

REMOTE COGNITIVE ASSESSMENT AND PLASMA P-TAU217 FOR PRECLINICAL ALZHEIMER'S DISEASE RISK STRATIFICATION IN THE REAL AD STUDY

Fredrik Öhman^{1,2,3}, Laura Stankeviciute¹, Nicolai Franzmeier^{1,4,5}, Iris Bosch^{1,3}, Frida Lenér^{1,6}, David Berron^{7,8}, Silke Kern^{1,3}, Henrik Zetterberg¹, Kaj Blennow¹, Michael Schöll^{1,2,3}

¹Department of Psychiatry and Neurochemistry, Institute of Neuroscience and Physiology, The Sahlgrenska Academy, University of Gothenburg, Mölndal and Gothenburg, Sweden ²Wallenberg Centre for Molecular and Translational Medicine, University of Gothenburg, Gothenburg, Sweden ³Department of Neuropsychiatry, Sahlgrenska University Hospital, Gothenburg, Region Västra Götaland, Sweden ⁴Institute for Stroke and Dementia Research (ISD), University Hospital, LMU Munich, Germany ⁵Munich Cluster for Systems Neurology (SyNergy), Munich, Germany ⁶Region Västra Götaland, Research, Education, Development & Innovation (REDI), Primary Health Care, Gothenburg, Sweden ⁷German Center for Neurodegenerative Diseases (DZNE), Magdeburg, Germany ⁸Clinical Memory Research Unit, Department of Clinical Sciences Malmö, Lund University, Lund, Sweden



