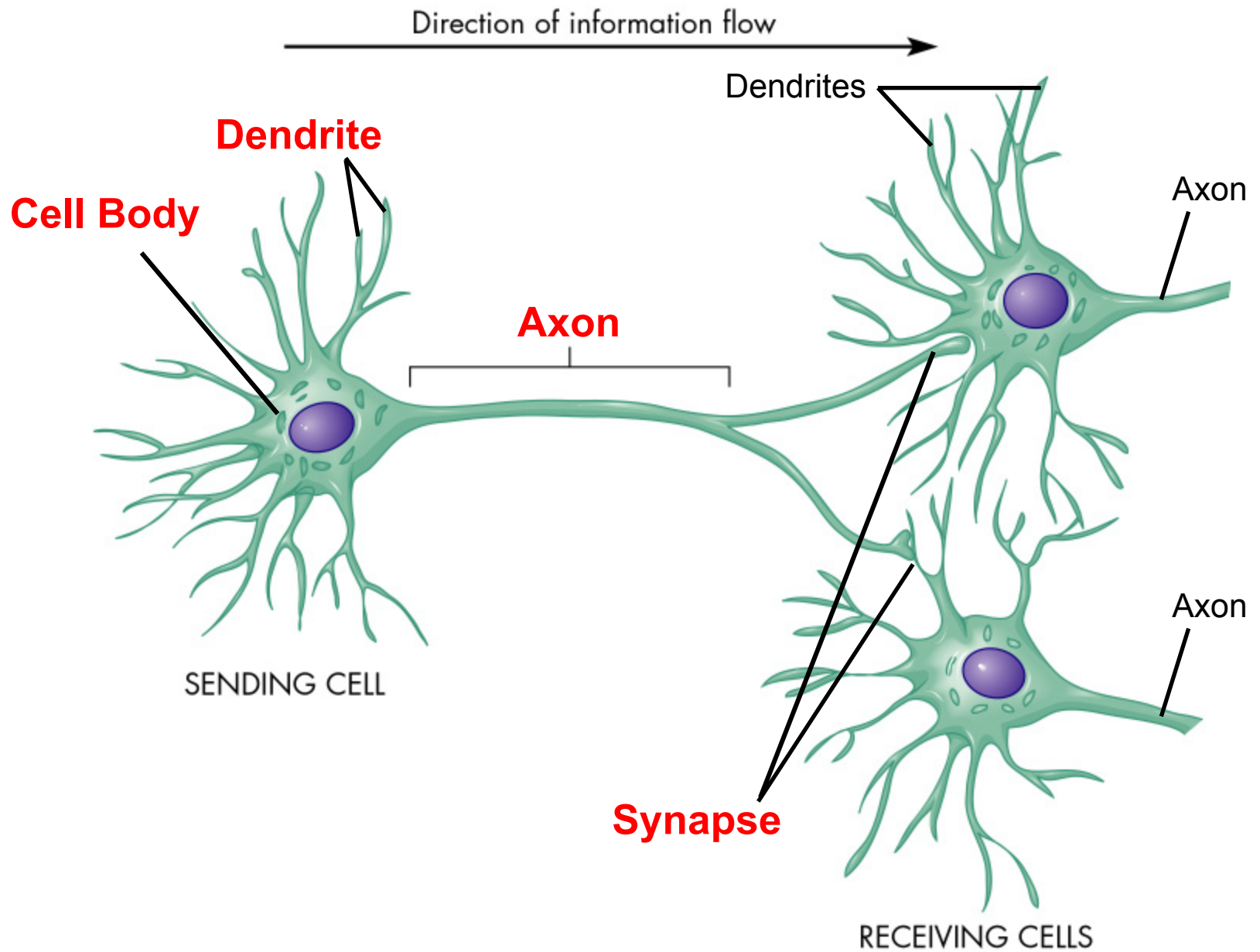
