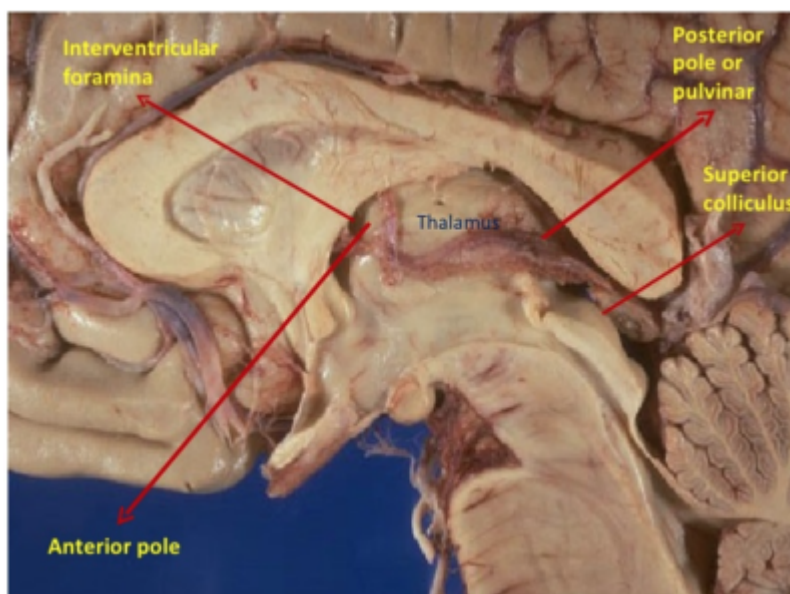


Pulvinar nuclei



The pulvinar **nuclei** or nuclei of the **pulvinar** (nuclei pulvinares) are the **nuclei** located in the **thalamus**.

As a group they make up the collection called the pulvinar of the thalamus (pulvinar thalami), usually just called the **pulvinar**.

The **pulvinar** has remained largely unstudied as a **neurostimulation** target to treat **refractory epilepsy**. Because the pulvinar has connections with the **posterior quadrant**, neurostimulation may be effective if applied to **seizures** originating in this area. Burdette et al. performed a retrospective **chart review** of patients with regional **neocortical epilepsy** onsets in the posterior quadrant treated with **Responsive neurostimulation**. **Demographics**, epilepsy history, clinical seizure frequencies, and **neuropsychological testing** results were obtained from the **chart**. **Electrocorticogram** (ECoG) records stored by the **RNS** System were reviewed to evaluate electrographic seizure onset patterns. The patients were followed for 10, 12.5, and 15 months. All patients were responders ($\geq 50\%$ seizure reduction), and two of the three patients experienced a $\geq 90\%$ reduction in seizures at the last follow-up. Pre- and postsurgical neuropsychological evaluations were compared for two of the patients, and there was no evidence of cognitive decline found in either patient. Interestingly, mild **cognitive** improvements were reported. The third patient had only postimplant neuropsychological testing data available. Findings for this patient suggested **executive dysfunction** that was present prior to the RNS System which did not worsen with surgery. A visual inspection of ECoGs revealed near-simultaneous seizure onsets in neocortical and pulvinar leads in two patients. Seizure onsets in the third patient were more variable. This is the first published report of brain-responsive neurostimulation targeting the **pulvinar** to treat refractory regional onset epilepsy of posterior quadrant origin ¹⁾.

1)

Burdette D, Mirro EA, Lawrence M, Patra SE. Brain-responsive corticothalamic stimulation in the pulvinar nucleus for the treatment of regional neocortical epilepsy: A case series. *Epilepsia Open*. 2021 Sep;6(3):611-617. doi: 10.1002/epi4.12524. Epub 2021 Aug 3. PMID: 34268893; PMCID: PMC8408587.

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