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Stem cells offer hope to diabetics

BY FRED TASKER, MCCLATCHY NEWSPAPERS

MIAMI -- Human trials under way at the University of Miami and other hospitals in Europe, Asia and Latin America using immature adult stem cells are showing promise for people with Type 2 diabetes.

In a University of Miami clinical trial published recently in the online journal *Cell Transplantation*, 25 patients achieved better insulin production, lower blood-sugar levels and reduced need for insulin injections.

In the trial, still in its pilot stage, doctors extracted immature adult stem cells from the patients' own bone marrow, purified and concentrated them, and injected them into arteries near the pancreas. They then put the patients into hyperbaric oxygen chambers like those used for divers with decompression sickness -- also called the bends -- and subjected them to 10 hours of pure oxygen at 2.4 times the atmospheric pressure at ground level.

Researchers said they believe the high-pressure oxygen pulled extra stem cells from the patients' bone marrow, adding to the stem cells injected near the pancreas. They said the immature stem cells developed into pancreatic cells, regenerating the pancreas's ability to produce natural insulin.

Nearly 24 million people in the United States, or 8% of the population, have diabetes, which can cause problems for the eyes, kidneys, nerves and heart, the Centers for Disease Control and Prevention said.

The optimistic findings come from only small pilot studies involving only dozens of patients, and three to four more years of research are needed before practical treatments might start.

Two more successful trials over three or four years would be needed before the FDA might approve the treatment for the public.

The studies, coordinated by University of Miami's Diabetes Research Institute, also are to take place at the Karolinska Institutet in Stockholm, Sweden, Stem Cell Argentina in Buenos Aires and other institutions.