

A new technique to test for brain damage in newborn babies

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Credit: Bridget Colla

Neurological damage known as Hypoxic-ischemic encephalopathy (HIE) occurs in babies who experience a lack of oxygen or blood supply before birth, and can often lead to death or cerebral palsy in severe cases. HIE affects approximately three out of every 1,000 full term births.

The cause for reduced blood flow to the infant's brain is often unknown. Currently, there is no indicator that doctors can use at the mother's bedside to determine which babies will go on to develop HIE, or to help in deciding when to initiate treatment.

Researchers at QMUL's Blizard Institute have discovered that dried [blood spots](#) taken from babies who are deprived of oxygen in birth could help doctors and researchers study tiny pieces of genetic code called microRNAs. These microRNAs could in the future help to diagnose and treat early brain injury.

The team have been exploring whether it is possible to reliably study these microRNAs from less than a drop of blood placed onto a piece of card, which is stored at room temperature.

Study lead Dr Ping Yip, non-clinical lecturer in neurotrauma at the Centre for Trauma Sciences, explains: "These hospital bedside biomarkers could be used to help doctors determine which newborns require urgent treatments. This discovery will enable others to use this simple technique to further study microRNAs and in the near future find the microRNAs that will help doctors in early diagnosis and treatment of HIE, as well as determining the scale of brain injury and predicting future brain development."

More information: Vennila Ponnusamy et al. A study of microRNAs from dried blood spots in newborns after perinatal asphyxia; a simple and feasible biosampling method, *Pediatric Research* (2015). [DOI: 10.1038/pr.2015.276](https://doi.org/10.1038/pr.2015.276)

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