



Dr. Marc Schweiger



They say you can't mend a broken heart. At the conclusion of an innovative clinical trial underway at Baystate Medical Center, however, Dr. Marc Schweiger might disagree.

Schweiger and other doctors from the Baystate Heart & Vascular Program are now enrolling patients to participate in testing a new therapy that introduces adult mesenchymal stem cells into the body's bloodstream following a heart attack, in hopes that the stem cells will make their way to damaged heart tissue, reduce inflammation, and perhaps even promote regeneration of heart muscle.

The trial is being conducted and funded by Osiris Therapeutics Inc., a Maryland biotechnology company that is hoping to develop Prochymal for eventual broad use as a post heart attack therapy. The stem cells in Prochymal are derived from the bone marrow of healthy adult volunteer donors between the ages of 18 and 30 years. Potential donors undergo extensive screening and testing for transmissible diseases and the stem cells must pass stringent release criteria before they are infused into patients.

"There is reason to believe that the use of stem cells in limiting inflammation and assisting repair may have the potential to make a significant impact on the prognosis for patients recovering from a heart attack," says Schweiger, an investigator on the study and director of Baystate's Cardiac Research program. "The participants we've enrolled in the study have been quite enthusiastic about the chance to get involved in cutting-edge research."

James Bailey of Monson, a lieutenant with the Hampden County Sheriff's Department, is one such patient. Bailey suffered a heart attack last

June while participating in a training exercise in Ludlow, and was taken to Baystate Medical Center for emergency angioplasty. Soon after being stabilized, Bailey was presented with the chance to join the trial. Shaken by the unexpected threat to his life, Bailey decided to opt in.

"They call this type of heart attack the 'widow-maker,' because only one percent of people survive it. I consider myself very fortunate," Bailey says. "Being 40 years old, anything that I could do to improve the function of my heart I was willing to do."

Baystate is one of about 40 sites nationally participating in the trial. Tufts Medical Center in Boston and UMass Memorial Medical Center in Worcester are the only other Massachusetts centers currently involved in the study.

Research suggests that adult mesenchymal stem cells interact with the body's immune cells (cells that attack infection or are located in areas of inflammation), decreasing inflammation and helping in tissue repair. Studies have shown that these cells are universally compatible in humans, similar to Type O blood. Patients with other medical conditions—arthritis, diabetes, or liver disease, for example—may not be eligible. Doctors carefully check to determine a patient's eligibility before enrolling him or her in the trial.

Doctors and investigators in the trial will use the information gained from participants to determine whether this new treatment may be a feasible means of boosting the recovery of heart-attack sufferers. Current post-heart-attack treatments do not attempt any repair of the damaged cardiac muscle, focusing instead on preventing further cardiac issues with blood thinners and other medical approaches.

For more information about Baystate's Heart & Vascular Program, visit baystatehealth.org/heart.

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Lt. James Bailey



UNBREAK MY HEART

New Study Seeks to Boost Repair of Cardiac Tissue

By Ben Craft