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# The Eye-Tracker Brief Evaluation of Receptive Aphasia: a new tool to assess residual language comprehension abilities in post-comatose patients

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## Introduction

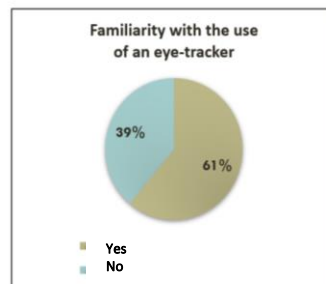
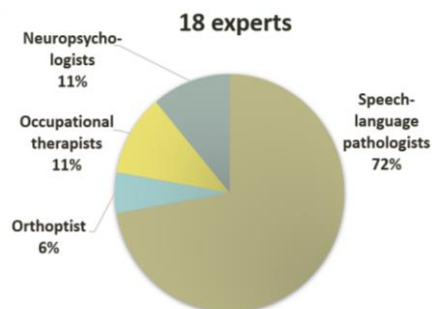
The assessment of verbal comprehension after a coma in patients with severe brain injury seems essential to improve their diagnosis and care. Recently, a specific tool has been developed, the *Brief Evaluation of Receptive Aphasia* (BERA), based on visual fixation responses.\* Yet judging these fixations by simple observation is often complex and open to interpretation. The use of an eye-tracking setting to accurately and objectively examine eye movements seems the most interesting to improve the sensitivity and reliability of the BERA tool.

## Methods



Based on the Delphi method, we investigated the relevance of an eye-tracker in the assessment of verbal comprehension in post-comatose patients, using a computerized version of the BERA assessment (GazePlay-Eval).

## Results



**Feasibility criteria**

Content criteria
Clarity
Relevance
Utility
Form criteria
Temporal accessibility
Ease of handling
Adaptability
Restriction of distractors
Objectification of visual fixations
Human factor
Repeatability

- 100% highlight the need for new tools to specifically assess language comprehension in this population
- 100% consider that the use of an eye-tracker is appropriate in this context
- Both assessment duration and visual distractors should be reduced

## Conclusion

The 'eye-tracked BERA' is a promising tool to examine the language profile of post-comatose patients.

Future studies are needed to test and validate the proposed modifications in this challenging population.

Aubinet C, et al. (2021). The Brief Evaluation of Receptive Aphasia test for the detection of language impairment in severely brain-injured patients. *Brain Injury*, 35(6), 705-717.

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