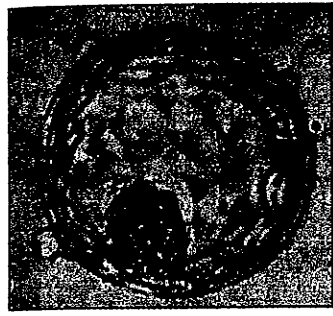


Bioethi

STOP! You cannot use THOSE cells.

Stem cells have been in the news a lot lately. Many people feel strongly that we should be able to use embryonic stem cells for any medical purpose. Others believe that there is no good reason to ever use embryonic stem cells. Still others believe that embryonic stem cells are suitable for some medical applications and not others. Stem cells are so controversial that President George W. Bush created a federal policy for their use in research funded by the US government.



A 6-day-old human embryo (also called a blastocyst). Stem cells are obtained by growing out the inner cell mass of the blastocyst. The inner cell mass is clearly visible in this picture (it is the dump of cells at about the 6-o'clock position within the embryo).

Photo courtesy of Joe Conaghan, PhD



An embryologist takes up frozen embryos from a cane (white item) in which they have been stored in liquid nitrogen. Fertility clinics must store or destroy extra unused embryos after *in vitro* fertilization. What do you think should be done with extra embryos?

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TO DO Conduct research to examine the use of embryonic stem cells in research and in the development of medical therapies. Evaluate the benefits and risks of using embryonic stem cells, and present a balanced review of a controversial issue.

1. Using the Internet, find information to answer the following questions. Record all of the bibliographic information, including Web site addresses, for the documents you use as references.
 - a. What are embryonic stem cells?
 - b. How do scientists produce, harvest, and use embryonic stem cells?
 - c. What is the value in using stem cells?
 - d. What are the risks of and arguments against using stem cells?
2. Describe three reasons to use embryonic stem cells in research and manufacturing. Give three reasons to not use them. Consider legal, financial, medical, personal, social, and environmental aspects.
3. Create a poster that accurately explains what embryonic stem cells are and why their use is controversial. Include the pros and cons of their use from item 2. Include numbers, data, and photos to make your poster more informative and convincing. Try to avoid your personal view, and give a thorough presentation of both sides of the issue.