REAL AD

Background

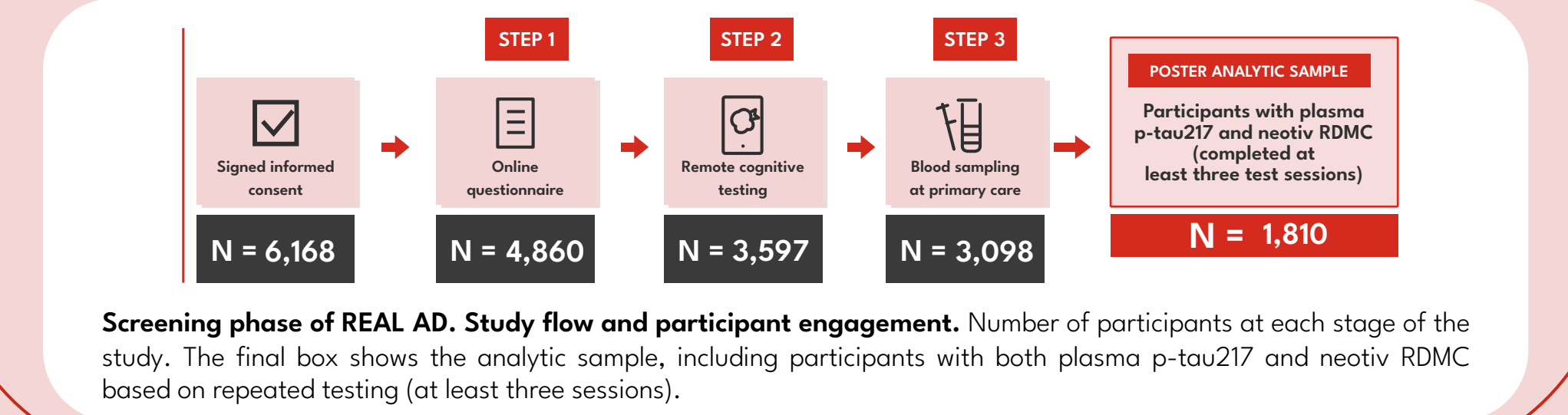
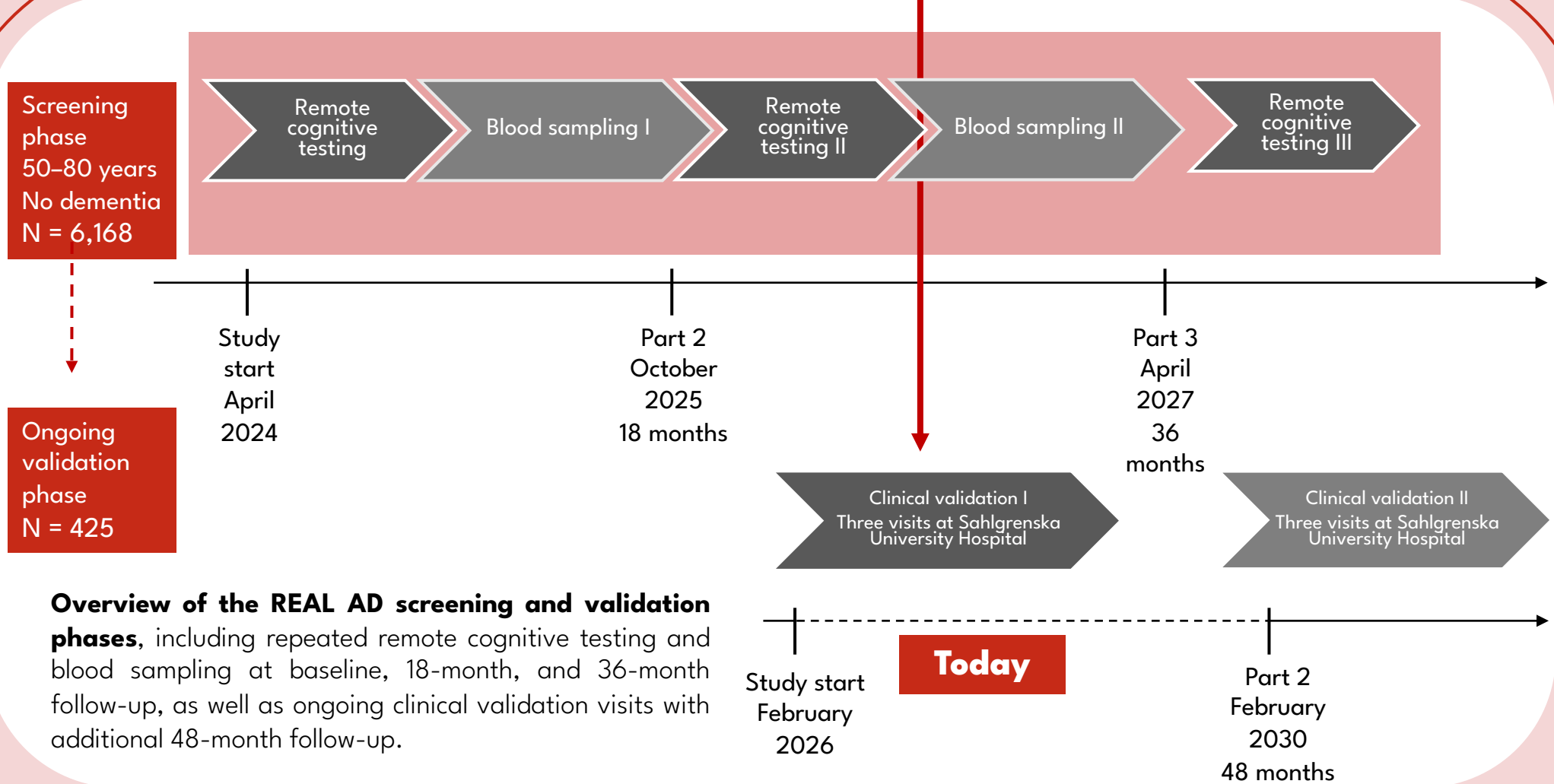
Population-level detection of early AD risk requires scalable tools beyond specialist memory clinics. Plasma p-tau217 and remote digital cognitive assessments may enable low-burden risk stratification, but their combined utility in population-based screening remains to be validated.

REAL AD is a longitudinal, population-based study in Western Sweden combining remote cognitive testing, blood-based biomarkers, and downstream clinical validation. Adults aged 50–80 years without self-reported dementia were recruited through a digital pathway and regional healthcare infrastructure.

