

Neuropsychological Correlates of Consent Capacity Across the Alzheimer’s Disease Spectrum: Preliminary Findings from the DECISION Study

Paulina Tegethoff¹, Johanna Gelz¹, Alexander Giehl¹, Sophia Hüscher¹, Iliana Gkelmpesi¹, Sophia Kafai¹, Julia Dier¹, Sophia Rutt¹, Fortese Neziraj¹, Anna Hufnagel¹, Robert Perneczky¹⁻⁵, Carolin Kurz⁶

¹ Department of Psychiatry and Psychotherapy, University Hospital of Munich, LMU Munich, Munich, Germany

² German Center for Neurodegenerative Diseases (DZNE), Munich, Germany

³ Munich Cluster for Systems Neurology (SyNergy), Munich, Germany

⁴ Ageing Epidemiology (AGE) Research Unit, School of Public Health, Imperial College, London, UK

⁵ Sheffield Institute for Translational Neuroscience (SITraN), University of Sheffield, Sheffield, UK

⁶ Department of Psychiatry and Psychotherapy, Technical University of Munich, TU Munich, Munich, Germany

KEY FINDING: Preliminary analyses suggest that executive functioning, language comprehension, and awareness are associated with consent capacity across the Alzheimer's disease spectrum and may represent promising targets for a brief screening approach.

