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## **Mechanisms of placebo analgesia: A dual-process model informed by insights from cross-species comparisons**

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### **Highlights**

- We propose a dual-process model of placebo analgesia, in which strong placebo responses are created by appropriate flexible conceptual beliefs, reinforced by affective experiences (reward and punishment).
- Cognitive schemas, mental representations of the self in context, are critical for many forms of placebo analgesia.
- An extensive review of animal studies on behavioral analgesia is used to inform a neural systems implementation of the model
- The model predicts that opioidergic neurotransmission underlies expectation-dependent placebo analgesia and cannabinoidergic neurotransmissions supports expectation-independent placebo analgesia.

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