



Summary thesis: Neurodevelopment and the effects of a neurobehavioral intervention in very preterm-born children.

Janeline W.P. van Hus

The aim of this thesis was to expand the knowledge on neurodevelopment of very preterm-born children and on an early intervention program, that provides optimal neurodevelopmental care and support for these children and their parents.

The effects of the Infant Behavioral Assessment and Intervention Program (IBAIP) on neurodevelopmental outcome of very low birth weight (VLBW) children (<32 weeks and/or <1500 gram), was evaluated in a randomized controlled trial. Eighty-six VLBW infants received the IBAIP until 6 months corrected age and 90 received standard care.

In a follow-up study at age 5.5 years, sustained intervention effects were found on cognitive and motor development and improvements on performance IQ, ball skills and visual-motor integration.

Longitudinally (from 6 months up to 5.5 years), a positive intervention effect on motor development was found. The subgroup "VLBW children with BPD" benefitted from the intervention for both cognitive and motor outcomes.

Further, in 5 year-old very preterm-born and term-born children was found that neurological dysfunction, low IQ, slow processing speed and attention problems mediated the relation between preterm birth and motor impairments.

In addition, the clinimetric properties of three instruments were evaluated.

The reliability, sensitivity and responsiveness of the Infant Behavioral Assessment were found at satisfactory to good to evaluate neurobehavioural organization in VLBW infants. It was concluded that the responsiveness of the Alberta Infant Motor Scale to detect intervention effects in VLBW infants was better than the Psychomotor scale of the BSID-II-NL at 12 months.

The results of the studies on the effects of the IBAIP have led to the implementation of an early intervention program, the so called ToP program.