

Lay Summary

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Investigating regional heterogeneity and progression-associated markers in oligodendrogliomas

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Oligodendrogliomas and astrocytomas are brain tumours that mainly affect adults in their 20s to 40s and share some genetic mutations that lead to their development. These tumours can be slow growing and low grade, however a proportion can transform into high grade tumours with a significantly worse prognosis. Recent studies have been able to identify some astrocytomas that will turn into high grade tumours, but this has not so far been possible for oligodendrogliomas. We have observed that a specific molecular marker (H3K27me3) is predominantly lost in low grade appearing oligodendrogliomas, but instead is not lost when the tumour shows features of higher grade (malignancy). In some tumours we have seen that areas which appear malignant keep this marker, and other areas which look less malignant lose this marker. In this project we want to understand if we can find genes that are expressed differently between areas with high or low marker expression that give us information about tumour malignancy and the risk of growing back after an operation. Therefore, our project may generate data that can help doctors understand the growth risk of individual tumours and give patients more personalised information about their tumours.