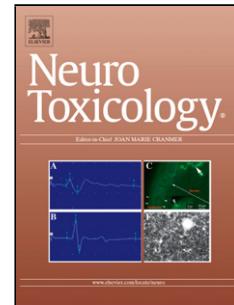


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# Exposure to Fine and Ultrafine Particulate Matter during Gestation Alters Postnatal Oligodendrocyte Maturation, Proliferation Capacity, and Myelination

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## Highlights:

- Exposure to particulate matter (PM) during fetal development is neurotoxic.
- Gestational PM exposure accelerates oligodendrocyte precursor maturation.
- Gestational PM exposure induces persistent corpus callosum (CC) hypermyelination.
- Gestational PM exposure persistently alters the CC oligodendrocyte progenitor pool.

## ABSTRACT

Accumulating studies indicate that the brain is a direct target of air pollution exposure during the fetal period. We have previously demonstrated that exposure to concentrated ambient particles (CAPs) during gestation produces ventriculomegaly, periventricular hypermyelination, and enlargement of the corpus callosum (CC) during postnatal development in mice. This study aimed to further characterize the cellular basis of the observed hypermyelination and determine if this outcome, among other effects, persisted as the brain matured. Analysis of CC-1<sup>+</sup> mature oligodendrocytes in the CC at postnatal days (PNDs) 11-15 suggest a premature maturational

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