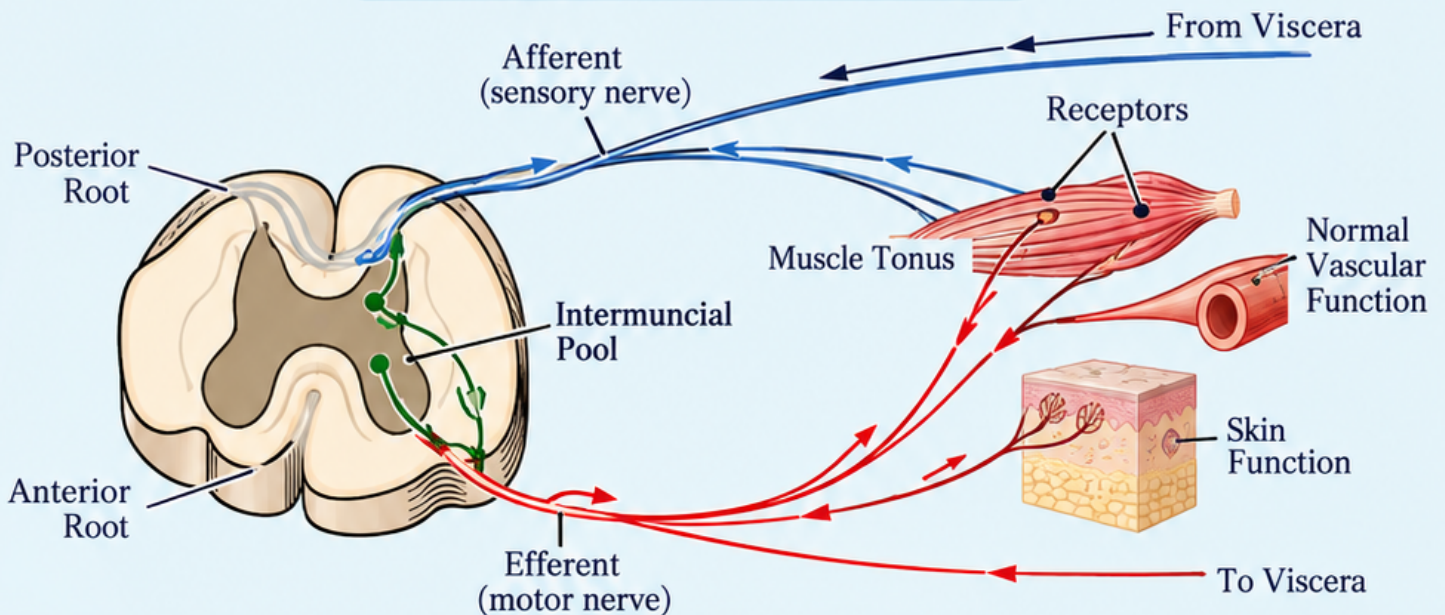


# -The Reflex Arc-

## THE NORMAL REFLEX ARC



The internuncial pool, interposed between the sensory nerves of the posterior root and the motor nerves of the anterior root, has an excitatory nature. When strong stimuli enter the sensory cord for 2 milliseconds, discharge from the motor root will last for 20 milliseconds. There seems to be a self re-exciting mechanism in the pool that amplifies the efferent (motor) responses to **10 times** the original afferent (sensory) impulse. This increase is in strength, speed of impulse and duration.

In other words, if you touch a stove and it is not hot; there is only a weak (normal) stimuli entering the reflex arc. In this case, the efferent (motor) response will not be amplified, and the hand will lift normally. However, if the stove is hot, the strong impulse will become *amplified in the internuncial pool* and emerge through the motor nerves as a higher frequency and more strongly sustained impulse. The hand will jerk off the stove in an emergency spastic retreat from greater injury.

Similarly, in those circumstances in which the body loses its balance, the cord mediates a balance restoring reflexes with coordinating assistance from the brain. This heightened motor response is the survival mechanism that keeps us from falling.

The spasming muscle that protects us from bleeding to death when tissues are badly severed is another example of the value of the amplified reflex impulses. Now, the problem with these muscle spasms (static spasms) is that the traumatized muscles may heal, but they still retain the problem of unnecessary hypertonicity with local and referred pain.