



Dr Phil Holland

Topic 1:

**Action potentials and
Synaptic transmission**

Part 4 of 5

Module:

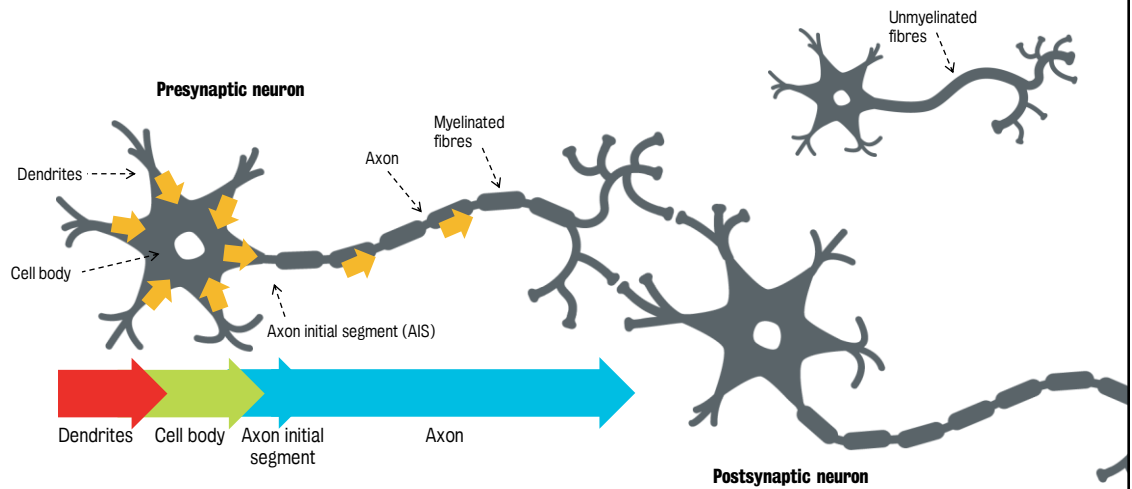
Biological Foundations of Mental Health

Week 3:

Synaptic transmission and neurotransmitter systems

Part 4

Axonal conductance

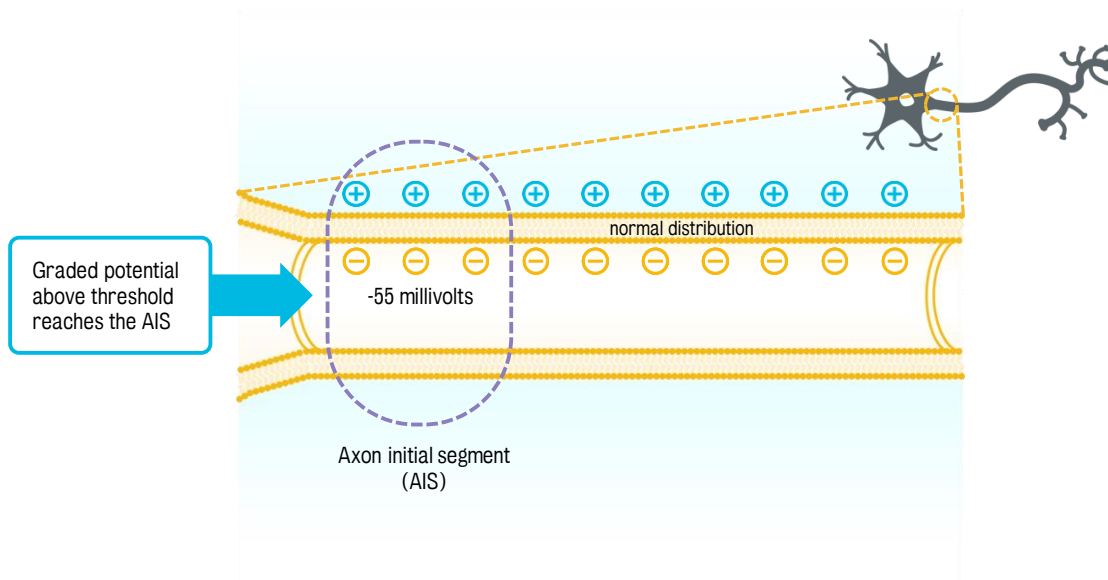


Week 3 Synaptic transmission and neurotransmitter systems

Topic 1: Action potentials and synaptic transmission

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Action potential conduction (1)