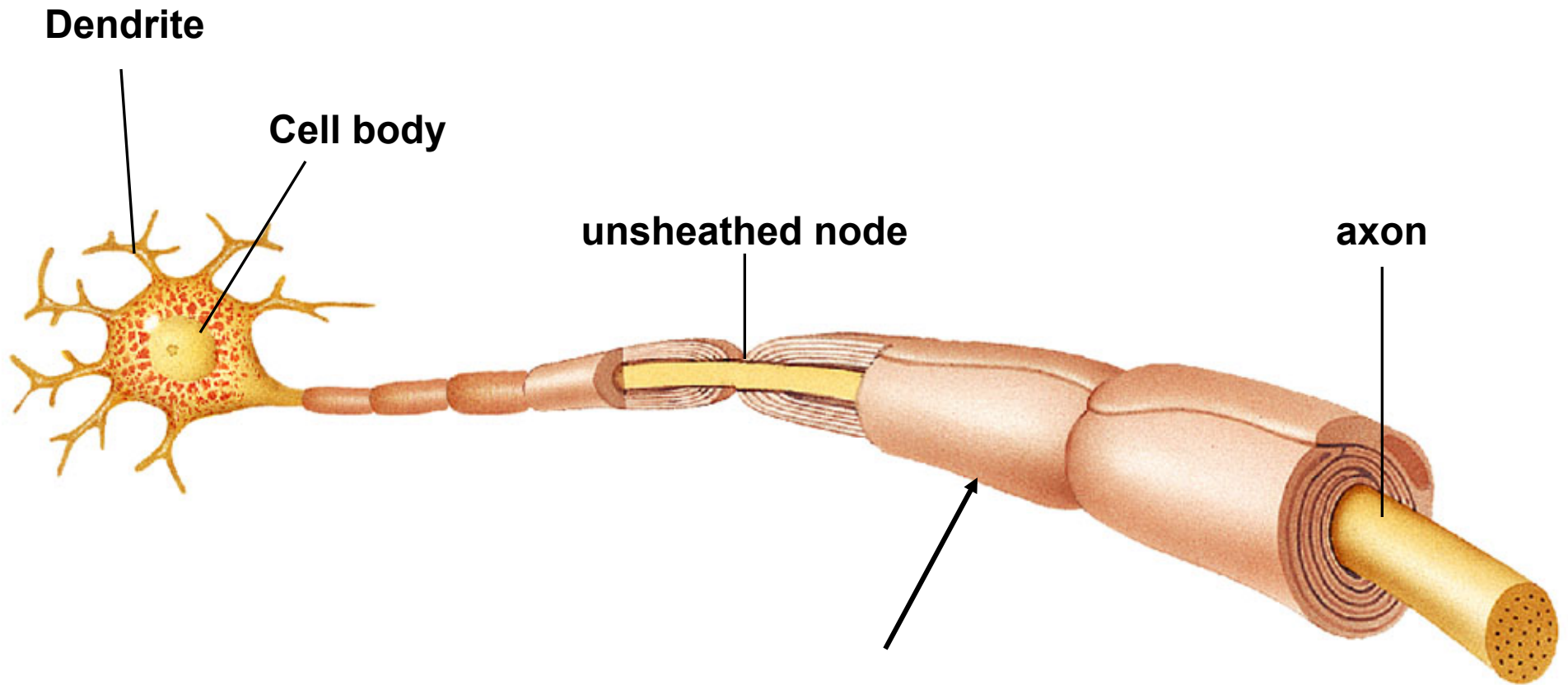


