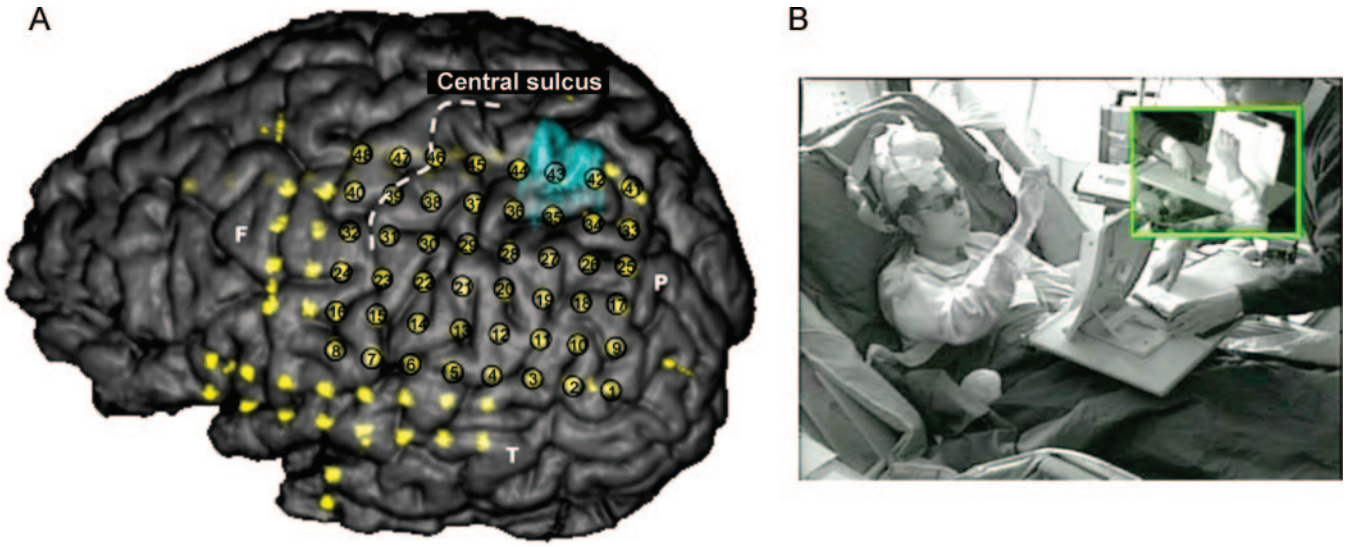
Stimulation of the parietal cortex affects reaching in a patient with epilepsy

Figure (A) MRI left hemisphere cortex rendering with positions of the grid electrodes superimposed (lesion in blue on the mesial side) and (B) video still of the reaching arrest and posturing during stimulation of electrode pair 37–45



A 15-year-old girl with complex partial epilepsy had subdural electrodes implanted. She was tested on reaching tasks during electrocortical stimulation prior to neurosurgery. MRI showed left mesial parietal dysplasia. Stimulation of the superior parietal cortex (electrode pair 37–45, figure, A) during line bisection and visually guided reaching resulted in movement arrest followed by the arm drifting upward (figure, B, videos 1 and 2 on the *Neurology*® Web site at www.neurology.org). Stimulation of these electrodes also resulted in reaching arrest when aiming toward proprioceptive targets (video 3). These observations are consistent with the idea that superior parietal cortex contains representations of defensive arm postures[1] or is involved in sensory-guided reaching.[2]

H.C. Dijkerman, DPhil, J. Meekes, MSc, A. Ter Horst, MSc, W.P.J. Spetgens, REEGT, E.H.F. de Haan, PhD, F.S.S. Leijten, MD, PhD, Utrecht, Woerden, and Amsterdam, the Netherlands

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Address correspondence and reprint requests to Dr. H.C. Dijkerman, Experimental Psychology, Helmholtz Institute, Utrecht University, Heidelberglaan 2, 3584 CS Utrecht, the Netherlands; c.dijkerman@uu.nl

Supplemental data at www.neurology.org

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