Biopsychology Glossary

Sensory neurone	A nerve cell transmitting impulses from receptors to the CNS.
Relay neurone	A nerve cell transmitting impulses from a sensory neurone to a motor neurone.
Motor neurone	A nerve cell transmitting impulses from the CNS to muscles/glands.
Synaptic transmission	The process by which an impulse is transmitted from one neurone to the next.
Neurotransmitter	A chemical substance which is released at the end of a neurone.
Excitation	When the net effect of nts makes it more likely an electrical impulse will be triggered in the post-synaptic neurone.
Inhibition	When the net effect of nts makes it less likely an electrical impulse will be triggered in the post-synaptic neurone.
Central nervous system	The brain and spinal cord.
Peripheral nervous system	All neurones outside of the central nervous system.
Autonomic nervous system	Controls mainly involuntary actions via impulses from brain stem to smooth muscle/glands.
Somatic nervous system	Controls mainly voluntary actions via impulses from motor cortex to skeletal muscles.
Parasympathetic nervous system	The branch of the nervous system which conserves energy by e.g. slowing heart rate, increasing digestion.
Sympathetic nervous system	The branch of the nervous system which expends energy, consisting of the flight or fight response to stress e.g. increasing HR rate, inhibiting digestion.
Endocrine system	The hormonal system.
Glands	Organs which secrete hormones.
Hormones	Chemical messengers which travel though the blood to stimulate target organs.
Adrenaline	A hormone from the adrenal gland which causes expenditure of energy in the flight or fight response to stress e.g. slowing breathing rate, pupil dilation.
Localisation of function	The idea that different parts of the brain are responsible for specific functions.
Lateralisation	The way in which some cognitive processes tend to be more dominant in one hemisphere than the other.
Motor cortex	The part of the cortex involved in the control of voluntary movements.
Visual cortex	The part of the cortex that receives and processes sensory nerve impulses from the eyes, allowing us to experience vision.
Auditory cortex	The part of the cortex that receives and processes sensory nerve impulses from the ears, allowing us to experience hearing.
Somatosensory cortex	The part of the cortex that receives and processes sensory nerve impulses from the skin, allowing us to experience touch, temp., pressure and pain.
Broca's area	A region of the left hemisphere involved in the production of speech.
Wernicke's area	A region of the left hemisphere involved in the comprehension of speech.
Split-brain	The result when the corpus callosum connecting the two hemispheres of

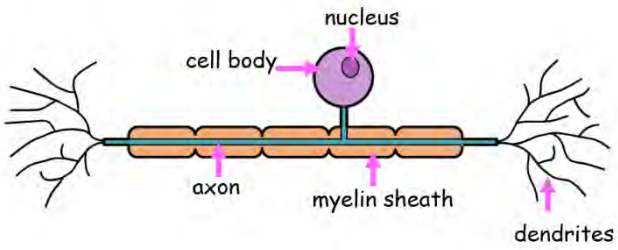
	the brain is severed.
Plasticity	The ability of the brain to modify its structure/function following changes within the body/the external environment
Functional recovery	A partial or complete return to the normal activity of the brain following disease/trauma.
Functional magnetic resonance imaging	**fMRI**: a brain-scanning technique that measures blood flow in the brain when a person performs a task; based on the premise that neurons in the brain that are the most active during a task use the most energy.
Electroencephalography	**EEG:** a non-invasive method to record electrical activity of the brain, involving placing electrodes on the scalp.
Even related potential	**ERP:** the brain response that's the result of a specific event, discovered by averaging results of multiple EEGs.
Post mortem	The examination of the brain after death.
Infradian rhythm	A biological rhythm lasting longer than 24 hours.
Circadian rhythm	A biological rhythm lasting 24 hours.
Ultradian rhythm	A biological rhythm lasting less than 24 hours.
Endogenous pacemaker	Internal 'biological clocks' that manage our rhythms (e.g. the SCN in the hypothalamus).
Exogenous zeitgebers	External influences that have an effect on biological rhythms.
Genotype	The genetic make-up of an organism.
Phenotype	The measurable characteristics of an organism, influenced by genotype and environment.
Evolution	The change in the heritable traits of a species over successive generations, driven by natural selection.

The Nervous System

The structure and functions of neurones

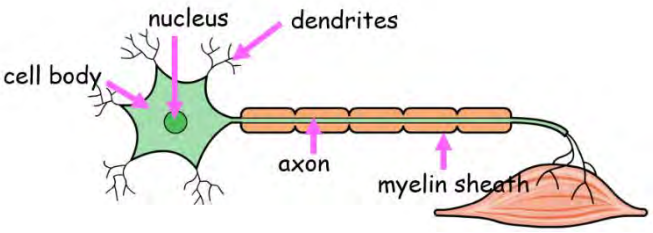
Information is transmitted to and from the brain via 3 sorts of neurone:

Sensory neurones



Function: **Transmits impulses from sense organs to the CNS.**

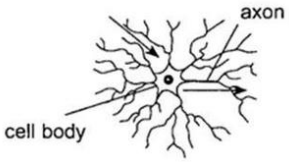
Motor neurones



Function: **Transmits impulses from the CNS to muscles/glands.**

Relay neurones

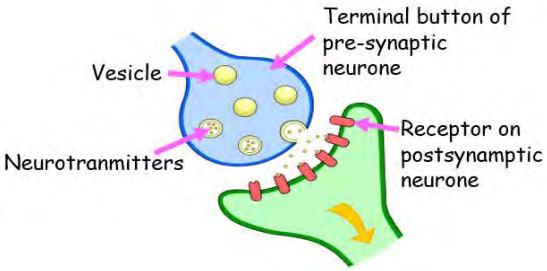
Function: **Found in the brain/spinal cord, transmits impulses from a sensory to a motor neurone.**



Synaptic Transmission

A synapse is the gap between neurones. An electrical impulse is transmitted across the synapse through synaptic transmission. An electrical impulse arriving at the terminal button of the pre-synaptic neurone causes the release of neurotranmitters from vesicles into the synaptic cleft. These diffuse across the gaps and then bind with receptors on the membrane of the post-synapic neurone.

Neurotransmitters can be **excitatory** or **inhibitory** (most can be both). If the neurotransmitter is **excitatory** then the post synaptic neuron is more likely to fire an impulse. If the neurotransmitter is **inhibitory** then the post synaptic neurone is less likely to fire an impulse. The excitatory and inhibitory influences are summated: if the net input to the post synaptic neurone is inhibitory the neuron will be less likely to 'fire' and if the net input is excitatory the neurone will be more likely to fire (drugs can mimic the action of excitatory/inhibitory n.t.s)



The divisions of the nervous system