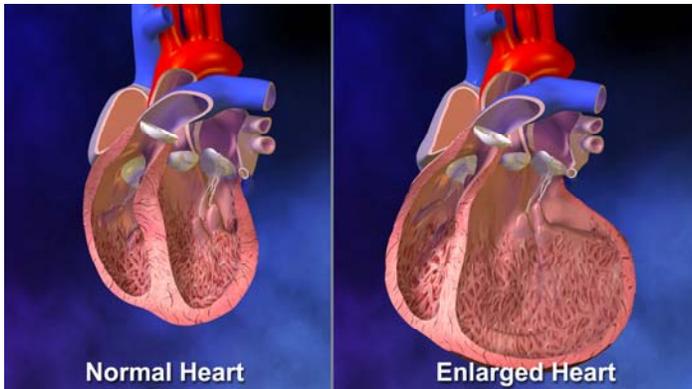


Heart Failure and Stem Cell Therapy

What causes heart failure?

Heart failure, sometimes referred to as congestive heart failure, happens when previous injuries (such as heart attack, high blood pressure, atrial fibrillation, etc.) prevent the heart from pumping as well as it should to maintain blood flow to meet the body's needs. These injuries can change the way the heart *looks* (making it enlarged) and the way it *works* (its ability to contract and relax).



How does heart failure impact my life?

Heart failure can impact the quality of your life by causing shortness of breath (particularly when exercising or lying down), feelings of being overly tired, or swelling in the legs. These symptoms can interfere with daily activities, and may limit you in things you once were able to do easily. Additionally, it places you at increased risk of further injury to

your heart (such as new heart attacks, arrhythmias, etc.).

Why use stem cells to treat heart failure?

Stem cells are unique in that they don't yet have a function in the body but can develop into more mature cells with a specific function. Promising studies (in both animals and humans) have shown that stem cells have the ability to improve the pumping action of the heart, make new blood vessels that improve blood flow, and help to reduce scarring on the heart (caused by the previous injuries mentioned above). It is hoped that by reversing the injuries that led to heart failure, symptoms will be reduced and quality of life will improve.

Does it work?

Each study adds to what is known about the effects of stem cells, such as which ones work best, what symptoms improve, and how long the effects last. Groundbreaking medical advances (present and past) are made possible because of participation of volunteers in clinical research. With each new study we are opening new doors to finding ways to diagnose, prevent, treat, or cure heart disease and disability. We appreciate *your help* in finding the answer to this important question.

