What are stem cells?
Your body is made up of cells. Together, these cells make up the tissues and organs inside your body. Each cell has an important job to do. A stem cell is a special kind of cell that can help the body to heal itself naturally.

Researchers are studying how adult stem cells can be used to treat heart disease and many other diseases and injuries.

Adult stem cells are unlike any other cells due to two special characteristics:
- they can adapt to become specialized organ and tissue cells
- they can make identical copies of themselves over long periods of time.

Stem cells are different from other cells because they can create new cells that are not exact copies of themselves. They can also continue to divide to make new cells for a long period of time. These special characteristics explain why stem cells can heal the body – they replace damaged cells in a specific part of the body for as long as needed.

Types of stem cells
There are two main types of stem cells.

- Embryonic stem cells are taken from a 3- to 5-day-old embryo. The embryos come from eggs created by in vitro fertilization that were never implanted into a woman’s uterus.
- Adult stem cells can be taken from the patient’s own body or from a healthy donor. Donors do not need to be a relative of the patient.

Only adult stem cells are used in clinical research studies. There is no ethical concern when using adult stem cells.

How will stem cell therapy affect me?
Your body heals itself naturally by using adult stem cells already in your body. As we grow older, the number and strength of our own stem cells decrease. Injecting more stem cells, either your own (autologous) or stem cells from a healthy adult donor (allogeneic), into the part of the body that needs them will make healing the damaged tissues and organs possible.

In the event of heart disease and stroke, an unnatural amount of cell death occurs due to lack of oxygen and the body cannot heal itself. The body needs a boost. We hope that stem cell therapy can be this boost. Stem cell therapy brings extra stem cells to the part of the body that needs them. Stem cell therapy is considered safe. Each stem cell study outlines the risks and benefits of receiving the treatment.

At the Minneapolis Heart Institute Foundation, we are leading the way in developing an understanding of the uses of adult stem cells in the treatment of stroke, angina (chest pain), myocardial infarction (heart attack), congestive heart failure and peripheral vascular disease. We are working to answer basic questions such as: how many stem cells should be delivered to the body, when should they be delivered, and how should they be delivered.

For more information
If you have any questions about a research study, please call the Minneapolis Heart Institute® OPTIMIST Clinic at 612-863-3900.