



UK Dementia
Research Institute



UNIVERSITY OF GOTHENBURG

Update on Biofluid-Based Biomarkers for Alzheimer's Disease

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Gothenburg, Sweden

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DISCLOSURES:

HZ has served at scientific advisory boards and/or as a consultant for Abbvie, Acumen, Alamar, Alector, Alzinova, ALZpath, Amylyx, Annexon, Apellis, Artery Therapeutics, AZTherapies, Bioventix, Cognitact, Cognito Therapeutics, CogRx, Denali, Eisai, Enigma, Johnson & Johnson, LabCorp, Merck Sharp & Dohme, Merry Life, Nervgen, Neurocode, New Amsterdam, Novo Nordisk, Optoceutics, Passage Bio, Pinteon Therapeutics, Prothena, Quanterix, Red Abbey Labs, reMYND, Roche, Samumed, Scandio Therapeutics AB, Siemens Healthineers, Triplet Therapeutics, and Wave, and has given lectures sponsored by Alzecure, BioArctic, Biogen, Cellectricion, Fujirebio, LabCorp, Lilly, Novo Nordisk, Oy Medix Biochemica AB, Roche, and WebMD.

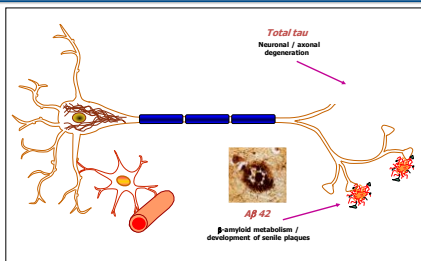
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LEARNING OBJECTIVES:

1. Identify how biofluid-based biomarkers contribute to diagnosis of dementias;
2. Describe which biofluid-based biomarkers for Alzheimer's disease are being moved into clinical practice;
3. Discuss advances in biomarkers related to other related dementias, including those for LATE dementia.

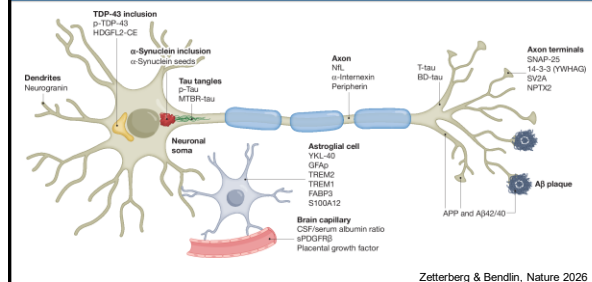
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Available biofluid-based biomarkers for neurodegenerative diseases in 2001



4

Available biofluid-based biomarkers for neurodegenerative diseases in 2026

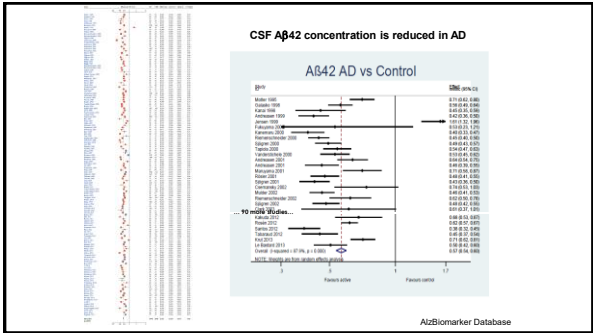


Zetterberg & Bendlin, Nature 2026

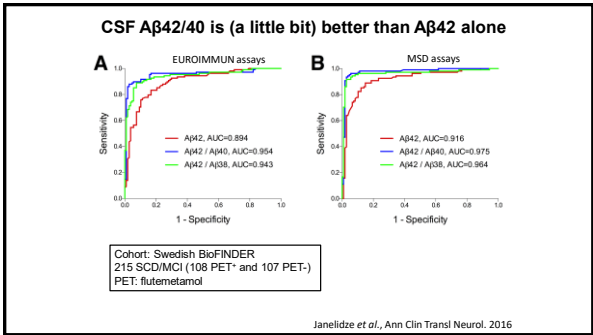
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A = amyloid pathology

