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Time to Reprogram the Stem Cell Debate

by

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When the founder of human embryonic stem cell research says a new advance spells "the beginning of the end" for his field, we should pay attention.

That happened last month, when Dr. James Thomson of Wisconsin and Dr. Shinya Yamanaka of Japan discovered how to "reprogram" ordinary adult cells to act like embryonic stem cells. Dr. Thomson said these induced pluripotent stem cells (iPSCs) "meet the defining criteria we originally proposed for human ES cells, with the significant exception that the iPS cells are not derived from embryos."

That is a *very* significant exception, in light of the past nine years of intense debate over destroying embryonic human beings for their stem cells. Dr. Thomson says the new cells will replace those taken from embryos: They are noncontroversial, are easily produced, and can be an exact genetic match to particular patients (the elusive goal that scientists pursued unsuccessfully by trying to clone human embryos).

Dr. Thomson now admits he always had moral qualms about destroying embryos. "If human embryonic stem cell research does not make you at least a little bit uncomfortable, you have not thought about it enough," he says. And Dr. Yamanaka has told the *New York Times* how a flash of moral insight, experienced while looking through a microscope at an embryo in a fertility clinic, led him to the stem cell breakthrough of the decade. "When I saw the embryo," says Dr. Yamanaka, father of two girls, "I suddenly realized there was such a small difference between it and my daughters… I

thought, we can't keep destroying embryos for our research. There must be another way." And he went out and found it.

This looks like a happy ending, a win for science and ethics. But politicians and biotechnology CEOs who have invested money and reputations in embryo destruction fought this advance every step of the way, and are not ready to give up yet.

A few months ago these critics said Yamanaka's advance in "reprogramming" adult mouse cells was a fluke – until it was confirmed by three other teams of scientists. They blocked legislation to provide federal funding for such research – but President Bush promoted it, and signed an executive order to ensure funding. They said it wouldn't work the same way in human cells – until Drs. Yamanaka and Thomson issued their new studies last month. Then they said iPSCs may fail to reverse disease – until an even newer study showed they can reverse sickle-cell anemia in animals, producing better results than embryonic stem cells from cloning. Now they say iPSCs pose a risk of tumor formation – but that is also true of stem cells from destroying embryos.

At present, adult and cord blood stem cells remain the gold standard for safe and effective treatments. But if embryonic stem cells had any important research uses that could not be achieved with adult stem cells, it seems iPSCs will do as well or better.

Some politicians want to ignore this advance, and continue their fight to force taxpayers to fund research involving destruction of human embryos. They may want to listen to the scientists themselves, who are heaving a sigh of relief that they no longer have to be involved in this dirty business.

(Mr. Doerflinger is Deputy Director of the Secretariat for Pro-Life Activities, U.S. Conference of Catholic Bishops. To learn more about the bishops' pro-life activities, go to www.usccb.org/prolife.)