



Neural mechanisms for emotional memory processing during sleep

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The gradual reinforcement of memories, called “consolidation”, is a process occurring partially during sleep and mediated by various patterns of coordinated neural activity. The formation of contextualized emotional memories involves a large network of structures, among which the hippocampus and the baso-lateral amygdala (BLA) are central. In the dorsal hippocampus, fast oscillations (sharp-wave ripples) during non-REM sleep mediate the consolidation of spatial memories through the reactivation of place cell activity. On the other hand, emotional information is processed primarily in the ventral hippocampus and amygdala, which are reciprocally connected. Using large-scale electrophysiology in freely-moving rats, we investigate how the association of contextual and aversive information involves changes in neural synchronization at the level of local field potential and neuronal assemblies along the dorso-ventral hippocampus-BLA axis during Non-REM sleep.