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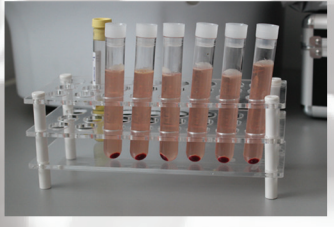
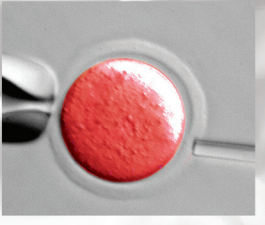
STEM CELL THERAPY

Stem cells
INTRODUCTION

Stem cells are one of the most wonderful discoveries of the modern medicine, which is able to change our notion concerning treatment of many diseases and give people health, youth, strength, longevity or even the last chance to live. The stem cells are the cells – predecessors, all other types of the cells are generated from them and form different organs and tissues. Stem cell therapy is an intervention strategy that introduces new adult stem cells into damaged tissue in order to treat disease or injury


A stem cell is essentially the **building block of the human body**. Unlike a regular cell, which can only replicate to create more of its own kind of cell, a stem cell can make any one of the 220 different cells in the human body. There are two main types of stem cells:

- Embryonic (found within the human embryo) and
- Adult stem cells (found in developed infants, children and adults)

Adult stem cells

Adult stem cells reside in adult bone marrow and fat, as well as other tissues and organs of the body. These cells have a natural ability to repair damaged tissue, however in people with degenerative diseases they are not released quickly enough to fully repair damaged tissue. Adult stem cells can be extracted from many areas of the body, including the bone marrow, fat, and peripheral blood. Once the cells have been harvested, they are purified and assessed for quality before being reintroduced back in the patient. Since the stem cells come from the patient there is no possibility for rejection.

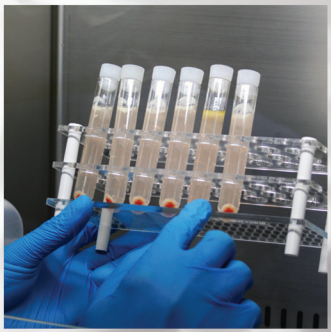
Adult stem cells have the ability to become different cell types (i.e. nerve cells, liver cells, heart cells, and cartilage cells). Studies have also shown that these are capable of homing to and repairing damaged tissue. Since adult stem cells are derived from adult tissues and, of course, with consent from the patient, there is little, if any, ethical dilemma to adult stem cell therapies.

"These stem cells help repair muscle, bone, cartilage, or tendons."

Adipose stem cells

For many years bone marrow-derived stem cells were the primary source of stem cells for stem cell treatments. However, recent studies have shown that subcutaneous adipose tissue provides a clear advantage over other stem cell sources due to the ease with which adipose tissue can be accessed as well as the ease of isolating stem cells from harvested tissue.

For many disease types, such as in cardiac pathology, adipose derived cells appear to be showing superiority to bone marrow derived cells. This may be related to the well documented fact that chronic disease causes bone marrow suppression. With our current technology, we can easily harvest the stem cells from your own fat cells; we use Adult Autologous Adipose-derived Stem Cells (ADSC's). The most significant advantage of using your fat as a source for the stem cells, is that the procedure can be done in the office in less than two hours.



Stem cell treatment PROCEDURE

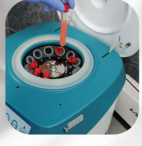
Treatment with adipose stem cells is a short and harmless procedure that can be done within a day. Obtaining Adipose-Derived Stem Cells (ADSCs) is much easier and less invasive than performing a bone marrow extraction. In addition, adipose tissue contains much larger volumes of mesenchymal stem cells than does bone marrow. We use the patient's own adipose tissue to extract the stem cells.

"Treatment is completed within a day"

Our technology allows us to complete the entire procedure on the same day, using less than minimally manipulated methods. A high-dose of stem cells can be obtained in just a couple of hours. This in-clinic treatment is completed the same day, and there is no need to ship samples to an outside laboratory and wait days for the cells to be returned for an injection on a second visit. This faster process provides increased stem cell counts, without manipulation.

Treatment process is done in 4 simple stages:

1. Harvest
2. Separation
3. Activation
4. Treatment

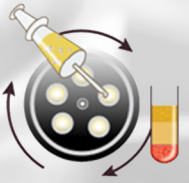



Phase 1: HARVEST

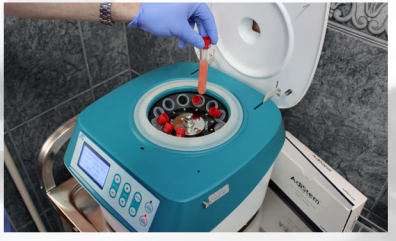
A small amount of fat (200 cc) is taken from patients waste area. Method of fat cell collection is similar to liposuction.

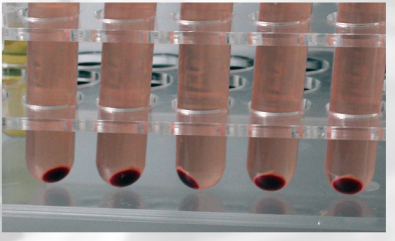
Harvesting Adipose-Derived Stem Cells (ADSCs) is much easier and less invasive than performing a bone marrow extraction. In addition, adipose tissue contains much larger volumes of mesenchymal stem cells than bone marrow does. We use the patient's own adipose tissue to extract the stem cells. The donor and the recipient are the same person which means that there is no danger of host rejection.

Phase 2: SEPARATION

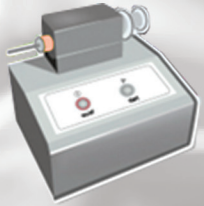


Stem cells are separated from fat cells in high-speed stem cell centrifuge machine where centrifugal force separates dormant stem cells from harvested fat.

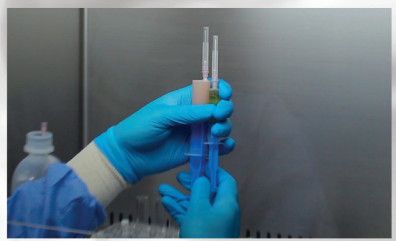


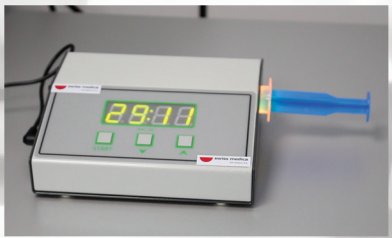


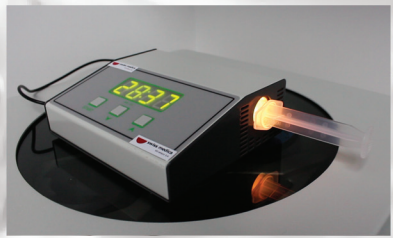
Phase 3: ACTIVATION



Isolated stem cells, after enrichment with patients blood plasma are photo activated in AdiLight machine and prepared for transfer.







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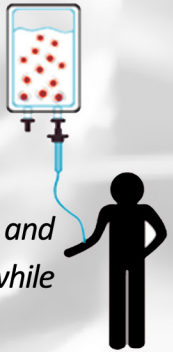
Phase 4: TREATMENT



Activated stem cells are aded to saline drip bag and returned to patients body via standard IV drip while patient is peacefully resting.

Healing is a complex process, involving mechanisms at both the molecular and cellular levels, but simplified it looks like this: When activated stem cell return to patient body, they are circulating the system for a short time until they become attracted to chemokine which is secreted in the area of the damaged tissue. Stem cells then rush and home to that injury area, and start turning into new tissue.

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