

THINC-it: what is it?

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Disclosures



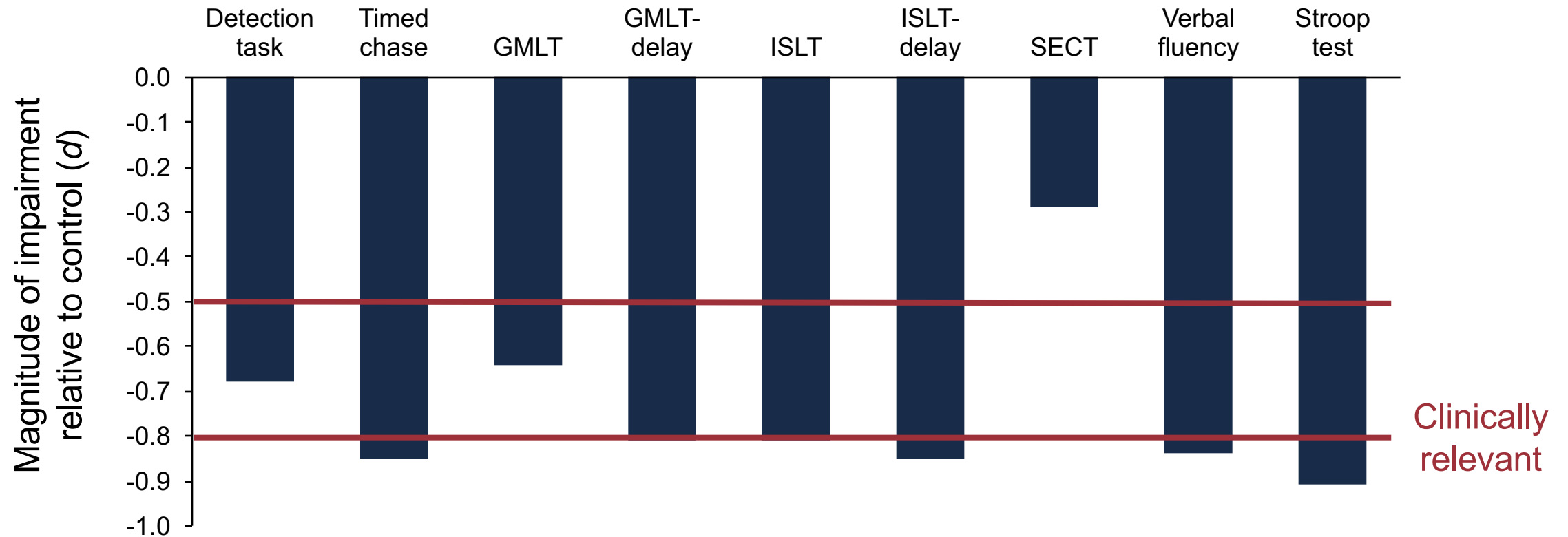
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Consulting roles (past 2 years)	AbbVie, Access to Quality, Amgen, Anavex, AstraZeneca, Avonex, Avraham, Axon, Axovant, Biogen Idec, Boehringer Ingelheim, Bracket, Cambridge Brain Sciences, Catenion, CRF Health, DeNDRoN, EnVivo Pharma, Enzymotec, ePharmaSolutions, Eisai, Eli Lilly, Forum Pharma, Fresh Forward, GfHEu, Heptares, Janssen AI, Johnson & Johnson, Kaasa Health, Kyowa Hakko Kirin, Lundbeck, MedAvante, Merck, MyCognition, Mind Agilis, Neurocog, Neurim, Neurotrack, Novartis, Nutricia, Orion Pharma, PharmaNet/i3, Pfizer, Prana Biotech, PriceSpective, Probiodrug, Prophase, ProStrakan, Regeneron, Reviva, Roche, Sanofi, Servier, Shire, Takeda, TCG, TransTech Pharma, Velacor
Research or grants	Memorabel
Speaker Bureaus and CME activities	Lundbeck, Medscape
Royalties	Oxford University Press, Blackwell Publishers
Patents and share options	MyCognition, Neurotrack

