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Background //

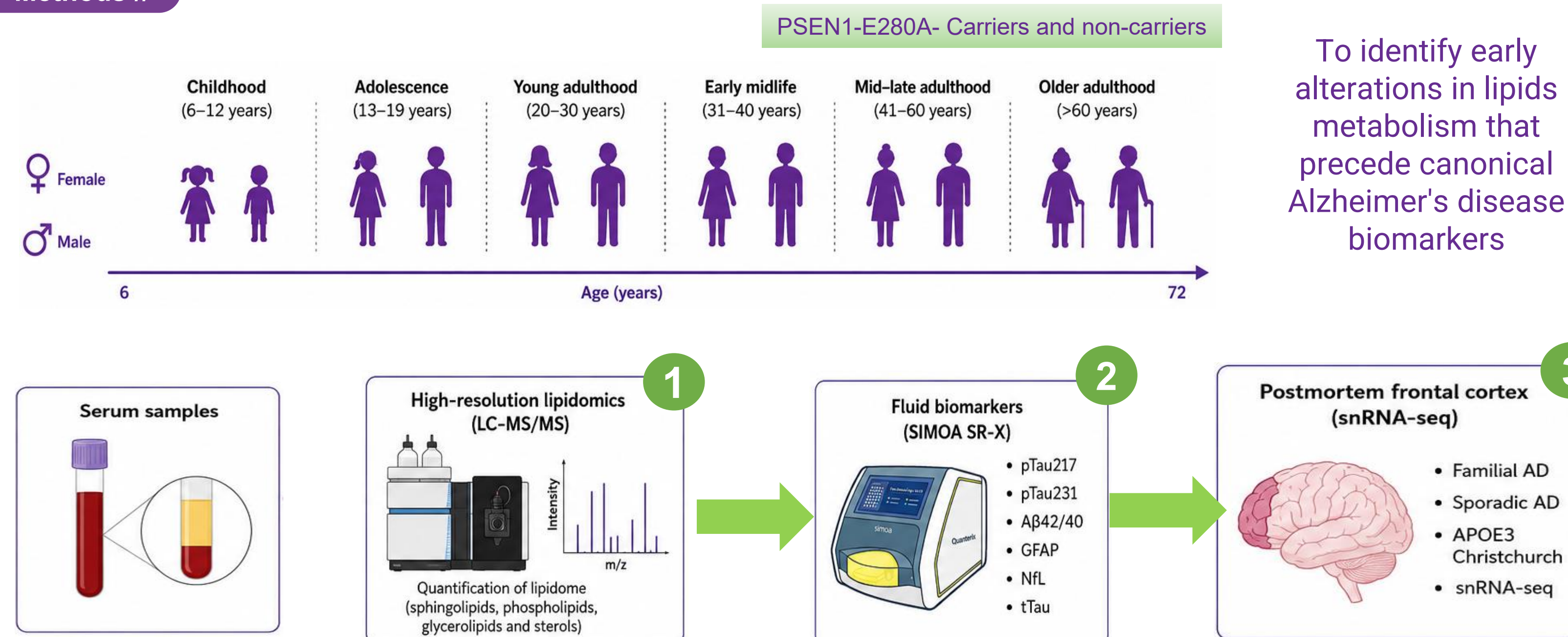
Alzheimer's disease is associated with early alterations in lipid metabolism, particularly in sphingolipids, which are essential for membrane structure, myelin stability, vesicular trafficking, and neuroinflammatory signaling. Although these changes have been widely described in brain tissue, their peripheral expression and relationship with classical Alzheimer's biomarkers remain less understood.

In PSEN1-E280A familial Alzheimer's disease, peripheral biomarkers may provide a window to detect biological alterations before clinical onset. Integrating serum biomarkers measured by SIMOA, lipidomic profiles, and postmortem snRNA-seq data may help identify early and late molecular signatures linked to disease progression and genetic background.

