CJ Significant Items Report

NIH

DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH

FY 2027 CONGRESSIONAL JUSTIFICATION

Significant Items

Alternatives to Animal Testing and New Approach Methodologies

Senate Language

The Committee supports NIH Common Fund's Complement Animal Research In Experimentation [Complement-ARIE] Program, intended to spur the development, standardization, validation, and use of new approach methodologies [NAMs] to more accurately model human biology. The Committee also encourages NIH, in new Announcements and other indications of funding opportunities, to continue consideration of NAMs as an option for areas of preclinical research when it is not appropriate to use human participants and where the use of NAMs has been demonstrated to support biomedical discoveries. The Committee further encourages NIH to collect and make publicly available a report that outlines how the use of vertebrate animal models in agency research contributes to the mission of NIH as well as efforts by the agency to encourage the use of new approach methods or strategies. This report should include examples of how other methods have been used in NIH research to reduce, replace, and refine the number of vertebrate animals used in research. (Page 162, Senate Report 119-55)

House Language

The Committee commends NIH for launching an initiative to expand human-based research technologies—such as tissue chips and computational models—and reduce the use of traditional animal models. Within this effort, a new Office of Research Innovation, Validation, and Application will coordinate agency-wide development and expansion of non-animal approaches in NIH's research. The Committee also notes that NIH announced in July 2025 that it will no longer issue Notices of Funding Opportunities that rely solely on animal models. Additionally, the Committee supports the Complement Animal Research In Experimentation (Complement-ARIE) Program, intended to spur the development, standardization, validation, and use of new approach methodologies (NAMs) intended to more accurately model human biology. The Committee encourages NIH, in new announcements and other indications of funding opportunities, to continue consideration of NAMs as the preferred option for areas of preclinical research when it is not appropriate to use human participants. The Committee encourages implementation of non-animal methods based on human biology in developing and evaluating potential treatments for rare diseases, where scientifically justifiable non-animal models exist to mimic human disease. Additionally, to encourage investigators to consider the use of NAMs and promote the competitive evaluation of applications that use NAMs, the Committee encourages NIH to include grant proposal reviewers with expertise in NAMs and provide reviewers with access to appropriate resources as relates to evaluating applications that may include NAMs, such as a reference librarian with expertise in evaluating the adequacy of the search methods used by the applicant for non-animal methods. The Committee requests an update in the fiscal year 2027 congressional justification on the feasibility of such actions and progress made on implementation. (Page 125, House Report 119-271)

Action taken or to be taken:

The National Institutes of Health (NIH) supports a wide range of scientifically sound approaches to advance our understanding of human health and disease. NIH is working to expand human-based research technologies to complement and reduce the use of animal models in biomedical

research while also improving human relevance. New approach methodologies (NAMs) include *in vitro* (organoids, tissue chips), *in silico* (computational modeling, AI), and *in chemico* (chemical methodologies without cells) approaches that do not use animals. While traditional animal models remain vital to advancing scientific knowledge, developing new technologies to work alongside or supplement animal models expands the tools available for scientific discovery. Driven by the 2023 recommendations of the Advisory Committee to the Director Working Group on Catalyzing Novel Alternative Methods, NIH is pursuing efforts to develop, enhance, and promote the use of NAMs. Efforts led by the NIH Common Fund's Complement Animal Research In Experimentation (Complement-ARIE) program seek to build upon ongoing technology, infrastructure, and policy development related to NAMs while enhancing the rigor, reproducibility, and human relevance of biomedical discoveries.

Complement Animal Research In Experimentation (Complement-ARIE)

The Complement-ARIE program is foundational to accelerating the development, standardization, validation, regulatory approval, and use of human-based NAMs. Leveraging the Common Fund's capacity for cross-institute collaboration, Complement-ARIE addresses the urgent need for research models that more accurately reflect the complexity of human biology across various populations. The program is structured around three primary pillars:[1]

- the NAMs Technology Development Centers, which support the technical innovation and development of combinatorial NAMs, with emphasis on increased biological complexity, throughput, and data sharing that can be adopted and deployed by an informed and engaged research workforce;
- the NAMs Data Hub and Coordinating Center, which supports standards for reporting and model credibility and prioritizes adherence to findable, accessible, interoperable, and reusable (FAIR) data principles; and
- the Validation and Qualification Network (VQN), which is a public-private partnership managed by the Foundation for the NIH to engage scientists from government, industry, nongovernmental organizations, and academic institutions to accelerate the implementation and adoption of NAMs in research and regulatory contexts by ensuring NAMs are robust, reliable, and reproducible.

In September 2025, the Common Fund launched the Complement-ARIE NAMs Reduction to Practice Challenge,[2] an open competition that invites innovative NAMs solutions from teams with demonstrated success in implementation of integrated human-based solutions. The goal of this challenge is to accelerate and catalyze near-ready combinatorial NAMs to a practicable form that can be submitted to the VQN. The challenge has 3 phases over a 3-year timeframe including Proof of Concept and Feasibility Studies (Phase 1), Prototype Development and Milestone Achievements (Phase 2), and Prototype Delivery for Validation and Qualification (Phase 3). Phase 1 winners are scheduled to be announced in July 2026.

[1] commonfund.nih.gov/complementarie/highlights/complement-arie-catalyzing-development-and-adoption-new-approach
[2] herox.com/Complement-ARIE-RTP/timeline

Additional Highlights and Conclusion

In pursuit of robust, reproducible, and patient-centered findings, NIH established the Standardized Organoid Modeling (SOM) Center, a national resource that will be dedicated to developing standardized organoid-based NAMs, at the Frederick National Laboratory for Cancer Research, a facility supported by the National Cancer Institute.[3] The SOM Center's goal is to leverage the latest technologies to enable real-time optimization of organoid protocols. Currently, most organoid models are produced in academic settings through trial and error, limiting their reproducibility. Standardizing organoid models using cutting-edge technologies such as artificial intelligence, robotics, and human cell sources will enhance adoption of NAMs and support a wide array of use-cases across academia, industry, clinical research (patient-specific models), and the broader scientific community. The SOM Center will also work with regulatory bodies, including the U.S. Food and Drug Administration, to develop models that meet preclinical testing standards.