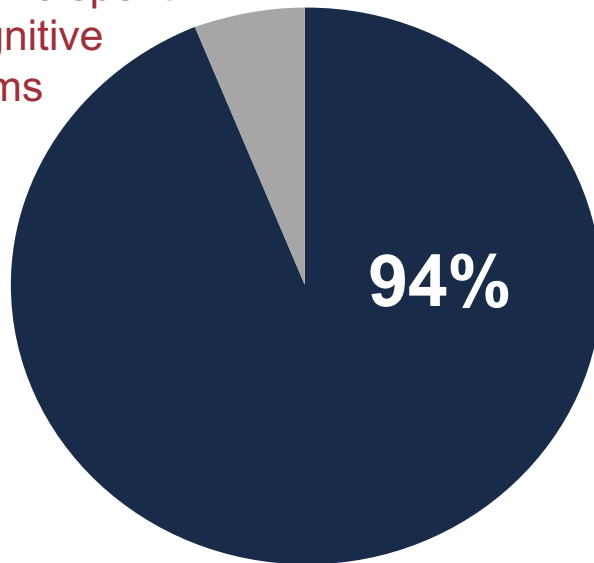
Cognitive impairment in patients with depression



Cognitive symptoms are common in depression

Cognitive symptoms during depressive episodes

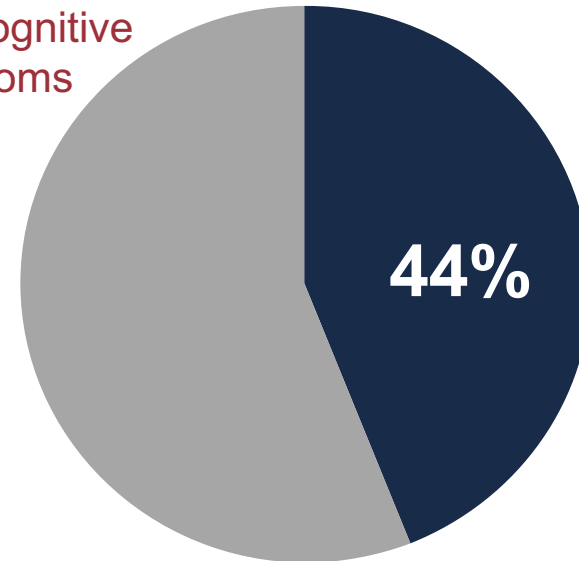
Proportion of time spent without cognitive symptoms



Proportion of time spent with cognitive symptoms^a

Residual cognitive symptoms in between depressive episodes

Proportion of time spent without cognitive symptoms



Proportion of time spent with cognitive symptoms^a

^aAccording to Diagnostic and Statistical Manual of Mental Disorders 4th Edition: diminished ability to think or concentrate, or indecisiveness
Prospective study (n=267) assessed 12 times over 3 years

<https://www.youtube.com/watch?v=s3ZVRQp2ky0>

THINC-it: a proposed solution

- 4 brief, reliable tests of
 - Global cognition
 - Attention
 - Working memory
 - Executive functions
- Non-expert administration
- Simple data reporting



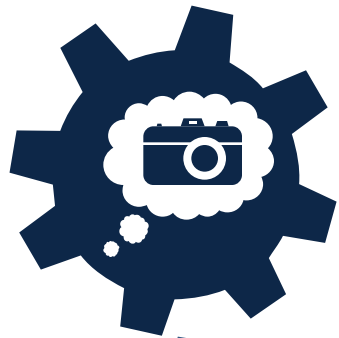
<http://thinc.progress.im/en/content/thinc-it-about>
<https://clinicaltrials.gov/ct2/show/NCT02508493>

PDQ-D5

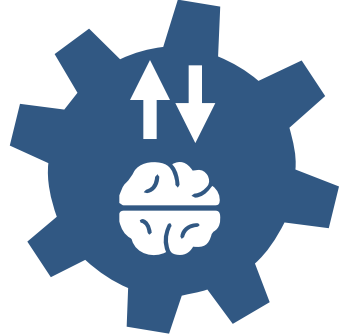
The following questions describe problems people may have with their memory, attention or concentration. Please select the best response based on your experiences during the **past 7 days**

