

Artificial Disc Replacement

Written by David A. Bomback, MD

Two cervical artificial disc replacements have been approved by the FDA and are now available for implantation. The ProDisc-C and Prestige total disc replacements have been determined to be safe and effective in the treatment of symptomatic cervical degenerative disc disease and cervical disc herniations. Artificial disc replacement surgery is intended to remove the diseased disc, decompress the neurological structures, restore normal disc height, preserve motion in the affected area of the neck and improve patient function. The artificial disc replacements have been designed to maintain the physiological range of motion in the cervical spine. The implants were developed using the clinically proven ball and socket concept that has been used in traditional orthopaedic joint replacement implants for over 40 years. Although an anterior cervical discectomy and fusion is still the gold standard operation for cervical disc herniation, it is possible that fusing 1 level of the spine may promote advanced degeneration of the adjacent segments. The theory behind artificial disc replacements is that by preserving motion at the diseased level, the adjacent levels may spare the undue stresses of a spine fusion. This may limit the need for patients to have revision surgery, which can occur in up to 25% of patients who had surgical fusions in a 10-year postop follow-up period. Spinal surgeons are excited about this new technology and are hopeful that this can improve on the natural history of cervical disc degeneration.

Two lumbar artificial disc replacements (Prodisc and Charite) are currently FDA approved. Results of lumbar artificial disc replacements have not been as encouraging as cervical replacements, but can still be effective for a specific subset of individuals with chronic lower back pain. Our surgeons are trained to perform cervical and lumbar artificial disc replacements.