

# Spine - Health and Disease

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Spinal segment movement is necessary for the health of the spine and the individual. A reduction of normal spinal segment movement will result in increased loads and stress placed upon weight-bearing tissues of the spine such as the disc, cartilage and underlying bone. This process causes abnormal wear and tear, thus, promoting the degenerative process. This series of events is often referred to immobilization degeneration (ID). It is characterized by a loss of tissue integrity, a change in tissue composition and arthritic changes. Normal spinal movement allows for weight bearing stress to be distributed more tissue and across a larger area of each spinal segment, thus, reducing the degree and rate of "wear and tear".

Lack of movement of a spinal segment and its related joints may result in stiffness of the spinal segment, loss of muscle around the spinal segment (atrophy), thinning of related bone (osteoporosis), and chronic swelling of neighboring tissues (edema) and reduced nerve activity from the spinal region leading to abnormal muscle firing patterns.

Abnormal spinal segment movement also affects other areas of the spine. A stiff or immobile spinal segment will cause neighboring spinal segments to move too much in order to compensate for the loss of movement in the stiff segment. This compensatory response is required for the individual to perform activities of daily living.

Regular spinal stretching and movement promotes healthy tissue repair and remodeling. It also promotes the development of strong and supportive muscles around the spine and improved flexibility. Normal spinal movement stimulates specialized nerve endings in tissues of the spine to send messages back to the spinal cord and brain. The barrage of normal nerve messages helps to regulate muscular function around the spine as well as positively influence neurological control of other bodily regions.

