

# [Physiology of behavior chapter 13](https://assignbuster.com/physiology-of-behavior-chapter-13/)

perceptual learningLearning to recognize a particular stimulusstimulus-response learningLearning to automatically make a particular response in the presence of a particular stimulus; includes classical and instrumental conditioning ONPHYSIOLOGY OF BEHAVIOR CHAPTER 13 SPECIFICALLY FOR YOUFOR ONLY$13. 90/PAGEOrder Nowclassical conditioningA learning procedure; when a stimulus that initially produces no particular response is followed several times by an unconditional stimulus (US) that produces a defensive or appetitive response (the unconditional response-UR), the first stimulus (now called a conidtional stimulus-CS) itself evokes the response (now called the conidtional response-CR)Hebb ruleThe hypothesis proposed by Donald Hebb that the cellular basis of learning involves strengthening of a synapse that is repeatedly active when the postsynaptic neuron firesinstrumental conditioningA learning procedure whereby the effects of a particular situation increase (reinforce) or decrease (punish) the probability of the behavior; also called operant conditioningreinforcing stimulusAn appetitive stimulus that follow a particular behavior and thus makes the behavior become more frequentpunishing stimulusAn aversive stimulus that follows a particular behavior and thus makes the behavior become less frequentmotor learningLearning to make a new responselong-term potentiation (LTP)A long-term increase in the excitability of the neuron to a particular part of the limbic system; includes the hippocampus proper (Ammon's horn), gentate gyrus, and subiculumpopulation EPSPAn evoked potential that represents the EPSPs of a population of neuronsassociative long-term potentiationA long-term potentiation in which concurrent stimulation of weak and strong synapses to a given neuron strengthens the weak onesNMDA receptorA specialized ionotropic glutamate receptor that controls a calcium channel that is normally blocked by Mg2+ ions; involved in long term potentiationAP52-Amino-5-phosphonopentanoate, a druge that blocks NMDA receptorsdendritic spikeAn action potential that occurs in the dendrite of some types of pyramidal cellsAMPA receptorAn ionotropic-glutamate receptor that controls a sodium channel; when open, it produces EPSPsCaM-KIIType II calcium-calmodulin kinase, an enzyme that must be activated by calcium; may play a role in the establishment of long-term potentiationnitric oxide synthaseAn enzyme responsible for the production of nitric oxidelong-term depression (LTD)A long-term decrease in the excitability of a neuron to a particular synaptic input caused by stimulation of the terminal button while the postsynaptic membrane is hyperpolarized or only slightly depolarizedshort-term memoryMemory for a stimulus or an event that lasts for a short whiledelayed matching-to-sample taskA task that requires the subject to indicate which of several stimuli has just been perceivedventral tegmental area (VTA)A group of dopaminergic neurons in the ventral midbrain whose axons form the mesolimbic and mesocortical systems; plays a critical role in reinforcementnucleus accumbens (NAC)A nucleus of the basal forebrain near the septum; receives dopamine-secreting terminal buttons from neurons of the ventral tegmental area and is thought to be involved in reinforcement and attentionmedial forebrain bundle (MFB)A fiber bundle that runs in a rostral-caudal direction through the basal forebrain and lateral hypothalamus; electrical stimulation of these axons is reinforcinganterograde amnesiaAmnesia for events that occur after some disturbance to the brain, such as head injury or certain degenerative brain diseaseretrograde amnesiaAmnesia for events that preceded some distrubance to the brain; such as a head injury or electroconvulsive shockKorsakoff's syndromePermanent anterograde amnesia caused by brain damage resulting from chronic alcocholism or malnutritionconsolidationThe process by which short-term memories are converted into long-term memoriesdeclarative memoryMemory that can be verbally expressed, such as memory for events in a person's pastnondeclaractive memoryMemory whose formation does not depend on the hippocampus formation; a collective term for perceptual, stimulus-response, and motor memoryperirhinal cortexA region of limbic cortex adjacent to the hippocampal formation that, along with the parahipoocampal cortex, relays information between the entorhinal cortex and other regions of the brainparahippocampal cortexA region of limbic cortex adjacent to the hippocampal formation that, along with the perirhinal cortex, relays information between the entohinal cortex and other regions of the brainepisodic memoryMemory of a collection of perception of events organized in time and identified by a particular contextsemantic memoryA memory of facts and general informationsemantic dementiaLoss of semantic memories caused by progressive degeneration of the neocortex of the lateral temporal lobesplace cellA neuron that becomes active when the animal is in a particular location in the environment; most typically found in the hippocampal formationsharp-wave-ripple complex (SWRs)A period of intense, high- frequency oscillations that originate in hippocampal fields (CA1 and CA3 and propagate to the cerebral cortex; involved in replay of information from periods of waking during slow-wave sleepreconsolidationA process of consolidation of a memory that occurs subsequent to the original consolidation that can be triggered by a reminder of the original stimulus; thought to provide the means for modifying existing memories