

The link between neurocognitive functioning and health-related quality of life in pediatric brain tumors

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Introduction

- Improved medical advances → greater chances to survive
- Measurements of HRQoL* and neurocognitive functioning become increasingly important

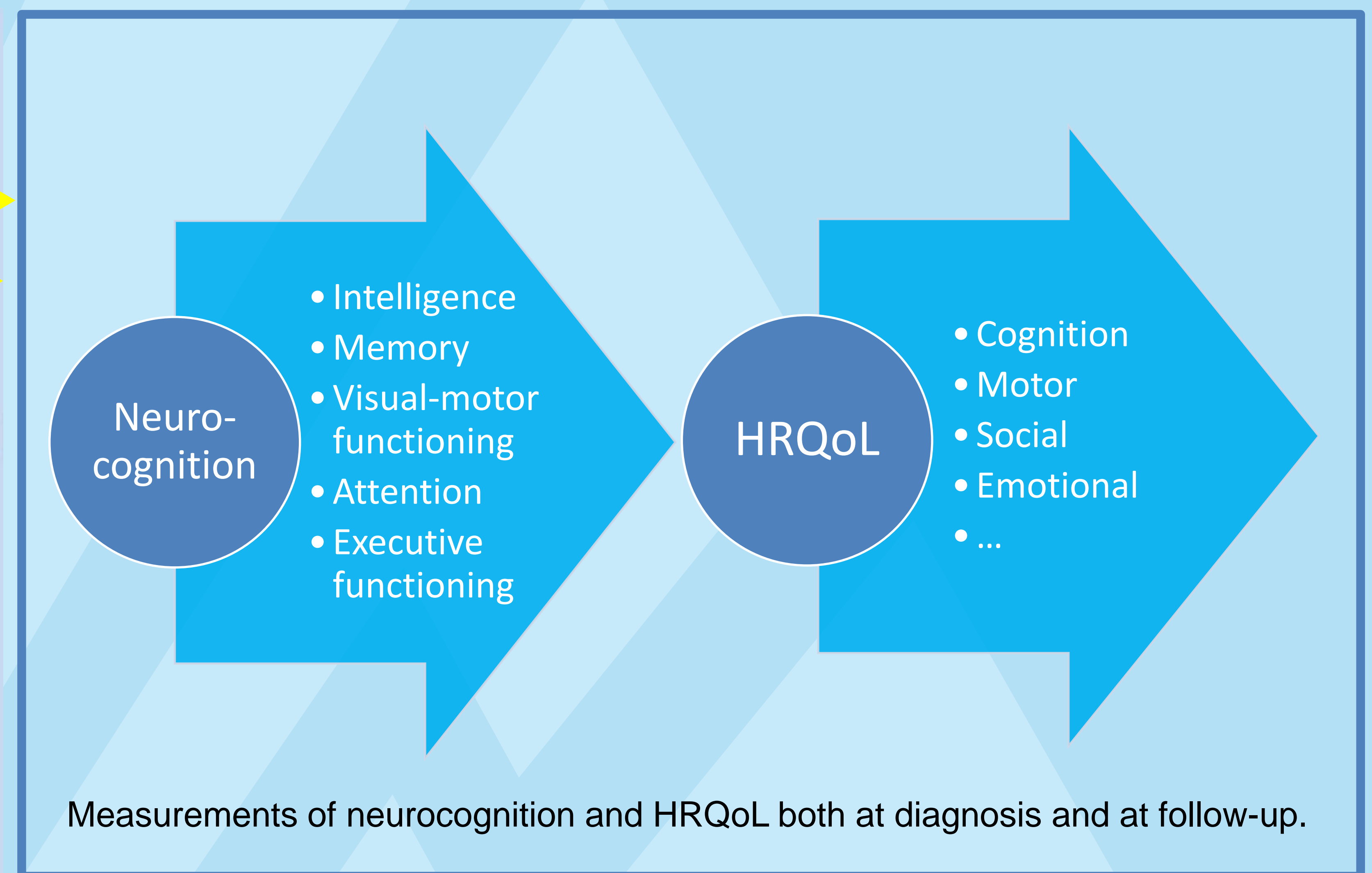
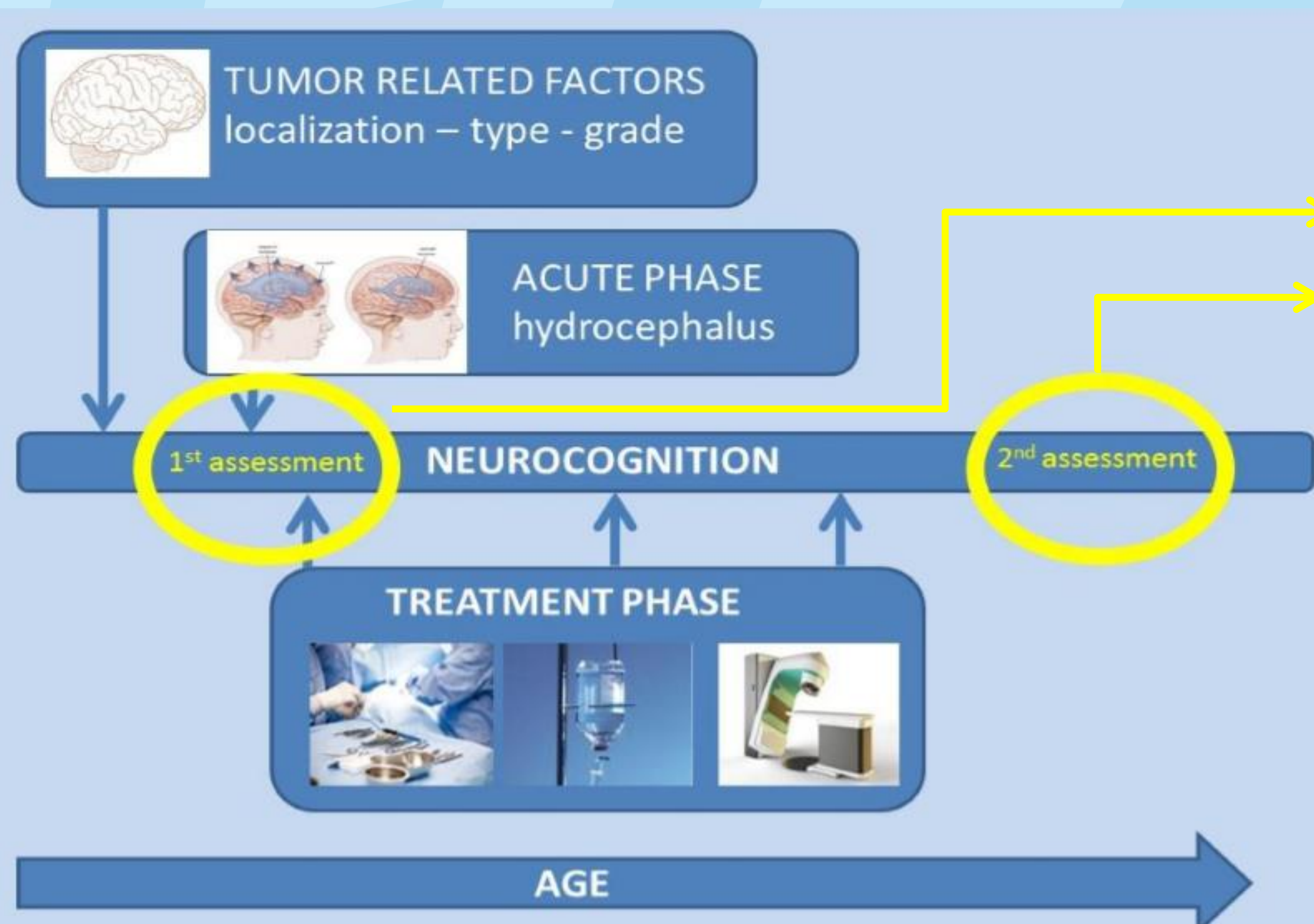
*Health-related quality of life

