

# Spine - Health and Disease

## Obesity and The Back

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Obesity affects many Americans each year and is associated with many adverse health consequences including back problems. Obesity represents a growing epidemic and is associated with increased risk for metabolic syndrome, diabetes, heart disease and sudden death syndrome. It also is implicated in the advancement of degenerative changes in large weight bearing joints such as the hips and knees.

According to the North American Spine Society (NASS), the three most common diagnoses in obese patients include degenerative disc disease, disc herniation, and spondylolisthesis, a condition associated with slippage of one vertebral body relative to an adjacent one. Obese individuals are also at increased risk for developing more advanced chronic degenerative changes involving the disc and facet joints of the spine, a condition referred to as spondylosis. Spondylosis can progress with the development of joint tissue thickening and bone spur formation which can create spinal stenosis, a condition characterized by narrowing of the central spinal canal.

Obese individuals tend to be more sedentary than those who are trim and more physically fit. Physical inactivity increases the risk for muscle weakness and muscle atrophy. This deconditioned state increased the risk for back pain and back strain. Muscle weakness reduces the mechanical stability of the spine and its segments thus placing necessary strain on the tissues of the spine during activities of daily living. One of the most important and the most often prescribed treatment for back pain is exercise therapy.

Obesity contributes to functional abnormalities of the spine. For example a protuberant abdomen causes stretching and deconditioning of the abdominal muscles which leads to a forward shift of the body's center of gravity. The excess weight abdominal weight pulls the pelvis down and forward, all this contributing to an increase in the low back curve (lordosis). The increased lordosis places additional mechanical stress on the spinal facet joints in the low back.

According to the American Obesity Association, the incidence of musculoskeletal pain, and back pain, is prevalent among nearly one-third of Americans who are classified as obese. More attention needs to be placed on weight and waist management to reduce the additional strain placed onto the muscles weight bearing elements of the back.

Regular movement is required to maintain the health and integrity of many of the tissues of the spine especially the intervertebral disc. The adult disc is particularly vulnerable to prolonged loads because it does not have its own blood supply. The health and integrity of the disc is dependant upon the movement of water and nutrients in and out of the disc. This is a process that requires

dynamic movement with compression and decompression. Obesity limits the dynamics of this process thus contributing to premature injury and degenerative changes of the intervertebral disc. Regular activity and exercise stimulates healing and the flow of nutrients and oxygen to the body.

There are many conditions which can contribute to the development of back pain in someone who is obese. These additional factors include sitting in a chair or lying on a bed that does not adequately support the pelvis and spine. The obese individual is more susceptible to back pain due to inadequate support.