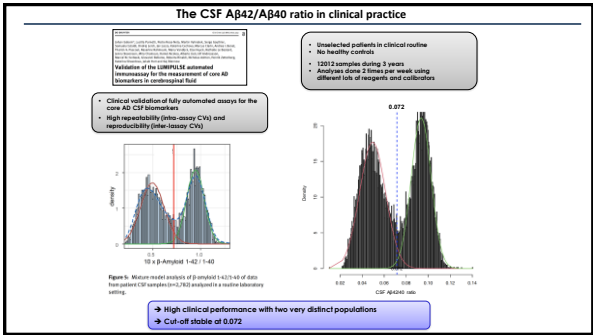
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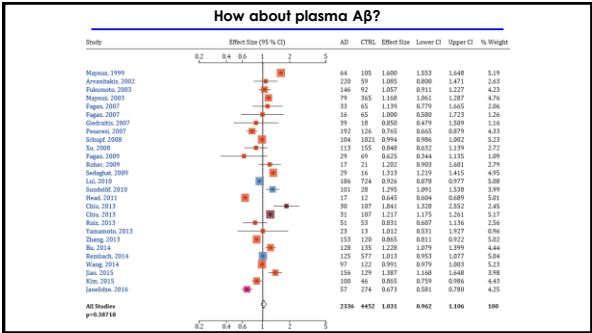
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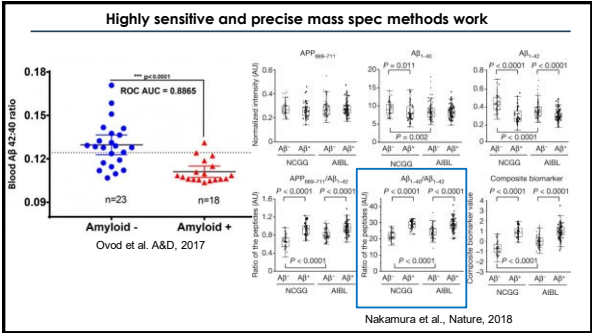
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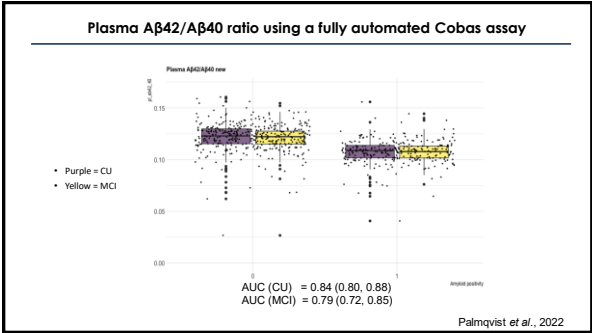
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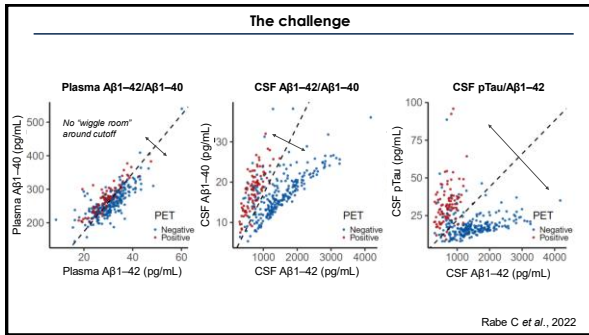
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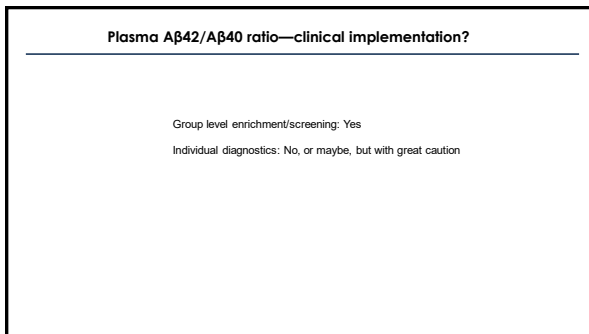
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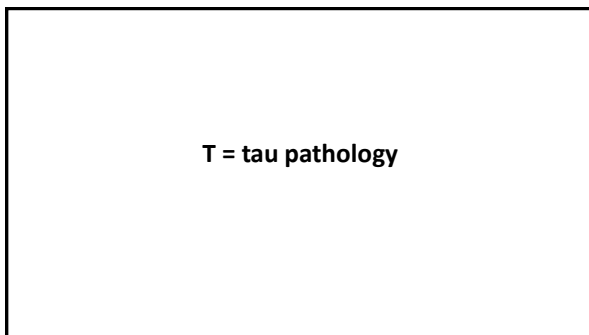
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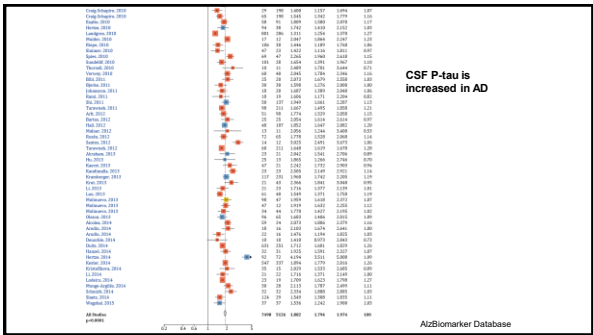
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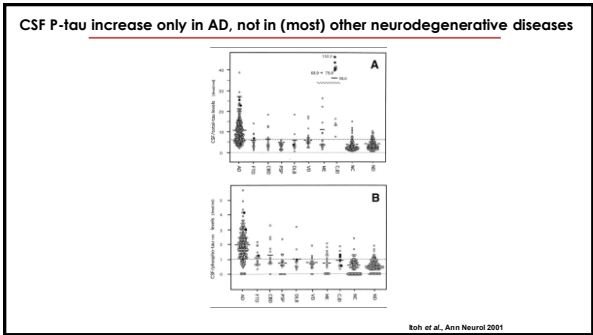
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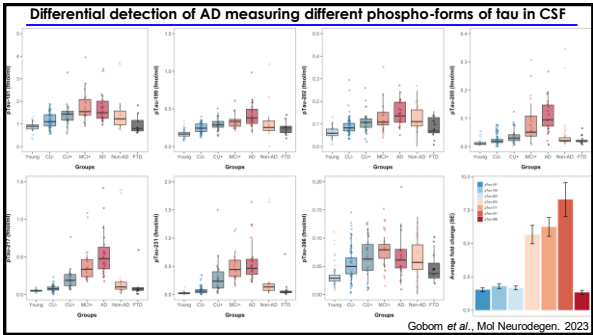
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Plasma p-tau indicates AD pathology (including amyloid)

