Medical Xpress

Being born preterm or low birthweight associated with lower IQ in adulthood

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Professor Dieter Wolke, Department of Psychology, University of Warwick. Credit: University of Warwick

The average IQ of adults who were born very preterm (VP) or at a very low birth weight (VLBW) has been compared to adults born full term by

researchers from the Department of Psychology at the University of Warwick. Researchers have found VP/VLBW children may require special support in their education to boost their learning throughout childhood.

Birth before 32 weeks of gestation is classed as very preterm (VP) and those born weighing less than 1500g are classed as very low birthweight (VLBW).

Research has previously found that those who were born VP or VLBW had lower cognitive performance in childhood.

In the paper, "Association of Very Preterm Birth or Very Low Birth Weight with Intelligence in Adulthood: An Individual Participant Meta-analysis," published today, the 28th of May in the journal *JAMA Pediatrics*, a consortium of researchers led by the Department of Psychology at the University of Warwick have conducted an Individual participant meta-analysis investigating IQ in adulthood.

Participants were 1068 VP/VLBW adults and 1067 term born controls born between 1978-1995 from 6 cohort studies in Europe and 2 from Australia and New Zealand, who had been studied from birth and had their IQ assessed in adulthood (aged 18-30 years).

The average IQ score in the general population is 100. The researchers found that VP/VLBW individuals scored approximately 12 IQ points less (i.e. 88) compared to term born adults (born 37-41 weeks gestation). Even when they removed those who had a childhood neurosensory impairment or learning disability (e.g childhood IQ score below 70) the adult IQ difference between VP/VLBW and term born adults was still on average 9.8 IQ points.

The risk factors that were associated with lower IQ performance for

VP/VLBW adults included neonatal severe lung problems (bronchopulmonary dysplasia), neonatal bleeds into their brain (intraventricular hemorrhage) and being born to mothers with lower education.

Robert Eves, first author from the Department of Psychology at the University of Warwick comments:

"We have found that being born very preterm or at a very low birthweight continues to have a highly significant long term impact on the average IQ as compared to their peers in 7 different countries. The multi cohort, international aspect of this research can especially give us confidence in this important finding"

Professor Dieter Wolke, senior author and project lead from the Department of Psychology at the University of Warwick adds: "While most born VP/VLBW show cognitive development within the normal range, many may benefit from better tailored early interventions. These may include reducing bronchopulmonary dysplasia and intraventricular hemorrhage in neonatal care and educational interventions of those born into socially disadvantaged families."

More information: Robert Eves et al, Association of Very Preterm Birth or Very Low Birth Weight With Intelligence in Adulthood, *JAMA Pediatrics* (2021). DOI: 10.1001/jamapediatrics.2021.1058

Provided by University of Warwick