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# Human Cloning Fact Sheet

## QUESTIONS AND ANSWERS ON HUMAN CLONING

### Q Why is human cloning unethical?

A Human cloning involves massive creation and deliberate destruction of human life for research purposes. It is ethically wrong to exploit human persons and use them as commodities.

### Q Are there different types of human cloning?

A There is only one type of human cloning but human clones could be used for different purposes. A human clone could be implanted into a woman's uterus to allow the child to develop and be born. Scientists and lawmakers, at this time, are opposed to allowing a cloned child to be born -- they call this "reproductive cloning." What scientists really want is to create human clones, allow them to develop for an indefinite period of time, and then destroy them to obtain cells, tissues, or organs.

### Q How are human clones created?

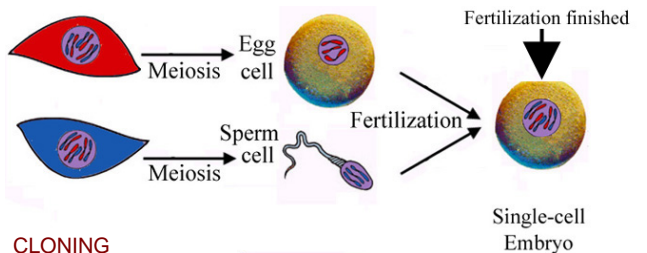
A Currently, human cloning is being pursued at several locations in the United States. The process used is called Somatic Cell Nuclear Transfer (SCNT). Scientists take a human egg and hollow out its center. Then the nucleus of a body cell from the person to be cloned (which contains that individual's genetic material) is inserted into the egg. The one-celled cloned embryo is stimulated to grow and develop by applying an electric current or chemicals.

### Q How will scientists obtain eggs for cloning purposes?

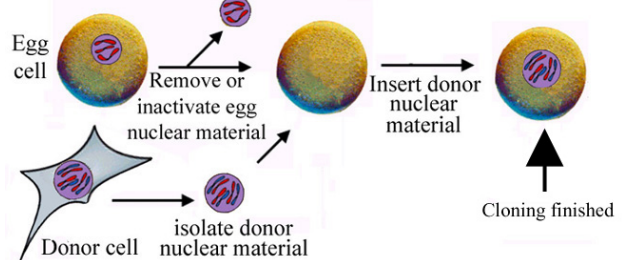
A It is estimated that millions of human eggs will be needed to advance human cloning. It is believed that scientists will pay women to inject them with hormones, with significant risk to the women, to stimulate human egg production. The eggs would then be retrieved for research purposes.

Scientists in other parts of the world are using cow eggs and inserting human genetic material to create Chimeras which are part-animal and part-human.

#### NORMAL FERTILIZATION



#### CLONING



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## **Q Why don't researchers simply use "leftover" frozen embryos instead of creating human clones?**

**A** The public has been led to believe that frozen embryos, which are supposedly going to be destroyed anyway, are the key to obtaining embryonic stem cells. There are an estimated 400,000 frozen human embryos in the United States but only 8,000 to 12,000 are available for research. Experts note that if 10,000 embryos were thawed for research purposes, there would be approximately only 275 cell lines produced, since the destructive research is extremely inefficient. Cloning is desired to give scientists an almost limitless supply of embryos.

Scientists also know that stem cells from a frozen embryo would be rejected by the recipient because these cells have the DNA of a different person. Scientists believe that if the clone of a person is created and then destroyed, the stem cells from the clone would not be rejected. This theory has not been proven.

## **Q What is fetal farming?**

**A** What scientists are learning is that if the embryo is allowed to develop beyond the embryonic stage (via uterus or artificial womb), the cells stabilize and are much less likely to produce tumors. To accomplish this result, some scientists want to engage in fetal farming. Scientists are already working on growing an embryo for an indefinite period of time in an artificial womb. Not only are the cells more stable as further gestation takes place, but scientists will be able to obtain whole organs rather than just tissues or cells. Fetal farming can be accomplished using frozen embryos, cloned embryos, or embryos created for research purposes.

The New Jersey state legislature, with strong support from the biotech industry, enacted a law that specifically authorizes and encourages human cloning for fetal farming by allowing human clones to be developed through the "embryo, fetal and newborn stages into a new human individual." Maintaining a cloned human up to the threshold of live birth and then destroying the child for stem cells, tissues and organs is permitted by this law.

## **Q Are there alternatives to human cloning?**

**A** Research using stem cells taken from adult tissues, placenta, umbilical cords and amniotic fluid are ethically non-controversial because they do not require the destruction of human life. These types of stem cells have already been used in human clinical studies for over 73 diseases and conditions, yielding promising results for real patients with real diseases with no rejection of the cells by the patient.

The discovery of iPS cells in late 2007 provides an ethical alternative for scientists to obtain patient-specific cells that are like embryonic stem cells with no loss of human life and no rejection factor.

## **Q Has human cloning been banned anywhere?**

**A** Seven states — Arkansas, Iowa, Michigan, North Dakota, Oklahoma, South Dakota, and Virginia — ban human cloning for any purpose. A Wisconsin law banning all human cloning was vetoed by Governor James Doyle.

Laws banning all forms of human cloning are already in effect in over 30 nations, including Germany, France, Norway, Canada, and Switzerland. In 2005, the General Assembly of the United Nations overwhelmingly urged member states to adopt bans on all forms of human cloning.



More information is online.  
Visit [WisconsinRightToLife.org](http://WisconsinRightToLife.org) - Click on *Stem Cell / Cloning*



This revision of the *Human Cloning Fact Sheet* was published March 13, 2009 by Wisconsin Right to Life with facts drawn from the most currently available information. Thanks to Dr. David A. Prentice, Ph.D., for use of the cloning graphic on Page 1.  
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