AQA Psychology A-level

Topic 6: Biopsychology

Flashcards

What are the two main divisions of the nervous system?

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Peripheral Nervous System- This refers to the parts of the nervous system that do not include the brain and the spinal cord.

Central nervous System (CNS)- This is comprised of the brain and spinal cord. It receives information from the senses and controls the body's responses.

Describe the somatic nervous system.

Describe the somatic nervous system.

Unlike the ANS, this part of the peripheral nervous system is responsible for carrying sensory and motor information to and from the central nervous system.

Describe synaptic transmission.

Describe the synaptic transmission.

This refers to the process by which a nerve impulse passes across the synaptic cleft from one neuron to another (from the presynaptic neuron to the postsynaptic neuron).

What are hormones?

What are hormones?

The body's chemical messengers. They travel through the bloodstream, influencing many different processes including mood, the stress response and bonding between mother and newborn baby.

Describe the fight or flight response.

Describe the fight or flight response.

This is a sequence of activity within the body that is triggered when the body prepares itself for defending or attacking (fight) or running to safety (flight). This activity involves changes in the nervous system and the secretion of hormones that are necessary to sustain arousal.

Why does the tend and befriend response occur in females?

Why does the tend and befriend response occur in females?

This is due to the presence of oxytocin in females, which tends to induce a nurtting response. The effects of oxytocin are negated by testosterone which is why the tend and befriend response occurs largely in females.

What are axons?

What are axons?

Axons carry the electrical impulse down the length of a neuron, these are covered in a fatty layer called a myelin sheath.

Describe research into localisation of brain function.

Describe research into localisation of brain function.

Broca carried out a postmortem on the brain of a patient known as ‘Tan’ (he was only able to say ‘Tan’) and found that he had part of his left frontal lobe missing, leading to language function being associated with this area of the brain.

How can driving a taxi help with functional recovery?

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It can help because it increases brain plasticity. Maguire et al (2000) found that taxi drivers had a significantly higher volume of grey matter in their posterior hippocampus than the control group.

Describe split-brain research.

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Sperry (1968) studied patients whose corpus callosum was severed for some reason, these patients had to watch as a word or image was projected to their right visual field (which is processed by the left hemisphere) or their left visual field, which is processed by their right hemisphere. When the object was projected to their RVF, they were able to describe what was seen, but when it was projected to the left, they said that nothing was there. However, they were able to tactilely select a matching object to the one shown to their LVF. This led Sperry to believe that they were unable to verbally identify what they had been seen, because the left hemisphere, where language is believed to be lateralised is needed for speech production.

Why are young people more likely to recover from brain trauma?

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This is because during infancy and childhood the parin experiences rapid growth, forming 15,000 synaptic connections between the ages of 2-3.this increases the plasticity of the brain, making it more likely that other areas of the brain can take on the role of damaged parts following a brain trauma.

What is Wernicke's area?

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This is a part of the brain that deals with language comprehension, it is located in the temporal lobe.

What is an electroencephalogram?

What is an electroencephalogram?

This is a recording of brain activity. During the test, small sensors are attached to the scalp to pick up the electrical signals produced when brain cells send messages to each other.

Give examples of infradian rhythms.

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Infradian rhythms are those that last longer than 24 hours, an example of this is the female menstrual cycle and Seasonal Affective Disorder (SAD).

Describe Siffre's research.

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Siffre spent a long period in a cave to examine the effects of free-running biological rhythms without the influence of exogenous zeitgebers. In each of his studies- one in 1962 and the other in the 70s, Siffre's free running circadian rhythm settled at about 25 hours, just above the usual 24.

What is an endogenous pacemaker?

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The suprachiasmatic nucleus is an example of this, it helps to set our circadian rhythms by interacting with other parts of the body. These are essentially internal biological clocks.

Give examples of circadian rhythms.

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An example of a circadian rhythm is the sleep-wake cycle. Circadian rhythms are those lasting 24 hours.

What is the suprachiasmatic nucleus?

What is the suprachiasmatic nucleus?

This is a bundle of nerves that act like the body's internal clock, within the hypothalamus. This helps to regulate our sleep wake-cycles.

What are the pros and cons of postmortem examination?

What are the pros and cons of postmortem examination?

Pro- Postmortems allow for anatomical studying of the brain, that cannot be done on live subjects.

Con- The subject is dead, so no follow up studies or questions can be asked to the patient based on findings from the post-mortem.

Describe the autonomic nervous system.

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This is the part of the nervous system that controls the brain's involuntary activities, and is self-regulating (autonomous). This is further divided into the sympathetic and the parasympathetic nervous systems.