



REGENERATIVE
MEDICINE
Changing
the game in
orthopedics
and pain
management

How to eliminate knee pain with your own stem cells



Six common questions about how stem cells stop the pain

Regenerative medicine in orthopedics is a non-surgical treatment that activates your own adult stem cells to repair injured tissues, reduce inflammation and stop pain. Here are six things you should know about how stem cell therapy can eliminate knee pain.



**What causes
of knee pain
can be treated
with stem cells?**

- Arthritis
- Meniscal Tears
- Ligament Sprains
- Patellar Tendonitis/
Tendinosis
- Osteochondral
(Cartilage) Defects
- Patellofemoral Pain
(Jumper's Knee)
- Baker's Cysts

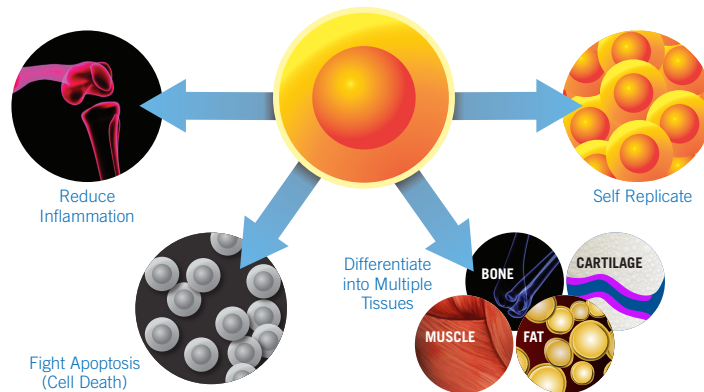


How do stem cells work?

Stem cells are the very basic cells that have not yet decided what final tissue that they will become – such as a cartilage cell, bone cell, muscle cell, etc. We all carry stem cells throughout our bodies that act as the body's "repairmen." There are several different kinds of stem cells. Mesenchymal stem cells (MSC) are the type that we use in orthopedic treatments. MSCs have the strongest potential to repair muscle, bone, joint and soft tissue injuries. These cells have the ability to self-replicate, reduce inflammation and differentiate into cartilage, bone, muscle and fat cells to help the body regenerate the lost tissue in the injured area.

We find that if these cells are placed in an injured environment, such as an arthritic knee, they are more likely to turn into the cells that the body needs. In the case of arthritis, the cells will recognize that there are cartilage injuries and help to repair the cartilage defects. Also with arthritis, there is an imbalance between the cartilage cell's (chondrocyte's) ability to build up or turn over normal cartilage because of the increased inflammation inside the knee. The stem cells help to change the inflammatory state of the knee, which not only helps to rebuild cartilage, but makes the knee significantly less painful.

Mesenchymal stem cells have the ability to:



What is the treatment like?

For the comfort of our patients, the treatment is done in our surgery center, though it is not a surgical procedure. The patient is put under light sedation. Carefully guided ultrasound is used to find a sample of stem cells or platelets. Typically, they are drawn from bone marrow in the pelvis bone and fat tissue from the love handles.

The sample is then concentrated in a stem cell centrifuge. Using ultrasound to guide the procedure, the concentrated stem cells are injected at the site of the injured joint. It's similar to a steroid injection. All of this is done in one visit, takes a little more than an hour, and patients are able walk out of the office shortly after.



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What other painful conditions can stem cells treat?

Stem cells have been shown to be helpful for treating joint and back pain caused by a wide variety of conditions including: arthritis, achilles tendonitis, ligament sprains, muscle strains, nerve injuries, nonunion fractures, plantar fasciitis, piriformis syndrome, generalized back and neck pain, degenerative disc disease, sacroiliac pain, tennis elbow, rotator cuff injuries and many other conditions!

Research

Hundreds of studies on the use of adult stem cells in orthopedics have been published in numerous medical journals. Check out the Research section on our website for a few studies we suggest you explore.

Regenorthopedics.com/research

Find out if you are a candidate

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How long is the recovery?

Patients may feel soreness in the knee treated for 3-5 days, but are generally able to walk around and do their normal activities. Most patients will start home exercises or physical therapy about 2 weeks after the procedure to work on range of motion, balance and strength of the knees. Patients can typically get back into sports and exercise at 4-6 weeks out from the procedure.

What is the success of the treatments?

Success of the treatment depends on the severity of the knee condition as well as each patient's own healing potential. Most patients respond well to stem cell treatments and report significant improvement in their mobility and ability to return to activities they enjoy. Many of our patients have had dramatic recoveries from conditions such as arthritis, regaining the ability to walk, dance, run, climb and/or ski again without pain. At very least, the vast majority of patients report a reduction in the pain they had been having. The success rate of your specific condition will be assessed at your initial consultation once we have a chance to review your injury.



How long do patients benefit from the treatments?

If a patient responds well to the treatment, physician experience has shown that most will achieve improved pain and function for a period of 3-7 years from the initial stem cell procedure. Here again, success and longevity of the treatment depend on the severity of the knee condition as well as the individual's healing potential.

