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Cervical Disk Replacement

Cervical disc replacement is a motion preserving procedure done for one or two-level problems in the cervical spine. The problem can neck pain related to arthritis, nerve pain or problems related to pinching of nerves or the spinal cord, or a combination of the two.

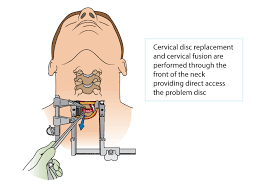
Disc replacements have been done for more than two decades. Currently, we use the third-generation of these implants. Our implant of choice is currently M-6 from Spinal Kinetics, which offers the closest biomechanics to nature of human disc. This implant differs from others by being compressible (squishy), which is not a characteristic of other implants on the market. Additionally, it offers six degrees of freedom, and a close restoration of the center of rotation of the normal healthy human disc.

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Cervical disk replacements are done using a small incision on the front of the neck, which allows safe and easy access to the disks. This is the same approach and technique utilized with anterior cervical discectomy and fusion (ACDF), a common procedure to fuse levels of the cervical spine. However, disk replacement is a motion-preserving procedure, so it offers several benefits over fusion:

* First and foremost, it can decrease the chance of adjacent segment disease, which is seen in up to 3% of fusion patients per year.
* It eliminates the need for a revision surgery for a nonunion (failure of fusion to take), which is seen in some patients who undergo a fusion.

Current peer-reviewed literature indicates that, when comparing disk replacement with fusion surgeries, disk replacement surgeries typically require follow up surgery less often, both at the same level as the previous surgery (the index level) and at the adjacent levels.

At times, we perform a hybrid reconstruction - placing a total disc replacement at one level and performing a fusion at another level.

One of the more common problems associated with fusion - a transient dysphagia (difficulty swallowing) that can persist for up to few weeks following the operation is also seen with a disc replacement. However, with modern surgical techniques it is rare to see this become a long-term problem.

The M6 disc has a combination of titanium endplates and a plastic core. The core has 2 layers: an artificial outer lining of braided polyethylene cables mimicking the human annulus, and a soft compressible inner nucleus made of polyurethane. It is possible that wear debris is being generated from the motion of either the titanium endplates or the plastic core, which could cause problems at the surgical site. However, the physical loads on the disc are relatively small, and very few cases of endplate erosion due to the wear debris have been reported.