

**Testimony of**

**Richard O. Hynes, Ph.D.**  
**President, American Society for Cell Biology**

**To the**

**Labor, Health & Human Services and  
Education Subcommittee  
of the  
Appropriations Committee**

**United States Senate**

**Stem Cell Research**

**September 14, 2000**

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Mr. Chairman and members of the Subcommittee: I am Richard Hynes, Professor of Biology at the Massachusetts Institute of Technology, where I am also an investigator of the Howard Hughes Medical Institute and Director of the Center for Cancer Research. I am a member of the US National Academy of Sciences and of the Institute of Medicine. I am here today as President of the American Society for Cell Biology. The Society represents 10,000 basic biomedical researchers, most of whom work in our Nation's leading research universities and institutes. It is my great pleasure to appear before you to explain why our organization feels that it is so important that the full potential of human embryonic stem cell research be realized.

On behalf of the American Society for Cell Biology, I wish first to extend my deepest appreciation to you, Chairman Specter, to Ranking Member Harkin and to the members of the Subcommittee for the visionary and courageous commitment you have made through your investment in biomedical research at the NIH. We are extremely grateful that you have embraced the goal of doubling the NIH budget over five years and that we are halfway towards reaching that goal. This funding is vitally important to allow our nations' scientists and clinicians to exploit the tremendous opportunities offered by the current revolution in biomedical research to enhance the health of the American public.

We believe deeply that this investment in biomedical research will be most effectively used if embryonic stem cell research is included among the innovative methods used to develop treatments and preventions for disease. We understand the ethical concerns that some have raised about this research but we respectfully submit that appropriately regulated research on human embryonic stem cells can be conducted while taking these concerns into account. The Guidelines recently released by the National Institutes of Health enable federally funded scientists to conduct research using pluripotent human embryonic stem cell lines. We believe that this research will undoubtedly lead to new ways to treat disease and disability. Embryonic stem cells will allow the creation of new, healthy tissue to replace damaged or dead tissue. Examples include bone marrow for the treatment of cancers, sickle cell anemia and thalassemias; pancreatic cells for the treatment of diabetes, and neuronal cells for the treatment of Parkinson's disease, Alzheimer's and various brain and spinal cord injuries and disorders. The prospects offered by this research are analogous to, but will likely far surpass, the benefits realized by organ transplantation over recent decades

We do not stand alone in our conviction that this invaluable research must go forward. Attached to my testimony is a statement signed by 70 American organizations, including the American Medical Association, the Michael J. Fox Foundation for Parkinson's Research, the Juvenile

Diabetes Foundation International, the Christopher Reeve Paralysis Foundation, the American Association for Cancer Research, and the Federation of American Societies of Experimental Biology which I respectfully request be submitted for the record.

I also want to reiterate the support of the American Society for Cell Biology for S.2015, "The Stem Cell Research Act Of 2000" which you have introduced, that would allow federally-funded scientists not only to use, but also to derive embryonic stem cell lines for research purposes.

Some have argued that human embryonic stem cell research is "illegal, unnecessary and immoral." We respectfully disagree on all counts. On the contrary, we believe that it would be immoral not to pursue this great opportunity to improve the quality of human life.

First, the charge that the NIH has acted illegally is unfounded. As you well know, the Labor, Health & Human Services and Education Appropriations bills have restricted embryo research for the last several years, but these bills are silent on the use of embryonic stem cells. These cells are *not* embryos and they cannot independently develop into embryos. The NIH Guidelines prohibit the use of NIH funds to create embryos for experimental purposes and they set specific criteria governing the sources from which embryonic stem cells can be obtained. These guidelines require the informed consent of the donors, preclude any possible direct benefit to such donors-and prohibit the creation of embryos for research purposes. Cells used for research must be derived solely from embryos generated for fertility treatments and in excess of clinical need. Such embryos would otherwise be discarded. A critical element of the NIH Guidelines is that the federal government will oversee the use of embryonic stem cells. Heretofore, this valuable resource was available exclusively to private and commercial entities, which were not accountable to the public. By funding human embryonic stem cell research, the federal government may exercise control over standards for use of stem cells. This provision will facilitate open debate and encourage public input into the appropriate uses of this important scientific opportunity.

Second, critics argue that embryonic stem cell research is unnecessary because stem cells derived from adult tissues may be used with equal effectiveness. I regret that this claim is ill-informed and misleading. Scientists are indeed guardedly encouraged by recent reports of plasticity of some adult stem cells, but this line of research is in its very early stages and far from definitive. We know little about the availability of adult stem cells, their differentiation, or their potential for prolonged maintenance outside the body. While we strongly support continued research on adult stem cells, it is far too early to conclude that they will be as effective in treating and preventing disease as embryonic stem cells seem certain to be. If embryonic stem cell research were to be halted based on that hope, it is entirely possible that years would pass before scientists determine whether or not adult stem cells are of equivalent value. During those years embryonic stem cell research could and should be pursued in parallel, to the great benefit of many of our fellow citizens. This possibility was emphasized in a letter to Chairman Specter in May from some of this Nation's leading researchers investigating adult stem cells who stated: "We are ... dismayed that our research ... is being used as a justification to hinder or prohibit research with embryonic stem cells. It is simply incorrect to use the future promise of adult stem

cell research as an argument that embryonic stem cell research is not critical and essential.” Again, I respectfully request that you submit their letters for the record.

Finally, given these facts, we believe it would be immoral *not* to pursue embryonic stem cell research, within the appropriate regulatory oversight mandated by the NIH Guidelines, because this research has enormous potential to save human lives and to mitigate human suffering. The embryos in question would be obtained from *in vitro* fertilization clinics only from those in excess of clinical need. I submit that, if the issue is morality, using embryonic cells for potentially life-saving research is greatly preferable to discarding them. Surely we should take advantage of the enormous life-saving potential of the thousands of embryos that are currently frozen and destined for destruction?

Great Britain, has recognized the value of stem cell research, having strongly recommend the use of embryonic stem cells and is now considering enabling publicly funded researchers to establish new embryonic stem cell lines. Other European countries are moving in the same direction. I do not believe that the Europeans are less moral or ethical than we. I also do not believe that they are less sensitive to the sanctity of life. I do believe that they have acted appropriately to enact by law the generation of new sources for stem cells in order to save lives and reduce suffering of the living and I believe we should do the same in this country.

In conclusion, The American Society for Cell Biology strongly endorses the NIH Guidelines which will enable federally-funded scientists to pursue embryonic stem cell research. We also endorse S.2015, “The Stem Cell Research Act of 2000”. We feel that, for the sake of humanity, studies using all forms of stem cells — embryonic, fetal and adult — should be pursued vigorously. We owe it to all those who are suffering to explore all possible avenues that could lead to the prevention of, and remedies for, disease.

I thank you for the opportunity to testify before you, Mr. Chairman. I would be pleased to answer any questions.