

# **A Response to President Obama's Executive Order on ESCR.**

## **IS IDEOLOGY TRUMPING SCIENCE & MONEY?**

By Vicki Evans – Date: Monday, March 9<sup>th</sup>, 2009

On March 9, President Obama signed an executive order lifting restrictions on federal funding for embryonic stem cell research. This is not surprising. It was a campaign promise. What is surprising is that, at the very time the federal government is throwing its full faith and credit behind experimentation on human embryos, science appears to have progressed away from embryonic stem cell research, leaving the government -- and politicians -- in the dust.

Whatever you thought about the Bush Administration's limitations on funding for embryonic stem cell research, that policy decision had the effect of promoting scientific research on alternative and ethical sources for stem cells. It is likely that these avenues of research would not have been pursued if all available funds had been channeled into embryo research. These avenues have been among the most successful in developing the promised cures that embryonic stem cells have failed to even begin to achieve. The most notable ethical stem cell advancements have taken place on three fronts.

First, scientists last year discovered how to manipulate the genes of adult cells to convert them into the equivalent of embryonic cells dubbed "induced pluripotent stem cells" or iPS cells. Being patient-specific, these cells could then be transformed into any type of cell in the body without immune

system issues. The one problem that did exist -- that of potentially dangerous mutations leading to a risk of cancer -- was eliminated last week when scientists found a safe way to reprogram the cells without the use of viruses. This puts iPS cells a huge step closer to human clinical trials.

A second break-through called “transdifferentiation” occurred last fall when a study published in the scientific journal, *Nature*, showed that somatic cells -- skin cells, for example -- could be directly reprogrammed to go from one type of cell to another without first regressing to the pluripotent stage. Again, no immune system problems, no human eggs required and no ethical quandaries.

Finally, among the most important scientific findings of the year was that of the resilience, plasticity and flexibility of “amniotic-fluid stem cells” or AFS cells, found in both the placenta and the amniotic fluid that surrounds the growing fetus. These are pluripotent cells that transform into differentiated cells. Scientists are currently studying the reasons that these cells do not form tumors and provoke little immune system response. Further down the road AFS cells would be ideal candidates for banking, as is done with umbilical cord blood today.

Add to this equation the fact that adult stem cell therapies actually being used in medicine today have already outpaced embryonic stem cells by a score of over 70 to 0. Adult stem cells from sources including bone marrow, blood, fat, nasal cells and baby-tooth pulp, are successfully treating autoimmune diseases, degenerative joint disease, MS, cerebral palsy, spinal injury and diabetes type 2 -- to name a few. These therapies are not hopeful promises to be fulfilled in some uncertain future. They are realities today.

These new scientific techniques are attracting prominent researchers away from embryonic stem cell research because of the significantly lower cost, ease of production, and genetic identity with the patient. But the overarching consideration here is that these procedures are all ethically sound. They do not require the destruction of days-old human embryos, whether those embryos are found in laboratories, fertility clinics or cloned for the purpose of therapies.

Much like today, there have been other times in our history when government used taxpayer dollars to finance programs that were morally reprehensible to a majority of Americans. The acceptance of collateral damage to achieve a greater good was never popular. We have an aversion to financing the destruction of life, whether it goes by the name of war, the one-child policy in foreign nations, or experimentation on human beings in prisons or in laboratories.

Maybe the new Administration just hasn't gotten the memo yet outlining these points.

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