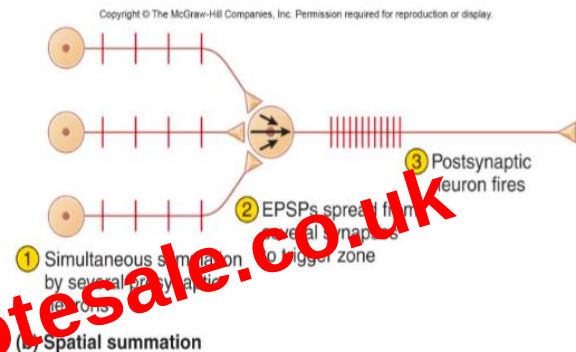
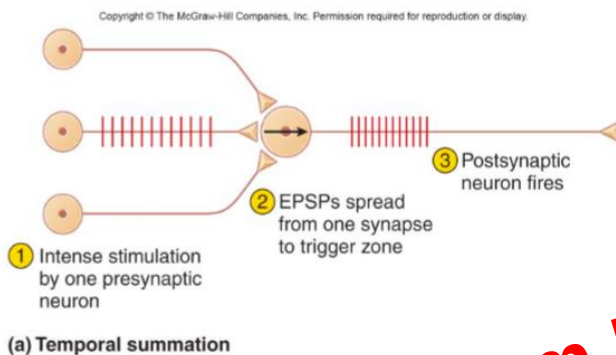
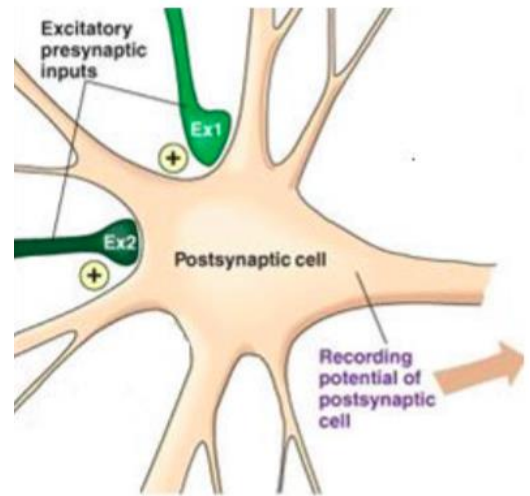


A single post-synaptic cell may interact with **multiple other cells**. This means that **EPSPs can 'add up'** (**summation**). Summation can occur in two ways:

- **Temporal summation** (a) – occurs when an **EPSP is evoked before the previous one has decayed**. This means that the post-synaptic cell is brought even closer to the threshold potential and more likely to fire an action potential.
- **Spatial summation** (b) – occur when post-synaptic cell is stimulated by **more than one synaptic end bulb at once**. This means that the post-synaptic cell is more likely to fire an action potential, since the EPSPs evoked by each cell adds up.



Signal termination

Important that the neurotransmitter **doesn't persist in the cleft** so that it doesn't interfere with incoming signals. Three ways that a neurotransmitter can be removed from the cleft:

- Neurotransmitter is taken back up into the pre-synaptic cell (**reuptake**) – most common mechanism
- **Enzymes** may also degrade the neurotransmitter – e.g. acetylcholinesterase breaks down acetylcholine into its constituent parts
- Neurotransmitter may simply **diffuse away**

Mechanisms of Neurotransmitter Deactivation

