

*Validation of the Brief Evaluation
of Receptive Aphasia (BERA) tool
in post-comatose patients*

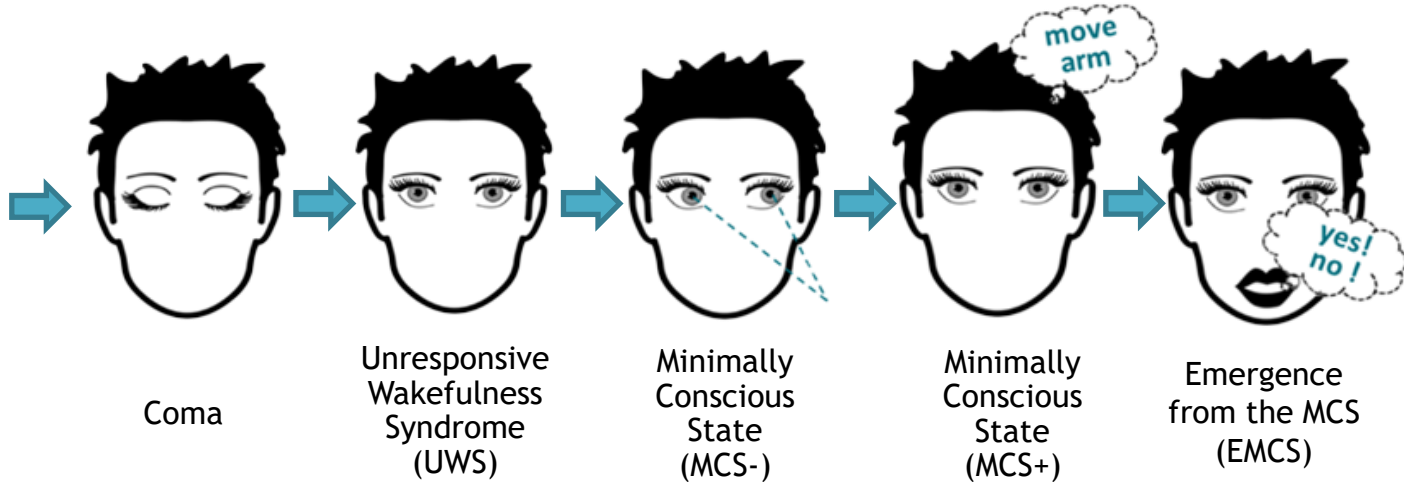
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Disorders of consciousness after coma

Trauma
Anoxia
Hemorrhage
Metabolic
Infection
Inflammation



Deafness
Blindness
Motor impairment
Aphasia
...



**30-40% risk of
consciousness
misdiagnosis**

Aphasia in disorders of consciousness

CRS-R, SECONDS,...: diagnosis of consciousness levels including language-related items

BUT no language assessment...

- Language components?
- Psycholinguistic variables?

Towards a language-specific assessment

↳ Elaboration of the
Brief Evaluation of Receptive Aphasia
(BERA)



Elaboration of the BERA language-specific tool

Brief Evaluation of Receptive Aphasia (BERA) 2 versions of 30 items

Language
domain

Complexity
level

Example

Phonology
10 items per
version

Semantics
10 items per
version

Morphosyntax
10 items per version

Simple
5 items

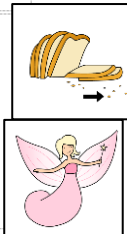
Complex
5 items

Simple
5 items

Complex
5 items

Simple
5 items

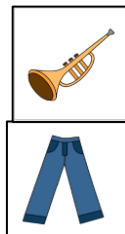
Complex
5 items



Mie
vs.
Fée



Main
vs.
Nain



Trompette
vs.
Pantalon



Ours
vs.
Renne



Elle rit.
vs.
Elle pense.