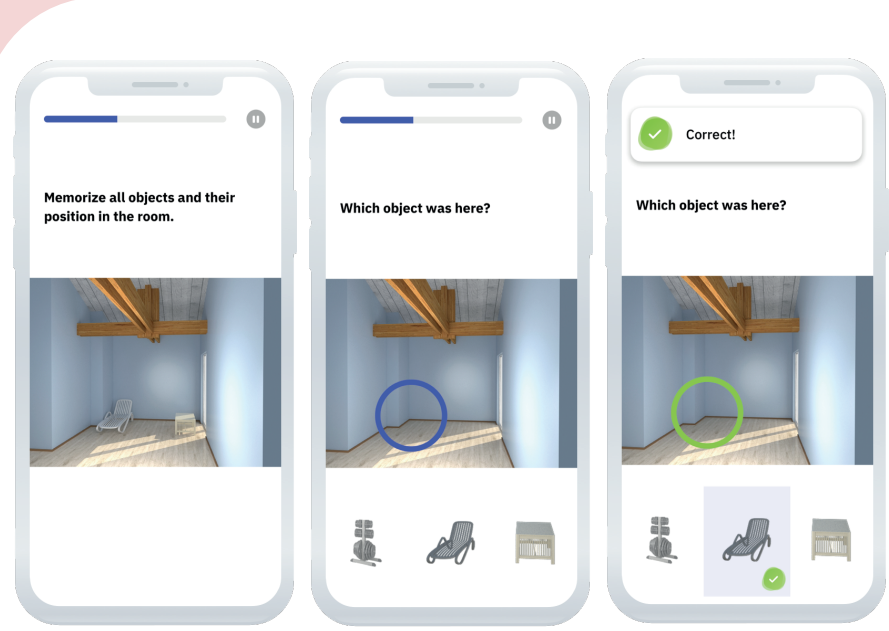
Aim

To examine whether plasma p-tau217 and smartphone-based neotiv remote digital memory composite (RDMC) can support biological–cognitive AD risk stratification, and to assess 18-month longitudinal stability of RDMC across p-tau217 groups.

