Stem Cell Research: Myth vs. Fact Five Years Out

MYTH: The Federal Government already funds embryonic stem cell research so no change in the President's policy is needed.
FACT: August 9th marks five years since President Bush announced that federal funding for embryonic stem cell research would be limited. At the time the President announced his policy, there were thought to be 78 stem cell lines available for research. However, the reality is that only 21 stem cell lines are available to researchers in the United States today. Existing lines are becoming less stable with time and there are not enough to reflect the genetic diversity needed. In addition, all of the available lines are contaminated with mouse feeder cells, making it impossible for these lines to be used to create therapies for humans. Since 2001, scientists have discovered better methods of deriving stem cell lines so that they do not face the same contamination issues.

MYTH: Adult stem cell research has cured 72 different maladies – therefore embryonic stem cell research is not needed.
FACT: While there is great promise in adult stem cell research, only a handful of treatments are currently FDA-approved. As opposed to adult stem cell research which has had several decades to progress, human embryonic stem cell research really only began in the late 1990s. Embryonic stem cells have a unique capacity of self-replication, self-renewal over time, and greater potential to differentiate into other types of tissues. The first step is traditionally basic research done at the National Institutes of Health (NIH). Regrettably, the NIH's work in this area has been hindered due to the restrictions from the 2001 policy.

MYTH: Embryonic Stem Cell Research will never cure any diseases - it holds no hope for medical research.
FACT: Researchers have made several advances to demonstrate its potential for scientific progress, and they now understand pieces of the framework for how this research could benefit diabetes. Already, many of the genes involved in pancreatic development have been identified, and recent discoveries have allowed scientists to overcome the difficult task of getting stem cells to produce the necessary proteins - in the correct sequence - that will allow them to become insulin-producing islet cells. As Dr. James Battey of NIH said, "The more stem cell lines available for study, the more likely a cell line will be maximally useful for a given research, and potentially clinical, application. For this reason, the scientific community would be best served by having a greater number of human embryonic stem cell lines available for study."

MYTH: Embryonic Stem Cell Research will lead us down an ethical slippery slope.
FACT: The ethical guidelines set by H.R. 810 are strict. Under the legislation, embryos must be left over following fertility treatment; it must be clear that embryos will be discarded; the people donating the embryos must provide written consent, and; donors may not be compensated for their donation. Following these parameters, an estimated 400,000 embryos could become available for research.

MYTH: Additional federal funding is not needed because the private sector will still fund embryonic stem cell research.
FACT: Current restrictions have caused some of the best and brightest scientists in the United States to move overseas to work in countries that have embraced the promise of embryonic stem cell research. Researchers are moving to the United Kingdom, Israel, Singapore, China, Australia, France, Sweden, Finland and Germany among other places. Losing scientists makes it harder for the private sector to fund important research.

Updated: August 2006