# Neuron (Nerve cell) Anatomy



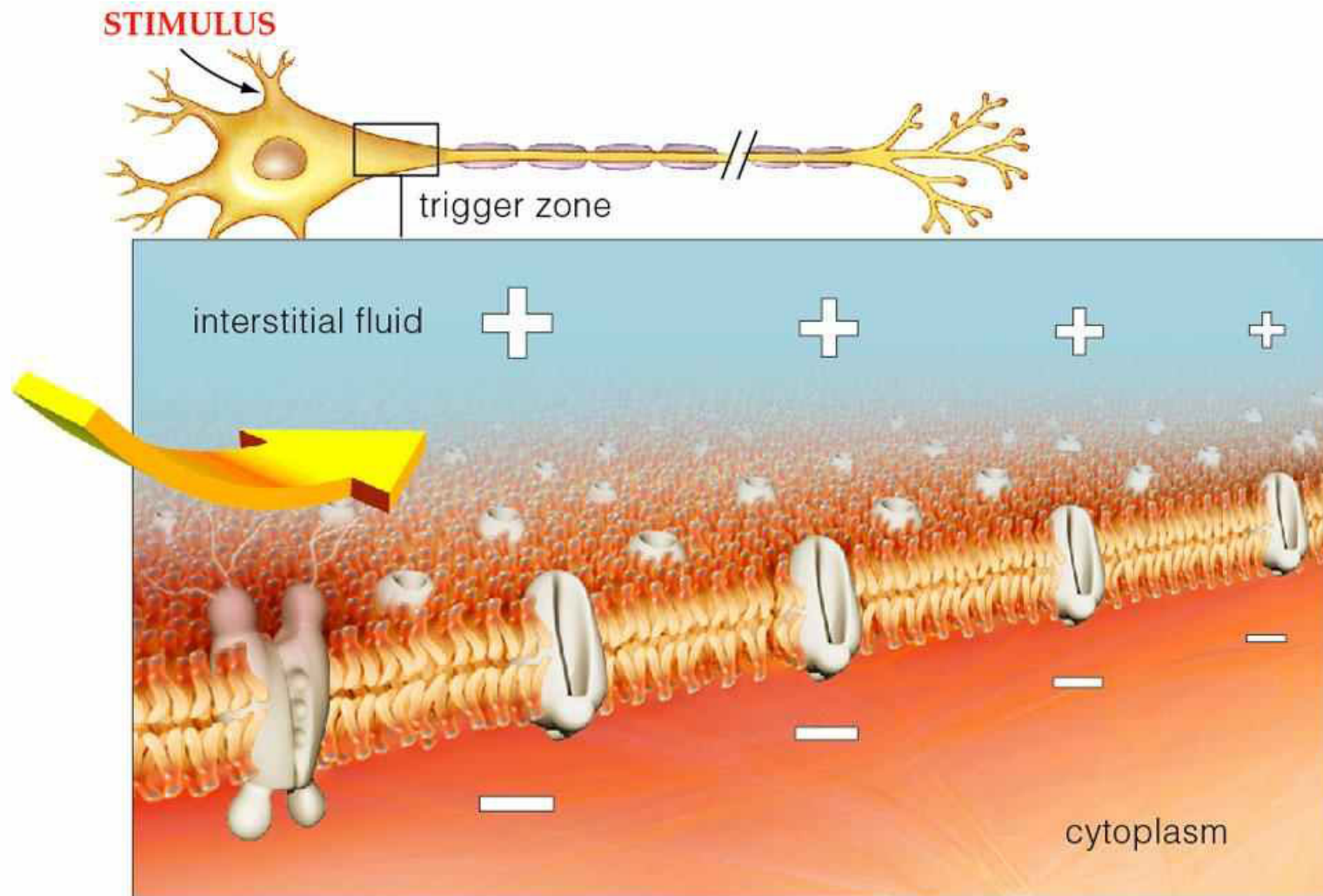


**Myelin Sheath:**  
**lipid-rich