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Brain Activity Related to Working Memory for Temporal Order and Object information

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Abstract:

Maintaining items in an appropriate sequence is important for many daily activities; however, remarkably little is known about the neural basis of human temporal working memory. Prior work suggests that the prefrontal cortex (PFC) and medial temporal lobe (MTL), including the hippocampus, play a role in representing information about temporal order. The involvement of these areas in successful temporal working memory, however, is less clear. Additionally, it is unknown whether regions in the PFC and MTL support temporal working memory across different timescales, or at coarse or fine levels of temporal detail. To address these questions, participants were scanned while completing 3 working memory task conditions (Group, Position and Item) that were matched in