CONDITIONS TREATED

HeartStem is an innovative state-of-the-art medical institute that offers advanced therapies including regenerative and cellular therapies such as stem cells for the following chronic conditions, typically in their advanced stages:

1. **Chronic Heart Conditions:**
   a. Congestive Heart Failure/Cardiomyopathy (CHF)
   b. Coronary Artery Disease (CAD)

2. **Vascular Diseases:**
   a. Generalized atherosclerosis
   b. Peripheral vascular disease
   c. Erectile dysfunction (ED)

3. **Chronic Lung Diseases:**
   a. Pulmonary hypertension (pHTN)
   b. Chronic Obstructive Pulmonary Disease (COPD)/emphysema

And secondarily:

4. **Other Chronic Conditions:**
   a. Diabetes Mellitus
   b. Senile Dementia/Cerebral Sclerosis/Alzheimer's and Parkinson's Disease
   c. Age Management:
      i. Bone Degenerative Diseases
      ii. Joint Degenerative Diseases (such as arthritis) & Sports Injuries
      iii. Skin Rejuvenation
      iv. Hair Regrowth

Contact us for a free, confidential and detailed consultation at (310) 780-0854 or info@heartstem.org
8631 West Third Street, Suite 1017, East Tower, Cedars Sinai Medical Center, Los Angeles, CA 90048
HEART AND CARDIOVASCULAR SYSTEM

In the current context, stem cell therapy describes the use of the patient's own stem cells, harvested from different sources, such as adipose tissue, muscle tissue, bone marrow tissue or even heart tissue (1-4), then isolated and re-inserted into the patients body. The function of stem cells is to regenerate and repair damaged tissue and to differentiate into functional tissue.

Stem cell therapy has been used for decades in the treatment of several bone marrow diseases. More recently, intensive research has been undertaken to evaluate the effects of stem cell therapy on heart disease, diabetes and several other chronic or acute conditions. Notably, several clinical trials have demonstrated the safety of stem cell therapies for conditions of the heart (2).

Adult stem cell therapy has been tested in different laboratory and clinical settings for chronic and acute cardiac disease conditions. The therapy appears safe and initial results have been overwhelmingly positive (5-12).

There is no general agreement, however, about which stem cell source (bone marrow versus adipose-derived or others) and which re-introduction technique (intravenously, intra-coronary, intramuscular or others) is optimal for a given condition. In addition, the FDA has not formally approved stem cell therapy for chronic cardiovascular diseases. However, recent research, including our own, shows overwhelmingly promising and beneficial effects in patients using stem cell therapy to manage heart disease.

The concept of repair through stem cells includes the generation of new heart muscle cells (regeneration), the stimulation of the growth of new blood vessels (angiogenesis), and the repair of damaged tissue (repair), as well as the occurrence of paracrine effects (secretion of several factors including growth factors).

Even though stem cell therapy is offered on a commercial basis by several groups throughout the U.S. and worldwide, several of those have no scientific or adequate clinical background or reputation to substantiate their claims. HeartStem on the other hand is based on the long-term experience of renowned practitioners like Dr. Ernst Schwarz, as well as on published scientific research (see references below among others).
REFERENCES


10) Kocher, A. A. et al., Neovascularization of ischemic myocardium by human bone-marrow-derived angioblasts prevents cardiomyocyte apoptosis, reduces remodeling and improves cardiac function, Nature medicine 7, 430-436,


SERVICES PROVIDED

1. **High Quality of Care**: medical therapy is administered in our state-of-the-art clinic according to the guidelines of the American Heart Association, American College of Cardiology, European Society of Cardiology and American Medical Association.

2. **Access to World-class Medical Academic Institutions**. Patients can have
   - Easy access to world class medical academic institutions in California such as Cedars Sinai Medical Center, UCLA, Loma Linda University and UCSD.
   - Direct patient care through members of our medical team.
   - Advanced surgical treatment options such as heart and lung transplantation, mechanical circulatory assist devices and total artificial heart implantation.

