

Stem cells

According to the Stem Cell the Magazine, finally, Stem Cell Therapy and Regenerative Medicine treatments are available, and this consumer guide has everything you need to know if you're interested in using regenerative therapies to heal your body from chronic joint and health conditions. Advancements in regenerative therapy have given us the ability to regenerate human tissue like bone, ligaments, cartilage, nerve tissue, fat tissue, and liver tissue.

Mesenchymal stem cells are the prototypical adult stem cell. They have a high potential for self-renewal, are highly adaptive and have a broad tissue distribution.

We are living in an exciting age because this is the first time in the history of medicine this technology has been made available to the public. Today, people all over suffering from chronic conditions and pain have the opportunity to experience these extraordinary treatments.

Most people have the misconception that the only stem cell therapy available is embryonic therapy and this couldn't be further from the truth. Embryonic stem cell therapy is not allowed in the United States because of the ethical and morality issues, but there are some countries across the world that may still perform those therapies.

Back in 1975 oncologists began an era of using bone marrow transplants, or bone marrow stem cells, to treat leukemia patients. Bone marrow was taken from the iliac crest (hip area) and processed into stem cells before being injected back into the patients to boost the immune system and successfully cure lymphoma. These therapies have been saving and improving lives for a while, and now they are available to you.

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The 5 Different Types of Regenerative Therapies! (which are the most cost effective):

There are five regenerative treatment therapies we will focus on in this guide.

All of these procedures have been around for about 20 years but have only recently become increasingly popular and more easily accessible. Stem cells have “raw potential” which means they can become any other tissue or organ in the body. Each of these treatments harnesses the regenerative power of stem cells to repair and replace damaged cells:

- Live Cord Tissue/Blood-Derived Stem Cells
- Bone Marrow Derived Stem Cell Therapy
- Adipose Derived Stem Cells
- Platelet-Rich Plasma Therapy
- Amniotic Cell Therapy

Live Cord Tissue/Blood Derived Stem Cells

Live cord tissue and live cord blood are taken from donated umbilical cord tissue.

Like amniotic fluid, it's donated from mothers who have cesarean sections. Live cord tissue and cord blood contain live stem cells. Patients opting for this treatment get the benefits of both stem cell regenerative properties and growth factors in one procedure.



Laboratories that process live cord tissue and cord blood samples follow the same strict guidelines as amniotic fluid extraction and must follow careful regulation before a sample can be cleared for distribution. Remember, technicians take crucial care to ensure none of the samples contain antigens, so there is no risk in using these cells.

Without the presence of antigens, there is no risk of infection or rejection side effects from the treatment. When considering other treatment methods for joint conditions like knee replacements where mortality risk is 1 in 400 and 15 to 20 thousand deaths from nonsteroidal anti-inflammatory meds, amniotic fluid, and live cord tissue stem cell treatment is a far safer option for patients.

Any medical practice administering amniotic fluid or live cord tissue stem cell treatments are required by law to report any adverse reactions to the procedure, and as of today, no adverse reactions have ever been reported in the history of the treatment use.

Bone Marrow Derived Stem Cell Therapy

After the astonishing success of bone marrow-derived stem cell therapy in cancer treatment during the 70's and 80's, researchers began to explore the effectiveness of stem cells in orthopedic treatment. They began to use bone marrow-derived stem cell therapy to repair and replace ligaments and cartilage with high rates of success, and bone marrow-derived stem cells became widely accepted as a successful way to reform cartilage tissue. The downside of bone marrow-derived stem cells is the limited number of doctors who elect to use the treatment. Bone marrow extraction is an invasive procedure that requires a surgical procedure done in a hospital or a surgical center.

The procedure is complicated and can leave patients sore for a short time after the extraction. Another challenge to using bone marrow derived stem cell therapy is that although bone marrow extractions are highly dense with stem cells, they don't contain a high amount of mesenchymal stem cells.

The bone marrow-derived stem cells for these treatments come from you. These are your own stem cells being repurposed and directed into the areas that need repair. Because the treatment is done with cells from your body, the threshold for infection or rejection is minimal to non-existent. These stem cells are not only proficient at forming cartilage tissues, but they are also used in the treatment of neurological conditions, respiratory conditions, metabolic conditions and a wide range of chronic and autoimmune disease. This invasive procedure usually ranges anywhere from \$15-20k for one large joint.

Adipose-derived stem cells

Adipose-derived stem cells come right from fat in your own body. These cells are collected through a liposuction procedure where your doctor extracts fat and processes stem cells from the sample. The technique is performed in a lab, and your fat cells are separated from valuable stem cells. The entire procedure is straightforward and takes about 2-3 hours to complete. Like bone marrow, fat cells are a store cache of your body's stem cells.

As you age, the amount of stem cells in storage begins to decrease, and this can affect the quality and density of the stem cells obtainable with an extraction. Some doctors prefer to use platelet rich plasma treatments (PRP), amniotic fluid and cord blood stem cell treatments for older patients because of the decreasing amounts of stem cells in fat and bone marrow.

Platelet Rich Plasma Therapy

Platelet-rich plasma therapy (PRP) is a regenerative treatment. PRP is rich in cytokines and growth factors and is commonly used in combination with the stem cell treatments described above. Platelets make up 1% of the total blood volume.



When you cut yourself, these platelets rush to the area to seal it with a scab and begin to create new tissue for the healing process. PRP also contains a high level of growth factors and cytokines that facilitate the healing process and supports immune functions. PRP doesn't have any stem cells so it can regrow any new cartilage or ligaments. PRP promotes healing and is also great for tears and inflammation. PRP has been successful in treating meniscus tears and rotator cuff tears with great results.

The platelet-rich plasma therapy can be completed in about 90 minutes to 2 hours. Your doctor will take a routine blood draw and use a centrifuge to separate the platelets from the blood. The plasma is then injected back into the patient. This minimally invasive treatment is the most moderately priced of all of the regenerative treatments at \$700-1200 and is highly effective.

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Amniotic Cell Therapy

Cells for amniotic cell therapy is derived from amniotic fluid obtained after cesarean sections. About 32% of births in the United States are done by C-section and cells are extracted from the tissue donated from the mother. FDA regulated labs take this tissue and process it for cells for the treatment abiding by strict regulations and guidelines.

There is a barrier between mother and child during gestation and on the mother's, side is something called chorionic tissue which contains antigens that could produce an immune response if used for cell therapy. These highly skilled laboratories ensure that no chorionic tissue is included in the cell extraction and only antigen-free amniotic tissue is used. Amniotic cells are responsible for growing a baby, so they are rich in growth factors. Amniotic cell therapy is like a super-charged PRP injection with a higher potency of cytokines.

Amniotic fluid doesn't contain any stem cells. When tissue is extracted, it's processed and frozen cryogenically for distribution. There is some misinformation available that claims there are stem cells in amniotic fluid but no live stem cells are present after this process. Amniotic fluid is dense in growth factors and cytokines and is a relatively inexpensive regenerative treatment. This treatment is perfect for older patients who have a lower chance of harvesting an effective amount of stem cells through bone marrow or adipose extraction and has a high success rate with joint healing. "Amniotic fluid is dense in growth factors and cytokines and is a relatively inexpensive regenerative treatment."

These five regenerative treatment procedures are truly groundbreaking advancements for many people who are desperately searching for alternative options to medication dependency and surgery. After the successful results in the treatment of joint conditions, systemic metabolic conditions, respiratory conditions and overall health, they are sure to continue to increase in popularity.