

Posterior parietal cortex involvement in skill learning

ABSTRACT:

Background

The current knowledge on the neural basis for acquiring non-declarative information is still limited. Evidence from different lines of research suggests that the neural structures involved in motor skill learning depend on task demands and learning stage. The contribution of the parietal cortex to motor skill learning is not fully understood.

Aim

This study evaluated the consequences of damage to the parietal lobe for learning a visuomotor tracking skill.

Method

Thirty subjects with a single unilateral brain lesion (13 with and 17 without parietal damage) and 23 demographically comparable healthy subjects performed the Rotary Pursuit task.

Results

For each group, time on target increased significantly across the four learning blocks. Subjects with parietal lesions had smaller improvements on the Rotary Pursuit from the 1st to the 4th block than subjects with lesions in other brain areas and healthy comparison subjects. The improvements on task performance from the 1st to the 2nd and from the 1st to the 3rd learning blocks were similar between groups.

Conclusions

The parietal lobe appears to play an important role in the acquisition of a new visuomotor tracking skill, in particular during a relatively late phase of learning.

Keywords

Memory, Skill learning, Parietal lobe, Lesion studies

Published Work:

Cavaco, S., Anderson, S., Chen, K.-H., Teixeira-Pinto, A., & Damásio, H. (2015). Parietal damage impairs learning of a visuo motor tracking skill. *Neuropsychologia*, 79, Part A, 106–112. doi: 10.1016/j.neuropsychologia.2015.10.038

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