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April 24, 2026

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Re: National Institutes of Health (NIH) Request for Information on Reducing Reliance on Human Embryonic Stem Cells in NIH-Supported Research – Notice Number NOT-OD-26-031

Dear Associate Director Jorgensen:

The National Catholic Bioethics Center (NCBC), the Catholic Medical Association (CMA), the National Association of Catholic Nurses, USA (NACN-USA), and the National Catholic Partnership on Disability (NCPD) write in response to the NIH request for comments regarding the use of human embryonic stem cells (hESC) in research. Our four organizations will consistently defend the dignity of every person, which is established at the moment of conception (fertilization).

Foundation for our Organizations' Concerns

Some have suggested that embryonic stem cell research is necessary for the development of treatment for persons with disabilities. Individuals who suffer from disabilities such as Parkinson's disease are often cited as reasons why the continued development of embryonic stem cell research is crucial. NACN-USA and CMA are composed of healthcare professionals who work directly with persons with disabilities. For the reasons given below, these organizations can attest that adult stem cell research has offered better hope of advancing cures within an ethical framework that respects the dignity of the person. NCPD is the premier Catholic organization that advocates for persons with disabilities within the Church and in the wider culture. A guiding ethical principle for NCPD is that any treatment that does not respect the dignity of the person erodes the dignity of all persons, including the most vulnerable and those with disabilities. NCBC has been upholding the dignity of the human person in health care and biomedical research since

1972. NCBC, with NCPD, CMA, and NACN-USA reject utilitarian calculations that would sacrifice unborn embryonic children to provide a better quality of life for others. In fact, these utilitarian claims are even more troubling given that they do not stand up to scrutiny.

Furthermore, adult stem cell research is effective, as shown below. Our four organizations ask the administration to carefully consider these comments in light of the fundamental moral principle that all persons, born or unborn, disabled or healthy, possess intrinsic dignity and may not be used as a means to an end. Our ethical opposition to the use of hESC has remained constant throughout the nearly three decades of that use. Over that time, the scientific consensus regarding human embryonic stem cells (hESCs) has shifted from treating them as a "gold standard" for research, while increasingly favoring alternatives like induced pluripotent stem cells (iPSCs) for therapeutic applications, due to ethical concerns and immunological challenges.[1] We wish to comment on both the ethical and scientific facts that definitively support the use of optimal methods, specifically with induced pluripotential stem cells and adult stem cells (iPSC/ASC).

Ethical Considerations

The moral argument against the use of hESC is definitive. There is no fundamental human right greater than the right to life. Recognizing that life begins with conception, the utilization of hESC is a discriminatory act that takes advantage of the indefensibility of the unborn person. That harm is compounded when the use of hESC is funded by taxpayer dollars. If that is allowed, the government is justifiably seen as condoning the use of unborn persons as a commodity. The intentional ending of one human life as a means of improving or healing another is immoral. The creation of human embryos, or using abandoned or “donated” embryos from fertility procedures, simply for the purpose of destroying them for research purposes is antithetical to the principles of inherent human rights.

Scientific Evidence and Clinical Progress

The scientific evidence supporting the use of ethically acceptable stem cells rather than hESC is clear. The majority of funding for stem cell usage in research currently utilizes iPSC/ASC, which does not carry the moral harm associated with hESC.[2] The goal of any biomedical research is to achieve improvements in the health and treatment of patients. In that regard, iPSC/ASC have demonstrated success. Adult stem cells, although in the past their regenerative/reparative capacity was misunderstood, are demonstrating a rapidly growing host of clinical applications; and their clinical utility is increasingly being validated, and demonstrating to be superior to hESC in the clinical setting.[3] Until recently, no human being has been

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[1] Mario Kropf, “Ethical Aspects of Human Induced Pluripotent Stem Cells and Alzheimer’s Disease: Potentials and Challenges of a Seemingly Harmless Method,” *Journal of Alzheimer’s Disease Reports* (Sept. 2, 2023) https://doi.org/10.3233/ADR-230018. Also, Mario Kropf Netherlands Center for the Clinical Advancement of Stem Cell & Gene Therapies, “The Ethical Advantages of iPSCs,” NecstGen (Copyright 2025). https://necstgen.com/ethical-advantages-ipscs/#:~:text=iPSCs%20are%20crafted%20from%20adult,the%20risk%20of%20transplant%20rejection.