BACKGROUND	METHODS	PRELIMINARY RESULTS	DISCUSSION & NEXT STEPS	REFERENCES																														
Informed consent requires the ability to understand, appreciate, reason about, and communicate a treatment or research decision (Bundesärztekammer, 2019; AWMF, 2019). Alzheimer's disease affects cognitive domains that are critical for decision-making, including memory, language, executive functioning, and insight (Caselli, 2012; Van Duinkerken et al., 2018). Consent capacity may be compromised even in early disease stages, while substantial interindividual variability remains (Palmer et al., 2017). Current assessments frequently rely on unstructured clinical judgment, resulting in variability and uncertainty in clinical practice (AWMF, 2019; Rolfes et al., 2024). Existing instruments such as the MacCAT-T are informative but can be time-consuming and challenging to implement in routine care (Van Duinkerken et al., 2018; Rolfes et al., 2024). Brief, standardized, and clinically feasible tools for assessing consent capacity in Alzheimer's disease are currently lacking. STUDY AIM To identify neuropsychological correlates of consent capacity across the Alzheimer's disease spectrum. To inform the development of a brief, standardized, and clinically feasible consent-capacity screening instrument.	1. ASSESSMENT Caregiver interview Focus group interviews with clinical experts Neuropsychological assessment (NP) with participant, including subsequent visit to the ophthalmology clinic Clinical assessment with participant Legal experts' input (completed) 2. DATA TRANSFER Transfer of results into study database (Excel) 3. DATA PROCESSING Data preparation and content harmonization Scoring of neuropsychological assessment data Evaluation of clinical data 4. DATA ANALYSIS Transfer of neuropsychological report to data team Development of a consent-capacity screening tool 5. ASSESSMENT Refinement and optimization of the screening tool PROFESIONISTS PHYSICIANS LEGAL - Prospective cohort across the AD spectrum - Current sample: N=34 - Cognitively unimpaired controls - Mild Cognitive Impairment (MCI) - Alzheimer's disease (AD) - Measures: - MacCAT-T - TMT-A / TMT-B - AAT Token Test - PCRS - DOSPERT Scale - CFQ - SCD-Q17 - CDR - Optical Coherence Tomography - Blood Analysis (pTau217, Aβ42/40, GFAP, NFL, APOE ε4 Status) - Participatory co-design: Patients, Caregivers, Clinicians, Legal experts	- Preliminary analyses (N ≈ 34) revealed substantial variability in consent capacity across the AD continuum.Executive functioning showed the strongest association with consent capacity (TMT-B: $p = -0.51$, $p = .006$). - Processing speed was also significantly associated with MacCAT-T performance (TMT-A: $p = -0.54$, $p = .004$). - Better language comprehension (AAT Token Test: $p = 0.45$, $p = .018$) and higher awareness (PCRS: $p = 0.46$, $p = .014$) were associated with better consent capacity. - Executive functioning, language comprehension, and awareness emerged as promising candidate domains for a brief consent-capacity screening instrument. Correlation Heatmap <table><tr><td>MacCAT_T</td><td>1.00</td><td>-0.57</td><td>-0.27</td><td>-0.00</td><td>0.14</td></tr><tr><td>TMTA</td><td>-0.57</td><td>1.00</td><td>0.66</td><td>-0.17</td><td>0.07</td></tr><tr><td>TMTB</td><td>-0.27</td><td>0.66</td><td>1.00</td><td>-0.05</td><td>0.17</td></tr><tr><td>Token</td><td>-0.00</td><td>-0.17</td><td>-0.05</td><td>1.00</td><td>0.06</td></tr><tr><td>PCRS</td><td>0.14</td><td>0.07</td><td>0.17</td><td>0.06</td><td>1.00</td></tr></table>	MacCAT_T	1.00	-0.57	-0.27	-0.00	0.14	TMTA	-0.57	1.00	0.66	-0.17	0.07	TMTB	-0.27	0.66	1.00	-0.05	0.17	Token	-0.00	-0.17	-0.05	1.00	0.06	PCRS	0.14	0.07	0.17	0.06	1.00	DISCUSSION Preliminary findings suggest that consent capacity is associated with executive functioning, language comprehension, and awareness. The observed pattern supports a multidimensional model of decisional capacity beyond memory performance alone. These findings provide initial support for the development of a brief, standardized screening approach for consent capacity assessment in memory clinic settings. Ongoing recruitment and multimodal assessments will further inform the identification of the most clinically relevant domains. NEXT STEPS Complete recruitment across the AD continuum. Integrate qualitative findings from stakeholder focus groups. Incorporate OCT and biomarker data. Conduct group comparisons (Controls vs. MCI vs. Mild AD). Identify independent predictors of consent capacity using multivariable models. Develop and validate a brief consent-capacity screening instrument.	AWMF. (2019). <i>Einwilligung von Menschen mit Demenz in medizinische Maßnahmen (S2k-Leitlinie)</i>. Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften. https://register.awmf.org/de/leitlinien/detail/108-001 Bundesärztekammer. (2019). Hinweise und Empfehlungen der Bundesärztekammer zum Umgang mit Zweifeln an der Einwilligungsfähigkeit bei erwachsenen Patienten. <i>Deutsches Ärzteblatt</i>, 116(22), 936–942. Caselli, R. J. (2012). Phenotypic differences between apolipoprotein E genetic subgroups: Research and clinical implications. <i>Alzheimer's Research & Therapy</i>, 4(3), 20. https://doi.org/10.1186/alzrt123 Palmer, B. W., Harmell, A. L., Pinto, L. L., Dunn, L. B., Kim, S. Y. H., Golshan, S., & Jeste, D. V. (2017). Determinants of capacity to consent to research on Alzheimer's disease. <i>Clinical Gerontologist</i>, 40(1), 24–34. https://doi.org/10.1080/07317115.2016.1197352 Rolfes, V., Hinz, U., Fangerau, H., Voßberg, D., & Haupt, M. (2024). MacCAT-T zwischen Anspruch und Praxis – Herausforderungen bei der Beurteilung von Einwilligungsfähigkeit bei Demenz. <i>Fortschritte der Neurologie · Psychiatrie</i>, 92(10), 413–422. https://doi.org/10.1055/a-2236-9338 Van Duinkerken, E., Farne, J., Landeira-Fernandez, J., Dourado, M. C., Laks, J., & Mograbi, D. C. (2018). Medical and research consent decision-making capacity in patients with Alzheimer's disease: A systematic review. <i>Journal of Alzheimer's Disease</i>, 65(3), 917–930. https://doi.org/10.3233/JAD-180311
MacCAT_T	1.00	-0.57	-0.27	-0.00	0.14																													
TMTA	-0.57	1.00	0.66	-0.17	0.07																													
TMTB	-0.27	0.66	1.00	-0.05	0.17																													
Token	-0.00	-0.17	-0.05	1.00	0.06																													
PCRS	0.14	0.07	0.17	0.06	1.00																													
CONTACT Paulina Tegethoff Paulina.Tegethoff@med.uni-muenchen.de																																		

Acknowledgements: This project was made possible by the generous support of the Pesl-Alzheimer foundation and Ilse-Kubaschewski foundation.