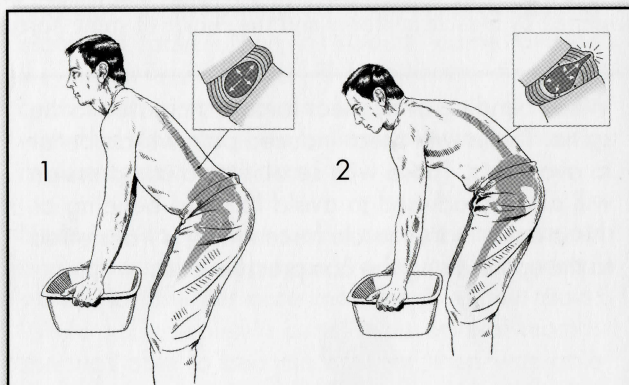


Bending

The spine bends much like a bending rod. The discs deform to allow the bending motion. Imagine taking a wire coat hanger and bending it back and forth over and over. Eventually the metal will fatigue and break. The spine experiences the same cumulative effect with repeated bending. Eventually the disc fibers will crack and the inner gel-like nucleus will seep through the outer wall. This is the source of pain in many people, particularly those who are under the age of 55. The key to avoiding this type of pain is to bend about the hips rather than the spine. **The hips are designed to bend (ball and socket joints) while the spine is a flexible rod that becomes painful with repeated bending.**



In both pictures the person is doing the same task of holding a tub, but their risk of back injury is substantially different. (1) Notice he has flexed, or bent, using his hips – his spine did not bend or change shape. The natural wedge shape of his lumbar disc did not change so there is no additional stress, or risk. (2) Notice, in contrast to the left panel, he elected to bend his spine together with some hip bending. His spinal disc is bent creating large posterior stresses. Over time the nucleus of the disc will travel through the layers of the disc annulus as they separate under the repeated stresses. This is what causes a disc bulge. **The avoidance strategy is to bend at the hips!**