

Resting State Functional Connectivity of the Dorsolateral Prefrontal Cortex

N.I. Bradfield, D.C. Reutens, MD, & A.G. Wood, PhD

Department of Medicine (Neurosciences), Southern Clinical School, Monash University, Clayton, 3168, Victoria, Australia

Introduction

The dorsolateral prefrontal cortex (DLPFC) is important for many cognitive processes and shows asymmetry of function. Handedness is an important modulator of asymmetry of cerebral organisation of prefrontal areas involved in language, but this effect has not been demonstrated for the DLPFC.

Method

We studied the functional connectivity of the left and right DLPFC in 16 age, sex and IQ matched left- and right-handed participants using low frequency BOLD fluctuations in the resting state.

Results

Conjunction and random effects analyses revealed areas of connectivity in prefrontal, paralimbic/medial frontal and parietal areas. No effects of handedness were found and there was no difference in the patterns of connectivity of the left and right DLPFC.

Discussion

These results suggest that DLPFC connectivity is not modified by laterality, handedness and is at best only weakly asymmetric. In addition, the lack of laterality differences and largely symmetrical connectivity suggests that DLPFC connectivity in the resting state does not underlie the asymmetry of DLPFC function.

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