During the past 7 days , how often did you...	Never in the past 7 days	Rarely (once or twice)	Sometimes (3 to 5 times)	Often (about once a day)	Very often (more than once a day)
Have trouble getting things organised?	0	1	2	3	4
Have trouble concentrating on what you were reading?	0	1	2	3	4
Forget the date unless you looked it up?	0	1	2	3	4
Forget what you talked about after a telephone conversation?	0	1	2	3	4
Feel like your mind went totally blank?	0	1	2	3	4

Key domains: the atoms of cognition



**Episodic
memory**



**Working
memory**



Attention



**Executive
functions**



**Psychomotor
speed**



**Social
cognition**

Digit Symbol Substitution Test (DSST)

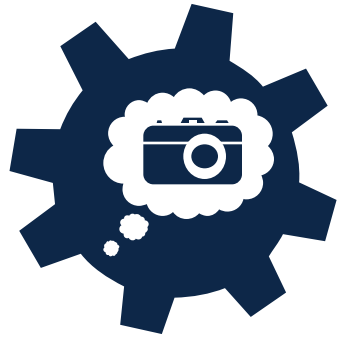
Digit symbol substitution test

1	2	3	4	5	6	7	8	9
↔	↑↓	≡		≠	□	Φ	∈	⇒

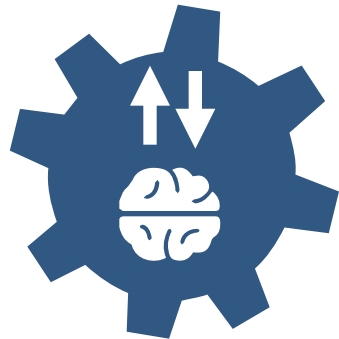
2	9	2	9	4	9	4	9	1	8	9	3	1	7	2	3	6	4	8	3	1	7	8	2	5
4				5	8	4	1	5	2	6	9	9	5	6	7	6	2	9	4	8	7	2	8	6
8	6	2				4	8	6	7	3	1	6	2	1	8	7	4	3	1	6	2	9		
2	5	4		1	6				7	2	6	4	9	1	8	5	7	1	5	4	5	3	9	2
3	9						7	6	1	6	5	9	1	3	1	3	9	8	9	7	3	4	3	



