

The effects of traffic-related air pollution (TRAP) on Alzheimer's disease (AD) phenotypes in a genetically susceptible animal model

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Epidemiologic studies identify TRAP as an AD risk factor. To test this hypothesis, we exposed male and female TgF344-AD rats and wildtype controls to TRAP in real-time using a mobile exposure facility that collects air from a highway tunnel. Brain samples collected after 2, 5, 9 or 14 months of exposure to TRAP or filtered air indicated that TRAP increased biomarkers of neuroinflammation and accelerated neuronal cell loss in transgenic and wildtype rats. TRAP also significantly increased plaque burden in transgenic rats. These data support the epidemiologic data linking TRAP to increased AD risk. Supported by NIEHS (grants R21 ES025570, P30 ES023513 and T32 ES007059) and NIA (grant P30 AG010129).

Relevant references:

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