**Sleep to Form Memory**

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Whereas memories are encoded and retrieved optimally when the brain is awake, the consolidation of memory requires an offline mode of processing as established optimally only during sleep. Recent studies have elucidated some of the neurophysiological mechanims underlying memory consolidation during sleep, especially in the hippocampus-dependent declarative memory system. This system is capable of rapidly forming an initial memory representation for an episode upon its one-time occurrence, and is thus at the basis of the formation of any long-term memory. Consolidation of hippocampus-dependent memories represents an active systems consolidation process that takes place mainly during slow wave sleep (SWS) rather than REM sleep. It critically relies on the neural reactivation of newly encoded memory representations that originates from hippocampal circuitry and stimulates the gradual redistribution of the representations towards extra-hippocampal, mainly neocortical networks serving as long-term store. The redistribution process goes along with qualitative transformation of the representation ending up in the formation and storage of abstracted schema-like memories stored in the neocortex. Memory reactivations originating from the hippocampus, are synchronized to the <1Hz EEG slow oscillations that dominate SWS and are generated in neocortical networks, partly as a function of the prior use of these networks for encoding of information. By synchronizing hippocampocal memory reactivations with specific activity from other brain areas, including thalamo-cortical spindles, slow oscillations enable persisting plastic changes underlying the long-term storage of memories in the neocortex.