Key domains: the atoms of cognition



**Episodic
memory**



**Working
memory**



Attention

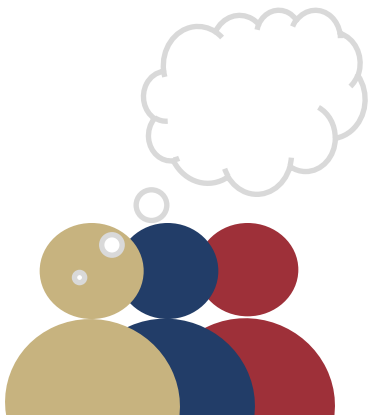


**Executive
functions**

Best-practice guidance for assessment of cognition

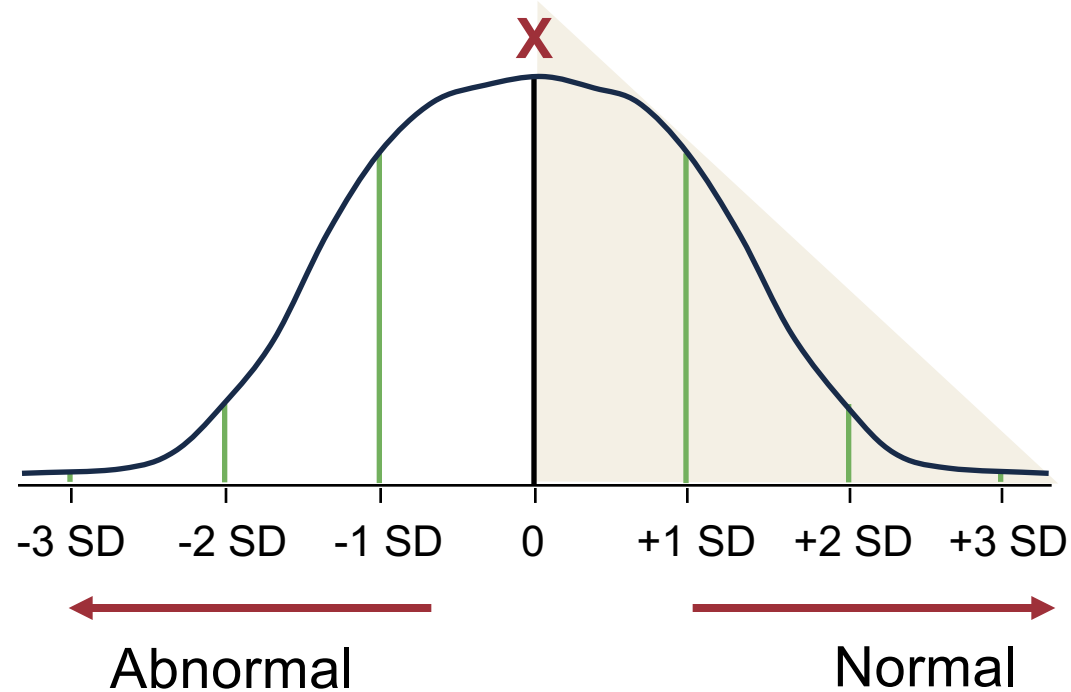
TESTS MUST BE...

- RELIABLE
- SENSITIVE
- VALID
- LONGITUDINAL USE
- CROSS-CULTURAL USE

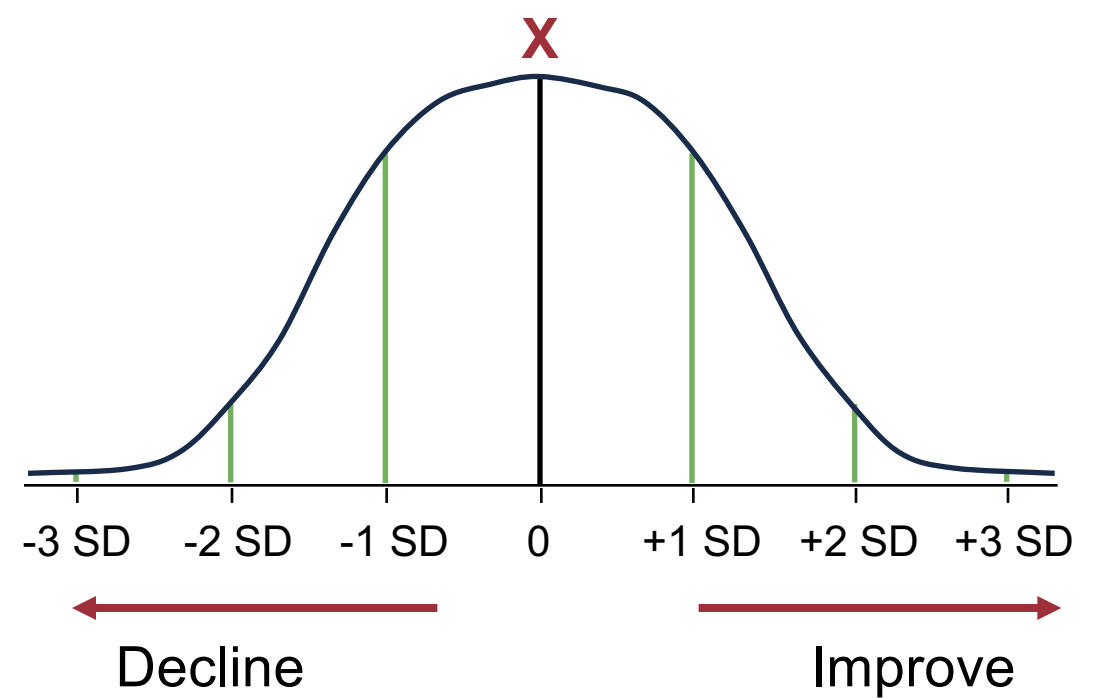


Identifying vs monitoring cognitive dysfunction

Does the patient have cognitive dysfunction?