2021 Patient recruitment & study design
 Recruited at King's Healthcare Patient Services (open-recruiter)
 (2020) and Recruitment in Research UK (ARUK) cohort

Completed 1 Yr (N=100)
 175 participants (2021) (ARUK Cohort)
 174 participants who gave plasma
 174 participants who gave CSF
 Clinical and cognitive assessment

Completed 2 Yr (N=100)
 168 participants (2021) (ARUK Cohort)
 167 participants who gave plasma
 166 participants who gave CSF
 Clinical and cognitive assessment

Completed 3 Yr (N=100)
 167 participants (2021) (ARUK Cohort)
 166 participants who gave plasma
 166 participants who gave CSF
 Clinical and cognitive assessment

2021 Neuropathological assessment
 Medical Research Council (MRC) London Neuropathology
 Assessment Brain Bank, Institute of Psychiatry, King's College
 London, London

**2021 Plasma p-tau181 in-house Single
 molecule array (Simoa)**
 Clinical Neuropathology Laboratory, University of Edinburgh,
 Edinburgh, Scotland

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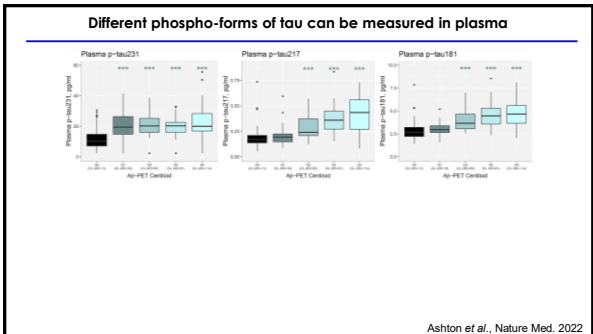
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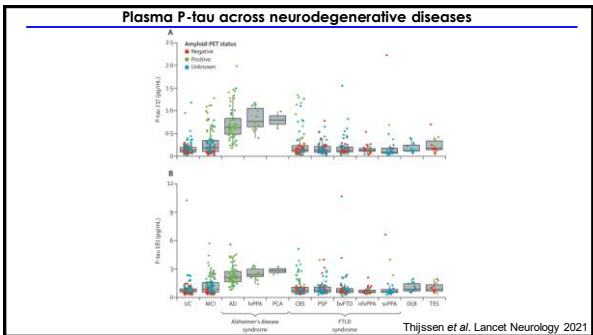
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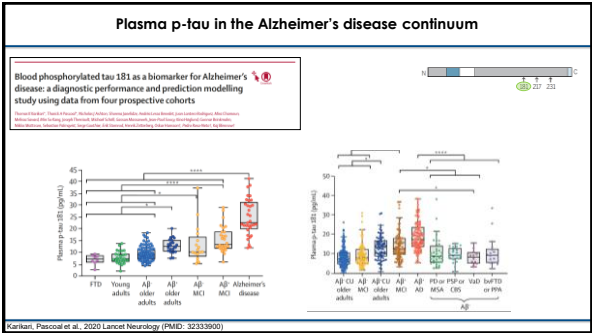
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Lantero-Rodriguez et al., 2020 Acta Neuropathologica (PMID: 32720099)