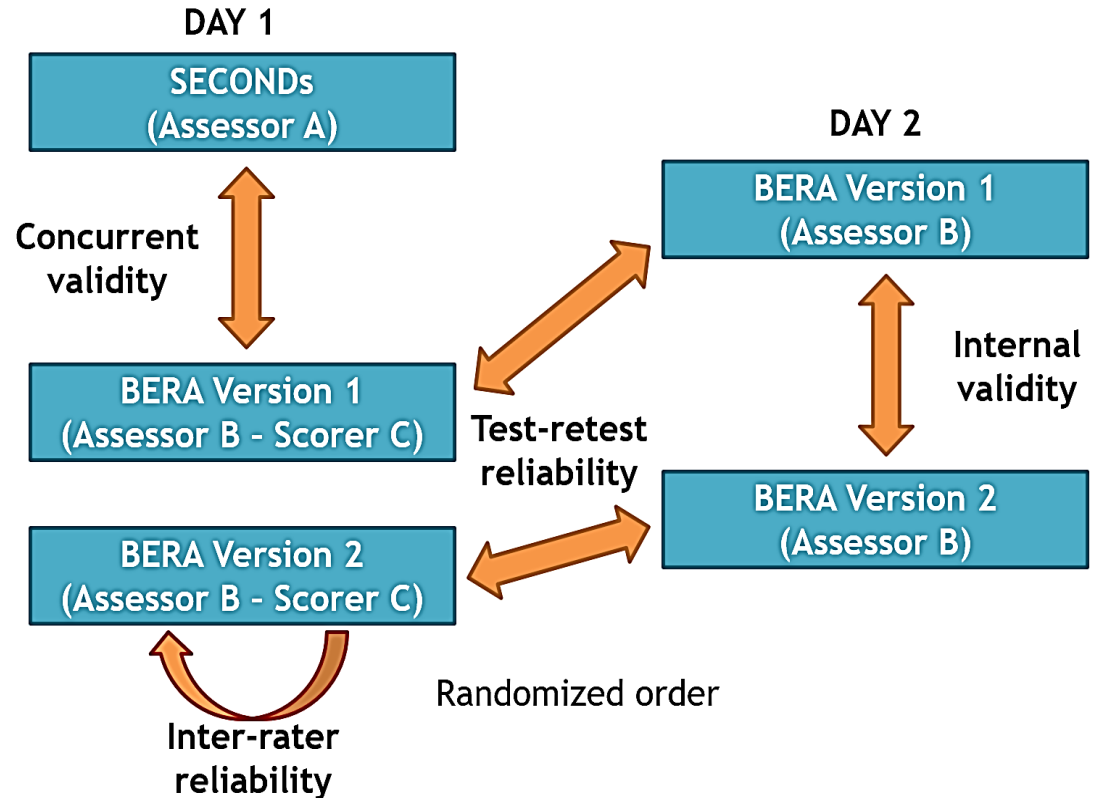


Elle dort.
vs.
Elles dorment.

Inclusion criteria and validation procedure

n = 48 patients

- Coma following severe brain injury
- Time post-onset: > 28 days
- Age: 18-80 y.o.
- French-speakers
- Preserved visual fixation or pursuit

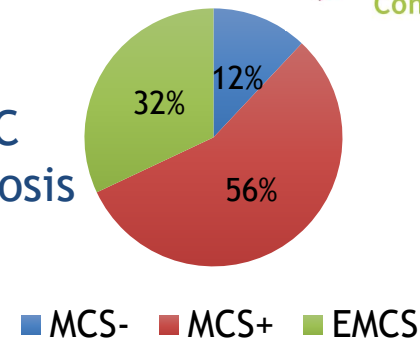


Psychometric preliminary data (n = 25)

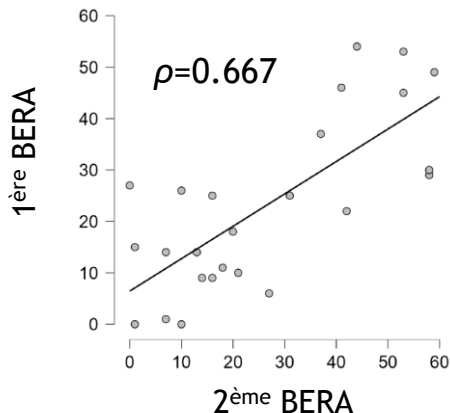
Duration mean for one version: $11,4 \pm 4,6$ min

Inter-rater reliability: ICC = 0.961

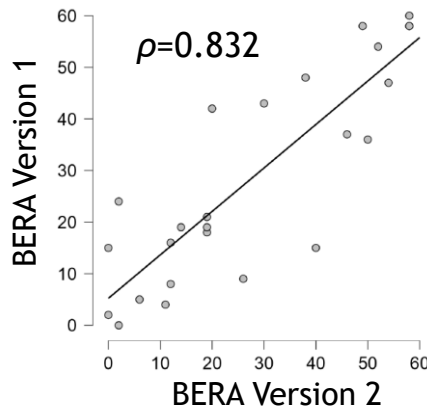
DoC
diagnosis



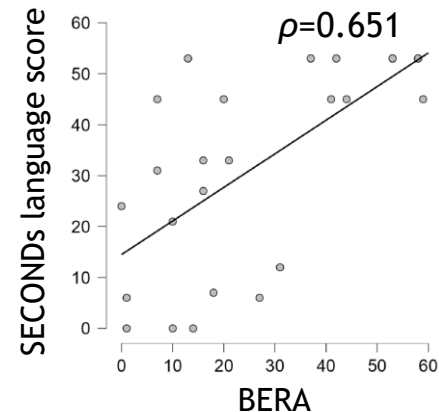
Test-retest reliability



Internal validity



Concurrent validity



Conclusion

- The BERA may **complement the CRS-R or SECONDS** scales for assessing and diagnosing post-comatose patients
 - Reduce consciousness **misdiagnosis** in aphasic patients
- BERA scores also indicate **selective receptive difficulties** for phonological, semantic and morpho-syntactic abilities
 - Orient speech-language therapies



Thank you!

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Open-access material here:
<https://www.coma.uliege.be/severe-brain-injury/#dc-diagnosis>