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**PerEpi**

Personalised diagnosis and treatment for refractory focal paediatric and adult epilepsy

Epilepsy is among the most frequently diagnosed pediatric and adult neurological disorders. Only in two-thirds of the patients, seizures can be adequately controlled with drug treatment. For the remaining drug-resistant patients with focal epilepsy, epilepsy surgery is currently the most effective treatment. However, only a fraction of those patients are eligible for epilepsy surgery. That is either because the epileptogenic zone in the brain cannot be localised with sufficient accuracy, or because it cannot be surgically removed without considerable neurological deficit.

PerEpi aims to improve this situation in two ways, both of which use concepts of non-invasive personalised medicine. The first one focuses on a new individualised multimodal approach to improve the localisation accuracy of the epileptogenic zone in order to offer the most appropriate personalised therapy. The second one focuses on a new individually optimised transcranial brain stimulation technique as a new treatment option to reduce seizure frequency and severity. This is particularly attractive for those patients with refractory focal epilepsies where surgery is not an option. A dedicated ethics work package will ensure that the research in the consortium is designed and conducted following the highest ethical standards and that responsible clinical integration is fostered.

