CRAIN'S DETROIT BUSINESS

UM doctor targets bone density using stem cells

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Tens of thousands in the U.S. suffer from osteomalacia, a severe loss of bone density created when the body's parathyroid glands in the neck stop producing a hormone needed to keep bones strong.

To date, the only available treatment is a heavy load of prescription drugs taken four or five times daily.

But if the work of Dr. Gerard Doherty, chief of endocrine surgery at the **University of Michigan Health Systems**, becomes viable, those days could be over.

After four years of research and $300,000 in funding, Doherty and other UM researchers recently took a large step forward in stem cell therapy research by developing a line of embryonic stem cells into parathyroid cells. Parathyroid glands are often damaged in surgery, causing the glands to stop producing the bone density hormone, Doherty said, causing patients to develop osteomalacia, a more severe form of osteoporosis.

“We started with nothing. Nobody had been able to do this before,” he said.

“And it now works, we can take cells that are completely undifferentiated stem cells and we can make them into cells that make parathyroid hormone and that have calcium receptors on them that are important for function.”

The technique is still years away from becoming available for treatment. Now Doherty is looking to use that same technique to develop cells taken from a patient's thymus into those parathyroid cells.

The big picture, though, is even more promising. By using the technique of transforming a basic cell into a cell with a specific function, Doherty said, a host of ailments could be treated in a better way.

“The real thing here is to make spare parts, to take a person's own cells and make them into the spare part that we need and then use it,” he said.