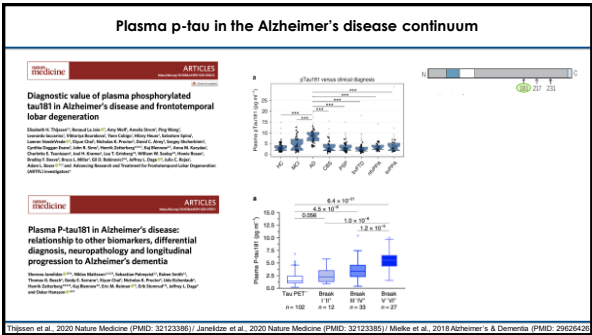


Ashton et al., Nature Med. 2022

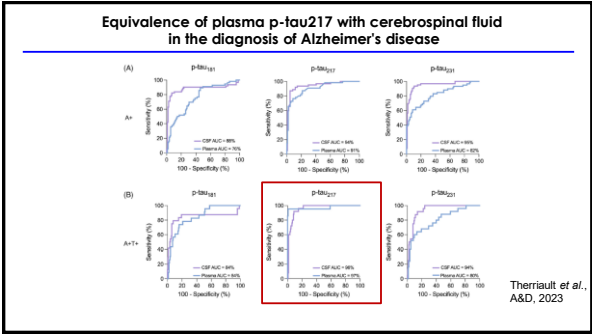
Thijssen *et al.* Lancet Neurology 2021



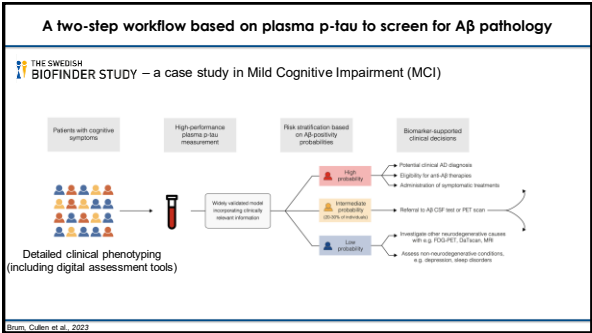
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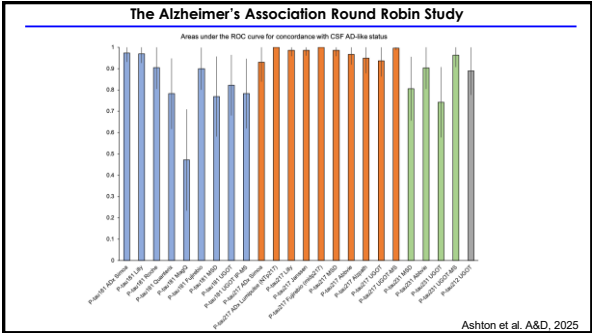
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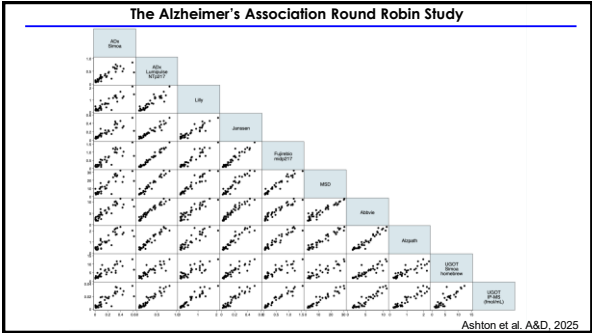
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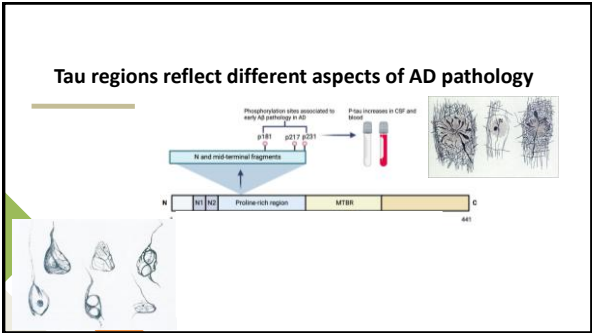
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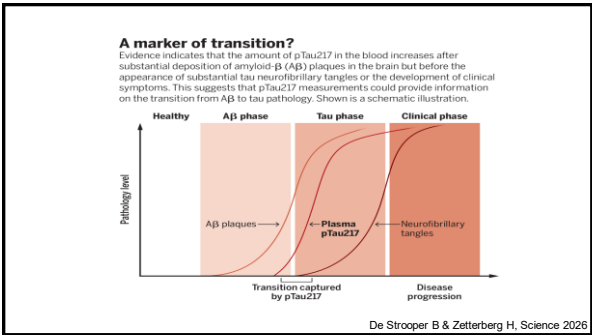
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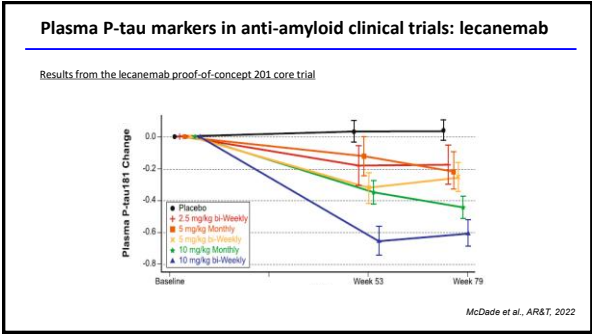
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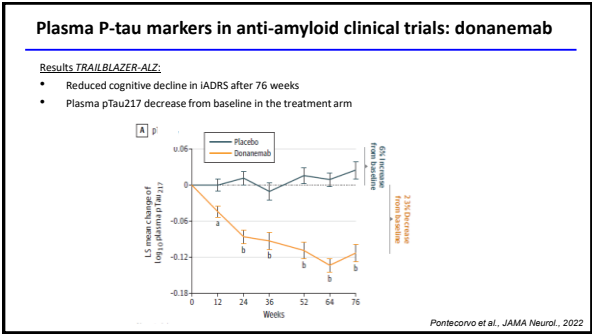
