

# Studying Feedforward and Feedback Signal Integration

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**Presentation Abstract Summary** This brief neuroscientific review addresses the importance of understanding how feedforward and feedback information streams are integrated in the brain in order to achieve associative processing. Particular attention is paid to the layered structure of the cortex, the functional segregation of feedforward and feedback signals to different cortical layers, and the impact of feedback on sensory perception. We also note the ability of ultra high-field functional MRI to densely record both feedforward and feedback signals in the human brain based on its sensitivity to dendritic processes in different layers of cortex and highlight several findings which relate these signals to cortical feedback. We believe that furthering our understanding about the integration of feedforward and feedback signals in the brain is a highly interdisciplinary challenge that has the potential to greatly impact the fields of neuroscience, computer science and engineering.

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