

HEALTH BENEFITS ATTRIBUTED TO STEM CELL TECHNOLOGY ACKNOWLEDGED AROUND THE GLOBE BY IMMINENT RESEARCHERS, DOCTORS & SCIENTISTS

1) Chronic Pain & Healing to injuries post surgeries

Clinical research regarding stem cell therapy benefits has grown dramatically in recent decades. The most promising thing about stem cell therapy is that they offer relief for patients with chronic pain and difficult-to-heal injuries, all without medications or risky reconstructive surgeries.

2) Helpful in common chronic conditions such as heart disease, neurodegenerative diseases and diabetes.

Today researchers are also uncovering ways to apply stem cell treatments for According to the National Institute of Health, Stem cells are important for living organisms for many reasons. In the 3- to 5-day-old embryo, called a blastocyst, the inner cells give rise to the entire body of the organism, including all of the many specialized cell types and organs such as the heart, lungs, skin, sperm, eggs and other tissues.

3) What specific types of conditions such a pain, stiffness, joints problem can stem cell therapy help treat?

Some of the most common include osteoarthritis knee pain, tennis elbow, shoulder pains or rotator cuff injuries, tendonitis, Achilles tendon injuries and now cardiovascular diseases like atherosclerosis.

According to Dr. Chris Centeno, Dr. John Schultz and Dr. John Pitt of Regenexx clinic in the Cayman Islands Stem Cells are good for back and tendon injuries. The form of stem cell therapy is considered to be one of the most thoroughly researched and effective in the world. The most common use of stem cell treatments is managing pain.

4) What Is Stem Cell Therapy?

Stem cell therapy is a type of treatment option that uses a patient's own stem cells to help repair damaged tissue and repair injuries.

Stem Cell Therapy is found to be helpful in following :

- Speed up the length of time it takes for injuries or wounds to heal
- Reduce pain, even chronic joint pain, with less need for medications
- Increase functionality, range of motion, flexibility and sleep quality
- Reduce muscle compensations and risk for future injuries
- Decrease nerve damage
- Increase collagen
- Help generate new heart and blood vessel tissue
- Help heal skin wounds, prevent formation of scar tissue and reduce hair loss
- Return patients to their normal activities as quickly as possible

5) What is the major health benefits related to cell rejuvenation ?

The California Stem Cell Agency reports that there is "no limit to the types of diseases that could be treated with stem cell research." Because of their amazing abilities to help with regrowth, stem cell therapy treatments are now being used (or continuously researched) in regards to treating:

- Orthopedic injuries and musculoskeletal problems
- Wounds and incisions following surgeries
- Spinal cord injuries, brain trauma and spinal stenosis

- Cardiovascular diseases, including hypertension, coronary heart disease, stroke and congestive heart failure
- Hair loss
- Vision impairment
- Diabetes and other pancreatic dysfunctions
- Neurodegenerative diseases such as Parkinson's, multiple sclerosis and Alzheimer's

6) How Stem Cell Therapy Works

It is found the stem cells technology can help in patient's affected, painful area— allowing the cells' growth factors to go to work immediately, building new skin cells, connective tissue and so on. Because they contain natural growth factors, stem cells accelerate the body's natural healing response and lower pain.

They reproduce quickly and can continue dividing in areas even after long periods of inactivity so benefits are experienced within a short period of time, but many start experiencing reductions in pain, improved mobility and better overall functionality after a regular therapy.

7) Stem Cells in Alzheimer's problem

Accordingly to Biomedical Sciences Department, Specialization in Immunology, C. W. Post College, Long Island University, NY it is found Stem Cell technique helps to be helpful in Alzheimer's problem which is an intricate, irreversible, dynamic neurodegenerative sickness.

8) Autoimmune diseases

As per Clinical trials for stem cell therapies it is found Stem Cell Technique has successfully done large number of trials for paraplegia, ataxia, multiple sclerosis, amyotrophic lateral sclerosis, cerebrovascular disease, multiple system atrophy, motor neuron disease, among other indications, without severe immunological response.

Medical References:

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9) Strokes, Brain Tumors

- Brain disorders
- Brain tumours
- Clinical trials
- Neural stem cells
- Neurodegenerative diseases
- Stem cells

Moreover, several studies showed their ability to migrate to a lesion area following brain injuries, such as neurodegenerative diseases (Alzheimer, Parkinson), strokes, or brain tumours

- 9) Researchers at Mayo Clinic are studying regenerative medicine techniques for restoring tissue and organ function.

Active clinical trials include:

11 studies in Center for Regenerative Medicine

- A Phase I Study of iPS Cell Generation From Patients With COPD

Rochester, Minn.

As part of the long-term goal of successfully implementing tissue regeneration strategies in an individualized manner for patients with thoracic diseases including, but not limited to: cystic fibrosis, pulmonary fibrosis and pulmonary hypertension, the investigators will assess the feasibility of collecting skin biopsies from patients undergoing surgery for thoracic disease, culturing skin fibroblasts from the biopsy, and reprogramming these skin fibroblasts into induced pluripotent cells.

