

CCLG: The Children & Young People's Cancer Association research: Discovering new blood-based signals for monitoring brain tumours in children

Project title: Tumour-derived cfRNA profiling for liquid biopsy monitoring of paediatric ependymoma

Project stage: Just started (began February 2026)

Funded by: CCLG and CCLG Special Named Funds, including Christopher's Fund, Tyler's Superhuman Fund, and #bemoremaise

Led by: Dr Alina Pandeale, University of Nottingham



About the project

Ependymoma is a type of childhood brain tumour that often grows back after treatment, becoming much harder to treat. Tumours which grow in the base of the brain, called posterior fossa ependymoma (PF-EPN), are especially difficult to treat as they are the most aggressive type of ependymoma. Right now, children with ependymoma have regular MRI brain scans to monitor their cancer, but these can be too slow to detect when a tumour is coming back. The earlier a tumour is detected, the better a child's chance of survival, so it is essential to find better ways to monitor ependymoma.

One option could be testing for tiny fragments of genetic code that have been released by cancer cells into the blood. These fragments, known as 'cell-free RNA', can carry important information about the behaviour of cancer cells and how active they are. They have been studied in other cancers, but not in ependymoma.

In this project, Dr Alina Pandeale at the University of Nottingham will investigate whether cell-free RNA from ependymoma cells is present in PF-EPN patients' blood. Using VIVO biobank PF-EPN samples, her team will look at plasma (the liquid part of the blood) and tumour tissue to see whether any genetic fragments (cell-free RNA) from the tumour also appear in the plasma. If they can detect and confirm ependymoma signals, it could lead to a better and faster way to identify when the cancer is growing back.

This is the first study investigating whether cell-free RNA signals can be found in the blood of children with ependymoma. The findings will provide the basis for research into blood-based tests for ependymoma relapse. These tests could work alongside MRI scans to monitor disease and spot relapse earlier – helping to make care more accurate and effective for children with brain tumours.



The Children &
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