

## Appendix C

### Overview of other longitudinal assessments

- Multi-Search Multi-Location (MSML) is a specific task to test working memory (Woodward et al., 2005). Mental representation of objects and their location needs to be remembered.
- Eye tracking assessment is performed by van Gils et al. to test the visuospatial attention (van Gils et al., 2020). Several visual stimuli, cartoon movies and a local motions, were presented to the infants in a quiet room while eye movements were recorded with an integrated eye tracking system.
- Haebich et al. used multiple tests: the Delis-Kaplan Executive function systems (DKEFS), the Rey Complex Figure test (RCFT) and the behavioural assessment of the dysexecutive system for children (BADSC) (Haebich et al., 2020). The tower test of DKEFS was administered to test spatial planning, rule learning, inhibition of impulsive and perseverate responding and the ability to establish and maintain instructional set. RCFT involves geometric line drawing which estimates spatial planning and planning strategy. From BADSC the Zoo map and Six Part test were used. The Zoo map captures the ability to plan and execute a specific eight location sequence and the Six Part test examines planning, task scheduling and performance monitoring skills by asking infants to finish 6 simple tasks in 5 minutes. Those test are more extended than the other assessments because those infants performed their neurodevelopment assessment around 13 years instead of 2 years.
- The Griffith mental development scales (GMDS) is another widely used method to test the neurodevelopmental outcome. Locomotor skills as well personal-social-, hearing and language-, eye and hand coordination-, performance- and practical reason skills are being tested (Brembilla et al., 2021).
- Sheng et al. used the Wechsler Primary and Preschool Scale of Intelligence, third edition (WPPSI-III) and the Movement Assessment Battery for Children, second edition (MABC-II) (Sheng et al., 2022). The WPPSI-III is used to provide information of full-scale IQ (FSIQ) and the MABC-II to provide information about the infant's motor skills.
- Developmental Neuropsychological Assessment (NEPSY-II) was used to assess specific cognitive functions: executive functioning, language, memory, sensorimotor and visuo-spatial processing (Kostović Srzentić et al., 2020).
- Gross Motor Function Classification System (GMFCS) test is used by Goeral et al. to assess the presence of cerebral palsy (CP). (Goeral et al., 2022)

## References

- Brembilla, G., Righini, A., Scelsa, B., Lista, G., Balestriero, M., Cesari, E., Castoldi, F. M., di Stasi, M., Ciardi, C., Ligato, E., Taricco, E., & Cetin, I. (2021). Neuroimaging and neurodevelopmental outcome after early fetal growth restriction: NEUROPROJECT—FGR. *Pediatric Research*, *90*(4), 869–875. <https://doi.org/10.1038/s41390-020-01333-1>
- Goeral, K., Kasprian, G., Hüning, B. M., Waldhoer, T., Fuiko, R., Schmidbauer, V., Prayer, D., Felderhoff-Müser, U., Berger, A., Olischar, M., & Klebermass-Schrehof, K. (2022). A novel magnetic resonance imaging-based scoring system to predict outcome in neonates born preterm with intraventricular haemorrhage. *Developmental Medicine and Child Neurology*, *64*(5), 608–617. <https://doi.org/10.1111/dmnc.15116>
- Haebich, K. M., Willmott, C., Scratch, S. E., Pascoe, L., Lee, K. J., Spencer-Smith, M. M., Cheong, J. L. Y., Inder, T. E., Doyle, L. W., Thompson, D. K., & Anderson, P. J. (2020). Neonatal brain abnormalities and brain volumes associated with goal setting outcomes in very preterm 13-year-olds. *Brain Imaging and Behavior*, *14*(4), 1062–1073. <https://doi.org/10.1007/s11682-019-00039-1>
- Kostović Srzentić, M., Raguž, M., & Ozretić, D. (2020). Specific cognitive deficits in preschool age correlated with qualitative and quantitative MRI parameters in prematurely born children. *Pediatrics and Neonatology*, *61*(2), 160–167. <https://doi.org/10.1016/j.pedneo.2019.09.003>
- Sheng, M., Guo, T., Mabbott, C., Chau, V., Synnes, A., de Vries, L. S., Grunau, R. E., & Miller, S. P. (2022). Ventricular Volume in Infants Born Very Preterm: Relationship with Brain Maturation and Neurodevelopment at Age 4.5 Years. *Journal of Pediatrics*, *248*, 51-58.e2. <https://doi.org/10.1016/j.jpeds.2022.05.003>
- van Gils, M. M., Dudink, J., Reiss, I. K. M., Swarte, R. M. C., van der Steen, J., Pel, J. J. M., & Kooiker, M. J. G. (2020). Brain Damage and Visuospatial Impairments: Exploring Early Structure-Function Associations in Children Born Very Preterm. *Pediatric Neurology*, *109*, 63–71. <https://doi.org/10.1016/j.pediatrneurol.2019.12.010>
- Woodward, L. J., Edgin, J. O., Thompson, D., & Inder, T. E. (2005). Object working memory deficits predicted by early brain injury and development in the preterm infant. *Brain*, *128*(11), 2578–2587. <https://doi.org/10.1093/brain/awh618>