

Lay Summary

BRAIN UK Ref: 16/007

INSTINCT

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Background:

Despite recent treatment advances ‘high-risk’ paediatric brain tumours (HR-PBTs) remain the leading cause of deaths from cancer in childhood. Advances in biological understanding, and their translation into effective therapies, will be essential to improve outcomes for these children, and coordinated national/international strategies will be required to achieve this.

The INSTINCT programme brings together UCL Institute of Child Health, Newcastle University Northern Institute for Cancer Research and the Institute of Cancer Research, each of which already play international leading roles in paediatric brain tumour research.

What does INSTINCT aim to achieve?

INSTINCT specifically aims to bridge the gap between biological discovery and clinical practice through using state-of-the-art biological investigations to improve the outlook for children with HR-PBTs.

BRAIN UK will support and facilitate the use of archival hospital brain tumour samples for molecular sequencing.

Through co-ordinated research and clinical networks between our centres, our research will: Advance knowledge of brain tumour biology

- Ensure improved diagnosis
- Lead to future clinical trials
- Enable new effective treatments to be developed
- Increase the profile of brain tumour research to public, patient, academic and funding stakeholders
- Train researchers and clinicians of the future

Publications:

Date	Publication title
2018	CNS Embryonal Tumours: WHO 2016 and Beyond
2018	Early wound site seeding in a patient with CNS high-grade neuroepithelial tumor with BCOR alteration: A case report.
2019	DNA methylation-based profiling for paediatric CNS tumour diagnosis and treatment: a population-based study
2019	DNA Methylation-Based Classification of Central Nervous System Tumours

2020	Methylation-based algorithms for diagnosis: experience from neuro-oncology
2020	A case series of Diffuse Glioneuronal Tumours with Oligodendroglial-like features and Nuclear Clusters (DGONC)
2020	Pediatric Pan-central nervous system tumour analysis of immune-cell infiltration identifies correlates of antitumor immunity.
2020	Infant High-Grade Gliomas Comprise Multiple Subgroups Characterized by Novel Targetable Gene Fusions and Favorable Outcomes.
2021	A rare case of paediatric astroblastoma with concomitant MN1-GTSE1 and EWSR1-PATZ1 gene fusions altering management.
2021	Emergence and maintenance of actionable genetic drivers at medulloblastoma relapse.
2021	Therapeutic implications of improved molecular diagnostics for rare CNS embryonal tumor entities: results of an international, retrospective study.