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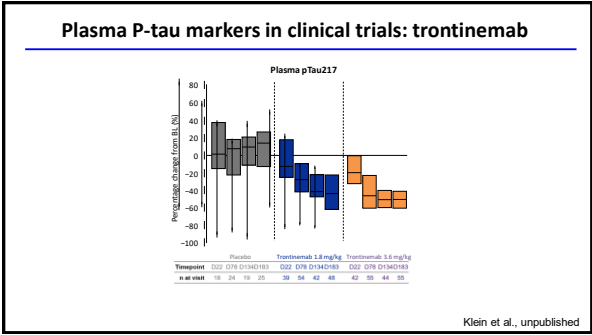
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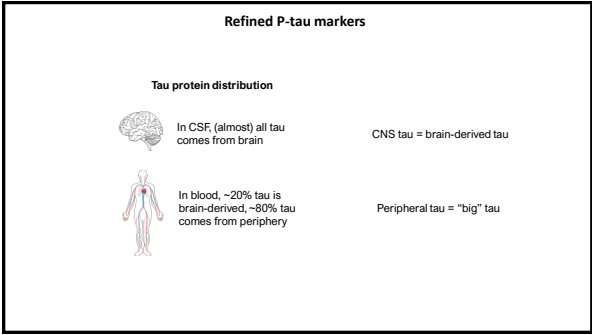
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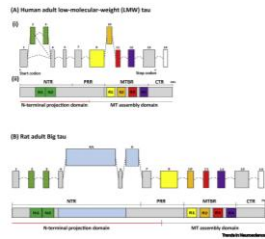


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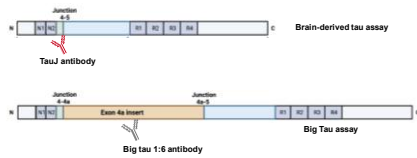
Refining plasma tau - central and peripheral tau



Fischer and Baas, 2020

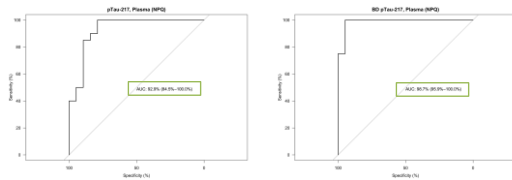
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Refining plasma tau - central and peripheral tau



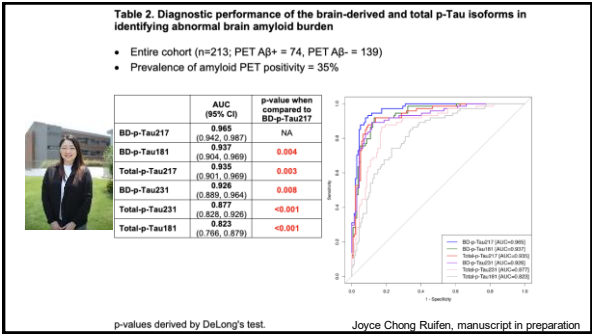
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NULISaseq BD-pTau217 assay shows higher AUC values for amyloid pathology by PET compared with "total" pTau217 measurement from blood