Objective //

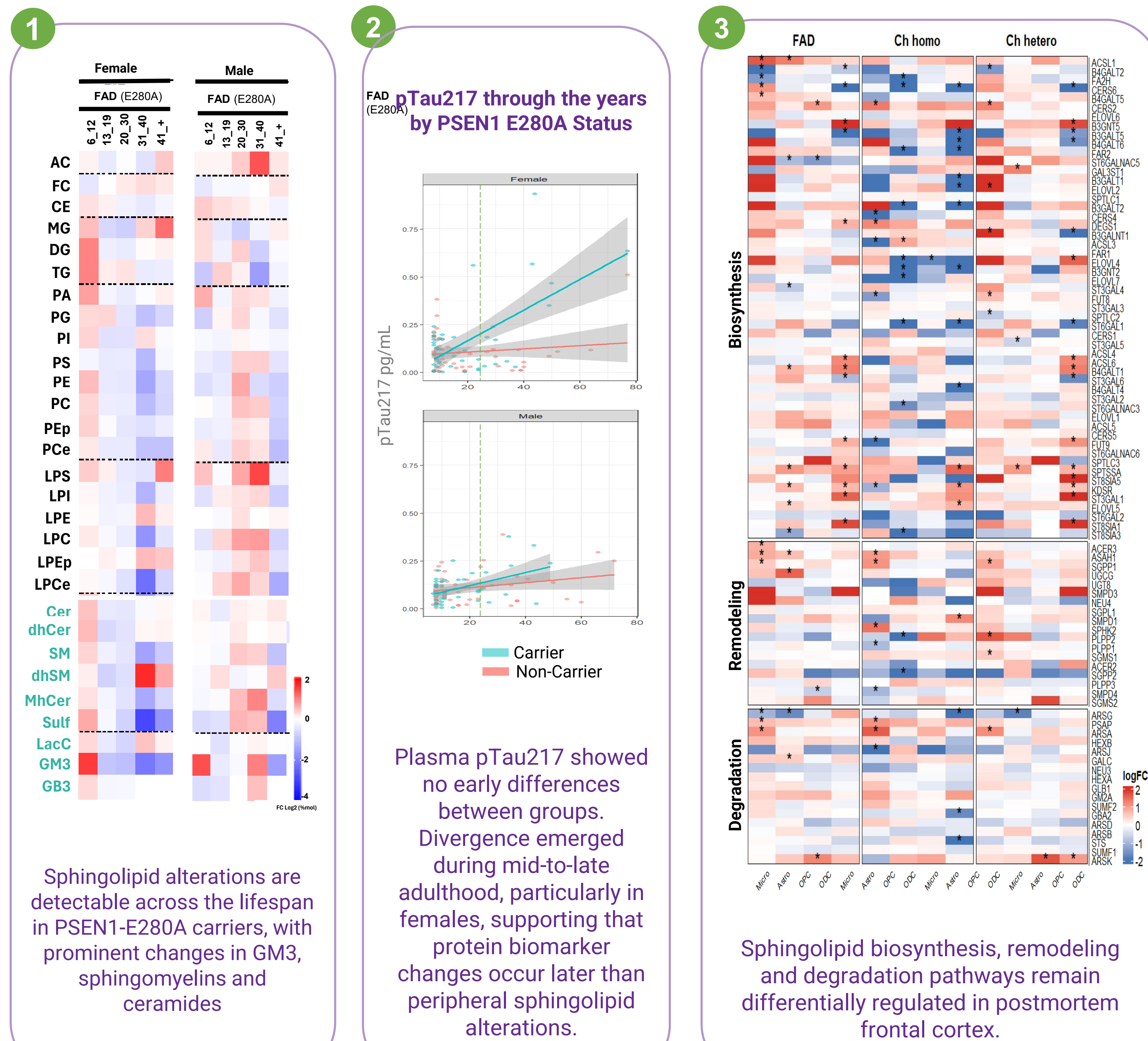
To identify sphingolipid-related molecular signatures associated with Alzheimer's disease progression in PSEN1-E280A carriers

Methods //

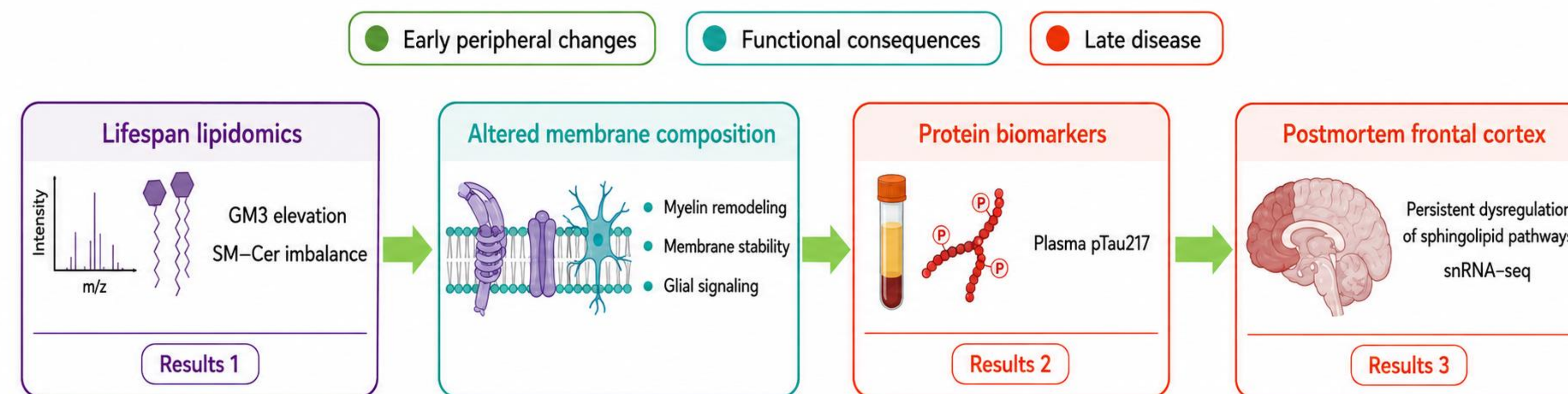


Results //

Early sphingolipid alterations precede canonical biomarkers



Early peripheral sphingolipid alterations precede protein biomarker changes



Early peripheral sphingolipid alterations may contribute to Alzheimer's disease vulnerability across the disease continuum.

References //

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