

# Cortical resection

The **localization** of **cortical** sites essential for **language** was assessed by **stimulation mapping** in the left, **dominant hemispheres** of 117 patients. Sites were related to language when **stimulation** at a current below the threshold for afterdischarge evoked repeated statistically significant errors in **object naming**. The **language center** was highly localized in many patients to form several mosaics of 1 to 2 sq cm, usually, one in the **frontal lobe** and one or more in the temporoparietal lobe. The area of individual mosaics and the total area related to language were usually much smaller than the traditional **Broca-Wernicke** areas. There was substantial individual variability in the exact location of **language function**, some of which correlated with the patient's sex and **verbal intelligence**. These features were present for patients as young as 4 years and as old as 80 years, and for those with lesions acquired in early life or adulthood. These findings indicate a need for revision of the classical model of **language localization**. The combination of discrete **localization** in individual patients but substantial individual variability between patients also has major clinical implications for **cortical resections** of the **dominant hemisphere**, for it means that **language** cannot be reliably localized on anatomic criteria alone. A maximal **resection** with minimal risk of postoperative **aphasia** requires individual localization of **language** with a technique like **stimulation mapping** <sup>1)</sup>.

<sup>1)</sup>

Ojemann G, Ojemann J, Lettich E, Berger M. Cortical language localization in left, dominant hemisphere. An electrical stimulation mapping investigation in 117 patients. J Neurosurg. 1989 Sep;71(3):316-26. PubMed PMID: 2769383.

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