

ELECTRICAL SYNAPSES

In this type, two neurons are connected by specialized channels known as gap junctions. Electrical synapses allow electrical signals to travel quickly from the presynaptic cell to the postsynaptic cell, rapidly speeding up the transfer of signals. The gap between electrical synapses is much smaller than that of a chemical synapse. The special protein channels that connect the two cells make it possible for the positive current from the presynaptic neuron to flow directly into the postsynaptic cell.

Electrical synapses transfer signals much faster than chemical synapses. While the speed of transmission in chemical synapses can take up to several milliseconds, the transmission at electrical synapses is nearly instantaneous. Where chemical synapses can be excitatory or inhibitory, electrical synapses are excitatory only.

While the electrical synapses have the advantage of speed, the strength of a signal diminishes as it travels from one cell to the next. Bcz of this loss of signal strength, it requires a very large presynaptic neuron to influence much smaller postsynaptic neurons. Chemical synapses may be slower, but they can transmit a message without any loss in signal strength. Very ~~large~~ small presynaptic neurons are ^{also} able to influence even very large postsynaptic cells.