



British Team Will Try New Program to Increase Egg Donations for Stem-Cell Research

In an effort to increase the supply of human eggs available for use in embryonic-stem-cell studies, a team of British scientists is moving forward with an “egg sharing for research” program, in which women seeking in-vitro fertilization can receive the treatment at a reduced price if they agree to donate half of the eggs harvested during the procedure to research.

The Medical Research Council, Britain’s counterpart to the National Institutes of Health, announced financial support for the project.

The project, which has drawn questions about the ethics of compensating egg donors, expands on an earlier program in which the team asked women whose in-vitro-fertilization procedures yielded more than 12 eggs to consider donating two of them.

But over seven months, only 66 eggs were donated – “not enough to design a scientific study,” according to Alison Murdoch, one of the leaders of the team, the North East England Stem Cell Institute.

The institute, known as Nesci, is a collaboration of universities, hospitals, social scientists, entrepreneurs, and others. Its academic partners are Durham University and the University of Newcastle Upon Tyne.

The team plans to use the donated eggs in a branch of stem-cell research known as therapeutic cloning. Therapeutic cloning could, potentially, generate embryonic stem cells that are matched to a patient, raising the possibility of treating conditions like diabetes and Alzheimer’s disease in the future. Embryonic stem cells have the potential to form any tissue in the body, which is why researchers believe they hold such promise.

In animal studies, scientists have created embryonic stem cells by removing the DNA from an egg and replacing it with DNA from an adult donor cell –such as a skin cell. Once the adult DNA is inserted into the empty egg, the genetic material is reprogrammed and essentially reverts to its embryonic state. When this re-engineered egg begins to divide, it forms a small ball of cells called a blastocyst, from which embryonic stem cells can be harvested.

But the blastocysts, which some people regard as human lives, must be destroyed to harvest the stem cells. Because of ethical issues surrounding, the destruction of embryos and the risks faced by women who donate eggs, not to mention the scientific hurdles, the research has still not been replicated in humans.

Dr. Murdoch, who is a professor of reproductive medicine and head of that department at Newcastle, said the Nesci team had turned to the egg-sharing program after other means of increasing the supply had failed.

“We have tried to use eggs that failed to fertilize” during in-vitro-fertilization procedures, she said, “but those don’t have the capacity to reprogram a nucleus.” She added, “If we are actually going to make progress in reprogramming, then we need fresh eggs.”



For the past decade, British women have been able to get a discount on an in-vitro-fertilization, or IVF, procedure if they agree to share their eggs with other women. The new program extends that benefit to women who wish their shared eggs to be used for stem-cell research rather than IVF, said Michael Whitaker, chair of Nesci.

The compensation for women who donate half their eggs will be £1,500 or about \$3,050; the cost of IVF in Britain runs between £3,000 and £4,000. The Medical Research Council will support the cost of 80 such donations over the next year or two.

The egg-sharing-for-research program is “highly ethically questionable,” said Kathy Hudson, director of the Genetics and Public Policy Center, in Washington. She argues that the program exploits women who may be unable to afford IVF and are desperate to have a baby. “There is no such thing as an excess oocyte,” she said. Every egg taken from a woman undergoing IVF “is one fewer embryo she has to make a baby,” she added.

All of the eggs obtained in the IVF process are usually fertilized, and the embryos that are not transferred into the woman’s uterus are frozen for possible use later.

California and Massachusetts, the states with the largest stem-cell research initiatives, ban payment for eggs beyond the direct costs of the medical procedures and transportation.

Without significant policy changes, a system like the British one is unlikely to be accepted in the United States, said Robert Lanza, vice president of research at Advanced Cell Technology, a company pursuing therapeutic cloning, who also agrees with Hudson’s concerns.

“But we definitely need to look at creative ways like this,” he said, to deal with the limited supply of eggs for research.