insulation**  
**around Axon**

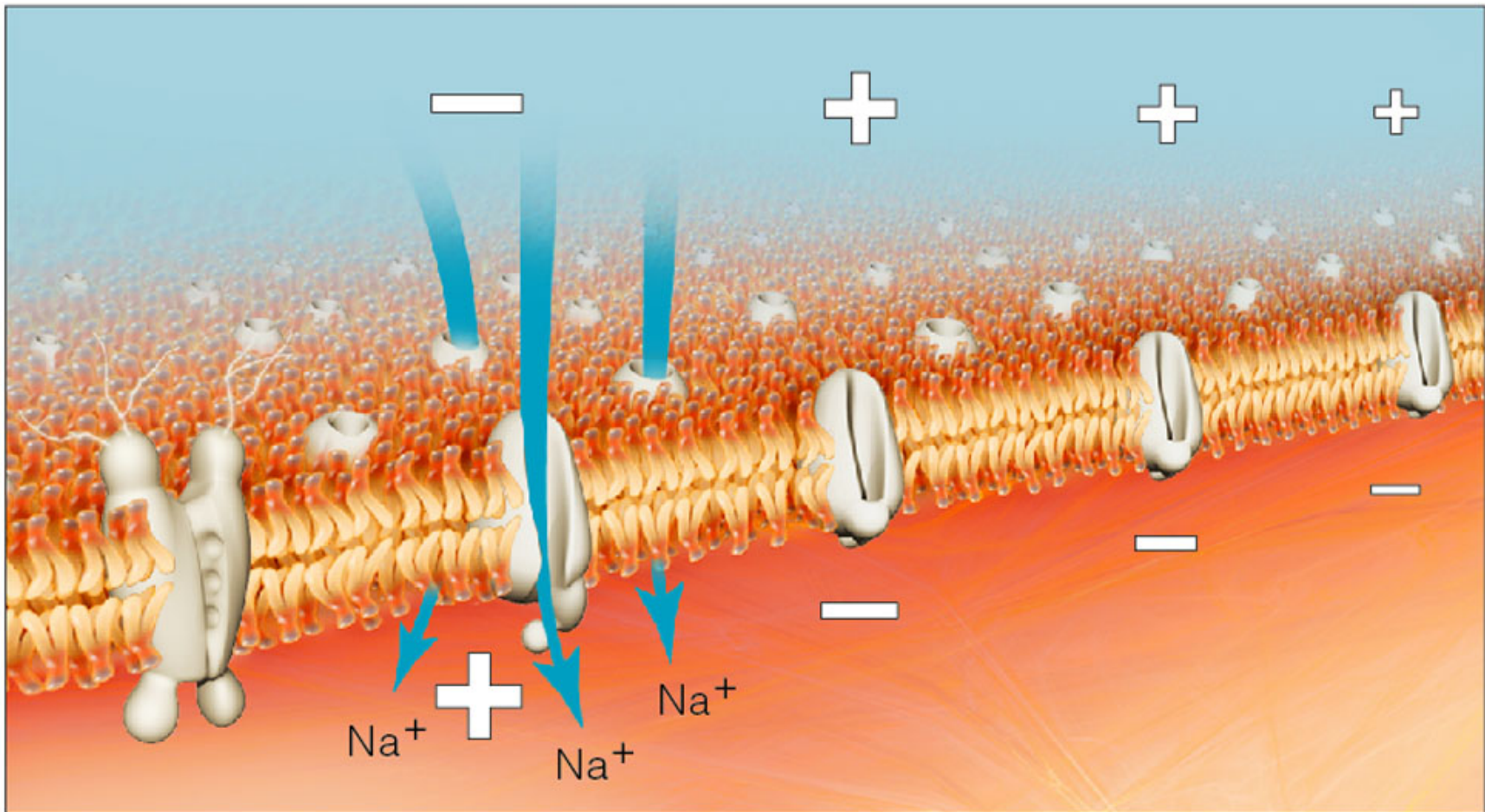
© 2006 Brooks/Cole - Thomson

