What are default mode networks?

The ‘default mode’ system refers to a network of regions including the precuneus, posterior cingulate cortex, medial prefrontal cortex, and medial, lateral and inferior parietal cortices, that appear to be active in the resting brain, and consistently show attenuations of activity following onset of a task-related activity. Default mode network (DMN) attenuation is not task specific; however the magnitude of reduction is dependent on the cognitive load and task requirements. The more demanding the task being performed, the stronger the deactivation. DMN activity is characterised by coherent low frequency (less than 0.1 Hz) neural oscillations. The functional connectivity of DMN regions is determined through the temporal correlation of blood oxygen level dependent activity in discrete anatomical regions. A ‘task-positive’ network of regions including the dorsolateral prefrontal cortex, inferior parietal cortex and supplementary motor area has been identified that is strongly anti-correlated with DMN activity. The DMN is thought to facilitate adaptive functioning, working memory, and processing emotionally salient stimuli.

What is the evidence for default mode networks?

Moderate to low quality evidence is unclear of alterations in functional activity in schizophrenia in default mode networks when the brain is at rest or during stimulus or task performance.

For more information see the technical table.

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