

Note from MCSCRC: The bills pending before the senate would not really block the ability for researchers to derive more diverse lines. Senate Bills 647-652 would block other aspects of the research, such as the ability to derive lines affected by inherited diseases. The senate bills would not block efforts to address the social justice issue. Rather, this important issue is being addressed at the University of Michigan as a result of Proposal 2, where it has not been address by others.

U-M to press for more stem cell research for minorities

Study finds few minorities included in the research

*KIM KOZLOWSKI The Detroit News
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Detroit -- For years, Amy Jackson has fed, dressed and bathed her husband, Thomas, as he succumbs to the later stages of Parkinson's disease.

The couple has put their hopes for others in embryonic stem cell research, which is working to improve treatments for incurable injuries and diseases such as Parkinson's. But if the research offered a breakthrough today for Parkinson's, it may not help Thomas Jackson Jr., who is African-American. A recent University of Michigan study showed a stark lack of diversity in the most commonly used embryonic stem cell lines, and researchers at the university are hoping to bridge that gap.

"It may be a white thing at this point," said Amy Jackson, 72. "But that doesn't mean it won't change."

Sean Morrison, director of U-M's Center for Stem Cell Biology, regards the lack of diversity as a social injustice and expects U-M to pioneer change in this area of research, perhaps by prioritizing embryos donated by underrepresented groups when creating stem cell lines.

Embryonic stem cell researchers derive cells from human embryos created through in-vitro fertilization used by infertile couples. In-vitro patients are disproportionately white, Morrison said. The treatment costs upwards of \$10,000 and typically is not covered by insurance. Michigan residents can donate their embryos to research when they have finished building their families and no longer need leftover embryos or they didn't use the embryos because they were unhealthy.

"We think embryonic stem cell research has the potential to change the future of medicine," said Morrison, who led the study that was published in the last month in the *New England Journal of Medicine*.

"If that's true, we have to make sure the research is done using diverse embryonic stem cell lines to ensure we don't accidentally develop treatment with embryonic stem cell lines that only work in certain groups."

But this work won't proceed if lawmakers make laws regulating embryonic stem cell research that was approved by voters in 2008, Morrison said. On Jan. 20, a six-bill package was voted out of the Michigan Senate Health Policy Committee and is now headed to the full Senate floor. Proponents say some parameters are needed but opponents say it would halt the research.

Mostly European origin

Before voters approved the constitutional amendment allowing the research, Morrison wondered about the diversity of existing stem cell lines. He and his colleagues examined the genetic material in each of the 47 most commonly used stem cell lines. Since everyone is 99.9 percent genetically identical, Morrison said, they looked at the 0.1 percent that determines differences. They teamed up with Noah Rosenberg, a U-M population geneticist who pioneered methods to infer population origin.

Their discovery: The majority of the stem cell lines they studied originated from people of Northern and Western European descent. Some of the lines represented people of Middle Eastern or Southern European ancestry, and two hailed from East Asia.

But none of the lines represented people descending from Africa, the Pacific Islands or from populations indigenous to America.

"We were surprised at just how little diversity there was," Morrison said.

The research findings come a month after the university announced it would accept human embryo donations, launching work in the state some opponents regard as immoral. The study also follows decades of medical research involving human subjects that focused primarily on white males.

But that started to shift in 1987, when women and minorities began to lobby for change. The National Institutes of Health published a policy that encouraged investigators to include women and minorities when studying human subjects, said Vivian Pinn, director of the NIH's Office of Research on Women's Health.

Concerns came up in the early 1990s that researchers were not embracing the policy, so in 1993, legislators made it a law.

Since then, NIH-funded clinical trials have included more women and minorities: In 2008, there were 15.4 million participants in 11,000 clinical trials. Of the 15.4 million participants, 60 percent were women and 28.6 percent were minorities, according to an NIH report monitoring adherence to the law.

"It is very important for people of all colors and cultures to benefit from research funded by public dollars," Pinn said.

Scientific ramifications

It's critical because different biological and cultural differences can affect preventions, interventions and treatments discovered in clinical trials, said Marie Swanson, chairwoman of the Department of Public Health at the Indiana University School of Medicine.

"You have to have broad representation so results of a study can be scientifically valid for the entire population," Swanson said.

BiDil, a heart drug approved by the Food and Drug Administration in 2005 specifically for African-Americans, is an example. The approval followed two trials in which the drug did not show a benefit among most subjects, but suggested it was effective in black patients. Follow-up studies confirmed the treatment's benefits for African-Americans with heart failure and led to the drug's approval.

Though there are hundreds of existing stem cell lines, the study showing a lack of diversity among the most commonly used stem cells is critical as the science moves forward, said Jack Mosher, a researcher on the project.

"One's genetic background influences so many things, including disease susceptibility and response to medications -- both positively and negatively," Mosher said. "As stem cells continue to grow in importance for understanding and treating disease, it's plausible that their genetic background and the diversity between different lines will manifest in similar ways."

Even more important, Morrison added, "You don't want to leave people out."

Myreo Dixon, who has depended on a wheelchair for 22 years after his spinal cord was injured by a bullet as a result of gang violence, thinks it's great that stem cell research could possibly help him and others walk again.

He's not surprised that the most commonly used stem cell lines lack diversity. But he's glad that scientists are discovering the lack of diversity now -- before any major discoveries are made, and possibly leaving some people out.

"This may bring life to people," said Dixon, a Detroit resident. "We shouldn't deny anybody life."