[2] Cade Hildreth, Founder & President, “What Are iPSCs, Who is Funding Them, and What Trials are Underway?” Blog: *BioInformant* (December 4, 2025). https://bioinformant.com/what-are-ips-cells/#:~:text=at%20this%20link.-,Funding%20for%20iPS%20Cell%20Technology,a%20period%20of%20ten%20years..

[3] D.A. Prentice, “Adult Stem Cells: Successful Standard for Regenerative Medicine,” *Circulation Research* 124:6 (14 March 2019). https://doi.org/10.1161/CIDCRESAHA.118.313664.

cured of any disease as a result of the use of hESC,[4] and the limited successes often are in clinical trials.[5] In contrast, the use of iPSC/ASC is demonstrating the potential to improve or save many lives.[6]

Non-embryonic stem cells function as a component of the normal repair and regeneration systems in the body, functions that embryonic stem cells cannot perform without the potential for rejection.[7] Even more problematic are the dangers associated with both iPSC and hESC, given their biological and inherent property towards proliferation. They are recognized as tumorigenic, particularly in the development of teratomas. Until recently, it was assumed that human induced pluripotent stem cells (HiPSCs) would behave like/worse than their embryonic counterparts in respect to their tumorigenicity. However, a rapidly accumulating body of evidence suggests that there are important genetic and epigenetic differences between these two cell types, which seem to influence their tumorigenicity.[8] The potential ability of researchers to control this property in iPSC/ASC[9] highlights the advantage of funding iPSC/ASC, as well as the rationale to discontinue funding of the former.

The impact of iPSC/ASC on health care is wide and profound. In a relatively short period of time, the advantages of these methods have become abundantly clear, with the World Health Organization (WHO) reporting more than three thousand ongoing trials using adult stem cells,[10] yielding significant improvements and successes in treatments ranging from hematopoietic diseases[11] to severe burn injuries[12] and macular degeneration.[13] Cardiovascular benefits are increasingly evident, particularly with stem cells derived from bone marrow and umbilical cord blood.[14] The use of these cells has led to

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[4] Charlotte Lozier Institute, "Fact Sheet: Adult Stem Cell Research and Transplants" (November 21, 2017). https://lozierinstitute.org/fact-sheet-adult-stem-cell-research-transplants/.

[5] Gina Kolata, "'It's like a miracle': The man who may be the first person cured of type 1 diabetes," *The Irish Times* (Fri Dec 03 2021). 'It's like a miracle': The man who may be the first person cured of type 1 diabetes – The Irish Times.

[6] José Bragança, *et al.,* "Induced pluripotent stem cells, a giant leap for mankind therapeutic applications," *World J Stem Cells* 11:7 (2019 Jul 26). 421–430. doi: 10.4252/wjsc.v11.i7.421.

[7] Mayo Clinic Staff, "Stem cells: What they are and what they do: Stem cells offer promise for new medical treatments. Learn about stem cell types, current and possible uses, and the state of research and practice," *Mayo Clinic* (Jan. 21, 2026). https://www.mayoclinic.org/tests-procedures/bone-marrow-transplant/in-depth/stem-cells/art-20048117.

[8] Uri Ben-David, Nissim Benvenisty, "The tumorigenicity of human embryonic and induced pluripotent stem cells," *Nat Rev Cancer* 11:4 (2011 Apr) 268-77. doi: 10.1038/nrc3034. PMID: 21390058 DOI: 10.1038/nrc3034.

[9] Chaoliang Zhong, *et al.,* "Tumorigenicity risk of iPSCs in vivo: nip it in the bud," *Precis Clin Med.* 5:1 (2022 Feb 3). pbac004. doi: 10.1093/pcmedi/pbac004; also Go Itakura, "Fail-Safe System against Potential Tumorigenicity after Transplantation of iPSC Derivatives," *Stem Cell Reports: ISSCR* 8:3 (March 14, 2017) 673-684. https://www.cell.com/stem-cell-reports/fulltext/S2213-6711(17)30047-4.