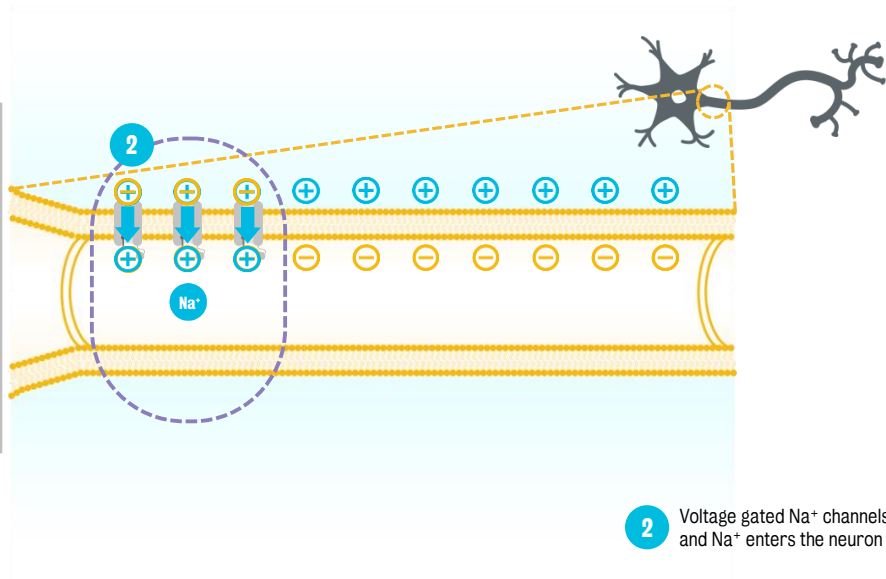
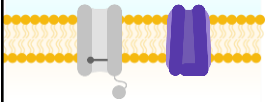
Week 3 Synaptic transmission and neurotransmitter systems

Topic 1: Action potentials and synaptic transmission

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Action potential conduction (2)

Axon initial segment has a very high concentration of voltage-gated sodium channels and voltage-gated potassium channels.

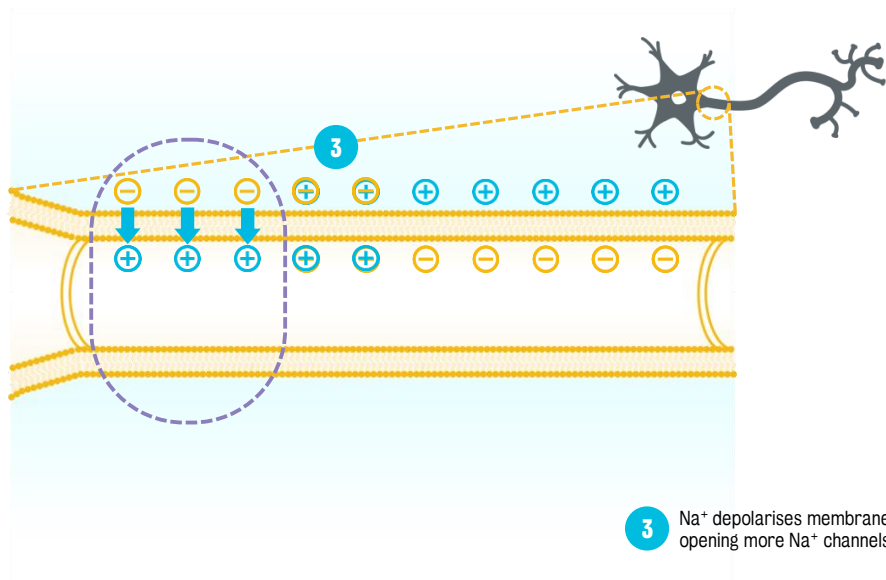


Week 3 Synaptic transmission and neurotransmitter systems

Topic 1: Action potentials and synaptic transmission

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Action potential conduction (3)

