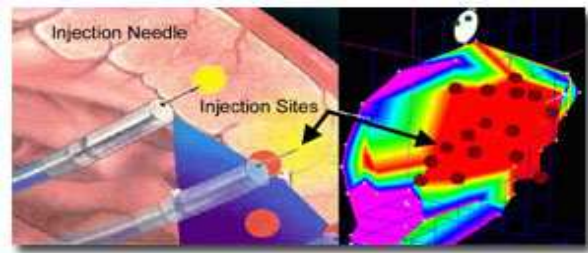


Leading the World in Stem Cell Research

With approval from the U.S. Food and Drug Administration (FDA), physician scientists at the Texas Heart Institute continue their study of stem cell therapy. The treatment involves harvesting stem cells from a patient's own bone marrow, processing them for 3 hours, and injecting them directly into the heart muscle through a specially designed catheter. This study is the first such FDA-approved stem cell study for heart repair in the United States—and the first in the world involving patients with advanced heart failure. Research continues at all levels to determine the best type of stem cell to use for heart repair and the best method of delivery, as well as to understand the biomolecular mechanisms involved in this treatment.



Stem cell researchers have just recently received FDA approval to use more "powerful" stem cells, also found in the patient's own bone marrow, to treat areas in the heart that are not being supplied with enough oxygen. These cells are more powerful because they are more primitive, so in theory they can differentiate more readily into new cells the body needs for oxygen-deprived tissues. Researchers are able to identify these cells based on their expression of an enzyme called ALDH. Our physician researchers will deliver the stem cells with a new catheter called the NOGA XP, which can quickly and accurately identify the areas of the heart where the cells will be most effective.

Recently, the Texas Heart Institute established a center to coordinate its stem cell research efforts. The new Interventional Cardiology/[Stem Cell Center](#) occupies more than 5,000 square feet on the 10th floor of The Denton A. Cooley Building. The center houses a heart failure laboratory; laboratories for biochemistry and molecular biology, cardiac electrophysiology, and cardiac physiology research; and stem cell storage facilities.