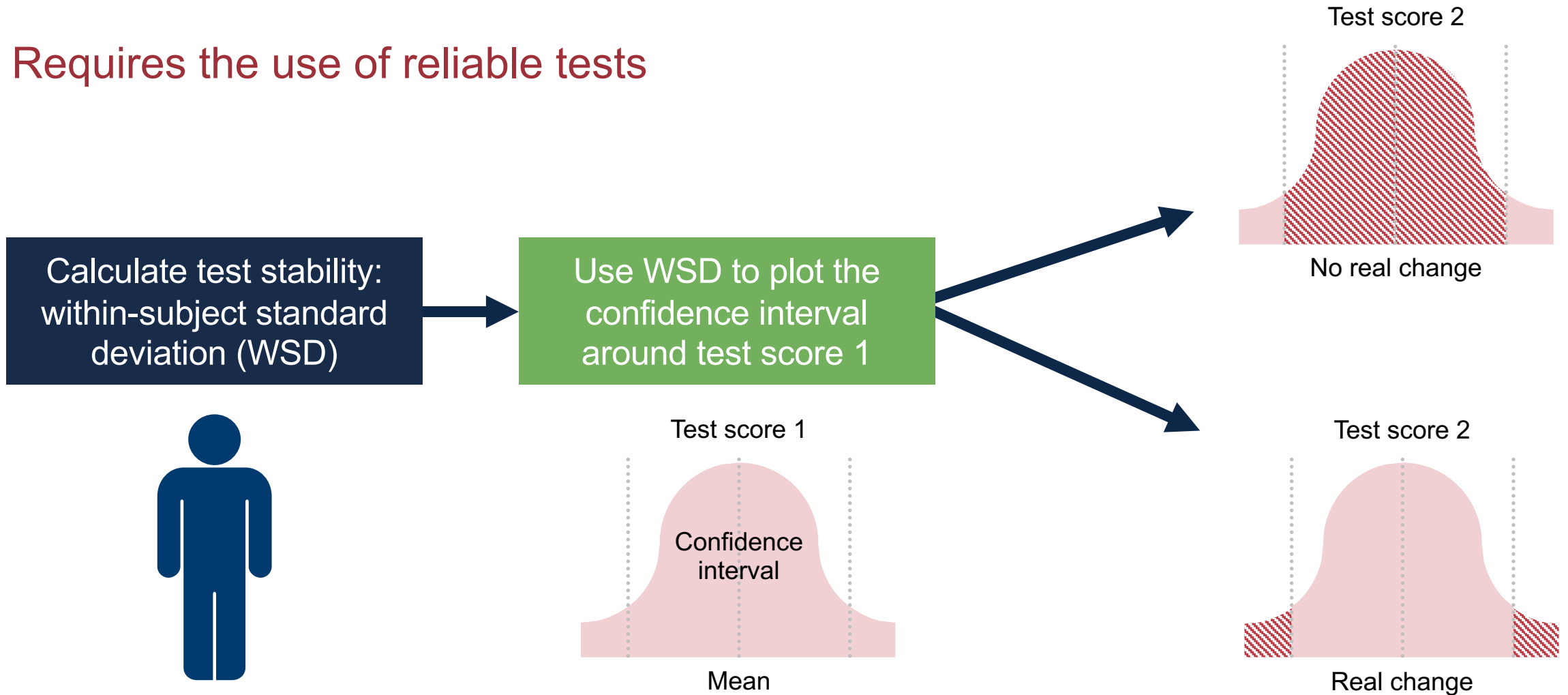


Has there been a change in cognitive function?



Determining reliable change in individuals

Requires the use of reliable tests



Summary and recommendations

- Cognitive function can be impaired in patients with MDD
- Selected measures must be reliable, sensitive and valid
- THINC-it has been designed to meet 'best practice' guidance

Thank you

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