

# TOTAL DISC REPLACEMENT

Total Disc Replacement is the next generation in the surgical care of degenerative disc disease. A total disc replacement (TDR) is a motion preserving technology now being used by spine surgeons in place of fusion. TDR aims to replace the degenerative disc, which is the pain generator, with a mobile implant; thus allowing continued motion and preventing adjacent segment degeneration, which is presumed to be the cause of long term failure of fusions.

## Intervertebral Disc

The spine supports and stabilizes your body and allows motion. The spine also provides protection for the spinal cord and nerve roots. Your spine is made up of bones called vertebrae that are stacked on top of each other to form a column. Each vertebra has a hole in the center through which the spinal cord passes. The spinal cord contains nerves that carry signals from your brain to the rest of the body. The vertebrae are separated by soft, cushioning intervertebral discs which maintain an appropriate space to support motion and allow nerves to pass through the spine to many different parts of the body. The intervertebral discs of the spine have several important functions including shock absorption, motion coupling, as well as providing proper spacing between the vertebra.

## Degenerative Disc Disease

One of the most common causes of back pain is degenerative disc disease. Degenerative disc disease is a natural part of aging but can also be exacerbated by a trauma to the disc. The inherent problem with degenerative disc disease is a result of the discs blood supply, or rather, its lack thereof. The spinal discs have minimal blood supply, which brings healing nutrients and oxygen to damaged structures in our body. Thus the spinal disc lacks any significant reparative powers once it has been damaged and therefore can continue to degenerate over time. If a disc is injured or degenerating it may become painful because of instability that can lead to an inflammatory reaction resulting in pain. Also if the height of the disc in collapsing the nerve roots, or the spinal cord, can be compressed causing pain. Common symptoms experienced are numbness, tingling, difficulty sitting, and leg/arm pain.

## Conservative Treatment

Many times patients are able to manage their ongoing pain, as well as more painful flare episodes with non-surgical, conservative treatment. Most surgeons typically ask their patients to undergo at least six months of conservative treatment which may include:

**Pain Management** – Over the counter, prescription medication, and/or epidural steroid injections to get the patient to gain control of their pain.

**Physical Therapy** – Once the patient's pain is under control physical therapy is prescribed to improve the resting tone in the deep muscles that run alongside the spine. Strengthening of the back muscles will help off load stresses on the disc and can dramatically reduce pain and improve function.

**Behavioral and Lifestyle Changes** – Patients with back pain should refrain from doing activities that are known to hurt their back. It is highly recommended that smokers stop smoking because it has been found that smoking further deprives the disc of nutrients needed to maintain height and hydration. Weight loss is also recommended for overweight patients.

## Total Disc Replacement Surgery

A TDR may be the right option if conservative treatment does not work and severe pain continues to make it difficult to function in everyday activities. The implants used in a TDR are made to be structurally similar to a healthy disc and share similar functions. The implant is composed of top and bottom metal endplates and a plastic inlay that forms a ball and socket joint. The implant disc allows for motion by allowing the top endplate to move over the plastic ball attached to the bottom endplate.

During the total disc replacement surgery, the patient will be under general anesthesia. The surgeon will make a small incision to get to your unhealthy disc. The unhealthy disc is removed and the height at that level of your spine is restored to relieve pressure on the nerves. The implant is then inserted into the disc space. Finally, the surgeon will close the incision.

The surgeon will help put together a plan to steadily bring the patient back to normal activity while the healing process occurs. Patients are encouraged to begin moving soon after surgery. Most patients return to normal daily activities two weeks after surgery.

FLAGSTAFF  
**BONE & JOINT**

ORTHOPAEDIC EXCELLENCE. EXCEPTIONAL CARE.

[www.flagstaffboneandjoint.com](http://www.flagstaffboneandjoint.com)