

MATERNAL EXPOSURE TO AIR POLLUTION AND THE RISK OF THE CHILD DEVELOPING TYP1 DIABETES

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Background and aims: The aetiology of type 1 diabetes [T1D] is not fully understood but it is widely accepted that genetic and non-genetic factors act together to initiate and accelerate the development of T1D. However, this could not explain the rapid increase for T1D. One suggested environmental risk factor contributing to the development of T1D is air pollutants.

The aim of this birth cohort study was to investigate if maternal exposure low-level of air pollution was associated with the risk of the child to develop T1D.

Methods: High quality registry information on 81 110 births with individually modelled exposure data at residence for nitrogen oxides NO_x and proximity to roads with differing traffic density were linked to data for each child born after 1999 who had developed T1D prior to august 2010 and date of diagnosis where obtained from the Diabetes Centre in Malmö. The data were analyzed using logistic regression on the dichotomous variable T1D or not and survival analyses based on time of diagnosis.

Results: No extended risks of developing T1D if the child had been exposed prenatally for elevated levels of air pollutions were shown.

Conclusions: We saw no effect on the risk of the child developing T1D if the mother had lived in areas of higher levels of air pollution during pregnancy. Although in this study area the air pollution levels generally are well below the threshold levels set by World Health Organisation.