

Letter to the Editor

Immobilization and Low Back Pain

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Low back pain after prolonged immobilization is a very frequent complication. Clinical observation has provided ample support for the theory that prolonged bed rest may cause low back pain especially after resumption of mobility. This pain is related to several factors including tightness of the back and hamstrings muscles or weakness of the back and abdominal muscles. Any shortening of these muscles will alter spinal alignment and posture. Abdominal and spinal muscle weakness increases spinal curvature and weight bearing on the small apophyseal lumbar joints. Immobilization osteoporosis of the spine is also possible contributor to the development of back pain.

Abdominal muscle strengthening exercise as well as strengthening and sensible stretching of paraspinal and hamstring along with general conditioning may prevent these complications of bed rest.

Osteoporosis after immobilization can contribute to the occurrence of back pain. Maintenance of skeletal mass depends largely on mechanical loading applied to bone by tendon pull and the force of gravity. Bone mass will increase with repeated loading stresses and will decrease with the absence of muscle activity or with elimination of gravity.

Immobilization results in prolonged loss of bone density. Osteopenia due to immobilization is characterized by loss of calcium and hydroxyproline from cancellous bone of long bone epiphysis and metaphysis.

The importance of exercise in overcoming inactivity induced osteopenia should not be overlooked. Disuse osteoporosis can be minimized by the regular use of isometric or isotonic exercise. Ambulation or at least standing on a tilt table may retard the loss of calcium.