



A golden idea:

Studies suggest new ways to deliver drugs with nanotechnology

348



Pediatric problem:

Agnès Saint Raymond talks about the need for child medicines

354



Haunted hope:

The drug clioquinol is resurrected to fight Alzheimer's disease

356

A stem cell ban is lifted, but some states see a heavy backlash

To the cheers of biomedical researchers around the country, US President Barack Obama lifted limitations on federal funding of embryonic stem cell research on 9 March. Within the next few months, the US National Institutes of Health will release guidelines outlining when and how human stem cell research should be federally funded. As a result of this move, US researchers will be able to apply for federal funding to do research on an increased number of human embryonic stem cell lines. However, as the federal government moves to promote embryonic stem cell research, some states are considering new rules that could hinder such work.

In his statement, Obama rescinded the executive order issued by President Bush eight years ago that banned federal funding for research on any embryonic stem cell lines created after 9 August 2001. There are still potential hurdles to overcome, though—the Dickey-Wicker amendment, first passed in 1995 and renewed every year since, still forbids any federal funds from going toward research that involves the destruction of human embryos. Nearly all human embryonic stem cell lines are created through the destruction of embryos. This means that the Dickey-Wicker amendment might be used to challenge government support of such cell lines.

The US Congress can now take a number of actions on the issue of embryonic stem cell research, explains Michael Werner of the Coalition for the Advancement of Medical Research. As one option, Congress could pass legislation that takes Obama's executive order and codify it. Congress could also pass the Stem Cell Research Improvement Act of 2009, introduced by Representative Diana DeGette of Colorado, and its related Senate version. This legislation is essentially the same as 2005 and 2007 versions of the bill that Congress passed and President Bush vetoed. The bill provides more specific regulations over which embryos can be used for federally funded stem cell research than Obama's executive order does. Congress could even go as far as legalizing embryonic stem cell research nationwide, although this action is unlikely.

Only a handful of states, such as South Dakota,



Penning a new chapter: The debate about stem cell research shifts to the state level

currently limit research on stem cell lines that have already been derived from embryos. Still, organizations that oppose embryonic stem cell research have been working for years to change regulations on embryonic stem cell research in other states.

Louisiana already has a law in place forbidding research that involves destruction of fertilized human embryos, regardless of the funding source. South Dakota bans research on human embryos or cells and tissues derived from them.

On 12 March, the Georgia State Senate passed a bill known as “Ethical Treatment of Human Embryos Act” that would prohibit any destruction of human embryos in Georgia. As *Nature Medicine* went to press, the bill was under consideration in the Georgia House of Representatives. Daniel Becker of Georgia Right to Life, an organization that supports the bill, explains that this legislation will allow researchers to conduct studies on existing human embryonic stem cell lines but will prevent them from creating such lines in the state.

Charles Craig, president of Georgia Bio, fears that this bill, if passed, might harm Georgia's biomedical and biotechnology industry. “Basically, this bill identifies Georgia as antiscience and antitechnology,” says Craig. He thinks it could propel embryonic stem cell researchers to leave Georgia. “What scientist would want to be in a state that is hostile to research?” he asked.

Russell Korobkin, a law professor at the University of California in Los Angeles thinks Obama's move might propel similar organizations into action. “For last year, [we] heard virtually nothing about [this] issue in the major media,” he says. “Now it has been brought back [into the spotlight] and is likely to motivate some opponents of the research.”

Legislation proposed in Texas, for example, would ban state funds for embryonic stem cell research. And, as *Nature Medicine* went to press, the Mississippi Senate was considering a bill already passed in the state's House of Representatives that would block state funds from going toward research at the University of Mississippi that involves the destruction of human embryos.

However, Korobkin doubts such initiatives will have much of a general impact on the field of biomedical research. “While a few states might pass more restrictive laws now, I don't see that happening in very many states or in states where a large amount of research is going on,” Korobkin says. When restrictive legislation is passed, embryonic stem cell researchers can simply move to other states, he explains.

Werner notes that the states that have taken extra steps to support embryonic stem cell science, such as New York and California, will benefit the most. These states will welcome the extra federal funding, given that the economy has limited their state budgets.

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