

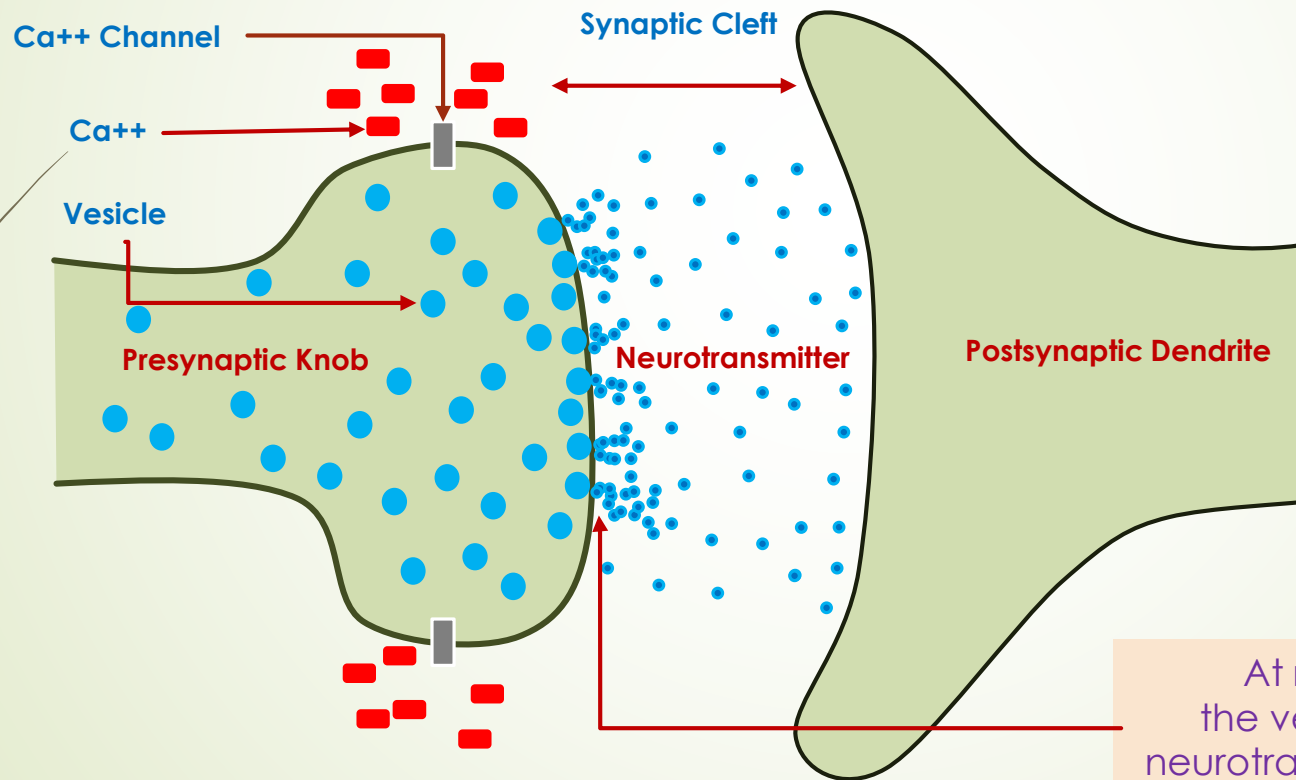


The Neural Conduction in Synapses (Personal View)

