

Shaping the risk for late-life neurodegenerative disease: A systematic review on prenatal risk factors for Alzheimer's disease-related volumetric brain biomarkers – Highlights

1. Adverse prenatal exposures may increase the risk for Alzheimer's Disease by affecting the developing brain, limiting brain volumes and thereby the brain's reserve capacity.
2. We identified 79 eligible studies reporting on whole brain volume, hippocampal volume and/or temporal lobe volume, for which prenatal exposure to alcohol, opioids, cocaine, nutrient shortage, placental dysfunction and maternal anemia was associated with smaller brain volumes.
3. These studies provide a convincing body of evidence for smaller brain volumes in brain regions associated with Alzheimer's disease after adverse prenatal exposures.
4. The field would benefit from core outcome sets and reporting guidelines to improve the comparability between studies, overall research quality and applicability of research in this field.
5. The prenatal environment is critical in shaping the risk for late-life neurodegenerative disease.