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Charite Artificial Disc  
Abstract  
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In 2003 the rights to the Charite Artificial Disc were acquired by an American company and the FDA approved the disc for commercial use on October 26th of 2004 after extensive review of the two year U.S. clinical trial results. In addition to these studies, total disc replacement with the Charite Artificial Disc has been performed in Europe for over 17 years and has been used in treating thousands of patients worldwide with successful results.

This makes the Charite Artificial Disc the first and most clinically tested total disc replacement in the world. A breakthrough in non-fusion technology, it offers an innovative surgical option to physicians for treating some patients with degenerative disc disease and related conditions. The significance of bringing motion to spinal surgery will most definitely have the same impact that total knee and hip replacement surgeries have had.

Causes of low back pain are varied but can result from injury, trauma or degeneration that may lead to a variety of issues including muscle strain, bulging or herniated disc, spinal stenosis, sciatica, or pinched nerve, sacroiliac joint inflammation and degenerative disc disease.

The largest demand for a device like the Charite Disc comes from degenerative disc disease.

Some disc degeneration over time is normal, however excessive pressure or injury to the disc can lead to more damage, loss of water content and weaker ligament tissue.

Loss of water content causes the discs to lose some of their ability to act as cushions, and can result in the two vertebrae above and below to move closer to one another. Tears and resultant scar tissue within the annulus can weaken the ligament material. The end result is extremely painful.

The Charite Artificial Disc is a three-piece articulating medical device consisting of a sliding core between two metal endplates. The sliding core is made from a medical grade plastic and the endplates are made from medical grade cobalt chromium alloy. The endplates support the core and have small teeth which secure them to the vertebrae above and below the disc space. The sliding core fits in between.



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