

## **Lay Summary**

**BRAIN UK Ref: 22/015**

**Retrospective and prospective analysis of digital images of histology slides of brain tumours using machine learning and deep learning to predict/identify molecular properties**

**Prof Felix Sahm, University Hospital Heidelberg**

Molecular markers are important to identify prognosis and potential treatments for brain tumour patients. However, assessing the tissue for these alterations requires costly methods and can sometimes take weeks until completion. Here we want to train a computer program (using so-called artificial intelligence) to read digital copies of histological slides and predict molecular alterations of the tumour. First, we will use cases with known molecular alterations (so-called training set), and once the training is completed, the algorithm (formula) will be applied to a test (or validation) set.