

Stromal Vascular Fraction Therapy:

A Multi-Discipline Approach

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In our recent series of blogs and articles, we have highlighted specific diseases and conditions that were effectively managed using Stromal Vascular Fraction (SVF) or its derivative component adipose-derived stem cells. For more information on how these multipotent regenerative agents of change impact the health outcomes of patients with osteoarthritis, erectile dysfunction, cardiac conditions, or critical limb ischemia please visit our website and read our backlog of informative blogs.

Regular readers know that adipose tissue represents a prolific source of adult stem cells and other regenerative cellular agents (SVF) to aid the body in healing and repairing damage. These cellular tools hold great promise in the area of regenerative medicine and offer a therapeutic option for a plethora of diseases as well as assisting in repairing large-scale skin damage from burns, post-cancer radiation injury, and trauma. Although there is a lot of great information contained in our blogs and related articles, we at the Gulf Coast Stem Cell and Regenerative Medicine Center (GCSC&RMC) want everyone to know how beneficial this therapy option is whether this is your first visit to our site or your 50th.

To recap, autologous (originating within the patient's own body as opposed to from another) fat deposits, which exist naturally in even the leanest human body, contain an amazing "cellular soup" of beneficial cells such as adult mesenchymal stem cells (ASCs), growth factors, endothelial progenitor cells, T cells, and macrophages. Using a simple outpatient procedure, the fat can be removed in small amounts and its content of precious cells can be easily isolated for reintroduction into the body at the site of damage or disease. Even though the procedure is virtually painless and no more invasive than removing a small skin lesion or the act of giving blood, the small amount of adipose tissue removed contains a tremendous number of usable stem cells that run into the tens of millions. These valuable therapeutic cells are multipotent, meaning they are a "skeleton key" that fits whatever task the body needs it to accomplish. To put it plainly, inject SVF aliquots into an arthritic knee and they go to work becoming connective

tissue and cartilage, restoring the articular surface to a working condition. On the other hand, in the case of cardiac damage or a failing heart, stem cells deployed (given), not only improve blood flow by literally becoming blood vessels but also can metamorphose into heart muscle, which is an amazing event, since the best medicine cannot dream of accomplishing.

In 2017 alone, it was reported that about 1524 individual patients were reported as having received autologous SVF therapy derived from their own liposuction-harvested fat. Therapies were shown to be not only safe and effective, but the patients reported significant clinical improvements (which were standardized by quantifiable data). In a collaborative study conducted at the beginning of 2018, SVF obtained from a total of 58 patients was analyzed. Rather than focusing on one condition or disease, the patients represented degenerative, inflammatory, autoimmune disease, and advanced-stage cancer. This study is especially significant, as most of these are among the conditions we primarily treat at Gulf Coast Stem Cell and Regenerative Medicine Center. The study, which is discussed below, was primarily tasked with determining whether a certain combination of cell types included in the therapy could predict or even affect efficacy results. Although factors such as gender, age, the clinical condition treated, SVF dose, or actual route of injection were not shown to affect the outcome, the first three parameters did affect the overall SVF yield. Although this is statistically significant, it should be noted that the cellular yield from the adipose-derived SVF extraction still far surpasses that derived from bone marrow (hemopoietic stem cells, HSCs) and carries none of the risks and inconvenience associated with bone marrow harvest and processing, including expansion (multiplication) of stem cells.

As a research-based clinical therapy provider and a proud member of the Cell Surgical Network, we try to stay on the cutting edge of new research and therapies in the field of regenerative medicine. This study not only provides additional evidence that stem cell-based therapies are effective for a wide variety of conditions but introduces the idea that individually-formulated cellular combinations tailored to each patient can improve outcomes. An overall ratio of 2:1 ASCs/HSCs (progenitor cells) was determined to be the most effective of combinations. However, this increases the cost precipitously. The most significant finding of this study is arguably the fact that the data opens up the possibility to design new therapy regimens for individual patients by adjusting the cell ratios before each regimen. This is music to our ears, as

we take pride in personalizing therapies for each of our patients. (There will be more information on HSC progenitors and their role in regenerative medicine in our first blog of June, so look for that on our blog page coming soon.)

At the Gulf Coast Stem Cell and Regenerative Medicine Center, we are actively engaged in research programs, managing a wide range of varied disorders, including orthopedic, degenerative, neurological and autoimmune. For more information about the diseases and disorders that we currently address and study, please call (866) 885-4823. There is also a lot more information on our [website](#).

Original Research Article - <https://www.ncbi.nlm.nih.gov/pubmed/29417261>



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