Aims

- To examine the evolution of neurocognitive functioning and HRQoL over time
- To examine the relation between neurocognitive functioning and HRQoL in children with a brain tumor, immediately after diagnosis and in follow-up

Methods

- 49 children with brain tumors
 - Mean age at diagnosis 8.91 ± 4.18 years
 - Tumor type: Pilocytic astrocytoma (51.02%), Medulloblastoma (18.37%), Ependymoma (6.12%), Craniopharyngioma (6.12%), Other (18.37%)
 - Treatment: Surgery (79.59%), Chemotherapy (36.73%), Irradiation (51.02%)
- First neurocognitive assessment max. 6 months after diagnosis but before chemotherapy and/or irradiation
- Follow-up after 2 years
- Measurements of neurocognition and HRQoL, based on composite scores



Results

- Evolution of neurocognitive functioning:
 - Attention ($t(48) = -3.39, p = .001$) and executive functioning ($t(48) = -2.27, p = .03$) significant decline over time
- Relation between neurocognitive functioning and HRQoL:

At diagnosis

- Sign. correlation between memory and patient-reported HRQoL ($r = 0.453, p < 0.05$)
- Sign. correlation between verbal intelligence and parent-reported cognition ($r = 0.427, p < 0.05$)
- Regression analysis: verbal intelligence is a good predictor of parent-reported cognition ($\beta = .58, p < .05$)

At follow-up

- Sign. correlation between parent-reported HRQoL and both performance intelligence and executive functioning ($r = 0.410, p < 0.01; r = -0.323, p < 0.05$)
- Sign. correlation between attention and parent-reported cognition ($r = -0.356, p < 0.05$)
- Regression analysis: no predictors of HRQoL were found

Conclusion

Attention and executive functioning decline significant between diagnosis and after two years. Our data suggest that these functions are related with HRQoL after two years. Further research is necessary to elucidate the relation between neurocognition and HRQoL and to clarify moderating and mediating factors such as change of parents' expectations of daily life functioning.