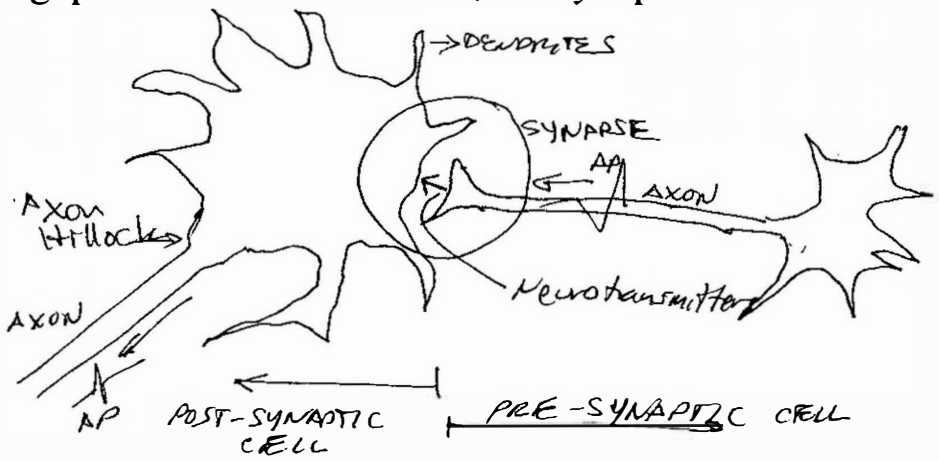
Transmission of information between neurons

Once an AP has travelled all the length of an axon, the information it carries is transmitted to another neuron by an electrochemical process that takes place in the gap between the two cells , the synapse:



The AP in the presynaptic neuron releases chemicals known as Neurotransmitters, which flow through the synapse (gap) and cause some ionic channels in the membrane of the postsynapstic cell to open up.

According to the kind of neurotransmitter released, the flow of ions will promote a depolarization- Excitatory Postsynapstic Potential (EPSP) -(positive current flowing into the cell) or a hyperpolarization - Inhibitory Postsynaptic Potential (IPSP) (equivalent positive current flowing out of the cell) . (Note that the current has to complete a loop, forming a current dipole) → current source , current sink

Several (presynaptic) axons may be influencing a given postsynaptic neuron with mixed input. If the net depolarization (excitation) is big enough, an AP will be started in the axon hillock of the postsynaptic neuron (transmission and summation completed).