

TESTIMONY March 19, 2007
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OF HEALTH

SENATE APPROPRIATIONS LABOR, HHS, EDUCATION FISCAL 2008
APPROPRIATIONS: LABOR, HHS, EDUCATION

Partial Transcript

SENATOR HARKIN: But the first thing I want to get into is something that Senator Specter brought up and both of us worked together on this very hard and, again, Senator Specter has just had the chairmanship during all those years when we first isolated embryonic stem cells in Wisconsin, at the University of Wisconsin, and Senator Specter had the first hearings on that and, as he said, we've had 20 since then.

He and I have worked together harmoniously on this to try to push the frontiers of this and to get around the restrictions. But when you were appointed to your position five years ago, a lot of people were anxious about what we were going to do about embryonic stem cell research and about the restrictions that were placed on August 9, 2001 at 9:00 p.m.

At that time, you know there was a limit of how many stem cell lines could be financed through federal funds for research. We were told at that time there were 78, but then we've found out a lot since then. Now, again, when you first came before this committee, you said you wanted to let science take its course. Well, over the last five years, science has taken its course. I thought that was profound on your part to do so, to say that, because what we've discovered is that those 78 lines are not 78, they're really about 21, at least that's the latest I've been told. Only a handful are used on a regular basis, limiting their genetic diversity. We know, also, that all of them have been contaminated because they were grown on mouse feeder cells. So the likelihood that they would ever be used for any human intervention are unlikely.

We now know that there's much better ways of deriving and growing stem cells than what we knew in 2001. However, the lines derived from these new methods

are not eligible for federal funding. So given all that's happened in the last five years, I'd just like to revisit this issue with you. With everything you've told us about the vision for the future and moving that line up and getting in front of this, would scientists have a better chance of finding these new cures, new interventions for diseases if the current restrictions on embryonic stem cell research were lifted?

DR. ZERHOUNI: I think the answer is yes. My experience has been this. In 2001, I think the policy that was put in place was the first one to fund embryonic stem cell research. I think NIH has done a great job in the first three years of that in establishing infrastructure, funding new scientists which weren't fundable before. Since 2004, I think it's very clear from the point of view of science and what I have overseen that these cell lines will not be sufficient to do all the research we need to do for the reasons that you mentioned, but the most important one is that these cell lines have exhibited instability from the genetic standpoint and it's not possible for me to see how we can continue the momentum of science in stem cell research with the cell lines that we have currently at NIH that can be funded.

So from my standpoint, it is clear today that American science would be better served and the nation would be better served if we let our scientists have access to more cell lines, so that they can study with the different methods that have emerged since 2001, the different strategies that we now understand, underlying the fundamental issue, which is nuclear programming or DNA programming or reprogramming. So the answer is yes.

SENATOR HARKIN: Well, Dr. Zerhouni, let me ask you to comment on two things, then. One is that what we're hearing a lot now in the press, in the popular press, not so much in the scientific journals, is that we don't have to do this, adult stem cells can take care of it all. Then we have amniotic stem cells and then we have umbilical cord stem cells and that we don't need embryonic stem cells, that all these others will handle it, will take care of it.

And, secondly, just on the issue of stem cell research itself, how would something like -- why is it so important that NIH do this? Already California is doing it. I think Missouri just passed a constitutional amendment on it. Iowa, my own state, the legislature just voted and the governor signed into law lifting the ban in Iowa, Wisconsin, of course, New York. So different states are doing different things and a lot of times, when I talk about this, people say, "Well, if the states are doing it, there's no real reason for NIH to be involved in this." So if you could address both of those. Why is it important for NIH and what about adult stem cells and all these others being sufficient?

DR. ZERHOUNI: Well, let me give you my point of view and I think the scientific point of view here. Again, my statement, as I made five years ago, is that I will always stick to the scientific truth and disease knows no politics. So let me say this.

The presentations about adult stem cells having as much or more potential than embryonic stem cells, in my view, do not hold scientific water, if you will. I think they are overstated. I think we do not know at this point where the breakthroughs will come from. I think scientists who work in adult stem cells themselves will tell you that we need to pursue as vigorously embryonic stem cells.

My point of view is that all angles in stem cell research should be pursued. I think people sometimes misunderstand what the fundamental challenge is in stem cell research. It's not solely to use it to replace things, like in adult stem cell transplantation, but it's to really understand for the first time in the history of mankind how DNA is programmed to reprogram. Well, to do that, you need to have copies of cells that have been programmed, adult stem cells, but, also, copies of cells that have never been programmed forward, embryonic stem cells.

The key thing here is that the nation that understands that will be in a stronger position, as we were in the 20th century for the information revolution, for

computers. It's basically the software of life that we're talking about. So from my standpoint as NIH director, it is in the best interest of our scientists, our science and our country that we find ways and the nation finds a way to allow the science to go full speed across adult and embryonic stem cells equally.

SENATOR HARKIN: And why is it so important for NIH?

DR. ZERHOUNI: Right. So why is it important? As the NIH director, I can tell you that the role that NIH has played in this country over the years has been second to none. There is no state that can really provide the depth and oversight and stimulation of this research over the long run. This is not a one mile race. This may be a marathon and it is important, I think, for NIH to play its historical role. I think that we have done that. We can do this with appropriate oversight, a lot of safeguards to make sure that this research is not misused.

SENATOR HARKIN: Ethical guidelines.

DR. ZERHOUNI: Ethical guidelines. You know, Senator, we've done this. We've done this with the recombinant advisory committee in 1976, '77, '78. At that time, as you know, genetic engineering came on the scene. There was a huge question about both the safety and the ethics of using genetic engineering. Well, NIH took the lead and set up a committee, called the recombinant advisory committee.

We've been probably the most successful country in biotechnology. We've created a completely new industry and I think that this is the kind of role NIH can play. If you have a patchwork of policies, a patchwork of different approaches, you may not have the same standards, it will be very difficult for our country to muster its strength unless we have some sort of move forward in this area. We cannot, I don't think, be second best in this area. I think it is important for us not to fight with one hand tied behind our back here and NIH is key to that.

SENATOR HARKIN: Also, from seeing what's happening out there now, I see that like California, they're in a bidding warfare to get scientists to come there and Missouri is now going to do some bidding and Wisconsin. I suppose Iowa will probably get in the game now that we've lifted the law. So it just seems that, to me anyway, by providing NIH with this authority, which you have the experience, the oversight, you are the world's leader, everyone recognizes NIH as being the gold standard of unbiased research, that if you put a blanket over the NIH, it kind of reduces -- it may not stop, but I think it would reduce a lot this kind of bidding warfare between states and we'd have a national kind of approach on this. Plus, NIH could reach out to other countries and coordinate other countries in doing this research, also. Could that kind of process take place?

DR. ZERHOUNI: My view is that I think it's time to move forward in this area. It's time for the nation's policymakers to find common ground, to make sure that NIH does not lose its historical leadership. I think we've maintained that leadership all the way to 2004- 2005, but as we've discovered that the lines that we have are less viable than we would have liked them to be, as these lines are older, I think it's important to realize that we need to move forward here and NIH needs to continue its historical role as the leader of biomedical research in the world.

To sideline NIH in such an issue of importance, in my view, is shortsighted. I think it wouldn't serve the nation well in the long run. We need to find a way to move forward and I look at, obviously, it's more than science that is involved here, but I hope that we can find that soon.

SENATOR HARKIN: Well, Dr. Zerhouni, let me thank you for a very profound and courageous statement that you've made here today.

ZERHOUNI: Thank you.