- Safety Study of Autologous Umbilical Cord Blood Cells for Treatment of Hypoplastic Left Heart Syndrome

Rochester, Minn.

This is a Phase I study to determine the safety and feasibility of injections of autologous umbilical cord blood (UCB) cells into the right ventricle of Hypoplastic Left Heart Syndrome (HLHS) children undergoing a scheduled Glenn surgical procedure. The investigators are doing this research study to find out if autologous stem cells from the individual's own umbilical cord blood can be used to strengthen the muscle of the right side of their heart. This will help determine the safety and feasibility of using cell-based regenerative therapy as an additional treatment for the management of HLHS.

- TX2® Low Profile TAA Endovascular Graft

Rochester, Minn.

The Zenith® TX2® Low Profile TAA Endovascular Graft study is a clinical trial approved by US FDA to evaluate the safety and effectiveness of the Zenith® TX2® Low Profile TAA Endovascular Graft indicated for the treatment of patients with aneurysms/ulcers of the descending thoracic aorta having vessel structure suitable for repair.

- Use of Autologous Bone Marrow Aspirate Concentrate in Painful Knee Osteoarthritis

Jacksonville, Fla.

The overall goal of this study is to develop regenerative cell therapy for use in patients with osteoarthritis (OA). The primary objective of this proposal is to conduct a pilot study that assesses the

safety and feasibility of using concentrated bone marrow aspirate containing MSC to treat patients with painful knee OA.

- A Dose-escalation Safety Trial for Intrathecal Autologous Mesenchymal Stem Cell Therapy in Amyotrophic Lateral Sclerosis

Rochester, Minn.

The purpose of this study is to determine determine the safety of intraspinal delivery of mesenchymal stem cells (MSCs) to the cerebral spinal fluid of patients with Amyotrophic Lateral Sclerosis (ALS) using a dose-escalation study.

- An Efficacy, Safety and Tolerability Study of Ixmyelocel-T Administered via Transendocardial Catheter-based Injections to Subjects with Heart Failure Due to Ischemic Dilated Cardiomyopathy (IDCM)

Scottsdale/Phoenix, Ariz.

This study is designed to assess the efficacy, safety and tolerability of ixmyelocel-T compared to placebo (vehicle control) when administered via transendocardial catheter-based injections to patients with end stage heart failure due to IDCM, who have no reasonable revascularization options (either surgical or percutaneous interventional) likely to provide clinical benefit.

- Umbilical Cord Blood Collection and Processing for Cardiac Regeneration in Hypoplastic Left Heart Syndrome Patients

Rochester, Minn.

Cell-based cardiac regeneration has been the focus of acquired, adult heart disease for many years. However, congenital heart disease with severe structural abnormalities may also be reasonable targets for cell-based therapies. Interestingly, the pediatric heart is naturally growing and may be the most amendable to regenerative strategies. Therefore, identifying autologous cells (cells from the patient's own body) would be important to initiate these studies.

This study aims to validate the use of umbilical cord blood as a source of autologous cells for the purpose of cardiac repair of congenital heart disease. Cells will be isolated from the cord blood to help us determine the feasibility of collection, processing, and storage of these samples at the time of birth of infants with prenatal diagnosis of hypoplastic left heart syndrome. This study may be useful for the development of pre-clinical and clinical studies aimed at the long-term goal of repairing damaged heart muscle.

- MSC for Occlusive Disease of the Kidney

Rochester, Minn.

To determine the safety and toxicity of intra-arterial infused autologous adipose derived mesenchymal stromal (stem) cells in patients with vascular occlusive disease of the kidney.

- A Prospective Study of Patients with Hypoplastic Left Heart Syndrome (HLHS) Following Stage II Surgical Palliation

Rochester, Minn.

Hypoplastic left heart syndrome (HLHS) is a severe form of congenital heart disease that consists of multiple obstructions to flow through the left heart and aorta, as well as hypoplasia of the left ventricle. Most patients require a three-stage surgical protocol starting within days of birth. Stage I of this process is the Norwood reconstruction (within the first few days of life), Stage II (usually required within 3-8 months) involves creation of a direct connection between the patient's superior vena cava and the pulmonary arterial confluence (bidirectional Glenn anastomosis), and the last stage is creation of a Fontan circulation (typically within the first 2-4 years). This "single ventricle" approach requires the right ventricle to perform as the only circulatory pump for the entire body.

Our long-term goal is to develop regenerative strategies to strengthen and augment the right ventricular muscle of the single-ventricle heart following surgical palliation in HLHS patients. To

determine the safety and feasibility of a cell-based therapeutic intervention at the Stage II surgery, we aim to document the natural history of post-surgical care in HLHS patients having undergone standard of care with protocol specific follow-up over the course of a 6-month period.

This prospective study will document the natural history in patients with HLHS after planned Stage II surgical palliation with a focus on cardiovascular parameters within 6 months following surgery in 10-20 patients.

- Stem Cell Fistula Plug in Perianal Crohn's Disease

Rochester, Minn.