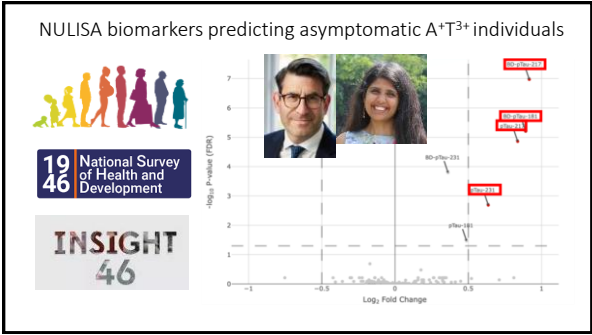


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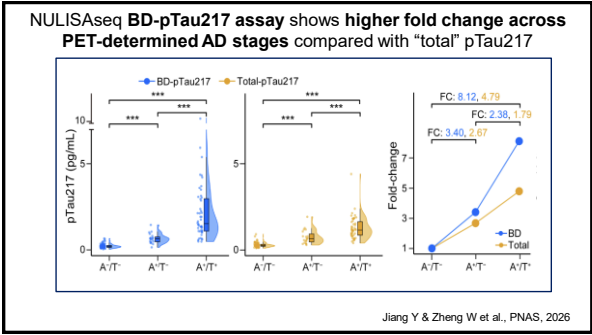
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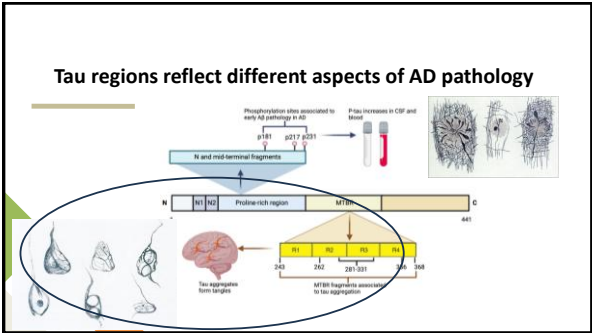
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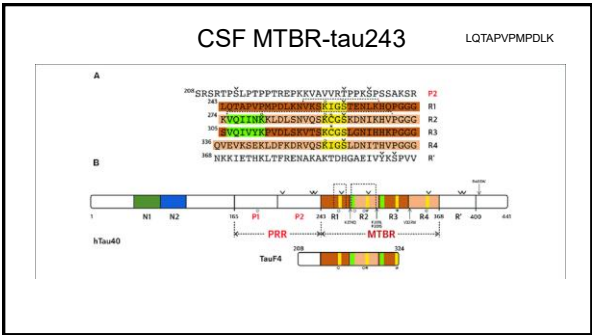
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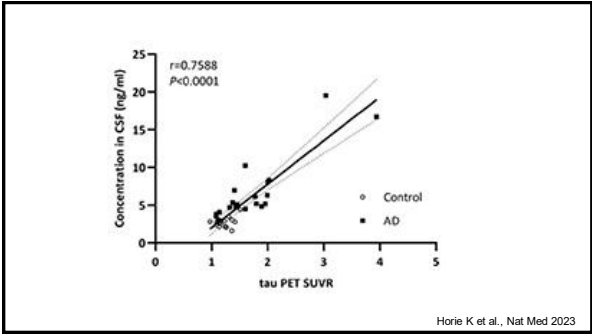
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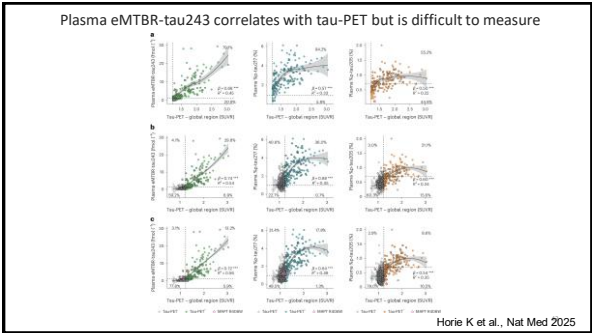
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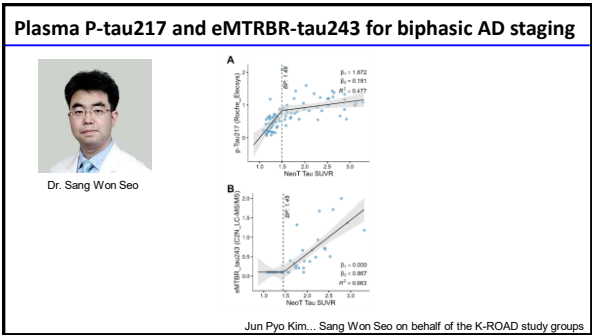
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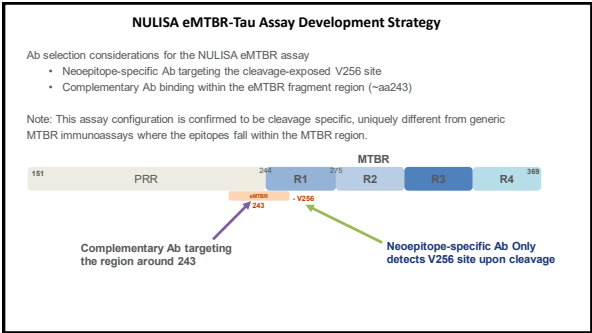
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What is MTBR-tau243?

