

Regenerative Medicine Frequently Asked Questions

What is Regenerative Medicine?

- In the world of orthopedics, **Regenerative Medicine** is a non-surgical treatment that allows your body's own natural healing process to repair or regenerate injured tissues, which in turn can provide long-term relief from your pain. These minimally-invasive, non-pharmacologic therapies have been shown to be effective at treating acute and chronic injuries and have the potential to significantly improve your overall quality of life. For patients with arthritis, or those trying to return to an activity or sport, Regenerative Medicine is changing the game in orthopedic care.

Am I a candidate for Regenerative Medicine?

- You may be a good candidate for Regenerative Medicine if you suffer from joint pain that limits your normal daily functioning or physical activity. This includes chronic degenerative conditions like arthritis, but also can help acute injuries that have failed to get pain relief with more conservative treatment options, such as physical therapy, NSAIDS, or steroid injections. Our regenerative procedures provide you with another option if you would like to explore a minimally-invasive and safe alternative to a major joint replacement surgery.

What is Stem Cell Therapy?

- Stem Cell Therapy is a regenerative medical treatment that uses your body's stem cells to facilitate the repair of injured tissues, reduce inflammation, and ultimately assist with healing itself.

What is PRP Therapy?

- Platelet Rich Plasma (PRP) Therapy is a regenerative medical treatment that uses platelets and growth factors from your blood to stimulate your body's healing response. PRP can be used as a single treatment or a series of treatments, but can also be used in conjunction with stem cell therapy to enhance the regenerative process.

What is Regenerative Cell Therapy?

- When PRP and stem cells are combined into one treatment, it is referred to as Regenerative Cell Therapy. Due to the high concentrations of growth factors found in PRP, there is an increase in cell signaling and stem cell activation amplifying the regenerative process. By using this synergistic combination of treatments, we have the potential for stimulating previously irreparable tissues to heal themselves.

What are some of the painful conditions that stem cells and PRP can treat?

- Stem cells and/or PRP have been shown to be helpful for treating joint pain caused by a wide variety of conditions including: arthritis, tennis elbow, rotator cuff injuries, achilles tendonitis, plantar fasciitis, ligament sprains, muscle strains and tears, nerve injuries, nonunion fractures, degenerative disc disease, and many other conditions.

How do stem cells work?

- Stem cells are the very basic cells that have not yet decided what final tissue they will become. They can be found in tissues throughout the body and act as local “repairmen.” There are several different kinds of stem cells. Mesenchymal stem cells (MSCs) are the type that we use in orthopedic treatments.
- MSCs have the strongest potential to repair musculoskeletal injuries. These cells have the ability to self-replicate, reduce inflammation, and differentiate (turn into) cartilage, bone, tendon, ligament, and muscle to help the body regenerate the lost or damaged 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 damaged cartilage. Stem cells also help to change the inflammation state of the knee, which not only helps rebuild cartilage, but makes the knee significantly less painful.

What is the procedure like?

- Your minimally-invasive procedure will be performed in the comfort of your physician’s office using only local anesthesia. Your Regenerative Medicine specialist will take a sample of stem cells, most often from fat tissue from around the “love handles.” The sample is then prepared, concentrated, and injected with precision ultrasound guidance at the site of your injury. This is similar to a cortisone injection. All of this is done in one visit, takes about an hour, and you are able to walk out of the office shortly after.

How long is the recovery?

- Most patients report little to no pain, but it depends on the location of the procedure and treatment sites. Some patients may feel soreness in the treated joint for about 4-5 days, but are generally able to walk around and do their normal activities. We recommend patients to limit their activities for the first 1-2 weeks and then begin to slowly return to physical activity as recommended by your provider. 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 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, or climb again without pain. At the 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.

Are the Regenerative Medicine procedures safe?

- Yes. Because the procedure involves taking your own tissue and cells, there is an extremely low risk of infection or immune reaction. The procedure is performed under sterile technique and with closed-loop sterile processing of tissue to ensure the highest level of safety.

Is there research that supports Regenerative Medicine?

- Yes. Although Regenerative Medicine is relatively new, there are thousands of published studies relating to this field of medicine, with hundreds of studies on the use of stem cells and PRP in orthopedics. Because of the positive results patients are experiencing, especially with regards to orthopedic conditions like arthritis, Regenerative Medicine continues to be a focus of intense interest amongst researchers.



How long do patients benefit from stem cell treatments?

- Because stem cell treatments in orthopedics are relatively new, we are still waiting for those long-term outcome studies. However, if a patient responds well to the treatment, physician experience has shown that most will achieve improved pain and function for years to come. Here again, success and longevity of the treatment depend on the severity of the condition as well as the individual's healing potential.

Where are stem cells found in the body?

- Mesenchymal stem cells (MSCs) can be found throughout your body, however some areas contain higher concentrations of these stem cells and are more easily accessible than others. Regardless of where you get your MSCs, they all function in the same way. The MSCs can be activated and redirected to help repair or regenerate your damaged tissue at the site of injury.

Is there a difference between stem cells taken from bone marrow versus fat tissue—Which one is better?

- Mesenchymal stem cells (MSCs) are found in both bone marrow and in adipose (fat) tissue. However, there are numerous advantages to collecting these stem cells from your adipose tissue. For one thing, the concentration of MSCs in your adipose tissue is up to 1,000 times higher than that found in your bone marrow. Plus, the concentration of MSCs in the bone marrow begin to decline over time, whereas the concentration of these stem cells in adipose tissue stays relatively constant as we age. Collecting stem cells from the adipose tissue is also less invasive and less painful than undergoing bone marrow aspiration.
- Stem cells from bone marrow were first to be utilized in orthopedics, so there is more published research on it in the last 20 years. That said, the more recent research has been primarily from adipose-derived stem cells because of the clear and superior advantages. Adipose-derived stem cells are considered by most to be the new “Gold Standard” of Regenerative Medicine in orthopedics.

Does the FDA regulate stem cell treatments?

- The FDA does regulate the use of human cells and tissues (including stem cells) through guidelines relating to the manipulation of the tissue. Because stem cell treatments are relatively new, there is currently only one stem cell treatment available that is FDA-approved, which we offer to our patients. In addition, other regenerative therapy options are available to our patients that are 100% FDA compliant and follow all FDA regulations and/or provide patients the opportunity to participate in a clinical trial (study).

Are Regenerative Medicine procedures covered by insurance?

- Your initial consultation will likely be covered by insurance, but like most newer techniques and technologies, the procedure itself is not covered by insurance at this time. Please speak to your doctor about using your flexible spending account to cover the procedure's expense. Regenerative procedures are usually paid for out-of-pocket, unless they're approved by workers' compensation or auto insurance claims.

If Regenerative Medicine is right for me, what can I do to enhance the results?

- There are several lifestyle choices that can affect your body's response to inflammation, including adequate sleep, stress management, proper nutrition, and exercise. Please refer to our “Regenerative Lifestyle” handout for detailed information that will help you maximize your body's regenerative potential.

If you have any unanswered questions or would like to schedule your procedure, please contact Dr. Hiesterman's office at 320.202.5527.



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