

Regular checks of very preterm babies' head size can help identify long-term IQ problems

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Regular early head circumference assessments add valuable information when screening for long-term neurocognitive risk – according to new research by an international research collaboration, including the University of Warwick, UK and the University of Tennessee Knoxville, US.

The researchers found that a method as simple and cost effective as frequently measuring [head](#) size adds valuable information when screening for long-term neurocognitive risk.

The research published in Journal of the International Neuropsychological Society examined the development of children who are born very preterm and/or very low birth weight who tend to have a lower head circumference at birth, and if their heads don't grow sufficiently their IQ development might be impaired.

203 VP/VLBW (under 32 weeks gestational age and/or under 1500g) and 198 term born children (between 37 and 41 weeks gestation) were followed in Germany born in 1985-6 into adulthood.

Co-researchers Dr. Dieter Wolke and Dr. Julia Jaekel measured the head circumference at birth, 5 months, 20 months and 4 years of age. Intelligence was assessed with standardised tests in childhood – 6 and 8 years, and at 26 years.

They found that VP and VLBW infants had smaller heads at birth, but between birth and 20 months their heads grew relatively faster than that of term born children because they had to catch up.

Professor Dieter Wolke, from the Department of Psychology and Warwick Medical School at the University of Warwick is a senior author in the report, 'Head [growth](#) and intelligence from birth to adulthood in very preterm and term born individuals.' He comments:

"Measuring [head circumference](#) and thus head growth in early childhood is a proxy measure of brain volume growth in early childhood. It is simple and cheap to do and as shown in our research, slow head growth is a specific warning sign for potential neurocognitive problems."

Dr. Julia Jaekel, the first author from the University of Tennessee said:

"Those who showed faster head growth, whether preterm or term born, had higher intelligence scores at 26 years. Catch-up head growth was particularly beneficial for intelligence scores in VP and VLBW children. It was a better predictor than how early or at what [birth](#) weight infants were born."

This research shows that head growth is a proxy measure of brain volume growth and is linked with long-term cognitive development. Monitoring the development of head growth, in particular in VP and VLBW infants, assists in the assessment of neurocognitive risks later in life.

The next step for researchers is to investigate how to assist with head growth and thus brain development in VP and VLBW children. Some of these targets for improvement are nutrition and eating, neuro-protective treatments, and appropriate cognitive and emotional stimulation as brain food.

More information: Julia Jaekel et al. Head Growth and Intelligence from Birth to Adulthood in Very Preterm and Term Born Individuals, *Journal of the International Neuropsychological Society* (2018). [DOI: 10.1017/S135561771800084X](https://doi.org/10.1017/S135561771800084X)

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