The precuneus and posterior cingulate, two interacting hubs engaged during various cognitive functions, including reflective self-awareness; visuospatial and sensorimotor processing; and processing social cues. This inseparable duo ensures the cortico-subcortical connectivity that underlies these processes. An adult presenting a right precuneal low-grade glioma invading the posterior cingulum underwent awake craniotomy with direct electrical stimulation (DES). A supramaximal resection was achieved after locating the superior longitudinal fasciculus II. During surgery, they found sites of positive stimulation for line bisection and mentalizing tests that enabled the identification of surgical corridors and boundaries for lesion resection. When post-processing the intraoperative recordings, we further identified areas that positively responded to DES during the trail-making and mentalizing tests. In addition, a clear worsening of the patient's self-assessment ability was observed throughout the surgery. An awake cognitive neurosurgery approach allowed supramaximal resection by reaching the cortico-subcortical functional limits. The mapping of complex functions such as social cognition and self-awareness is key to preserving patients' postoperative cognitive health by maximizing the ability to resect the lesion and surrounding areas [1)]

1)
Bermúdez G, Quiñones I, Carrasco A, Gil-Robles S, Amoruso L, Mandonnet E, Carreiras M, Catalán G, Pomposo I. A novel cognitive neurosurgery approach for supramaximal resection of non-dominant precuneal gliomas: a case report. Acta Neurochir (Wien). 2023 Aug 19. doi: 10.1007/s00701-023-05755-8. Epub ahead of print. PMID: 37597007.