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## Series of RECAP cohorts – part 4: the NTNU Low Birth Weight Life study from Norway

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**In our series about cohorts of the EU-funded project „Research on European Children and Adults born Preterm“ (RECAP preterm), we presented the Project Extreme Prematurity (PEP) from Norway. We are thrilled to share a second example from Norway with you, the Low Birth Weight Life study of the Norwegian University of Science and Technology (NTNU). Principal investigator Kari Anne I. Evensen, Associate Professor at the NTNU, told us what this study is all about.**

The NTNU Low Birth Weight in a Lifetime Perspective (NTNU Low Birth Weight Life) study is a Norwegian prospective cohort study, focusing on long-term consequences of low birth weight. The overall aim is to study clinical outcomes and brain correlates across a life span. The NTNU LBW Life study initially included a preterm VLBW (very low birth weight) group of 121 live-born children with birth weight  $\leq 1500$ g and a term-born control group of 120 children, born in Mid-Norway in 1986-88. The VLBW group had been admitted to the neonatal intensive care unit at the University Hospital in Trondheim. The term-born control group was recruited from a multicentre study of pregnant women. The participants have been examined by a multidisciplinary team of pediatricians, physiotherapists, neuropsychologists, psychiatrists and ophthalmologists at several time points throughout childhood and into adult age.



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Examinations have included motor and cognitive skills at 1 and 5-6 years of age, and additionally vision, mental health and quality of life at 14 years of age. At 18-19, 23 and 26-28 years of age, follow-up included assessments of cognitive and executive skills, mental and physical health as well as quality of life. At all time points, magnetic resonance imaging (MRI) has been performed. At our latest follow-up, we had 64 VLBW participants and 90 controls, corresponding to a

participation rate of about 75% of presently eligible participants.

Our main results are that VLBW children are at risk for several developmental problems. The VLBW participants had increased risk of motor and cognitive problems in childhood, adolescence and young adult age. A higher proportion of the VLBW adolescents had psychiatric symptoms and disorders, lasting to adulthood, anxiety and attention deficit being most prevalent. They had slightly reduced vision in adolescence. Cerebral MRI findings correlated with the clinical outcomes, including mental health,

cognitive and motor function. The VLBW adolescents reported similar quality of life as their peers, although with a decline after 20 years of age.

The NTNU Low Birth Weight Life study is one of few studies internationally with such a broad and extensive long-term follow-up of preterm individuals. We have been fortunate to have a dedicated group of participants making this research possible. Recently, we received funding for a new data collection at 32 years of age in collaboration with a Finnish cohort study (Helsinki Study of Very Low Birth Weight Adults). The examinations will focus on physical activity and fitness, body composition and respiratory function, visual and motor function as well as executive functions, mental health and quality of life. This will bring new and important knowledge about these outcomes in adulthood.

## NTNU Low Birth Weight Life

Principal investigator: Prof. Kari Anne I. Evensen

[View more](#) (NTNU website)

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