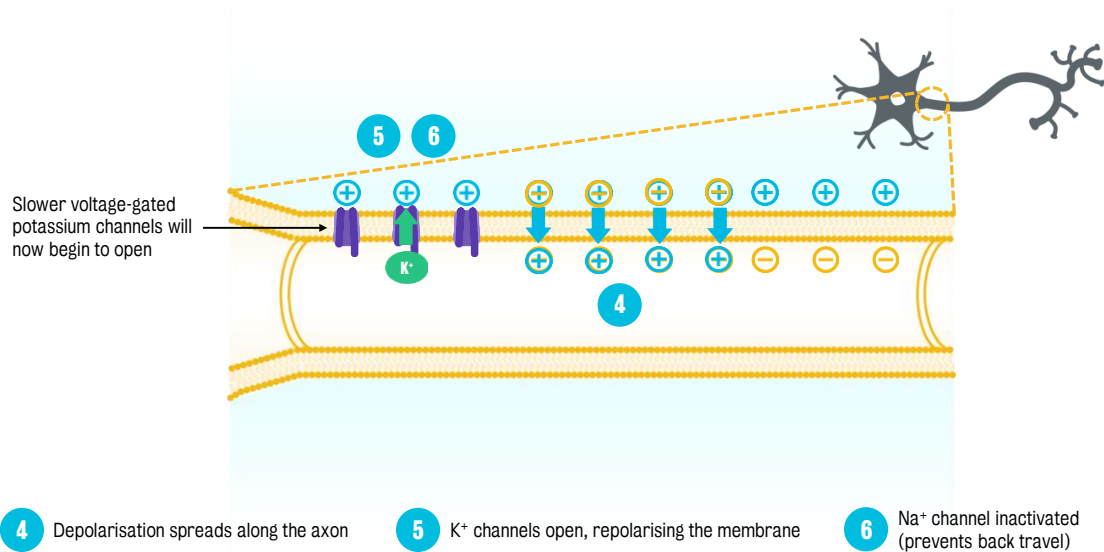


Week 3 Synaptic transmission and neurotransmitter systems

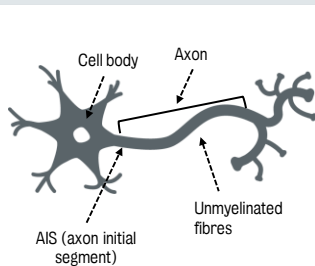
Topic 1: Action potentials and synaptic transmission

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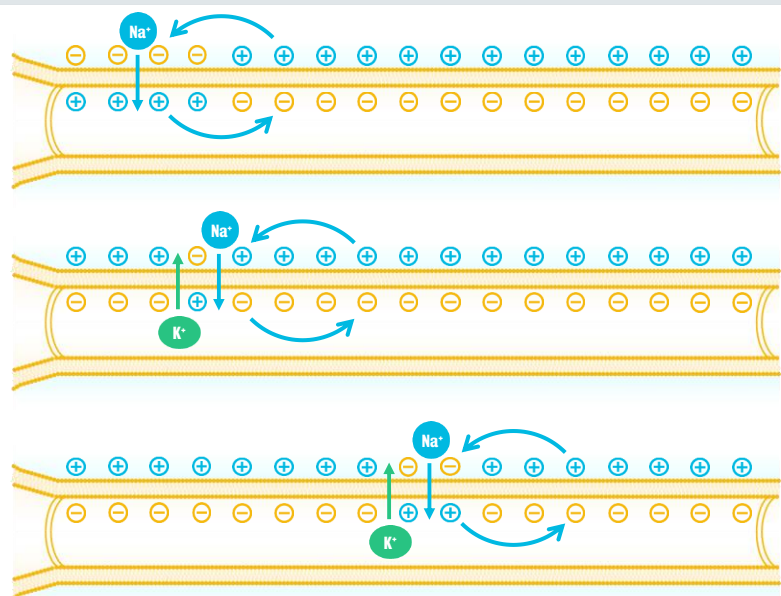
Action potential conduction (4)



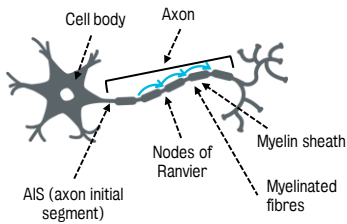
Action potential conduction: Non-myelinated



This is a relatively slow process.

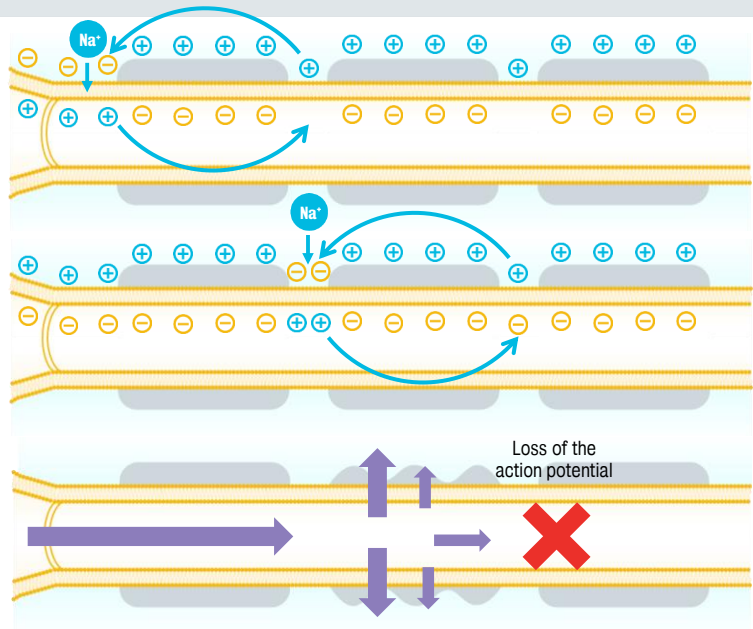


Action potential conduction: Myelinated axons

Saltatory conduction

Peripheral nervous system:
Schwann cells

Central nervous system:
Oligodendrocytes



End of part 4