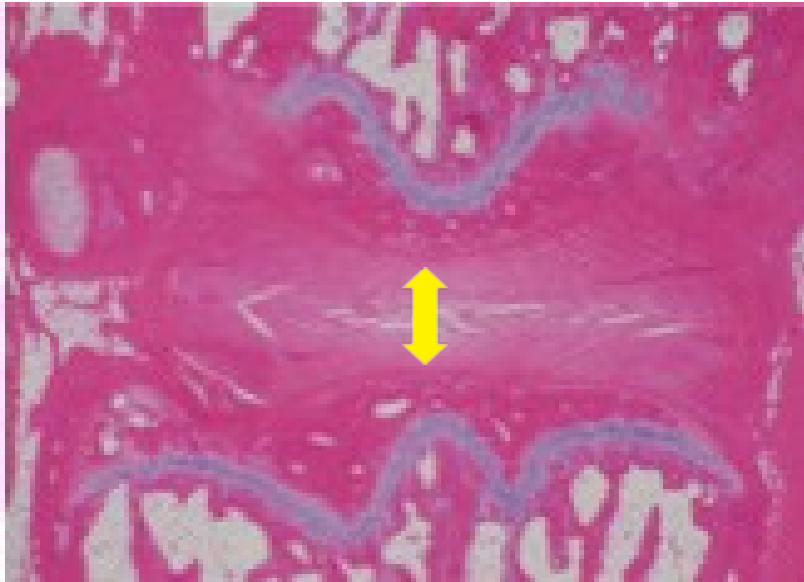


## Stem Cell Therapy



Intervertebral disk before treatment



Intervertebral disk after treatment

### Overview

Stem cells have the unique ability to decrease inflammation and pain while initiating the stabilization and reparative process. Stem-cell therapy introduces new adult stem cells into damaged tissue in order to treat disease or injury. Many medical researchers believe that stem-cell treatments can potentially change the face of human disease and alleviate suffering. The ability of stem cells to self-renew offers significant potential for generation of tissues that can replace diseased and damaged areas in the body, with minimal risk of rejection and side effects.

### How can Stem Cell Therapy help with Back Pain?

Stem cell therapy offers the possibility of significant back pain relief as well as, for the first time, renewal of tissues, which may prevent further degeneration and pain. Arthritis, degenerative disk disease and herniated disks are the major causes of low back pain.

### What are stem cells?

Stem cells are master cells of the body that are available for repairing damaged tissues and organs including spine discs and cartilage cushions in the joints. Stem cells may also help repair the body by dividing to replenish cells that are damaged by disease, injury, or normal wear. When a stem cell divides, each new cell has the potential either to remain a stem cell or to become another type of cell with a more specialized function, such as a nerve cell, cartilage cell, disk cell, bone cell.

There is one type of stem cell that has been found to regenerate the damaged cartilage of the disk and spinal joints ... the Adult Mesenchymal Stem Cell. These adult cells are capable of surviving over long periods and divide to make additional stem cells. They are also unspecialized "blank slates" that can become specific types of cells that do specific work inside our bodies.

Adult stem cells can be found throughout the body. They are found as unspecialized cells among the specialized cells in tissues and organs. An adult stem cell can either divide to make more adult stem cells or differentiate to produce some or all of the major specialized cell types of the tissue or organ. There is one accessible source of autologous adult stem cells in humans available to our patients in the United States: bone marrow, which requires extraction by harvesting, which is aspiration through a simple needle.