**Two Functions:**  
**Insulation**

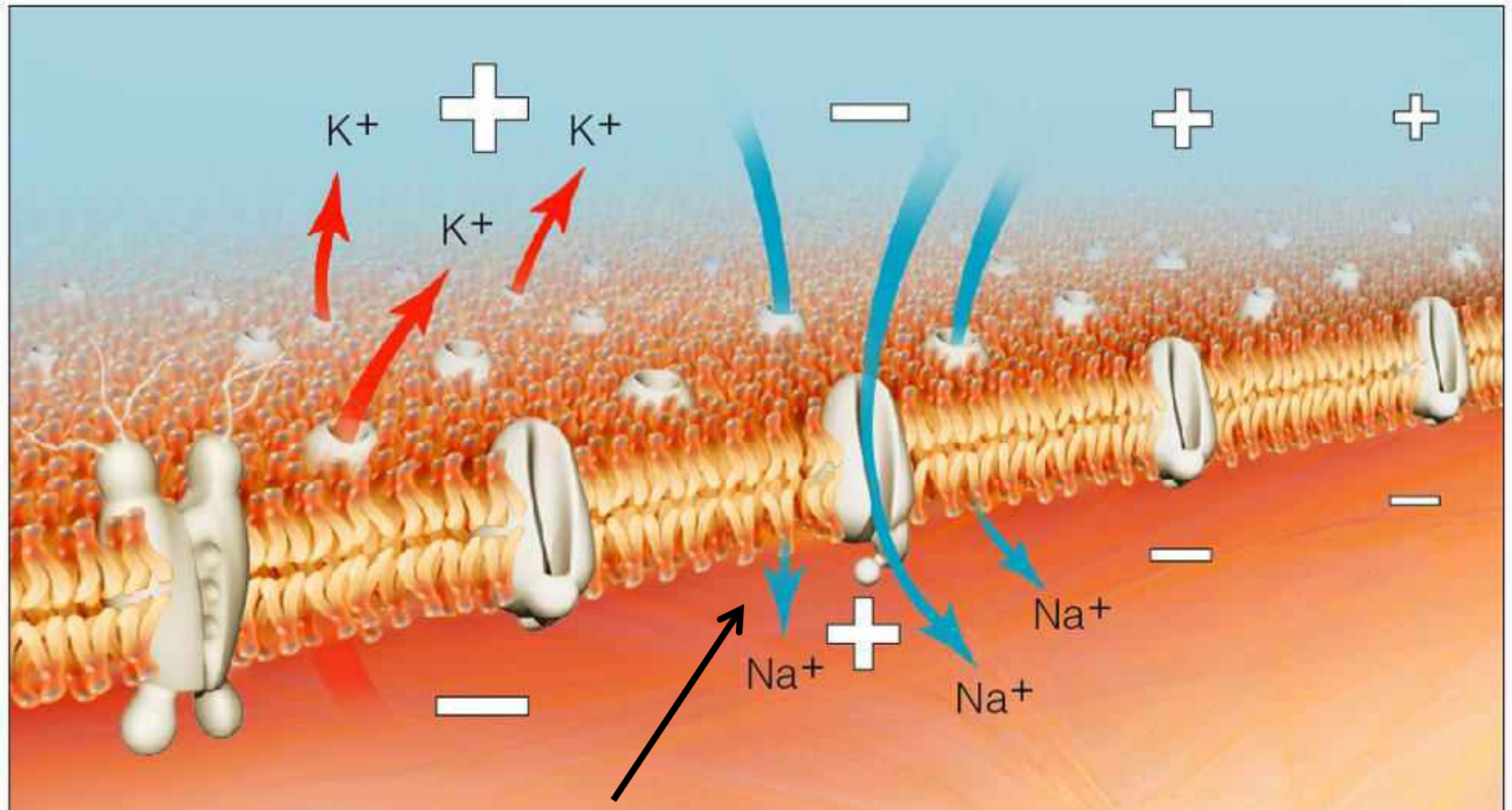
**Make nerve impulse faster**



