Arousal and behavioral self-regulation in a sustained olfactory attention task

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Résumé

Achieving optimal performance in specific tasks requires the adjustment of arousal and physiological states to align behavior with attentional demands. Understanding how these adjustments occur and the factors that influence them may provide valuable insights into the pathophysiology of conditions involving attentional deficits. Here, we will present data from freely moving Long-Evans rats trained on a sustained-attention odor detection task that requires prolonged, randomized nosepoke holding times and active sensory-motor sampling through sniffing. Using behavioral analysis along with simultaneous whole-body plethysmography, on-the-fly pupillometry and facial videography, our experimental and analysis framework aims to inform how rodents finely adjust their arousal levels and sensory-driven motor behavior to achieve a behavioral state optimized for sustained olfactory attention.

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