3. **Local Hospital Care**: Representation of our medical team in several local hospitals in the greater Los Angeles area for advanced care including interventional cardiology, such as:
   - Cedars Sinai Medical Center (Los Angeles),
   - Southern California Hospital (Culver City),
   - Valley Presbyterian Hospital (Van Nuys),
   - St. Bernadine Medical Center (San Bernardino),
   - Loma Linda University Medical Center (Murrieta),
   - Temecula Valley Hospital (Temecula),
   - UCSD Medical Center (La Jolla),
   - Inland Valley Medical Center (Wildomar),
   - Rancho Springs Medical Center (Murrieta),
   - Fallbrook Hospital (Fallbrook).

4. **Concierge Medicine and V.I.P. services** including 24-hour accessibility to an on-call doctor with rapid turn-around time, options for continuous or as-needed home telemetry monitoring, home visits and direct accessibility to emergency medical services as needed.

5. **Advanced Therapies**: Availability of conserving and regenerative treatments including home IV, hormonal, cellular and stem cell therapies.
BENEFITS

1. Safety

- Stem cell therapy typically harvests patient’s own cells and re-introduces them where they are needed. As such, there is minimal risk of infection or immune system rejection. It is non-invasive: only small surgical procedures are required.
- Harvesting is usually done through blood draw, aspiration or liposuction and as such has a very low incidence of complications.
- Re-introduction is done through injection or catheters, here again with extremely few know problems to date.

2. Tolerability

- Stem cell therapy is natural; no drugs, foreign objects or substances involved. We just trigger your own body to do what it does best: heal.
- Treatment is fast: typically a few hours up to a whole day as an out-patient; sometimes an overnight stay for follow-on observation can occur.
- The procedure is discreet, it typically leaves no scars.
- Pain is minimized; harvesting is through aspiration and re-introduction through catheter or injection, typically only requiring local anesthesia.

3. Expertise

The researchers and clinical doctors at HeartStem have been working in our own laboratories all over the world as well as with the leading industrial and research laboratories and companies in the field such as BioHeart™ in Florida for many years. Several animal studies were performed, which ultimately led to the introduction of cell therapy for patients with several advanced chronic diseases including congestive heart failure, erectile dysfunction and COPD among others.

To date, hundreds of patients have been treated throughout the U.S. and worldwide using this technology and expertise. Our Medical Director, Dr. Ernst R Schwarz MD, PhD, has published several scientific papers on stem cell therapy since 1998 (see a few selected publications in the reference list), and has personally performed several stem cell treatments for chronic heart diseases and other conditions alongside the world's leaders in the field.

4. Effectiveness
Please consult the earlier “References” section for trial and study references as well as the section below for qualitative results.

5. Regulatory

Even though there is no official FDA approval of several innovative treatment options, including stem cell therapy at the moment, a number of procedures can now be performed in the U.S. for patients to get the best possible benefits from the practicing of medicine. In particular, harvesting stem cells from a patient and re-introducing them in that patient’s body after only minimal manipulation is a practice that is allowed in the U.S. today.

6. Procedures

Stem cell harvesting will be obtained by mini lipo-suction or bone marrow aspiration. These are considered "minimally-invasive" procedures, which require only local anesthesia and are performed by our experienced medical team. Our laboratory technicians isolate and prepare the cells for re-introduction. All procedures are performed according to safety and regulatory guidelines and are done with all precautions for safe and sterile cell handling.

There are a number of options for cells re-insertion into the patient's body. The most common ones are intravenously, by injection or via catheters. This typically happens in the heart or lung or into the peripheral tissue where the cells are needed most. Only approved catheters and devices and established techniques are used.

The best source of regenerative cell material and the best re-introduction route will be determined based on the patient’s condition, clinical requirements and medical necessity. These will be established after a thorough evaluation, physical examination and detailed consultation between the patient and our medical team.

7. Follow-up

Careful follow-up will be provided on a regular and as-needed basis locally through our Southern California clinics, via telemetry or through our clinical partners nationwide or worldwide, as appropriate.
QUALITATIVE RESULTS

Stem Cell Therapy for CHF/CAD

Left Ventricular Ejection Fraction

Exercise Capacity

Stem Cell Therapy for COPD

St. George Respiratory Questionnaire

Exercise Capacity

Courtesy of Dr. Kristin Comella, PhD, BioHeart™.