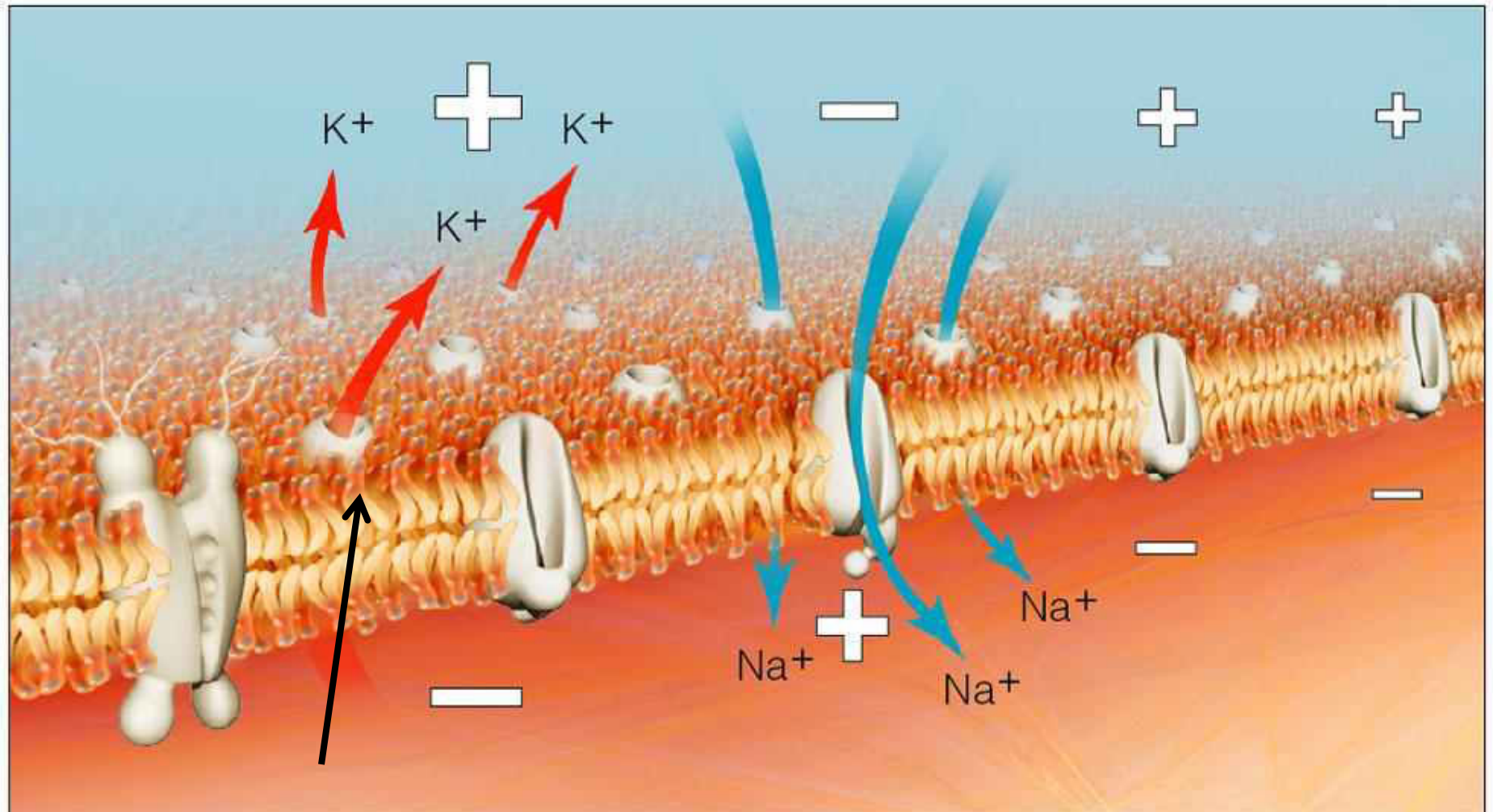
**Nerve cell at rest. Inside of cell is negative, outside of cell is positive.**



