



Cell Therapy Injections

A natural treatment for pain and injury

Your body's cells have several unique abilities!

They can transform into other cell types, such as bone, cartilage, muscle and tendon. They also serve an important part in cell signaling, recruiting other stem cells to the target area and triggering nearby cells to begin the repair process.



What conditions can be treated with cell therapy?

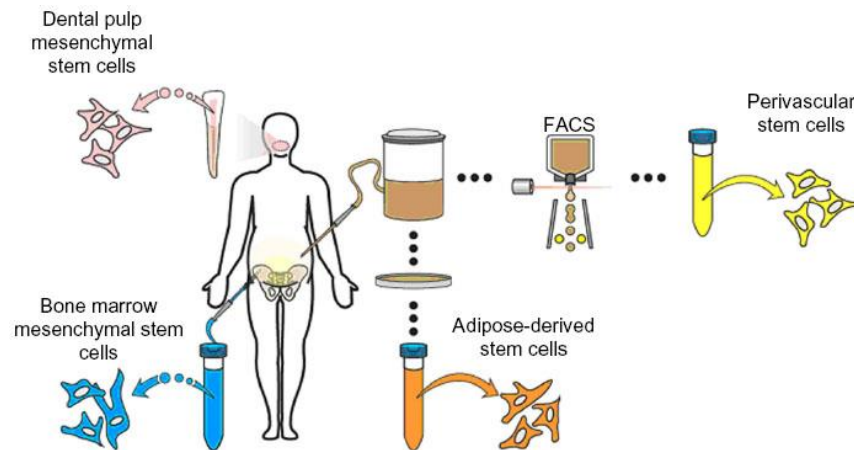
The most common conditions treated are:

- **Osteoarthritis** of the joints
- Chronic partial **rotator cuff tears**
- Persistent partial tendon tears (ie: **tennis elbow, plantar fasciitis, quadriceps and patellar tendon tears**)
- **Meniscal tears** in the knee

- Chondromalacia patella (**patellofemoral syndrome**)

What are Stem Cells?

Stem cells are undifferentiated cells in adults that have the potential to become other, more specialized types of cells. Mesenchymal stem cells (MSCs), also known as Medicinal Signaling Cells (MSCs) are multipotent cells that can differentiate into a variety of cell types including: osteoblasts (bone cells), chondrocytes (cartilage cells), and adipocytes (fat cells).



How is it made?

Stem cells can be obtained/harvested from the **bone marrow** (typically from the iliac crest of the hip) or from **adipose tissue (fat)**. For **Micro-Fragmented Adipose Treatment (MFAT)** the MSCs are obtained from the fat, typically of the lower abdomen or the flank and upper buttock. For **Bone Marrow Aspirate (BMA)**, the MSCs are obtained from the bone marrow. Harvesting of these cells are **performed in a sterile environment** in our office.

For **MFAT**, either an area on your abdomen or back and buttock will be marked and then anesthetized (numbed). Then a **lipoaspirate procedure** (non-cosmetic, don't get your hopes up!) will be performed to obtain a sufficient amount of adipose tissue. The adipose will then

be sterilely processed to isolate the stem cell tissue to be injected.

For bone marrow, you will be placed on your stomach and the harvest area will be marked with the ultrasound and anesthetized. A specialized device is used to **aspirate out the stem cells safely and painlessly**.

How is it administered?

Cell therapy treatments are **administered as an injection**, typically under ultrasound guidance to ensure precise placement. For treatment of arthritis, we typically perform a **prolotherapy** treatment first, a few days before the cell therapy procedure. This helps **prepare the joint biologically for the healing process** generated by the stem cells. Then, about one month after the stem cell procedure, a **PRP injection** is commonly given. This helps keep the stem cells active and allows the joint to keep healing.



Here's an analogy

If you are going to plant a garden, you cannot simply throw down seeds and expect them to blossom into healthy plants. Rather, you must till the soil and make sure it is rich in nutrients and able to support the seeds. Then you can plant the seeds and provide water, nutrients and sunlight allowing the plants to grow. You also must periodically tend to your garden to ensure that your plants are growing properly.

Your arthritic joint or chronic area of injury is like a garden. You need to **create a hospitable environment for the stem cells to grow/differentiate into healthy bone, tendon, ligament, cartilage, and/or muscle.**

By performing **prolotherapy** prior to the stem cell procedure you are **"tilling the soil."** On the day of the procedure the **stem cells** are harvested, **"the seeds are planted"**, and the **PRP** is used to activate the stem cells, **"the water and sunlight."** Around 3-6 weeks after the stem cell procedure it is recommended to have a **repeat**

PRP injection to the area to ensure the **"joint garden"** are still being maintained. Thereafter, a PRP injection every 1-3 years may be needed to maintain your "joint garden."

What are the risks?

The risks and side effects of stem cell treatment are extremely low. All injection procedures are potentially at-risk for causing soreness, infection, bleeding, and nerve damage. Risks will also vary depending on the structure(s) being injected. However, because we are using your own cells, you cannot be allergic to the treatment! Also, because the injections are done under ultrasound guidance, the risks of damaging surrounding structures or injecting the wrong location, are almost completely eliminated. Your doctor will review the risks of the treatment with you.

What is the evidence?

Studies suggest an improvement rate as high as 80-85%, though some arthritic joints, namely the hip, do not respond as well. Some patients experience complete relief of their pain. In the case of **tendon and ligament injuries the results are generally permanent.** In the case of joint arthritis, how long the treatment lasts depend partly on the severity of the condition. Mild arthritis may not need another round of treatments. More advanced arthritis, on the other hand, typically requires a repeat course of treatment, usually in 1-3 years.

How to prepare for the procedure:

It is recommended to avoid anti-inflammatory medicines 7 days before and at least 2 weeks after the procedure. If adipose is being harvested, it is recommended to take Arnica orally 10-14 days before and use topical Arnica 5 days after to reduce bruising and post-procedural pain. For bone marrow harvest, bringing headphones is an option as you will be flat on your stomach for a 15-30 minute period. Drink 64 oz of water per day for 1-2 days before your procedure.

How much does it cost?

Cell therapy treatment is typically not covered by insurance. **The cost of the procedure will be discussed at your consultation.** You are able to use your *medical flexible spending accounts* to pay for this procedure.

What happens after the procedure?

Your physician may temporarily place you in a sling (for upper extremity procedures) or a boot, brace, and/or crutches (for lower extremity procedures). A rehabilitation program will be designed specifically for your condition.

To schedule a consultation, go to our website at MotionisMedicinedfw.com or give us a call at 817-900-3539.

