

The Synapse Key Information

A synapse is the junction between two neurones, or between a neurone and an effector (such as a muscle or gland), where information is transmitted chemically. When an action potential reaches the presynaptic neurone terminal, it triggers the release of neurotransmitters (e.g. acetylcholine) from synaptic vesicles into the synaptic cleft. These neurotransmitters diffuse across the cleft and bind to receptors on the postsynaptic membrane, causing ion channels to open and potentially generating a new action potential. Synapses ensure unidirectional transmission, allow signal modulation, and play a key role in summation and neural communication.

Key words & definitions

Key word	Key information
Effector	A muscle or gland that responds to a nerve signal.
Presynaptic Neurone	The neurone that sends the signal across the synapse.
Neurotransmitter	A chemical messenger (e.g. acetylcholine) released by the presynaptic neurone that transmits signals across a synapse.
Synaptic Vesicle	Small sacs in the presynaptic neurone that contain neurotransmitters.
Synaptic Cleft	The small gap between the presynaptic and postsynaptic membranes.
Postsynaptic Membrane	The membrane of the neurone or effector that receives the signal.
Unidirectional Transmission	The process by which synapses ensure that impulses travel in one direction only.