Study overview

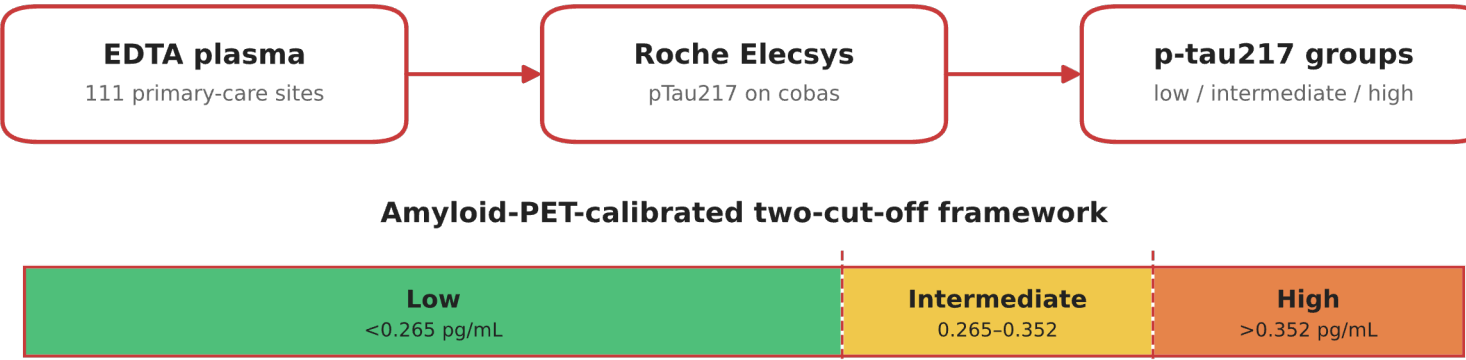


Remote digital cognitive assessment



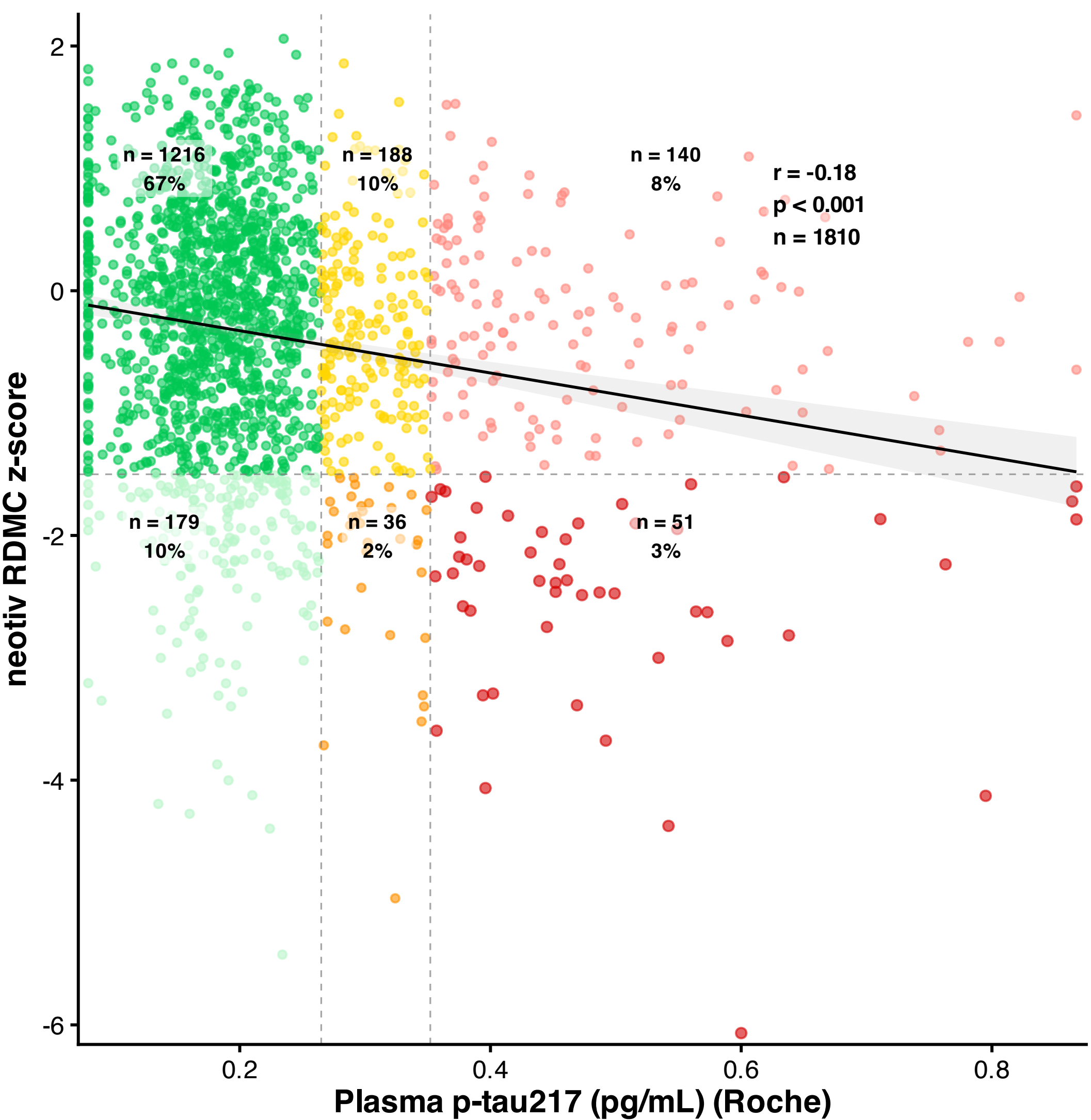
The **neotiv remote digital memory composite (RDMC)** was derived from smartphone-based episodic memory tasks assessing mnemonic discrimination, associative memory, and delayed recognition memory. RDMC was calculated from repeated testing (three sessions).

Blood-based biomarker



Plasma p-tau217 was measured in EDTA plasma using the Roche Elecsys pTau217 assay on the fully automated cobas platform. Low, intermediate, and high p-tau217 groups were defined using amyloid-PET-calibrated cut-offs.

