

Stem cell advance may not end debate: Long way to go with research on adult cells

News in the [December 25, 2007](#) issue

Although many religious thinkers cheered the news last month of a breakthrough in stem cell research, the moral controversy may not end anytime soon.

The announcement—made by independent teams of scientists working in Japan and Wisconsin—holds the promise of cures for a host of debilitating and terminal diseases. Scientists have studied embryonic stem cells because of their potential to become any one of more than 200 types of tissues in the human body.

However, research on stem cell development has proven highly controversial because human embryos are destroyed in the process. In addition, some scientists have proposed cloning human embryos from patients with certain diseases. Such cloning would prevent rejection of any new tissues or organs grown from the stem cells and used for those patients. Many religious groups—and many nonreligious bioethicists—find both prospects ethically troubling.

The new research has the potential to render both moral quandaries moot because, for the first time, it reprograms adult cells to act in ways that are apparently identical to those of embryonic stem cells. The research was conducted by Shinya Yamanaka of Kyoto University and a team led by James Thomson at the University of Wisconsin. Both teams used four genes to “reprogram” human skin cells, which essentially reverted to the stem cell format of their ancestors.

Those who consider embryonic stem cell research tantamount to abortion and who oppose cloning were ecstatic at the announcement.

Dubious “experiments involving embryo cloning and embryo destruction are being rendered obsolete. Scientists can now work with ‘embryonic-like’ stem cells without ethical concerns,” wrote Tony Perkins, president of the Family Research Council, in

his November 20 e-mail newsletter to supporters of the activist group.

The National Catholic Bioethics Center was more reserved in its praise for the study's potential. "Such strategies should continue to be pursued and strongly promoted, as they should help to steer the entire field of stem cell research in a more explicitly ethical direction by circumventing the moral quagmire associated with destroying human embryos," read a statement from the Philadelphia-based group.

But scientists—and some politicians—have said the announcement doesn't mean that embryonic stem cell research should cease immediately. "Even though these announcements are momentous, until a reprogrammed panacea cell is used to make stem cells that actually function properly to repair a damaged nerve, spinal cord or heart, all avenues of research must be funded and pursued," wrote Arthur Caplan, head of the Center for Bioethics at the University of Pennsylvania, in a column for MSNBC.com.

Caplan noted that the way the researchers reprogrammed the cells could make creating new tissues or injecting them into patients problematic. Yamanaka and Thomson's gene-therapy technique, he wrote, "uses viruses to get the reprogramming done. Those who have worked with gene therapy know that retroviruses do not always put genetic material where it is supposed to go."

"This does not obviate the need for human embryonic stem cell research," Story Landis, the head of the National Institutes of Health's stem cell task force, told the *Los Angeles Times*.

The researchers said they have yet to confirm whether the cells they created really are identical to embryonic stem cells. And Thomson himself said that embryonic stem cell research should continue. -*Associated Baptist Press*