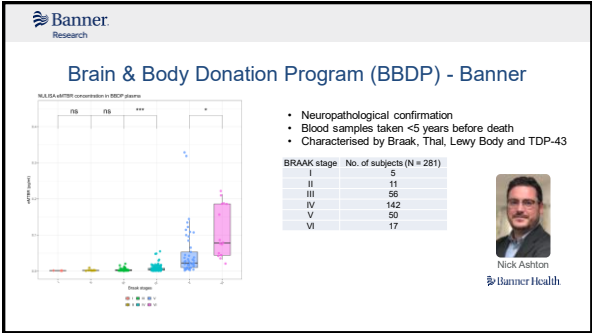
CSF: a tryptic fragment of tau: LQTAPVMPDLK

Plasma: a semi-Arg-C fragment: ...LQTAPVMPDLKN[deamidation]

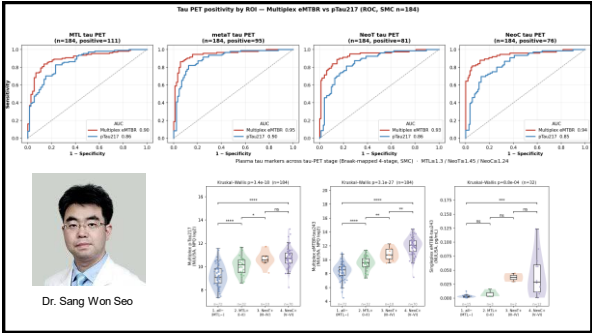
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Plasma P-fau—clinical implementation?

Group level enrichment/screening: Yes

Individual diagnostics: Yes (but careful—we are constantly learning)

Plasma P-fau—clinical implementation?

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Plasma P-fau—clinical implementation?

Group level enrichment/screening: Yes

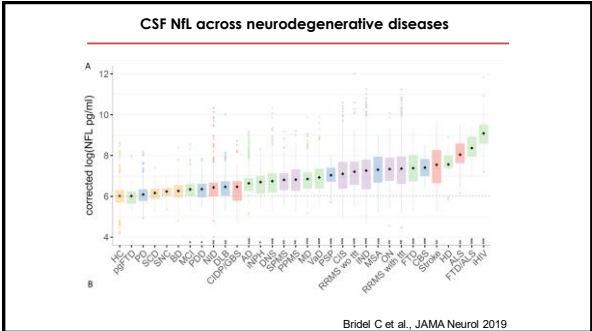
Individual diagnostics: Yes (but careful—we are constantly learning)

Plasma P-tau—clinical implementation?	
Group level enrichment/screening: Yes Individual diagnostics: Yes (but careful—we are constantly learning)	

N = neurodegeneration

N = neurodegeneration

N = neurodegeneration

[illegible][illegible]

CSF NFL across neurodegenerative diseases

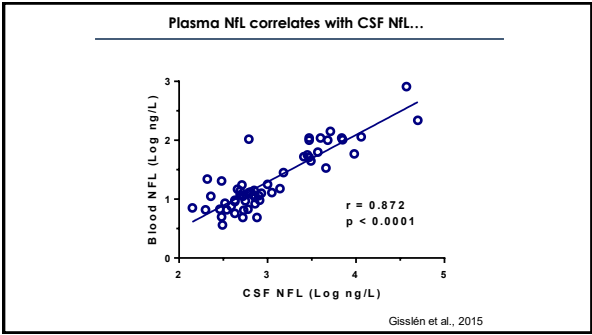
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corrected log(NFL pg/ml)

