frequency of low birth weight in a small industrial town of Hungary.

Methods: Pregnancy care documents of all pregnant women living in Dorog were used for a 5-year period of 2000-2004. Air pollution data (PM10, NO2, SO2, CO, O3) were used from the local Air Monitoring Network. From the 24-hour concentrations, both weekly average and weekly maximum levels were used for the analysis. Fetal exposure to the monitored air pollutants were determined for each week of pregnancy and their associations with birth weight of single, full-term babies were analysed.

Results: Exposure to higher levels of PM10, SO2 and NO2 at the final period of pregnancy and increased concentrations of CO between weeks 21-25 were associated with low birth weight.

Implications: Increased levels of various air pollutants during various periods of pregnancy may increase the risk of low birth weight.