**title:** Single nucleus transcriptomics reveals cell type-specific heterogeneity on the effects of gestational ozone exposure within the brain.

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**summary:** Air pollution, particularly ozone, is a major global health concern that impacts respiratory health and has been linked to pregnancy-related complications. Our study exposed mice to ozone during early pregnancy, revealing significant changes within the cells of the brain. Combined ozone exposure and pregnancy affected pathways associated with neurodegenerative diseases, potentially influencing long-term maternal and offspring health. These findings highlight the importance of addressing air pollution's impact on both respiratory and neurological health during pregnancy.