

ONE MECHANISM OF OPIOID ACTION:

When an opioid binds to an opioid receptor in the membrane of a neuron **1**, calcium channels close, blocking positively charged calcium ions from entering the cell **2**. In addition, cAMP levels decrease and potassium channels open **3**, allowing positive potassium ions to exit the cell. These events hyperpolarize the cell, increasing the charge difference between the cell's interior and the extracellular environment and making the neuron less likely to fire an action potential. Quieting neurons along pain pathways with opioids dampens the transmission of pain signals and results in analgesia.

