Instructions For Movement Summary

This summary is about movement. Movement in the human body is possible due to specific interactions between the nervous, muscular and skeletal systems. To complete this assignment, you will describe these interactions as the body goes through specific actions.

Required Elements

The summary must have the following elements as you describe the interactions that occur during movement:

1) An Introduction: Introduce the topic by explaining the role of the nervous system, motor pathway, nerve impulses, muscular system and skeletal system in the process of movement. Explain how these systems interact to produce movement in general (do not describe specific movements here).

2) Motor Pathway: A paragraph including an explanation of what a motor pathway is and the purpose it serves in the process of movement. A description of the specific path nerve signals travel through the brain, spinal cord, spinal nerves and peripheral nerves so that the brain is able to send signals to control the muscles and cause the movement at the joint between the bones. (The motor pathway as discussed in class) – This pathway is described only once in general, NOT for each specific movement!

3) Nerve Impulse: A paragraph including an explanation of what a nerve impulse is and its role in the process of creating movement, as well as an explanation of the process by which a nerve impulse is initiated in the neurons of the motor pathway, propagated down their axons and passed to the next neurons in the pathway before finally stimulating the muscle at the synapse (as discussed in class)

4) Conclusion: A paragraph providing an example of how these systems interact by writing a description of the interactions between the nerves, muscles and bones going through a specific set of movements. For each movement listed in the scenario below, you should describe specifically what happens. Be sure to:

a. Name the movements that occur at the joints (flexion, elevation, extension abduction etc.).

b. Name the specific nerves that stimulate the specific muscles to contract & pull the specific bones to produce specific movements at the joint (include the articulation points between the bones).

c. DO NOT LIST the nerves, muscles and bones involved! Name them as you describe how they are interacting with each other to produce movement. See the example below.

5) College Level Scientific Writing: Include the resources used on a work cited page at the end of the summary. The sources should be written in APA format. The summary should be double spaced. DO NOT use first, second or third person anywhere within the summary. Do not make non-factual statements and do not include extraneous information – remain on topic. The summary should demonstrate proper syntax and lack spelling, grammar and punctuation errors. The summary should be written in your own words!

Example for # 4: “To kick a ball requires flexion, followed by rapid extension at the knee. To flex the knee, a nerve impulse passes through the motor pathway, exits the spinal cord via the spinal nerves making up the sacral plexus, and passes into the sciatic nerve. This nerve stimulates the biceps femoris, semimembranosus & semitendinosus to contract. When these muscles contract, they pull the tibia and fibula posterior and up toward the back of the femur, the medial and lateral condyles of the tibia slide backward on the medial and lateral condyles of the femur. Once the knee is flexed, it must be extended. To extend the knee, a nerve impulse…

Scenario used for # 4 only

You see a delicious cookie on the table in front of you. You decide you will try one. To do this you must:

1) Lift your arm directly in front of you to reach for the cookie – describe movement at the shoulder

2) Grasp the cookie with your fingers and your thumb – describe movements at the MP joints

3) Bring the cookie to your mouth – describe 2 movements - first rotate (palm up) and then bend the elbow