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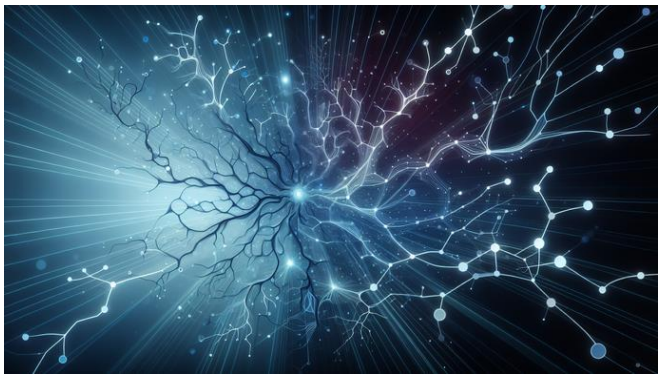
Advancements in Brain Clearance Mechanisms: New Insights into Alzheimer's Disease



Researchers from Nanyang Technological University report that enlarged perivascular spaces visible on routine MRI are a significant early marker of Alzheimer's disease. Detecting this mechanistic sign could refocus early-intervention targets toward clearance pathways and improve risk stratification.

MRI analyses in nearly 1,000 multiethnic participants linked enlarged perivascular spaces with amyloid and tau and implicated brain clearance pathways. Associations were present across clinical stages; the imaging marker complements CSF biomarkers and suggests impaired toxic clearance as a contributing pathway.

Impaired perivascular and CSF-lymphatic drainage may drive regional accumulation of beta-amyloid and tau, with slowed clearance potentially preceding thresholds for detectable plaques and tangles.

Collectively, these high-confidence findings support assessing perivascular spaces in early-detection MRI, stratifying participants for preventive trials, and advancing exploration of clearance-targeted therapies.

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