**Synaptic Transmission:**

* Neurons are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to each other.
* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cannot jump the synaptic cleft (or synapse).
* Synaptic transmission is entirely \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in nature.
* At the end of axons, tiny \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ contain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* When an impulse reaches the end of an axon, these synaptic vesicles migrate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* They then release their neurotransmitter and it \_\_\_\_\_\_\_\_\_\_\_\_\_\_ across the synaptic cleft
* Neurotransmitters attach to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and causes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to open resulting in a depolarization in the membrane.
* An \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is created and the impulse travels down the neuron.
* Diffusion takes time, so the \_\_\_\_\_\_\_ synapses involved, the \_\_\_\_\_\_\_\_ the response.
* Synaptic transmission can only occur \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Since only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ neurons contain synaptic vesicles, and only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_neurons have receptor sites for them, the messages cant be sent in the other direction
* This explains why impulses can only travel from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and never in the other direction

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**Neurotransmitters:**

**Acetylcholine**: (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

* + neurotransmitter produced in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and stored in \_\_\_\_\_\_\_\_\_\_\_\_.
	+ when an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaches the pre-synaptic knob the vesicles \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ releasing their contents (acetylcholine) into the \_\_\_\_\_\_\_\_\_\_\_\_
	+ The acetylcholine \_\_\_\_\_\_\_\_\_\_\_\_\_\_ across the synapse and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the post-synaptic knob.

***How do we stop the message?***

* + Before another message can cross the cleft, it must be cleaned (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
	+ The enzyme *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* removes acetylcholine from the receptor sites and breaks it into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ the acetic acid & choline are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ to be reused

Neurotransmitters can be:

* + *excitatory* - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ *Inhibitory* – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Often it takes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ neuron releasing its neurotransmitter into the synaptic cleft to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the post synaptic neuron.
	+ This is referred to as **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

*(See figure 11 p. 422)*