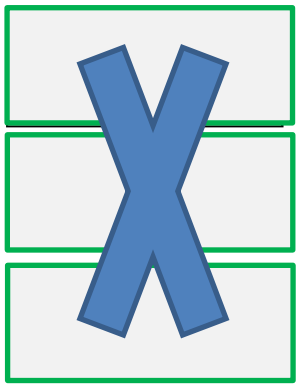
CNS

PNS

Descending info.

Ascending info.



Voluntary Motor responses

Controls movement of skeletal (voluntary) muscles

Involuntary Motor responses

Controls movement of smooth & cardiac (involuntary) muscles, and glands.

All voluntary motor movement involves **ACh** neurotransmitter binding to **Nicotinic cholinergic** receptors.

Parasympathetic Motor responses

_____ **nerves**

heart rate ↓

BP ↓

bronchioles **bronchoconstrict**

GI peristalsis ↑

GI secretions ↑

GI arterioles **vasodilate**

_____ **nerves**

urination ↑

defecation ↑

All parasympathetic motor responses work by **ACh** neurotransmitter binding to **Muscarinic cholinergic** receptors.

Sympathetic Motor responses

_____ **nerves**

heart rate ↑

BP ↑

bronchioles **bronchodilate**

GI peristalsis ↓

GI secretions ↓

GI arterioles **vasoconstrict**

skeletal muscles **vasodilate**

Lumbar nerves

urination ↓

defecation ↓

All sympathetic motor responses work by **epinephrine** neurotransmitter binding to what 3 types of adrenergic receptors?

B1 adrenergic – controls what? ↑ **Heart rate**

B2 adrenergic – controls what? → **bronchodilation & skeletal muscle vasodilation**

α adrenergic – controls what? ↓ **GI activity**