[10] R.M. Aly, "Current state of stem cell-based therapies: an overview," *Stem Cell Investig* 7:8 (15 May 2020). https://doi.org/10.21037/sci-2020-001.

[11] F. Bernaudin, *et al*., "Long-term results of related myeloablative stem-cell transplantation to cure sickle cell disease," *Blood* 110 (2007) 2749-2756, 2007, https://doi.org/10.1182/blood-2007-03-079665; HRSA, "Blood Stem Cell Program" (April 18, 2026) https://bloodstemcell.hrsa.gov/data, and https://bloodstemcell.hrsa.gov/data; and The Lancet Hematology (press release), "Experts warn of stem cell underuse as transplants reach 1 million worldwide" (Feb 27, 2015). https://www.sciencedaily.com/releases/2015/02/150227084630.html.

[12] J. Poulos, "The limited application of stem cells in medicine: a review," *Stem Cell Res Ther* 9:1 (2018). https://link.springer.com/article/10.1186/s13287-017-0735-7.

[13] M. Mandai, *et al*., "Autologous induced stem-cell-derived retinal cells for macular degeneration," *N Engl J Med* 376 (2017) 1038-46. https://www.nejm.org/doi/full/10.1056/NEJMoa1608368.

[14] M.N. Banerjee, *et al*., "Clinical studies of cell therapy in cardiovascular medicine: recent developments and future directions," *Circ Res* 123:2 (6 July 2018) 266–287. 2018, https://doi.org/10.1161/CIRCRESAHA.118.311217.

strikingly significant improvements in many neurologic conditions, including stroke,[15] multiple sclerosis,[16] and spinal cord injury.[17] The efficacy of iPSC/ASC in the field of genetic therapies is likewise demonstrated in disorders such as epidermolysis bullosa[18] and Krabbe disease.[19]

Basic research utilizing iPSC/ASC demonstrates a similarly broad range of discoveries that further support funding of these methods. Three-dimensional organoids have been developed from them to discover the mechanism of damages incurred by Zika virus[20] and to identify cell-based anomalies leading to lissencephaly.[21] Organoids of lung, kidney, brain, liver, and other organs have been developed from adult stem cells to improve the study of diseases, including the mechanisms of SARS-CoV-2 damage and its treatment.[22]

The potential improvements in multiple clinical areas can be foreseen in the expanding number of research reports utilizing these stem cells, including hearing loss,[23] thyroid disease,[24] Creutzfeld-Jakob disease,[25] congenital heart disease,[26] restoration of vision,[27] gynecologic carcinomas,[28] and intestinal disorders.[29]

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[15] G.K. Steinberg, *et al*., "Clinical outcomes of transplanted modified bone marrow–derived mesenchymal stem cells in stroke: A Phase 1/2a Study" *Stroke* 47:7 (July 2016) 1817-1824. https://doi.org/10.1161/STROKEAHA.116.012995

[16] P.A. Muraro, *et al*., "Long-term outcomes after autologous hematopoietic stem cell transplantation for multiple sclerosis," *JAMA Neurol* 74:4 (1 April 2017) 459–469. https://doi.org/10.1001/jamaneurol.2016.5867.

[17] D.A. Prentice, "Remembering pioneers in patient treatments," *J Tissue Sci Eng* 3:4. e119 (2012). DOI: 10.4172/2157-7552.1000e119

[18] T. Hirsch, *et al*., "Regeneration of the entire human epidermis using transgenic stem cells" *Nature*, 551: 7680 (* Nov. 2017) 327–332. https://doi.org/10.1038/nature24487.

[19] M.D. Wright, *et al.,* "Developmental outcomes of cord blood transplantation for Krabbe disease - A 15-year study," *Neurol* 89:13 (26 Sept 2017) 1365-1372. https://doi.org/10.1212/WNL.0000000000004418.

[20] P.P. Garcez, *et al*., "Zika virus impairs growth in human neurospheres and brain organoids," *Science* 352: 6287) (14 April 2016) 816–818. https://doi.org/10.1126/science.aaf6116.

[21] M. Bershteyn, *et al*., "Human iPSC-derived cerebral organoids model cellular features of lissencephaly and reveal prolonged mitosis of outer radial glia." *Cell Stem Cell* 20:4 (6 April 2017) 435-449.e4. https://doi.org/10.1016/j.stem.2016.12.007.

