

Scientists Say "Therapeutic Cloning" Creates a Human Embryo

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** President Clinton's National Bioethics Advisory Commission, in its 1997 report *Cloning Human Beings*, explicitly stated:

"The Commission began its discussions fully recognizing that any effort in humans to transfer a somatic cell nucleus into an enucleated egg involves the creation of an embryo, with the apparent potential to be implanted in utero and developed to term."

** The National Institutes of Health Human Embryo Research Panel also assumed in its September 27, 1994 Final Report, that cloning results in embryos. In listing research proposals that "should not be funded for the foreseeable future" because of "serious ethical concerns," the NIH panel included cloning:

"Such research includes: . . . Studies designed to transplant embryonic or adult nuclei into an enucleated egg, including nuclear cloning, in order to duplicate a genome or to increase the number of embryos with the same genotype, with transfer."

** A group of scientists, ethicists, and biotechnology executives advocating "therapeutic cloning" and use of human embryos for research -- Arthur Caplan of the University of Pennsylvania, Lee Silver of Princeton University, Ronald Green of Dartmouth University, and Michael West, Robert Lanza, and Jose Cibelli of Advanced Cell Technology -- confirmed in the December 27, 2000 issue of the *Journal of the American Medical Association* that a human embryo is created and destroyed through "therapeutic cloning":

"CRNT [cell replacement through nuclear transfer, another term for "therapeutic cloning"] requires the deliberate creation and disaggregation of a human embryo."

". . . because therapeutic cloning requires the creation and disaggregation ex utero of blastocyst stage embryos, this technique raises complex ethical questions."

** On September 7, 2000, the European Parliament adopted a resolution on human cloning. The Parliament's press release defined and commented on "therapeutic cloning":

". . . 'Therapeutic cloning,' which involves the creation of human embryos purely for research purposes, poses an ethical dilemma and crosses a boundary in research norms."

** Lee M. Silver, professor of molecular biology and evolutionary biology at Princeton University, argues in his 1997 book, *Remaking Eden: Cloning and Beyond in a Brave New World*:

"Yet there is nothing synthetic about the cells used in cloning The newly created embryo can only develop inside the womb of a woman in the same way that all embryos and fetuses develop. Cloned children will be full-fledged human beings, indistinguishable in biological terms from all other members of

the species."

** The President and CEO of the biotechnology firm that recently announced its intentions to clone human embryos for research purposes, Michael D. West, Ph.D. of Advanced Cell Technology, testified before a Senate Appropriations Subcommittee on December 2, 1998:

"In this . . . procedure, body cells from a patient would be fused with an egg cell that has had its nucleus (including the nuclear DNA) removed. This would theoretically allow the production of a blastocyst-staged embryo genetically identical to the patient"

** Dr. Ian Wilmut of PPL Technologies, leader of the team that cloned Dolly the sheep, describes in the Spring 1988 issue of *Cambridge Quarterly of Healthcare Ethics* how embryos are used in the process now referred to as "therapeutic cloning":

"One potential use for this technique would be to take cells -- skin cells, for example -- from a human patient who had a genetic disease You take this and get them back to the beginning of their life by nuclear transfer into an oocyte to produce a new embryo. From that new embryo, you would be able to obtain relatively simple, undifferentiated cells, which would retain the ability to colonize the tissues of the patient."

** As documented in the *American Medical News*, February 23, 1998, University of Colorado human embryologist Jonathan Van Blerkom expressed disbelief that some deny that human cloning produces an embryo, commenting: "If it's not an embryo, what is it?"