Biological–cognitive risk stratification

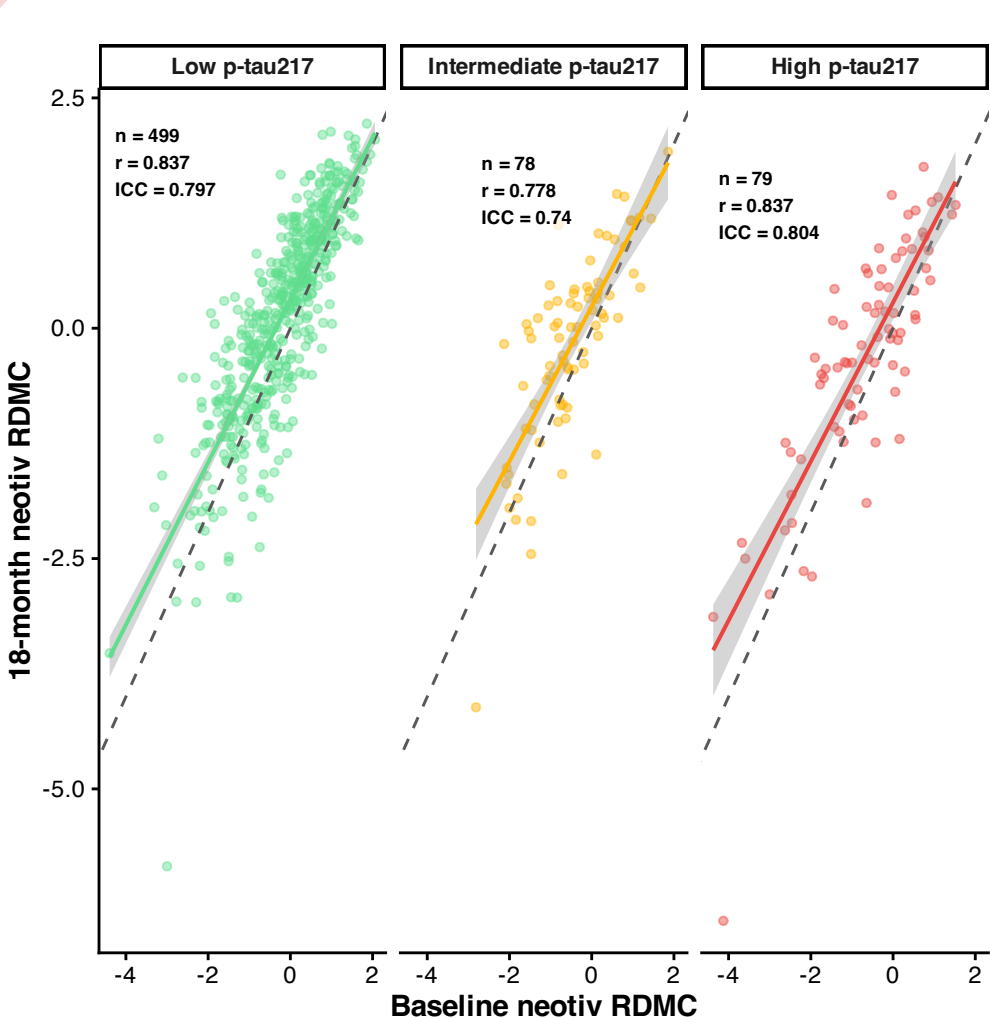


Sample descriptives and RDMC performance

Poster analytic sample	N = 1,810
Age, years	64.9 ± 7.3
Female sex, n (%)	1,319 (73%)
APOE $\epsilon 4$ carrier, n (%)	642 (36%)

