

CELLS: Not related to controversial research

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stem cells harvested from Van Lieshout's own system were processed to become a treatment for his deteriorating arteries.

One of seven

An adult stem cell is an undifferentiated cell found among differentiated cells in a tissue or organ. The stem cell can renew itself and differentiate to yield the major specialized cell types of the tissue or organ, according to the National Institutes of Health (NIH).

The primary roles of adult stem cells in a living organism are to maintain and repair the tissue in which they are found, according to the NIH Web site.

At a six-month checkup Aug. 17, Van Lieshout learned the anecdotal results of the procedure: There is improved blood flow to his leg, and the leg has grown stronger.

Prior to the procedure, Van Lieshout could just walk four minutes on a treadmill set at a 4-degree angle. At his three-month check-up, he walked for 10 minutes on a 10-degree slope.

"In the six-month evaluation, I walked 15 minutes at a 16-degree elevation," Van

Lieshout said. "We are hopeful the improvement will continue over the span of one year. The pulse in my foot has also shown improvement."

Van Lieshout believes he is one of just seven people in the world who have participated in an experimental procedure of this kind.

During January, he traveled from his Florida winter home to spend eight days at Northwestern. Health care providers transplanted stem cells from Van Lieshout's own bone marrow. Using available technology, they identified the stem cells associated with arterial growth from the more than one million cells extracted in two cups of blood.

"There were 25 of them," Van Lieshout said. "They injected the 25 in my calf and in my thigh. I was on a blood thinner; they had to watch for blood clots. They had to watch for everything."

An "awesome" feeling

Van Lieshout, a former principal of Southern Door High School until he retired in 1990, has studied adult stem cells and chose to share his story to educate others about them.

"This is happening," he said. "It's not science fiction. Adult

stem cells are on the verge of treating so many diseases from Alzheimer's to diabetes to heart disease to stroke to cancer. And they are right on the cutting edge. They are doing it. They are having success."

Adult blood-forming stem cells from bone marrow have been used in transplants for 30 years, according to NIH.

Scientists, NIH continued, have found adult stem cells in many more tissues than they once thought possible, and certain kinds seem to have the ability to differentiate into a number of different cell types under the right conditions. If the differentiation of adult

stem cells can be controlled in laboratory, NIH stated, the cells may become the basis for therapies for many common diseases.

In February, the Indiana University (IU) School of Medicine started a clinical trial using stem cell injections as treatment to severe peripheral artery disease. In the clinical trial at IU, bone marrow from the patient's hip was extracted while the patient was under a general anesthetic, according to the Stem Cell Research Foundation.

"I have had people say to me, 'How can you even think of doing that?' They equate it

(adult stem cell) with embryonic stem cells. They don't realize the adult stem cell program is so advanced," Van Lieshout said.

Because of the experimental nature of his procedure, Van Lieshout's entire hospital stay was not covered by Medicare. He personally paid \$10,000 for his care.

"That's the total cost to be able to walk," Van Lieshout said. "I cannot praise this enough. My right leg is now almost better than the left leg.

"And when I talk about this, it almost takes my breath away, because that's the feeling I have for it. It's awesome."

A description of Northwestern research can be found at www.northwestern.edu/science-outreach/stem-cell and a description of the Northwestern process can be found at www.science.com/releases/2004/04.

Other information about adult stem cells can be found at www.semcellresearch.org, the archives of the Pittsburgh Post-Gazette for June 26, 2004, in a 2004 report by the PBS Broadcasting System at www.pbs.org/newshour/science/stem-cells/index.html and on the site of the National Institutes of Health at www.nih.gov/info/basics/basics4.