The investigators propose to study the safety of autologous mesenchymal stromal cell transfer using a biomatrix (the Gore® Bio-A®; Fistula Plug) in a Phase I study using a single dose of 20 million cells. Twenty adult patients (age 18 years or older) with refractory, complicated perianal fistulizing Crohn's disease will be enrolled. Subjects will undergo standard adjuvant therapy including drainage of infection and placement of a draining seton with continuation of pre-existing anti-Crohn's therapy. Six weeks post placement of the draining seton, the seton will be replaced with the MSC loaded Gore® Bio-A® fistula plug as per current clinical practice. The subjects will be subsequently followed for fistula response and closure for 24 months. This is an autologous product derived from the patient and used only for the same patient.

10) Clinical Trials: Joint Disease

- Knee Osteoarthritis Treatment With Adipose-derived Stem Cells: Phase II Clinical Trial

Condition: Knee Osteoarthritis

Intervention: Biological: Stem cells

Sponsor: King Faisal Specialist Hospital & Research Centre, Jeddah

Not yet recruiting

Posted: Monday, September 18, 2017 - 12:00

- Bone Marrow Aspirate Compared to Platelet Rich Plasma for Treating Knee Osteoarthritis

Condition: Knee Osteoarthritis

Interventions: Combination Product: Pure PRP II; Combination Product: PureBMC

Sponsors: Andrews Research & Education Foundation; EmCyte Corporation; BioSciences Research Associates, Inc

Recruiting - verified September 2017

Posted: Thursday, August 31, 2017 - 12:00

- Conventional Platelet-Rich Plasma Versus Concentrated Bone Marrow Stem Cell Injections for Osteoarthritis of the Knee

Condition: Osteo Arthritis Knee

Interventions: Biological: Concentrated Bone Marrow Aspirate (BMAC); Biological: Platelet-Rich Plasma (PRP)

Sponsor: Mayo Clinic

Not yet recruiting - verified August 2017

Posted: Wednesday, May 24, 2017 - 12:00

- Micro-Fragmented Adipose Tissue (Lipogems®) Injection for Chronic Shoulder Pain in Persons With Spinal Cord Injury

Conditions: Shoulder Pain; Shoulder Impingement Syndrome; Rotator Cuff Impingement Syndrome; Rotator Cuff Tendinitis; Rotator Cuff Syndrome of Shoulder and Allied Disorders; Spinal Cord Injuries

Interventions: Biological: Autologous micro-fragmented adipose tissue; Device: Lipogems system

Sponsor: Kessler Foundation

Recruiting - verified May 2017

Posted: Tuesday, May 23, 2017 - 12:00

- Clinical Study of Umbilical Cord Mesenchymal Stem Cells (UC-MSC) for Treatment of Knee Osteoarthritis

Condition: Osteoarthritis of the Knee

Interventions: Biological: Umbilical-cord mesenchymal stromal cells (UC-MSCs); Other: Hyaluronic acid

Sponsor: Liaocheng People's Hospital

Recruiting - verified May 2017

Posted: Sunday, May 21, 2017 - 12:00

- The Effects of Stromal Vascular Fraction and Mesenchymal Stem Cells as Intra-articular Injection in Knee Joint Osteoarthritis

Condition: Osteoarthritis

Interventions: Biological: Mesenchymal stem cell; Biological: Placebo

Sponsor: SCARM Institute, Tabriz, Iran

Not yet recruiting - verified May 2017

Posted: Friday, May 19, 2017 - 12:00

- EVALUATION OF AN INNOVATIVE TREATMENT FOR RADIOCARPAL OSTEOARTHRITIS USING INTRA-ARTICULAR INJECTION OF A MIXTURE OF AUTOLOGOUS MICROFAT AND AUTOLOGOUS PLATELET-RICH PLASMA

Condition: Osteoarthritis

Interventions: Drug: injection of microfat and plasma rich platelet PRP; Device: MRI

Sponsor: Assistance Publique Hopitaux De Marseille

Not yet recruiting - verified May 2017

Posted: Thursday, April 20, 2017 - 12:00

- Intra-articular Autologous Bone Marrow Aspirate Injection for Knee Osteoarthritis

Condition: Osteoarthritis, Knee

Interventions: Procedure: BMA Injection; Biological: BMA

Sponsor: Hospital for Special Surgery, New York

Not yet recruiting - verified April 2017

Posted: Monday, March 6, 2017 - 12:00

- Cellular & Biocellular Regenerative Therapy in Musculoskeletal Pain, Dysfunction, Degenerative or Inflammatory Disease

Conditions: Osteoarthritis; Rheumatoid Nodule; Degenerative Joint Disease; Tendinopathy; Tendinosis; Back Pain

Interventions: Drug: Normal Saline; Procedure: Tissue Stromal Vascular Fraction; Biological: Platelet Rich Plasma; Procedure: Cellular Stromal Vascular Fraction

Sponsors: Robert W Alexander, MD; Regeneris Medical; Global Alliance for Regenerative Medicine

Recruiting - verified March 2017

Posted: Tuesday, January 24, 2017 - 12:00

- Extracorporeal Shockwave Therapy for Knee Osteoarthritis

Conditions: Shockwave Therapy; Knee Osteoarthritis

Interventions: Device: shockwave therapy; Other: PT; Other: placebo