

Neural correlates of establishing, maintaining, and switching brain states.

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Although the study of brain states is an old one in neuroscience, there has been growing interest in brain state specification owing to MRI studies tracing brain connectivity at rest. In this review, we summarize recent research on three relatively well-described brain states: the resting, alert, and meditation states. We explore the neural correlates of maintaining a state or switching between states, and argue that the anterior cingulate cortex and striatum play a critical role in state maintenance, whereas the insula has a major role in switching between states. Brain state may serve as a predictor of performance in a variety of perceptual, memory, and problem solving tasks. Thus, understanding brain states is critical for understanding human performance.

Trends Cogn Sci. 2012 Jun;16(6):330-7. Epub 2012 May 19. Tang YY, Rothbart MK, Posner MI. Texas Tech Neuroimaging Institute and Department of Psychology, Texas Tech University, TX 79409, USA; Department of Psychology, University of Oregon, OR 97403, USA; Institute of Neuroinformatics and Laboratory for Body and Mind, Dalian University of Technology, Dalian 116024, China.

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