

Evolution- Charles Darwin

One of the effects of evolution is that a species will become better adapted to their environment. If these species don't adapt they may become extinct due to being unable to deal with any of these factors:

- Increased competition
- Changes in the environment
- New diseases
- New Predators

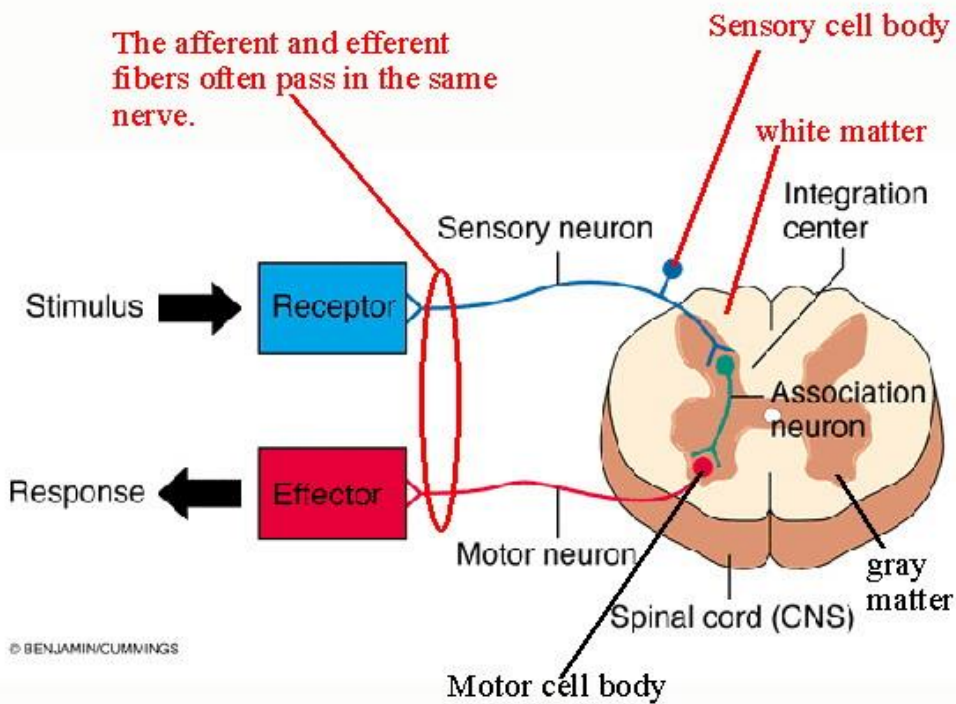
Darwin suggested evolution through natural selection

This follows important steps:

- Populations produce more offspring than can be supported by the environment
- Individuals there for compete for resources
- Within the population there is variation
- Those individuals with the most suitable characteristics to the environment are called the fittest
- These individuals compete successfully for the limited resources and survive to adulthood (survival of the fittest)
- They can then reproduce and pass on the successful genes to their offspring
- The next generation there for inherit the advantageous genes and the population gradually changes over time (evolution)

Galapagos Islands: where Darwin got the idea for his theory. All the creatures from the islands showed a marked relationship with those from the American continent. Darwin encountered evidence that evolution was proceeding independently on each island, producing what appeared to be new species. He saw different types of finches on the islands which lead him to think of mutations as

A Reflex Arc Shows How Neuron Types Work Together.



Stimulus---receptors---sensory neurone---relay neurone---motor neurone---effector---response

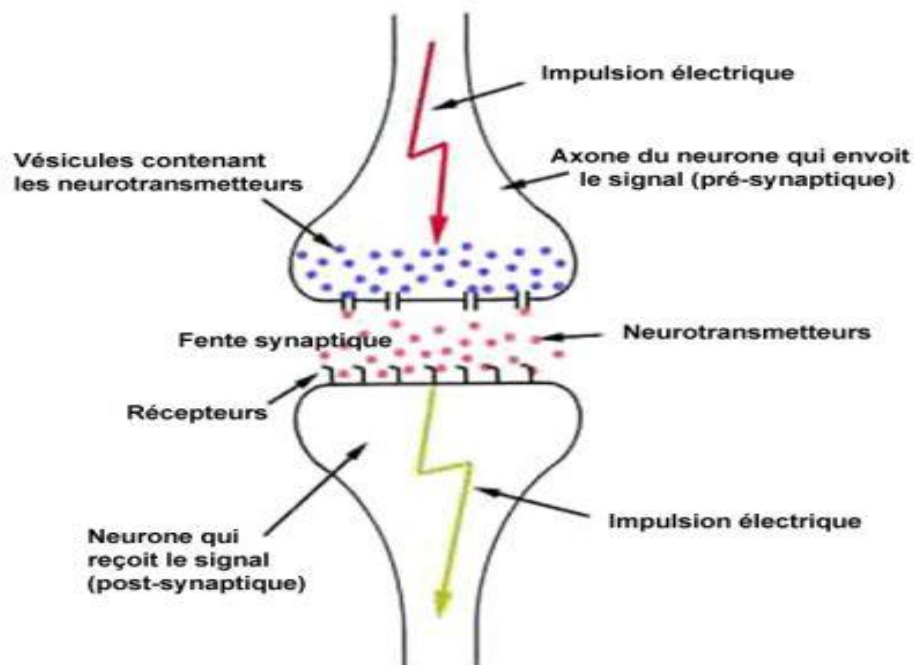
Eg:

Bright light---light sensitive cells in the eye---sensory neurone-relay neurone---motor neurone--- muscles around the pupil---pupil shrinks

Synapses

Neurons never touch each over

Electrical impulses must be changed into chemicals to cross the gap (synapses) between neurons



Oestrogen also stimulates the production of LH. When LH reaches its peak it stimulates the release of the egg so that it comes out

IN Vitro fertilization (IVF)

Women given hormones to stimulate egg production

Eggs harvested from ovaries

In a Petri dish sperm added to some eggs to fertilize them

2/3 fertilized eggs implanted into the uterus to develop

Used if:

Not enough eggs being produced

Oviducts blocked

Poor quality sperm

Homeostasis

Maintain a constant internal environment

Things to keep constant:

Carbon dioxide levels, temperature, blood sugar levels, water content of the body, ion content

Thermoregulatory centre:

Controls the body temperature

Contains receptors sensitive to temperature change in blood flowing through the brain

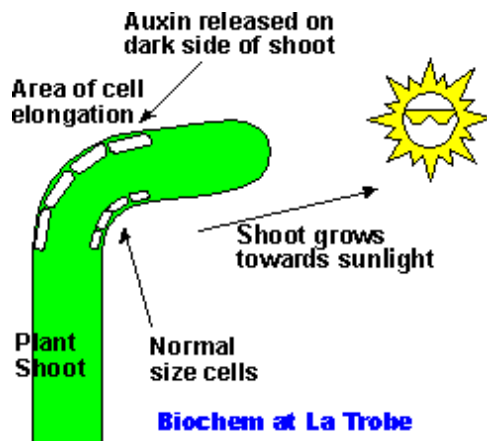
If the body gets too hot the enzymes denature (change shape) and cannot catalyse the reactions in cells

Cooling down:

Vasodilation- skin capillaries open wider increasing the blood flow to lose more heat by radiation from the skin

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Sunlight breaks them down. Therefore the shoot tip which has direct sunlight will have the least amount of auxins. The area of the plant that is shaded has a higher concentration of auxins. The area of the plant that is shaded has a higher concentration of auxins and so more growth occurs this leads to lop sided growth and the plant leans towards the sunlight



Plant growth hormones can be used as weed killers

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