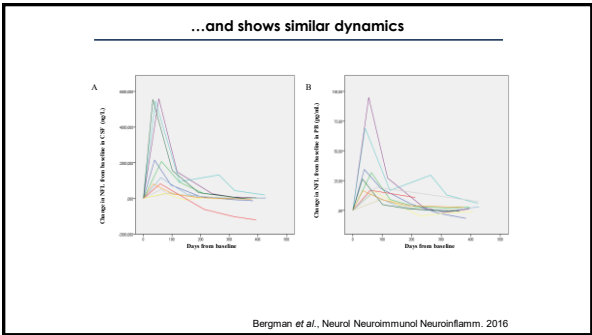
B

corrected log(NFL pg/ml)

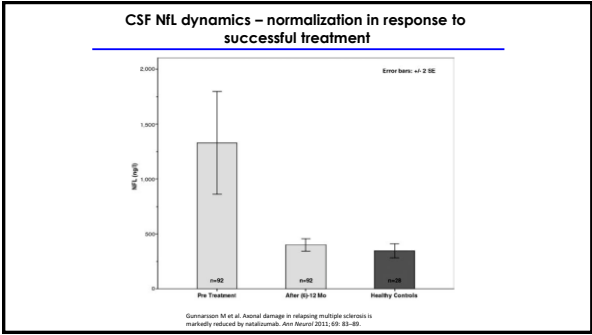
Bridel C et al., JAMA Neurol 2019



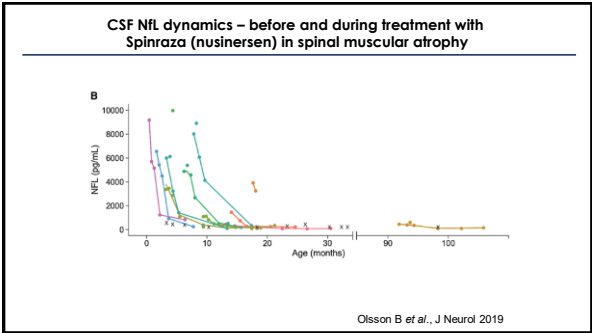
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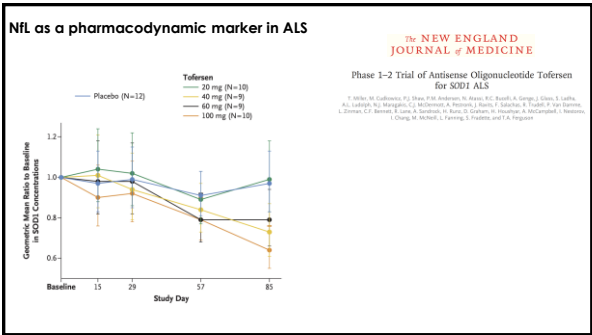
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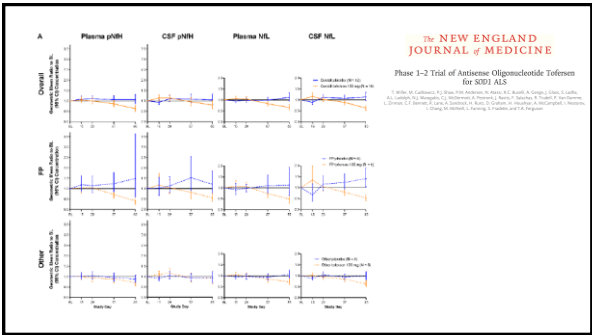
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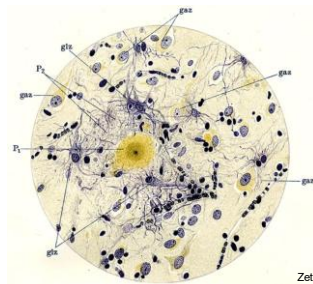
Diagnosing neurodegeneration with a blood sample: are we there yet?

Group level enrichment/screening: Yes

Individual diagnostics: Yes, but CSF is probably a little bit more sensitive

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Biomarkers in addition to ATN



Astrocytic activation
Microglial activation
Synaptic degeneration
 α -Synuclein aggregation
TDP-43 aggregation
Cerebrovascular disease

Zetterberg & Bendlin, Nature 2026

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THANKS!!

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Reference slide:

Zetterberg H & Bendlin BB. Biofluid biomarkers in Alzheimer's disease and other neurodegenerative dementias. *Nature* 2026 Feb;650(8100):49-59. doi: 10.1038/s41586-025-10018-w. Epub 2026 Feb 4. PMID: 41639575 DOI: 10.1038/s41586-025-10018-w

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