[22] S. Mallapaty, "The mini lungs and other organoids helping to beat COVID" (News Feature) *Nature* (26 May 2021). https://www.nature.com/articles/d41586-021-01395-z; and J. Jansen, *et al*., "SARS-CoV-2 infects the human kidney and drives fibrosis in kidney organoids," *Cell Stem Cell* 29:2 (3 Feb 2022) 217-231.e8. https://doi.org/10.1016/j.stem.2021.12.010.

[23] Q. Liu, *et al*., "High-throughput screening on cochlear organoids identifies VEGFR-MEK-TGFB1 signaling promoting hair cell reprogramming," *Stem Cell Reports* 16:9 (14 Sept 2021) 2257-2273. https://doi.org/10.1016/j.stemcr.2021.08.010.

[24] V. Ogundipe, *et al*., "Generation and Differentiation of Adult Tissue-Derived Human Thyroid Organoids," *Stem Cell Reports* 16:4 (13 April 2021) 913-925. https://doi.org/10.1016/j.stemcr.2021.02.011.

[25] B. R. Groveman, *et al*., "Human cerebral organoids as a therapeutic drug screening model for Creutzfeldt–Jakob disease," *Sci Rep* 11 (2021) 5165. https://doi.org/10.1038/s41598-021-84689-6.

[26] Y.R. Lewis-Israeli, *et al*., "Self-assembling human heart organoids for the modeling of cardiac development and congenital heart disease," *Nat Commun* 12 (2021) 5142. https://doi.org/10.1038/s41467-021-25329-5; and D. Srivastava, "Modeling human cardiac chambers with organoids," *N Engl J Med* 385:9 (25 Aug. 2021) 847-849. https://doi.org/10.1056/NEJMcibr2108627.

[27] B. Mahato, *et al*., "Pharmacologic fibroblast reprogramming into photoreceptors restores vision," *Nature* 581 (2020) 83-88. http://dx.doi.org/10.1038/s41586-020-2201-4.

[28] N. Yucer, *et al*., "Human iPSC-derived fallopian tube organoids with BRCA1 mutation recapitulate early-stage carcinogenesis," *Cell Reports* 37:13 (28 Dec. 2021). https://doi.org/10.1016/j.celrep.2021.110146.

[29] M. Nikolaev, *et al*., "Homeostatic mini-intestines through scaffold-guided organoid morphogenesis," *Nature* 585 (2020) 574–578. https://doi.org/10.1038/s41586-020-2724-8.

Safety & Practical Advantages of iPSC and ASCs

The superiority of iPSC/ASC in comparison to hESC is inarguably clear on multiple levels. The basic and clinical research results contrast starkly with the limited successes of hESC use.[30] Cost/benefit ratio with iPSC/ASC is a significant factor, particularly given the fiscal responsibility of NIH in the provision of research grant funding. While at this time hESCs often have lower production costs for large-scale, standardized therapies because they do not require the high, patient-specific reprogramming, the strong success rates are not there. However, iPSCs are generally more cost-effective for disease modeling and drug screening because they allow for patient-specific, ethically uncontroversial cell lines that can be generated without destroying embryos.[31] When taxpayer money is utilized for funding, the most successful and least costly methods should be supported. The proven record of advances and successes with the use of iPSC/ASC are more than sufficient to expand funding of these methods.

Policy Recommendations & Conclusions

The National Institutes of Health (NIH) announced on January 23, 2026, that it would pause new submissions to the NIH Human Embryonic Stem Cell Registry, effectively ending the registry that has been in place for 17 years.[32] The registry was created pursuant to President Barack Obama's Executive Order 13505 (2009), "Removing Barriers to Responsible Scientific Research Involving Human Stem Cells."[33] The cessation of all funding for hESC research is warranted. The funding of iPSC/ASC will not violate Executive Order 13505, which while focusing on support for hESC, does not prohibit support for iPSC/ASC. An additional and appropriate action is that EO 13505 should be either revoked or replaced as there is no further need for hESC funding. The funding of iPSC/ASC research will help meet the Trump Administration's goals of decreasing wasteful spending, the promotion of innovation, and ultimately, improving the health of Americans.