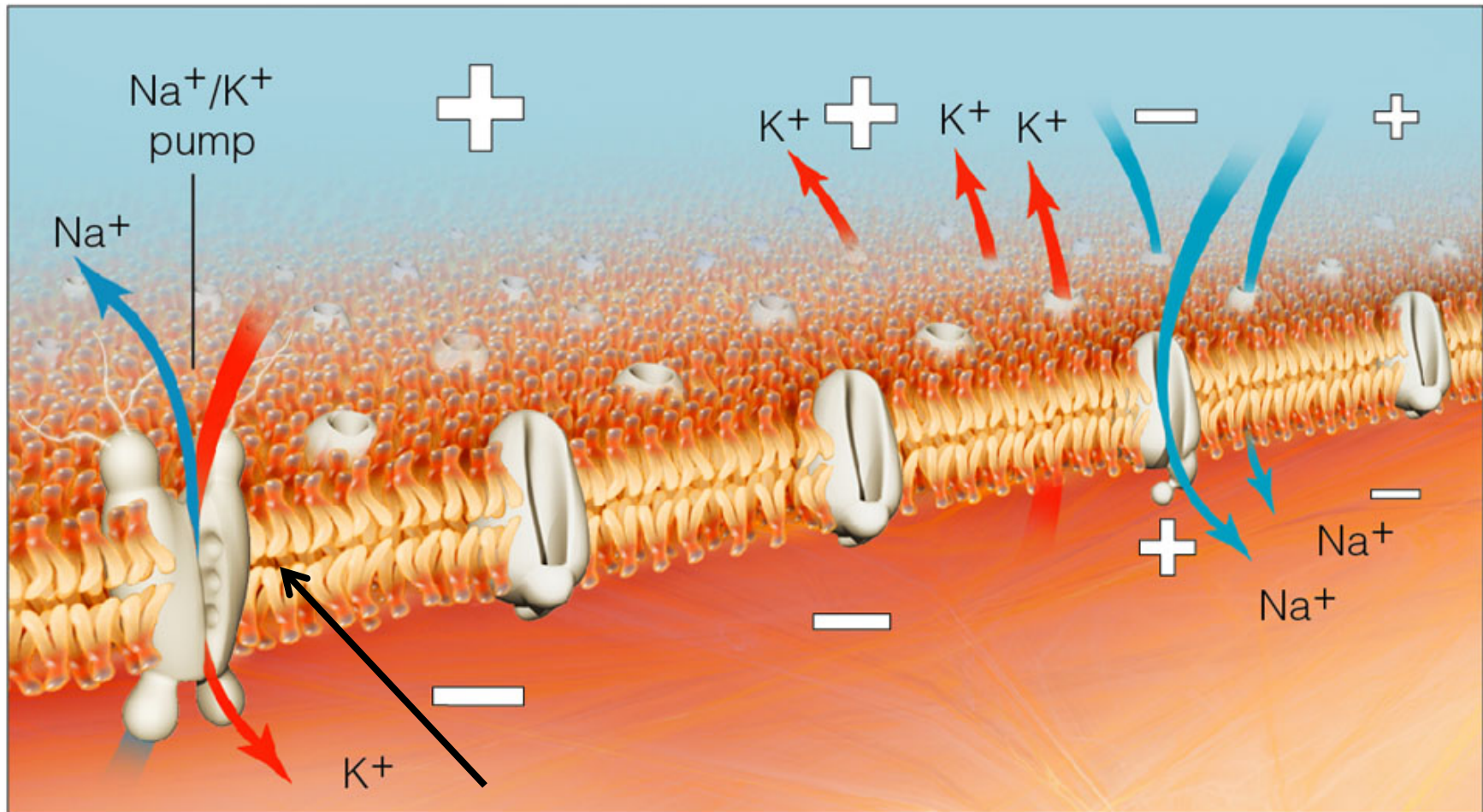
**1. Na<sup>+</sup> channel opens. Na<sup>+</sup> ions flow into cell.  
Reverses charge. Now positive inside, negative outside.**