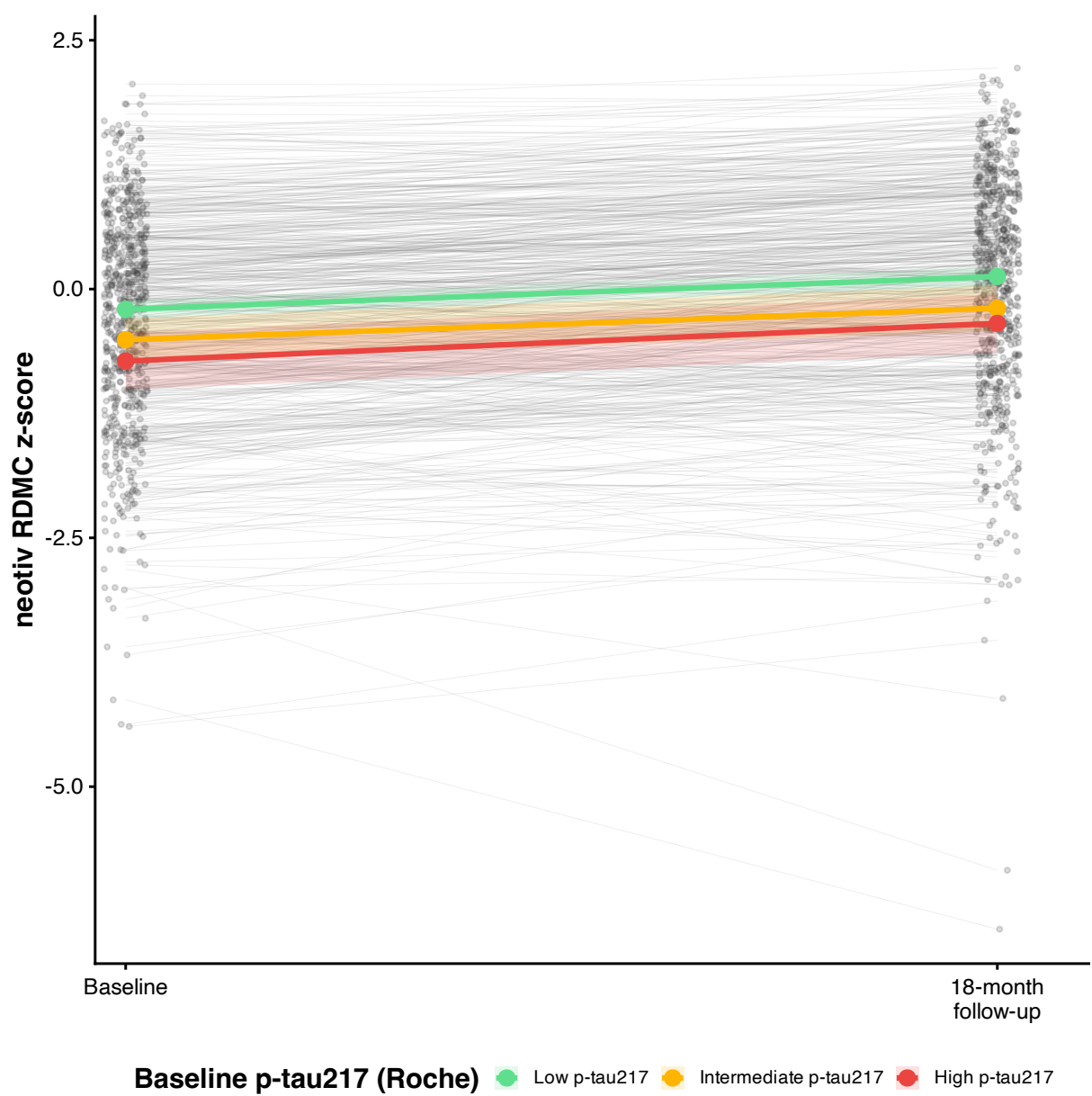
	n	Low neotiv RDMC (%)
Low p-tau217	1,395	13%
Intermediate p-tau217	224	16%
High p-tau217	191	27%

18-month neotiv RDMC stability



Preliminary 18-month neotiv RDMC stability by plasma p-tau217 group. Among participants with available follow-up data, baseline and 18-month RDMC scores were strongly correlated ($r = 0.78–0.84$; $ICC = 0.74–0.80$). Full follow-up data collection is ongoing.

Comparable 18-month RDMC change



Preliminary 18-month neotiv RDMC performance by plasma p-tau217 group. Among participants with available follow-up data, RDMC improved modestly across groups. Longitudinal slopes did not differ significantly across p-tau217 groups, $\chi^2(2) = 0.65$, $p = 0.724$. Full follow-up data collection is ongoing.

Take-home message

Plasma p-tau217 combined with remote smartphone-based cognitive testing may support scalable AD risk stratification and triage in population-based screening.

Preliminary 18-month data, available for a subset while follow-up is ongoing, showed good neotiv RDMC stability across p-tau217 groups.

Clinical utility is being evaluated through the full ongoing follow-up, planned longer-term follow-up, and the REAL AD validation phase against clinical, biomarker, imaging, and neuropsychological outcomes.



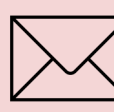
REAL AD



UNIVERSITY OF GOTHENBURG



VÄSTRA GÖTALANDSREGIONEN



fredrik.ohman@gu.se
michael.scholl@gu.se

