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Background

- Spatial neglect is a common syndrome experienced by stroke survivors.
- Extrapersonal Spatial Neglect is a Spatial Neglect Subtype that presents in the space beyond arms reach.
- Currently, UK clinicians primarily rely on pen-and-paper tests [1] to diagnose spatial neglect, which arguably only evaluate spatial neglect within arm's reach.
- As literature around the clinical subtypes continues to emerge, so too has a need for clinicians to be able to diagnose them, to inform rehabilitation and risk management.
- The aim of this review was to synthesize research validating tests of post-stroke extrapersonal spatial neglect and their psychometric properties.

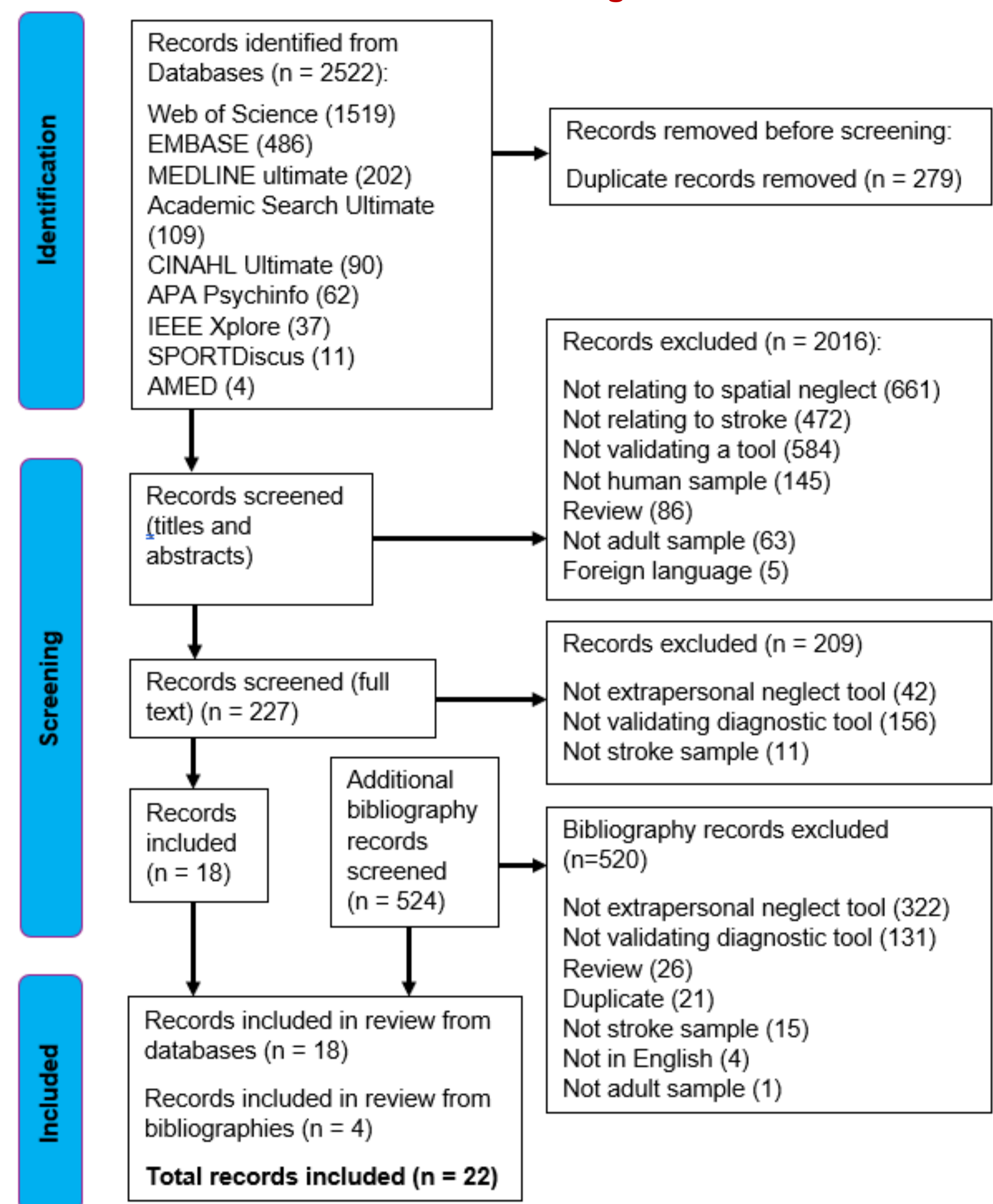
Results

- Screened 2522 studies. 22 studies were included validating 19 individual diagnostic tests on 1118 participants.
- 98% systematic review interrater reliability on QAVALS.
- The average study evaluated 1.74 different types of validity and reliability covered in this systematic review.
- 42% of extrapersonal diagnostic tests were computerised.
- 45% were functional tasks; 20% cancellation tasks; 12% navigation tasks; 6% line bisection tasks; 4% detection tasks and 2% extinction tasks. 10% remaining were a mixture of task types.
- Computerised tasks tended to be highly computerised, requiring lots of expensive equipment.

Conclusions and Ongoing work

- Studies had marked limitations in methodology and evaluated a limited number of psychometric properties (< 2 types).
- Novel tests of extrapersonal spatial neglect tended to have high levels of computerisation, which may not be suitable for certain clinical service contexts.
- Future extrapersonal spatial neglect diagnostic tests should focus on finding a balance between computerisation, and cost of equipment and technical support needs.
- Stroke clinicians should consider that spatial neglect may present outside of arms reach and should explore implementing an extrapersonal spatial neglect test in their service.
- The Neurolab team have been developing a novel test - The Computerised Extrapersonal Neglect Test (CENT) - it has shown promising psychometric properties which we hope to publish soon!

A PRISMA flow diagram



Quality Appraisal

The QAVALS [2] Critical Appraisal Criteria were used. The review evaluated 8 different psychometric properties, including - **Diagnostic Accuracy; Content (Face) Validity; Concurrent Validity; Convergent Validity; Discriminant Validity; Internal Consistency; Test-Retest Reliability; and Interrater Reliability.**

Study	Criteria																								Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Aimola (2012)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	9
Aravind (2015)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	13
Azouvi (2003)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	13
Berti (2002)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	6
Buxbaum (2008)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	14
Buxbaum (2012)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	14
Dawson (2008)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	15
Fordell (2011).	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	15
Kim (2010)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	13
Mesa-Gresa (2011)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	12
Nishida (2021)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	18
Ogourtsova (2018a)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	17
Ogourtsova (2018b)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	17
Qiang (2005)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	18
Spreij (2020)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	15
Thomasson (2023)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	16
Van Der Stoep (2013)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	11
Van Kessel (2010)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	12
Van Kessel (2013)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	14
Whitehouse (2019)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	17
Zoccolotti (1991)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	14
Zoccolotti (1992)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	13

*Green = Met; Red = Not met; Yellow = Not Reported.

Thank you to recruiting sites



References:
 [1] Checketts, M., Mancuso, M., Fordell, H., Chen, P., Hreha, K., Eskes, G. A., Vuilleumier, P., Vail, A., & Bowen, A. (2020). Current clinical practice in the screening and diagnosis of spatial neglect post-stroke: Findings from a multidisciplinary international survey. *Neuropsychological Rehabilitation*, 1–32.
 [2] Gore, S. (2017). *Subjective Assessment of Physical Activity in Chronic Obstructive Pulmonary Disease*. Doctoral Dissertation, University of Michigan-Flint, 1–195.