Most importantly, as discussed in the opening of this letter, the moral and ethical path forward is to fund research that maintains respect for each person, regardless of their stage in life. From the time of conception, each individual deserves protection from harm and the opportunity to flourish. Furthermore, the intent of the *Hyde Amendment* is to prohibit federal funding of procedures that terminate the life of a human embryo or fetus.[34] Clearly, the derivation of any hESC lines for subsequent scientific studies requires the killing of originating embryos in the pursuit of subsequent biomedical research, violating the very protections of human life intended by Hyde. However, Executive Order 13505 (2009) is enabled by an unjust and unethical "work around" of the *Dickey-Wicker Amendment*. This Amendment is a longstanding federal appropriations rider, consistently renewed that prohibits the U.S. Department of Health and Human Services (HHS) and NIH from using federal funds for research that creates or destroys

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[30] Jun Takahashi, "iPSC-based cell replacement therapy: from basic research to clinical application," *CytoTherapy* 27:7 (July 2025) 835-842. https://www.isct-cytotherapy.org/article/S1465-3249(25)00053-2/fulltext.

[31] Yanhong Shi, *et al.,*" Induced pluripotent stem cell technology: a decade of progress," *Nat Rev Drug Discov*. 16:2 (2016 Dec 16) 115–130. doi: 10.1038/nrd.2016.245.

[32] NIH, "NIH Pause on New Submissions to the NIH Human Embryonic Stem Cell Registry and Request for Information on Reducing Reliance on Human Embryonic Stem Cells in NIH-Supported Research" (January 23, 2026) Notice Number: NOT-OD-26-031. https://grants.nih.gov/grants/guide/notice-files/NOT-OD-26-031.html.

[33] President Barac Obama, "Executive Order 13505 -- Removing Barriers to Responsible Scientific Research Involving Human Stem Cells," *The White House* (March 9, 2009). https://obamawhitehouse.archives.gov/the-press-office/removing-barriers-responsible-scientific-research-involving-human-stem-cells.

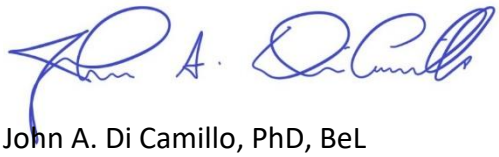
[34] 113th Congress (2013-2014) S.142 - *Hyde Amendment Codification Act*.

human embryos. It maintains a strict ban on taxpayer funding for research causing injury or death to human embryos.[35] However, the funding of research using hESC has been justified by the fact that the actual destruction of the embryo, required by the very garnering of the embryo's cells, kills the human embryo, not the resulting research using the destroyed embryo's cells. The funding of hESC research not only ignores the human rights for which *Hyde* and *Dickey-Wicker* were promulgated but is inconsistent with existing laws that prohibit the use of goods obtained through illicit means.[36] Additional moral injury to the human family that is the United States, is incurred when federal funding is provided to research using means that allow human lives to be lost intentionally and unnecessarily.

The advantages of iPSC/ASC are indisputable and profound, to the degree that NIH funding for hESC should be halted, and all funding should be allocated to research efforts that are reliable, economical, effective, and of paramount importance, ethical.

Our organizations are grateful for this opportunity to contribute to your review of this important topic. We stand ready to help in any way as your deliberations proceed and look forward to NIH's exclusive support for iPSC/ASC.

Sincerely yours,



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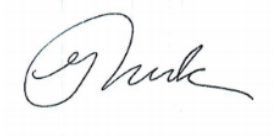

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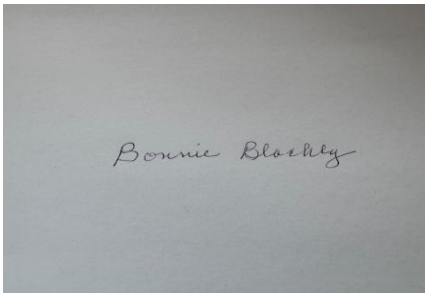

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[35] "Public Law No. 111-8". *Thomas H.R.1105*. The Library of Congress. Archived from the original on 2009-05-06.
[36] As an example: 18 U.S. Code § 2315 - Sale or receipt of stolen goods, securities, moneys, or fraudulent State tax stamps.