Dedicated to Advancing Stem Cell Research

Coalition for the Advancement of Medical Research

FAQ
Somatic Cell Nuclear Transfer (SCNT)

1. Whether you call it "therapeutic cloning" or "somatic cell nuclear transfer" or "nuclear transplantation," it is still cloning, isn't it?

Scientists do many kinds of cloning every day, most of which are commonly accepted. Cloning allows scientists to develop powerful new drugs and produce human insulin and useful bacteria in the lab. It also allows researchers to track the origins of biological weapons, catch criminals, and free innocent people.

There's a world of difference between reproductive cloning -- something that should be banned immediately -- and SCNT, sometimes referred to as therapeutic cloning. SCNT offers great promise for curing deadly and terrible diseases, and could *save* lives; it does not *create* people.

2. What exactly is SCNT?

Somatic Cell Nuclear Transfer (SCNT) is the implantation of a patient's DNA into an unfertilized egg in order to grow stem cells that could cure devastating diseases. The great promise of SCNT is that the patient's body would accept these cells because they would contain the patient's own DNA. SCNT aims to treat or cure patients by creating tailor-made, genetically identical cells that their bodies won't reject. In other words, SCNT could allow patients to be cured using their own DNA. SCNT produces stem cells, not babies. NO sperm is used in the procedure and the cells are NOT implanted into a womb.

3. How can SCNT help cure disease?

Many of the most debilitating diseases and conditions are caused by damage to cells and tissue. When combined with stem cell research, SCNT could be used to develop new and innovative treatments -- such as replacement cells and tissue -- that allow organs to function again and restore hope to millions of families.

SCNT is also integral to improving scientists' understanding of how stem cells and other cells develop. This knowledge could speed the search for new treatments and cures for some of the most complex diseases that currently plague our society. In particular, SCNT could allow researchers to move stem cell research to a new level, developing therapies that are specifically tailored to an individual's medical condition. Moreover, SCNT could help scientists develop stem cells that will not be attacked and destroyed by the body's immune system. This holds particular promise for patients who suffer from heart disease, diabetes, and spinal cord injuries.

4. What exactly is reproductive cloning?
Reproductive cloning is the use of cloning technology to create a living human being.

CAMR opposes reproductive cloning; and, patient advocacy groups, leading scientists, the National Academy of Sciences, along with an overwhelming majority of the American people agree that human reproductive cloning should not be allowed.

5. With SCNT, aren't we headed down a slippery slope toward reproductive cloning?
Not at all. With SCNT, there is no fertilization of the egg by sperm, no implantation in the uterus, and no pregnancy. Dr. Harold Varmus, the former head of the National Institutes of Health (NIH) and a Nobel laureate, says there is a profound distinction between cloning with the intent to make a living human being, and research cloning to help understand and treat life-threatening diseases and conditions.

Implantation into a womb to create a human being is the clear, bright, undisputed line that divides reproductive and non-reproductive technologies. This is where society can, and must, draw the line.

6. Why is SCNT important? Don't we already have enough stem cells for research?
No, we don't have enough stem cells for research. There are only a small number of NIH-approved embryonic stem cell lines available to government-supported researchers and there are not enough to proceed at full pace with extensive research into treatments and cures. There certainly are not enough to turn research into treatments.

Adult stem cell research shows promise in some areas and should also be pursued. However, our nation's top scientists, the National Institutes of Health, and the National Academy of Sciences all agree that embryonic stem cells have greater potential than adult cells because they are pluripotent (can make any cell in the body) and immortal (can be grown in a lab indefinitely).

Another important use of SCNT is to create new embryonic stem cells. The cells currently available to researchers are insufficient because:

> They do not allow full investigation of the genetic causes of disease. For example, scientists need to create new cell lines from stem cells that actually contain genetic diseases in order to study how these diseases affect the growth and development of other cells and tissue.
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> They are not sufficiently racially or ethnically diverse. Certain diseases are more prevalent in people of particular races, like sickle cell disease. By creating new stem cell lines from people of specific races, scientists could help unravel the causes of these diseases.

Bottom line: scientists need more cell lines to fulfill the promise of embryonic stem cell research.

7. With confusion about the different kinds of cloning, what is to prevent unethical, rogue scientists from performing full-fledged, reproductive cloning under the guise of therapeutic cloning?
CAMR supports immediate creation and enforcement of strict federal policy regulations to supplement existing FDA regulations, including a complete ban on reproductive cloning, stiff penalties for breaking the law, and rules to ensure that therapeutic cloning occurs under a comprehensive oversight system.

8. Does SCNT lead to a market for women's eggs and the exploitation of women?
No. The main purpose of SCNT is to perform research to understand how cells develop. Once that is understood, the process can be replicated in a laboratory and there will be no need for new eggs. And, recent research has also shown that SCNT can be performed using many fewer eggs than previously thought.

Further, federal policy dictates that all research must be reviewed by an independent review board to ensure that the research will be done according to the highest ethical standards including: protection of women, informed consent, and no undue financial inducements.

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