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"As to diseases ,make a habit of two things —
to help, or at least *do no harm*."
— Hippocrates, *The Epidemics* —

"Falling Behind" in Stem Cell Research?

Embryonic Stem Cell Research proponents misrepresent recent findings

Is the United States "falling behind" the rest of the world in stem cell research?

Proponents of human embryonic stem cell research (hESCR) say yes, and blame it on current federal policy limiting the number of human embryonic stem cell lines available for federally funded research.

But where is the evidence that the U.S. is actually "falling behind" the rest of the world in stem cell research? Proponents of hESCR point to recent studies they say prove their point. But despite their spinning, the studies show no such thing. **In fact, they show just the opposite – that despite its so-called "restrictive" policies, the US remains the world's leader in the field of stem cell research.**

For example, a recent survey conducted in Germany attempted to rank nations by the number of stem cell articles published in scientific journals on a per capita basis. The study found that Israel ranked first, with the U.S. far behind at number six. *The Scientist* (3/21/06), for example, trumpeted this finding in its lead paragraph reporting on the survey.

But as a measure of leadership in any given field of research, the number of articles published per capita is a virtually meaningless statistic. The statistic may show that Israel is a small country with a small but very well educated population. Or does it perhaps show that the U.S. is a large country with a large number of people, many of whom have chosen to do things other than stem cell research? So what?

The really key finding of the survey does not come until the fifth paragraph (out of eight) of *The Scientist* report: that the U.S. is by far the world's leader in the total number of stem cell articles published, alone accounting for 42% of all stem cell articles published worldwide between 2000 and 2004 – even with its supposedly restrictive approach to stem cell research. That is four times the articles published by the second leading nation, Germany, which accounted for 10.2 % of all stem articles published worldwide. Germany, by the way, has the most restrictive policies governing hESCR in all Europe, and led other European nations in the number of articles published.

So the data show that the two nations with more "restrictive" policies on stem cell research lead the world in the number of stem cell papers published.

Even more egregious than the distortions of this study, were those that accompanied one done by researchers at Stanford and published in *Nature Biotechnology*, "An international gap in human ES cell research" (4/06).

A press release accompanying the study noted that one its co-authors "said the paper doesn't necessarily prove that federal policies are holding back human embryonic stem cell research." Nonetheless, the *Washington Post's* story about the study flatly stated (4/7/06): "American scientists are falling behind researchers elsewhere in stem cell discoveries ***because of U.S. limits on the use of federal funding, a study has found"*** (emphasis added) **.**

Although the Stanford authors could not claim this outright, they nonetheless do their best

to "interpret" the data to show that "US congressional delays and the Bush administration's resistance to an expansion of federal funding suggest a real danger for US biomedicine…"

But the evidence they cite would seem to show something very different:

- **The United States remains the world's leader in number of published stem cell articles generally, *and* human embryonic stem cell articles specifically.**

- **From 1998 (when the field began) through the end of 2004, the United States alone published 46% of all papers published worldwide on hESCR – by far the single largest portion. The remaining 54 percent was divided among 17 other countries. (By comparison with the German study, note that the U.S. share of ESC articles is an even bigger percentage of the whole than its share of stem cell articles generally).**

- **The number of papers published by the U.S. has been increasing annually.**

- **Eighty-five percent of all human embryonic stem cell research published through the end of 2004 used the lines eligible for federal funding in the U.S. – that includes *all* published research, both in the U.S. *and overseas*.**

(Because researchers abroad are not subject to the "limitations" of U.S. federal funding policy and they do not apply for or receive NIH funds, it appears they use the supposedly "worthless" and "outdated" federally approved human embryonic stem cell lines because the lines are valuable for research, not because funding limits force them to use them).

So where is the author's evidence that the U.S. is falling behind internationally in hESCR?

The best they can do is note that in 2002, the U.S. accounted for a third of all hESCR papers published (3 out of 10) while by 2004, the U.S. share had dropped to one quarter of all papers published (20 out of 77). Thus the title of their paper: "An international gap in human ES cell research".

But the real "gap" is that no country in the world is anywhere near catching up with the U.S.

The numbers show that between 2002 and 2004, the US produced a seven-fold increase in the total number of papers it published. For all other countries *combined*, there was an eight-fold increase. This hardly seems to prove "a storm is brewing for [U.S.] stem cell science," as the authors contend.

Remember that the authors are comparing U.S. publication with publication by all other nations combined. The fact remains, however, that the U.S. continues to be, by far, the single largest publisher of papers on stem cell research and that is not likely to change.

Like so much in the area of embryonic stem cell research, the assertion that current federal policy on hESCR is causing the U.S. to become the international class dunce in this field is another myth we are expected to believe for no other reason than that the so-called experts repeat it over and over.

Of course, the U.S. remains tied with all other nations in the world in studies showing a *human treatment* from human ESCs. Since 1998, that number has remained steady at zero.

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"For additional perspective on the 'US Falling Behind' myth, see 'Celling Spin' by Eric Cohen at http://article.nationalreview.com/?q=OGFmM2E5N2E3NTI4NGU0ODIxZDU3MzdmZTk0NzY5Yjk="