AMMAR YASEEN MANSOUR

Neural Conduction in Synapses

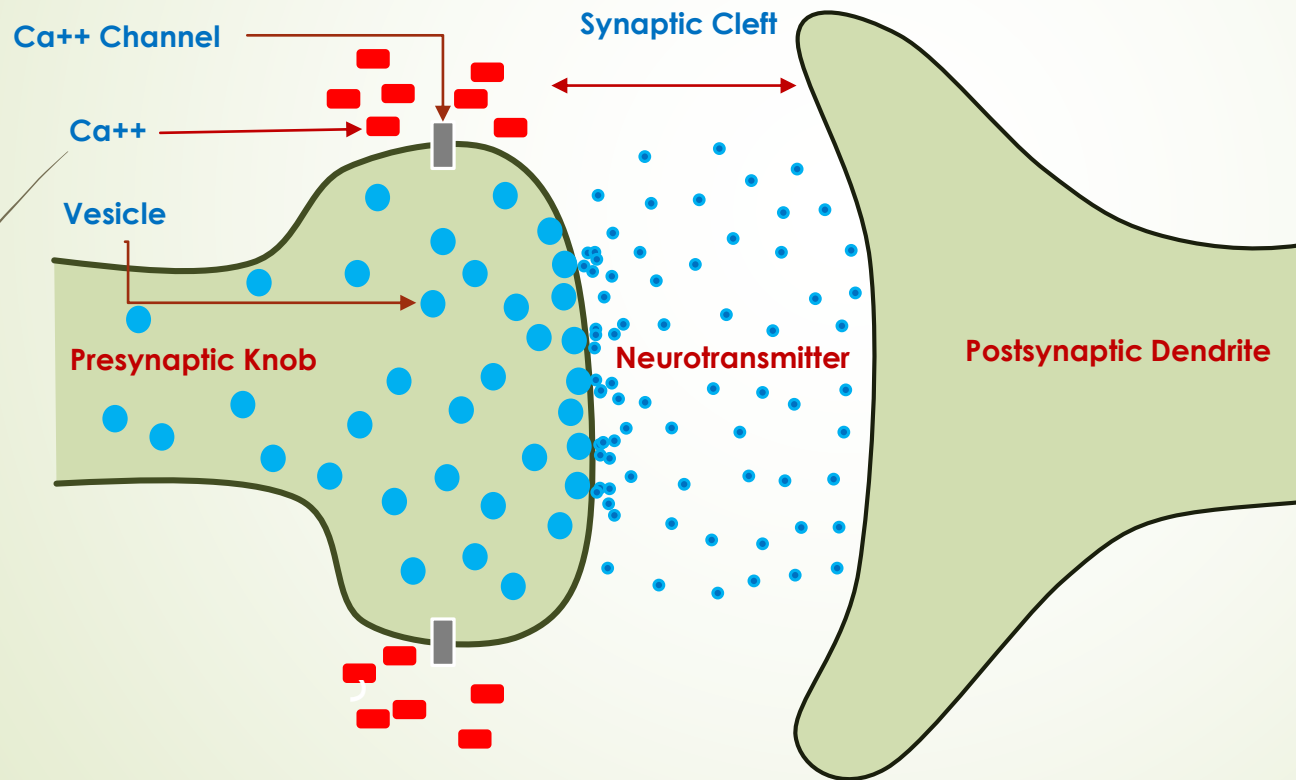
At Rest as well as in Action,
The Neurotransmitter Fills the Synaptic Cleft



At rest as well as in action,
the vesicles inject their loads of
neurotransmitter in the synaptic cleft.

Neural Conduction in Synapses

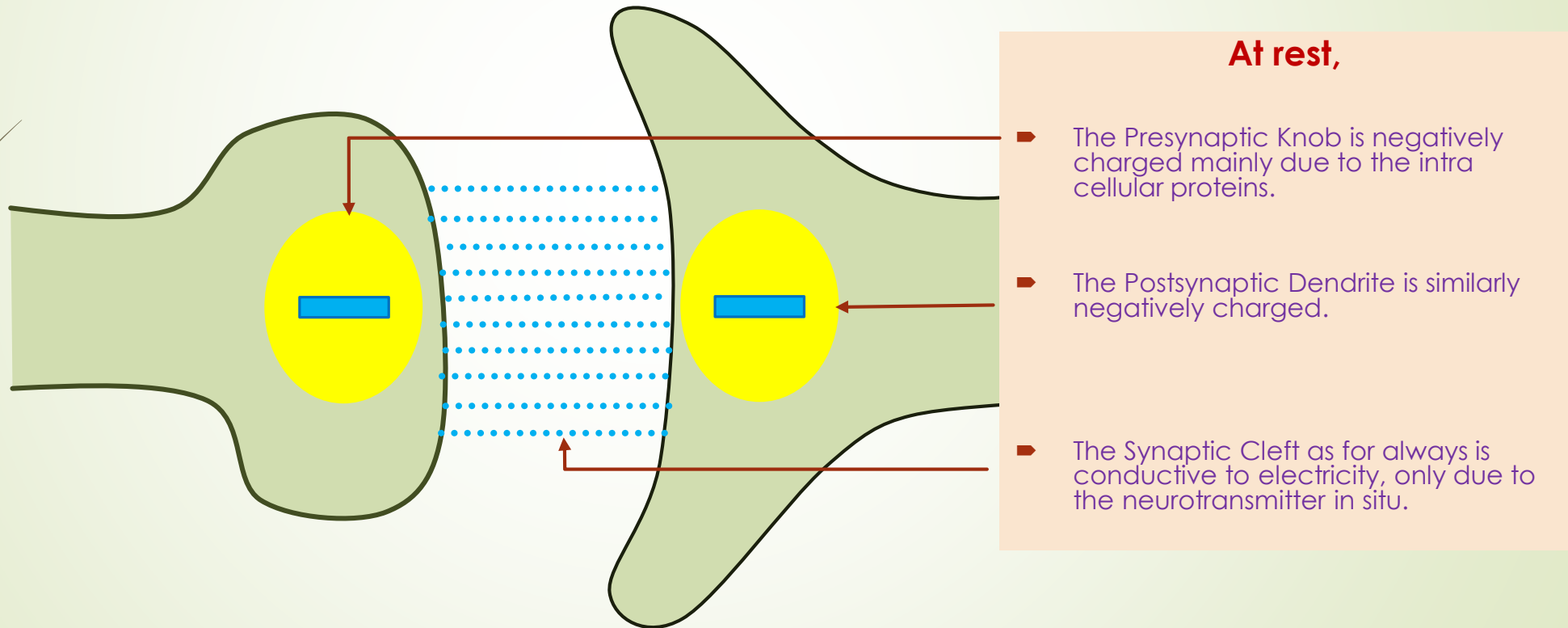
At Rest as well as in Action,
The Neurotransmitter Fills the Synaptic Cleft



- Originally, the synaptic cleft is a nonconductive of electricity.
- At rest as well as in action, the neurotransmitter fills the space of the synaptic cleft, and renders it conductive to electricity.
- Therefore, the synaptic cleft is permanently conductive to electricity.

Neural Conduction in Synapses

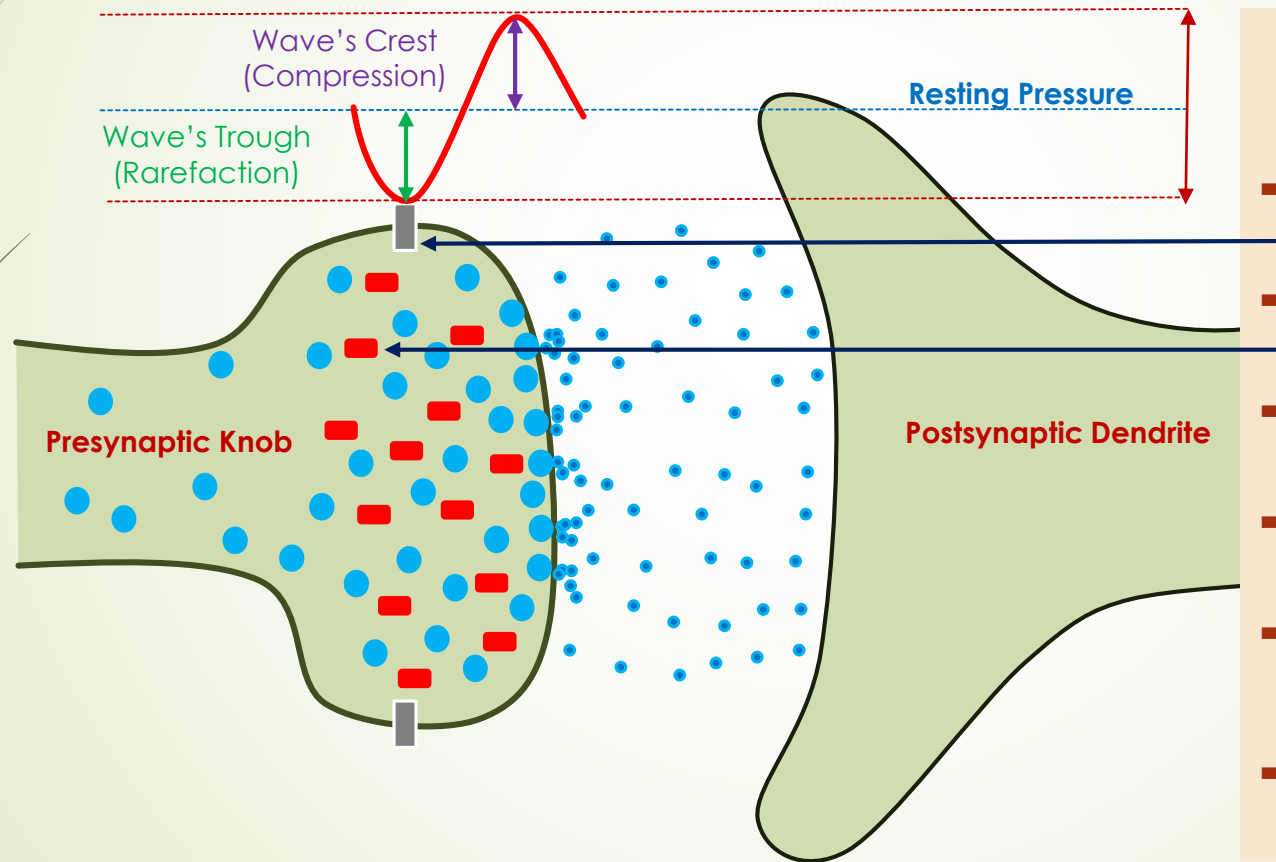
At Rest as well as in Action,
The Synaptic Cleft is Conductive to Electricity



Neural Conduction in Synapses

In Action,

The Ca^{++} Channels open the Gates, and Ca^{++} Ions Come in



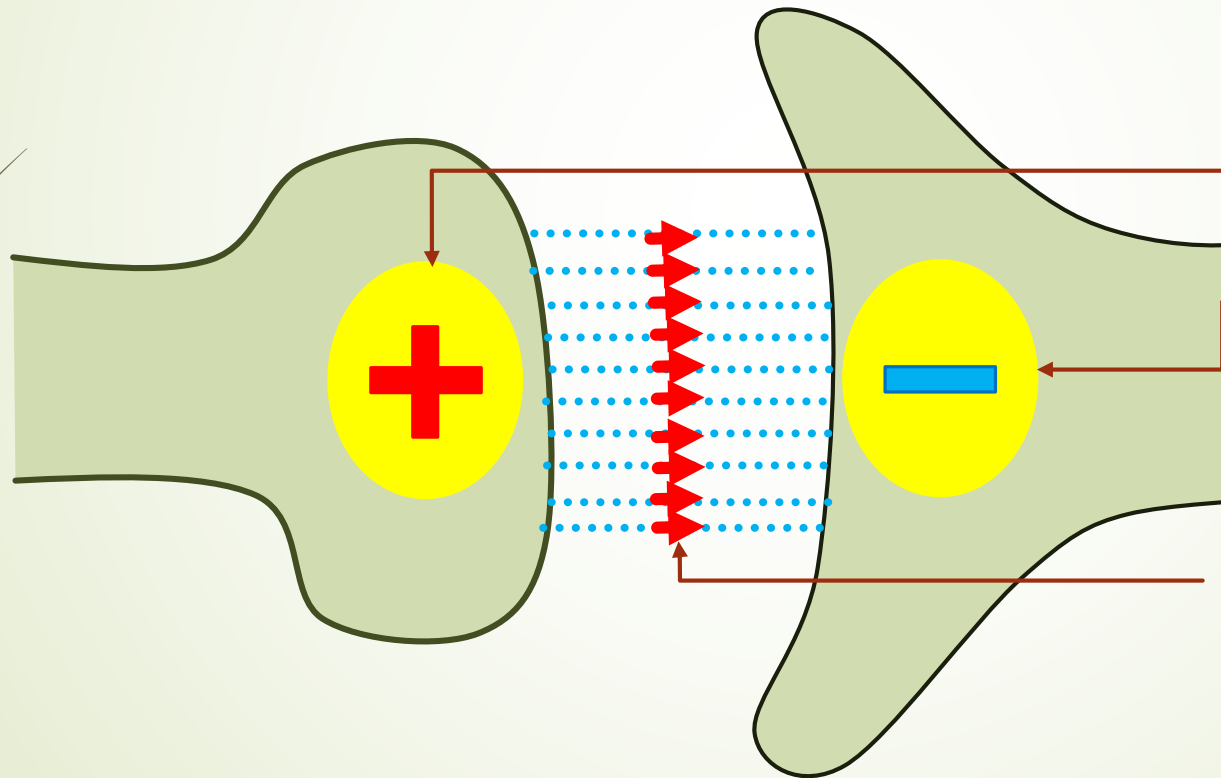
**In action,
upon the arrival of the Action Pressure
Wave to the Presynaptic Knob**

- The negative pressure of the wave's trough opens the gates of the Ca^{++} Channels.
- The negative pressure of the wave's trough also absorbs the Ca^{++} toward the lumen of the Presynaptic Knob.
- Then, the Knob is positively charged due to the incoming Ca^{++} ions.
- The Postsynaptic Dendrite remains negatively charged mainly due to the intracellular proteins.
- The Synaptic Cleft as always is conductive to electricity, only due to the neurotransmitter in situ.
- So that, the Electrical Neural Current could easily pass to the Postsynaptic Dendrite.

Neural Conduction in Synapses

In Action,

The Presynaptic Knob is Positively Charged



In action,

- ▶ The Presynaptic Knob is positively charged due to the incoming Ca^{++} ions.
- ▶ The Postsynaptic Dendrite remains negatively charged mainly due to the intracellular proteins.
- ▶ The Synaptic Cleft as always is conductive to electricity, only due to the neurotransmitter in situ.
- ▶ So that, the Electrical Neural Current can easily pass to the Postsynaptic Dendrite.



In the same context, one could read:

- [The Neural Conduction \(Innovated Conception\)](#)
- [Neural Conduction in Neural Fiber \(PowerPoint Presentation\)](#)
- [The Sensory Receptors, The Genius of Creation and the Beauty of Creature \(Innovated Conception\)](#)
- [The Neural Conduction in the Synapses \(Innovated Conception\)](#)
- [The Node of Ranvier, the Equalizer \(Innovated Conception\)](#)
- [The Node of Ranvier, the Equalizer \(PowerPoint Presentation\)](#)
- [The Philosophy of Pain, Pain Comes First \(Innovated Conception\)](#)
- [The Philosophy of Form, \(Innovated Conception\)](#)
- [The Spinal Injury, the Pathology of the Spinal Shock, the Pathology of the Hyperreflexia \(Innovated Conception\)](#)
- [The Nerve Conduction Study, The Wrong Hypothesis is the Origin of the Misinterpretations \(Innovated Conception\)](#)
- [The Wallerian Degeneration, Attacks the Motor Axons of Peripheral Nerve, while Conserves its Sensory Axons\(Innovated Conception\)](#)



THANK YOU