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Determining a New Way to Diagnose Epilepsy

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Epilepsy is a neurological disorder characterized by recurring unprovoked seizures and is one of the most common neurological disorders in the world, afflicting 50 million people worldwide. It is typically diagnosed by the occurrence of two unprovoked seizures at minimum 24 hours apart. However, there's only a 40-50% chance of a second seizure happening within two years after the first seizure. The uncertainty of whether a First-time Unprovoked Seizure (FUS) is due to epilepsy can lead to people experiencing mental health declines as well as legal restrictions, such as driving bans. While some methods exist to identify epilepsy, they can miss some cases of epilepsy. My research focuses on determining an additional method for identifying epilepsy by studying changes in the thickness brain's outer layer (the cortex) after a FUS. Should such changes occur, they could potentially be used to identify if an FUS is epilepsy.