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How does the nervous system cope with extremely preterm birth or prenatal drug exposure - research group for pediatric follow-up studies, Bergen, Norway

During the last three decades, treatment and care for babies born extremely preterm has gone through major positive improvements. As a result of this, preterm children without major sequelae now grow up, go to school and face their working career. Being born right in the middle of the brain folding process, myelination and nerve cell network development is bound to influence the developing nervous system. Can we see the changes in cerebral ultrasound or magnetic resonance imaging (MRI) examinations? Functional MRI? School performance? Our research group, The Research Group for Paediatric follow-up studies, is following several cohorts, both national and regional, with focus on short- and long-term outcome of exposures related to fetal and neonatal life. In cohorts of children born very preterm and extremely preterm we have looked at motor development, structural MRI and functional MRI, how preterm children cope with pain, how they cope in school, and how their sleep patterns differ compared to term born control children. Prenatal exposure to maternal substance abuse can also be detrimental to the developing fetal brain. Over the past few decades brain imaging studies have helped improve our understanding on how prenatal drug exposure can impact normal brain development, especially by elucidating the teratogenic effects of alcohol. However, possible long term effects of prenatal opioid exposure remains poorly understood. In a hospital based population of school-aged children with prenatal drug exposure we have investigated associations between prenatal opioid exposure and brain changes detectable by structural and functional MRI.

Biography

Silja T.Griffiths completed her PhD in 'Functional MRI, structural MRI and school performance in children born extremely preterm' at the University of Bergen, Norway. She is a paediatrician currently working as a consultant at the paediatric section of neurology, Haukeland University Hospital. As a senior researcher in the Research Group for Paediatric follow-up studies, Bergen, Norway (<http://www.uib.no/en/rg/paediatrics>) she has been following several cohorts of very preterm and extremely preterm children, and children with prenatal drug exposure.

Eivind Sirnes is a paediatrician. As a PhD-student in the Research Group for Paediatric follow-up studies, Bergen, Norway, he is currently involved in a project investigating possible neurodevelopmental consequences of prenatal drug exposure.

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