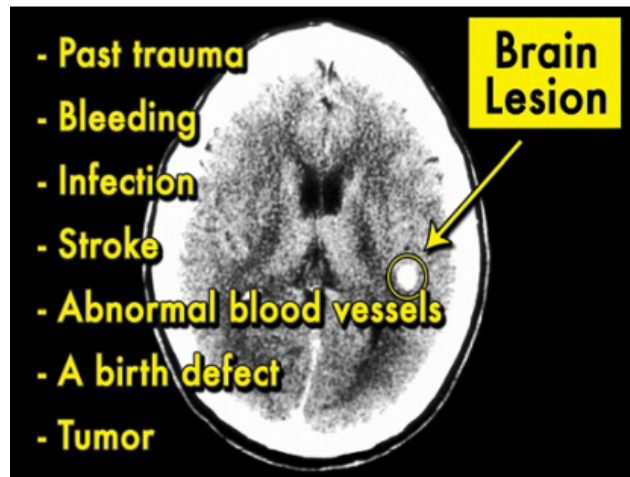
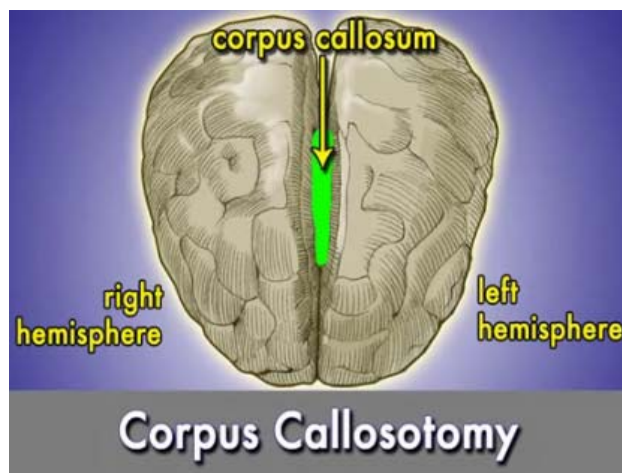


In a resective surgery a portion of the brain is removed. When this is not possible, doctors may consider other forms of brain surgery to treat epilepsy.



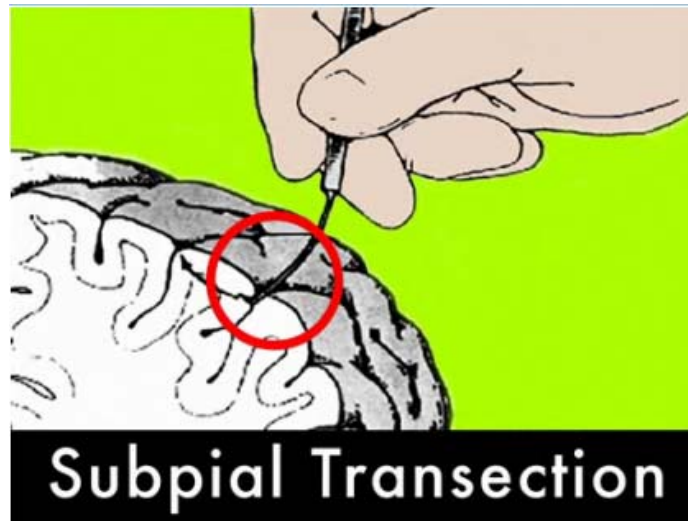
While resective surgery is the most common type of epilepsy surgery, there are several others which can be useful. One such procedure is called a lesionectomy. A lesion is an abnormal structure in the brain, like an old scar. The scar may be present due to past trauma, bleeding, infection, stroke, abnormal blood vessels, a birth defect or a tumor. Seizures often originate around a lesion. So a lesionectomy removes it, as well as a rim of surrounding brain tissue believed to be involved in seizure generation.



Another type of procedure, called disconnection surgery, involves severing specific nerve pathways in the brain along which seizures spread. One disconnection surgery, which reduces atonic, tonic-clonic and tonic seizures is corpus callosotomy. During this procedure, the corpus callosum, which is the large fiber bundle in the brain that connects the two hemispheres, is cut. Often, the operation involves severing just the front two-thirds of this area. Following this

partial procedure, seizure reduction hovers around 75%. Later, a second operation may be performed to disconnect the remaining third of the corpus callosum, and this can improve seizure control to up to 85%.

The most dramatic surgery performed to treat epilepsy is hemispherectomy. This operation involves removing and/or disconnecting one cerebral hemisphere from the rest of the brain. Hemispherectomy usually is only considered in patients with severe seizures who also have some weakness and sensory loss on the side of the body opposite from where the surgery is planned. This is because the surgery itself will cause severe weakness and sensory loss, even if it is not there already.



Another rare form of epilepsy surgery is multiple subpial transactions. This procedure is used to control seizures that stem from areas of the brain that cannot be safely removed. For example, if seizures originate in an area that is critical for language, removing this area might devastate the understanding of language or speech. A subpial transection involves making multiple superficial cuts into the more shallow layers of the brain. These cuts or transactions interrupt fibers that connect neighboring parts of the brain and in turn disrupt the spread of seizure activity. This procedure is not as effective as removal or disconnection surgery. And only a minority of patients become entirely seizure free after this procedure. Still, major complications of subpial transactions are rare and the benefits can outweigh potential complications.

No matter the form of epilepsy surgery considered, however, surgery is not for everyone and is always the patient's choice. If your seizures are not being controlled, discuss the possibility of epilepsy surgery with your medical team.