**2. Step 1 causes next Na<sup>+</sup> channel to open, Action Potential moves along Axon away from cell body.**



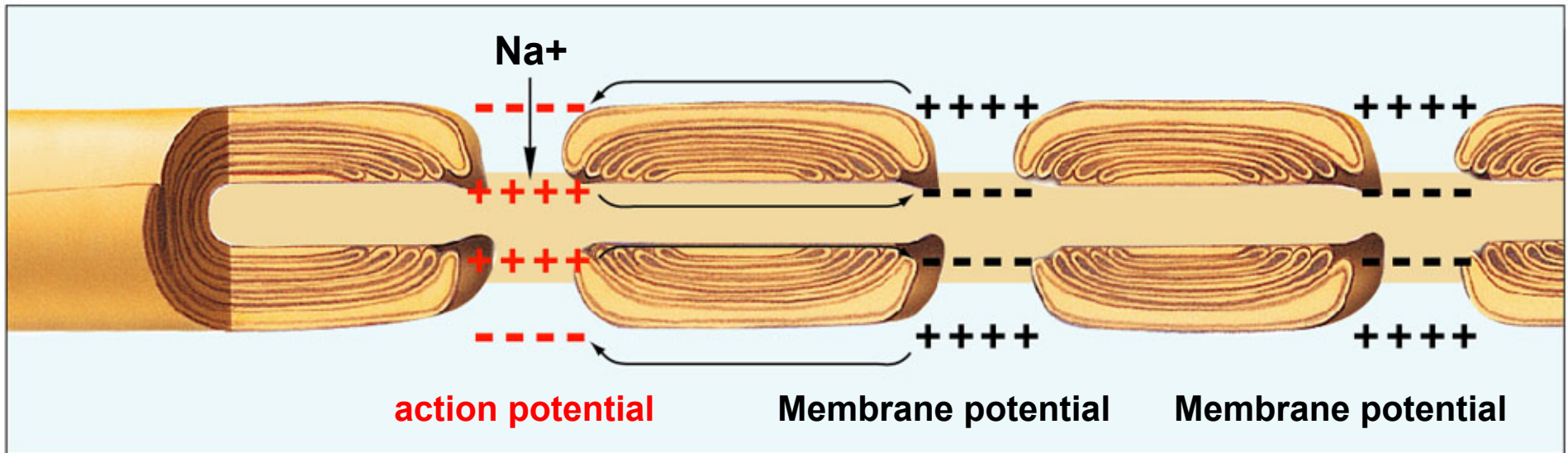
**3.  $K^+$  channels open right after  $Na^+$  channel.  
 $K^+$  flows out and restores negative charge inside,  
positive charge outside.**



**4. Sodium-Potassium pump uses ATP energy to pump Na<sup>+</sup> back out and K<sup>+</sup> back in. Membrane potential restored.**

# How the myelin sheath speeds nerve impulses

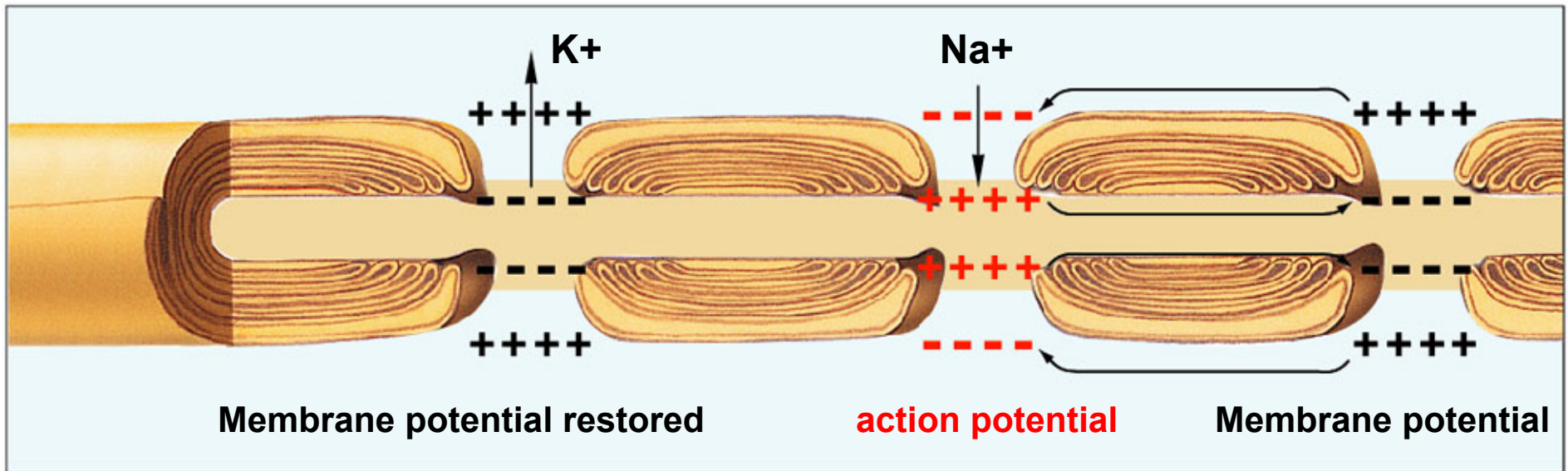
Cell body  $\longrightarrow$  Next Nerve



Axon

# How the myelin sheath speeds nerve impulses

Cell body  $\longrightarrow$  Next Nerve



Axon

