Sex differences in the hippocampal opioid system: Implications for addiction

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Research description:
The hippocampal opioid system is important for associative memory. Our light and electron microscopic studies have revealed that mu (MORs) and delta opioid receptors are subcellularly positioned in hippocampal neurons in females in a manner that promotes excitability and learning processes. Moreover, females in high estrogen states, but not males, exhibit an opioid-dependent long-term potentiation. Following chronic stress, the opioid system of females regardless of estrogen state is "primed" for even greater excitation of hippocampal circuits. These findings have implications for sex differences in drug addiction.

Selected publications:
