

Transmission between Neurons

Each neuron is separated from other neurons by a tiny gap called a synapse. Transmission across a synapse is chemical.

The gap between one neuron and the next is called the synaptic cleft. Floating in the cleft are many calcium ions and sodium ions, charged particles and sodium. The membrane that lies before the cleft is the pre-synaptic membrane and the one that lies after the cleft is the post-synaptic membrane. On the post-synaptic membrane are receptor molecules; these can open or close holes called ion channels in the membrane.

Furthermore, the synaptic knob contains synaptic vesicles, small bags filled with chemicals called neurotransmitters. These are chemicals which pass information across the synaptic cleft. There are many different neurotransmitters, including noradrenalin and serotonin.

Synapses can also be excitatory or inhibitory. Firing of excitatory synapses gives the instruction that the receiving neuron should send an impulse along its axon. Firing of inhibitory synapses instructs the neuron not to send an impulse. Remember that each neuron is connected to other neurons by a large number of synapses.

Summation is where stimuli are added together to achieve enough stimulation to trigger an impulse.

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