|  |  |
| --- | --- |
| **Biopsychology Learning Table 2: Neurons and Synaptic Transmission** | |
| **The Structure and Function of Neurons**   * Neurons are cells that are specialised to carry neural information throughout the body. * **Dendrites** receive signals from other neurons or sensory receptors. They are connected to the cell body (the control centre). The impulse travels from the cell body along the axon, where is stops at the axon terminal. Myelin sheaths allow nerve impulses to transmit more quickly along the axon. * **Sensory neurons** – carry nerve impulses (e.g. vision, taste touch) to the CNS. * **Relay Neurons** – Allow sensory and motor neurons to communicate with each other. Only found in brain and spinal cord. * **Motor Neurons** – form synapses with muscles and control their contractions. | [https://pmgbiology.files.wordpress.com/2015/02/neuron_types1355460789298.png](http://www.google.co.uk/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0CAcQjRxqFQoTCMnCvKrGycgCFYPFFAodlQYLOg&url=http://pmgbiology.com/tag/reflex-arc/&bvm=bv.105454873,d.d24&psig=AFQjCNGjoK1Ex63mJrTR7e3TxSbFluj9ow&ust=1445172791397825)  Myelin Sheath  Relay Neuron |
| **Synaptic Transmission**   * Each neuron is separated from the next by a tiny **gap** called a **synapse**. * Signals in the synapse are transmitted **chemically**. * When an electrical impulse reaches the end of the neuron (the **pre-synaptic terminal**) it triggers the release of neurotransmitters from tiny sacs known as **vesicles**. * These neurotransmitters diffuse across the gap and are taken up by **receptors**. The chemical message turns back into electrical and the impulse is carried down the next neuron. * Different receptors respond to different neurotransmitters depending on their shape. | [http://www.somerealitybites.com/wp-content/uploads/2013/12/synapse.png](http://www.google.co.uk/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0CAcQjRxqFQoTCOu31M7KycgCFQlVFAodx_QHRA&url=http://www.somerealitybites.com/the-snappy-synapse/&psig=AFQjCNG_OAUHt3UMDfW6tDS5D-QTUL0k8w&ust=1445173872042830)  PRE-SYNAPTIC TERMINAL |
| **Excitatory and Inhibitory Neurotransmitters** | Neurotransmitters can either have an **excitatory** or **inhibitory** effect on the neighbouring neuron. Excitatory neurotransmitters **increase** the **likelihood** of the neighbouring neurone **firing** (acetylcholine and noradrenaline). **Inhibitory** neurotransmitters **decrease** the **likelihood** of the neighbouring neuron **firing** (GABA and serotonin). |