NIH will work closely with federal partners to align validation standards with NAMs. By bolstering awareness of the translational value of human-based models, NIH seeks to cultivate a research ecosystem where NAMs are accessible throughout the biomedical research enterprise. This institutionalization of NAMs support ensures that the increased use of NAMs is a sustained, structural evolution of federal science policy.

[3] nih.gov/news-events/news-releases/nih-establishes-nations-first-dedicated-organoid-development-center-reduce-reliance-animal-modeling

Alzheimer's Disease and Alzheimer's Disease Related Dementias

Since fiscal year 2015, Congress has increased research funding for AD/ADRD by more than 500 percent, making it the largest expenditure of its kind in NIH. By 2050, the cost to treat and care for those suffering from Alzheimer's disease is expected to rise to as high as $1,100,000,000,000 a year. Without a medical breakthrough to prevent, slow, or stop the disease, Medicare- and Medicaid-related costs could rise more than four-fold. NIH-funded research offers hope for finding solutions to manage this disease successfully in the future. Therefore, the Committee continues to support Alzheimer's disease research, including multi-disciplinary approaches into the basic science and pathology of the disease, which builds upon the funding goals needed to prevent and effectively treat Alzheimer's by 2025 identified in the National Plan required by the National Alzheimer's Project Act (Public Law 111–375). The Committee includes an increase of $100,000,000 across NIH for AD/ADRD research, including an increase of $50,000,000 in NINDS and $50,000,000 in NIA. The NIA is encouraged to continue addressing the research targets outlined in the fiscal year 2026 Professional Judgment Budget. In addition, NIA is directed to provide an update on activities related to this research in the fiscal year 2027 CJ. (Page 134, Senate Report 119-55)

Action taken or to be taken

Dementia research has advanced at a remarkable pace over the past several years. Increases in appropriations have allowed the National Institutes of Health (NIH) to accelerate rigorous research, supporting scientists who have developed disease-modifying therapeutics; improved diagnostic tools to help support earlier diagnoses; advanced research into behavioral and lifestyle interventions to reduce dementia risk; identified new genetic and other risk and protective factors for dementia and supported investigations into their underlying biological mechanisms; and furthered research into dementia care and caregiving.

Preventing and treating Alzheimer's disease and related dementias

NIH is leading a precision medicine approach to preventing and treating dementia by identifying and testing interventions that target a diverse set of mechanisms. As of March 2025, the National Institute on Aging (NIA) was funding 211 active clinical trials[4] evaluating a range of approaches to treat and prevent dementia. These trials include interventions testing drug candidates for a broad set of therapeutic targets across many disease processes such as metabolism, inflammation, and lipid and vascular factors, in addition to new aspects of amyloid and tau biology. Other trials are examining the use of behavioral and lifestyle approaches in preventing or treating dementia. In parallel to trials for new therapeutic options, NIH is also advancing research on two Food and Drug Administration (FDA)-approved anti-amyloid immunotherapies, lecanemab and donanemab.

Recent findings from NIH-funded research have revealed multiple promising approaches for reducing dementia risk and improving cognition and memory. For example:

- Recent NIH-funded research revealed that herpes zoster (shingles) vaccination may prevent or delay dementia onset. Additional research suggests that vaccination reduces mild cognitive impairment diagnoses and, among patients living with dementia, deaths due to dementia.

[4] nia.nih.gov/research/ongoing-AD-trials

- Using Medicare claims data, researchers found that older adults who completed a specific type of cognitive training as well as booster sessions had 25 percent lower risk of developing Alzheimer's and other types of dementia over a 20-year follow-up period.
- Building upon findings of the SPRINT MIND clinical trial, researchers analyzed data from middle-aged and older adults in the NIH-funded Health and Retirement Study and found that persistent adherence to blood pressure medication was associated with a lower risk of dementia.

Developing and improving diagnostic tools

NIH prioritizes the development of sensitive, affordable diagnostic techniques and cognitive assessments, which are crucial for early and accurate identification of people living with dementia. In 2025, the PrecivityAD2 and PrecivityAD blood tests – the first commercially available blood tests for biomarkers of Alzheimer's – became available in all 50 states, Washington, D.C., Puerto Rico and select countries across Asia, Latin America, Europe, and the Middle East. The tests were developed with extensive NIH funding, including small business research grants. Separately, in 2025, the FDA cleared the Lumipulse blood test to diagnose Alzheimer's disease via detection of amyloid plaques – a major milestone made possible through samples and data generated by NIH-funded research.

NIH-funded researchers are using advanced technologies and artificial intelligence (AI) to assist in providing faster, more accurate diagnoses. For example, with the help of AI, researchers are training machine learning algorithms to spot sex-specific dementia risks using information found in electronic health records. The results can then be used to identify the underlying genetic activity and biochemical pathways that elevate each person's risk of dementia. NIH also sponsored the PREPARE (Pioneering Research for Early Prediction of Alzheimer's and Related Dementias EUREKA) Challenge, which supports novel approaches for early detection of dementia. Challenge winners used machine learning and other approaches that leverage speech patterns and demographic data to help identify individuals at risk for developing dementia.

NIH is not only striving to improve diagnostic tools, but also to increase access to early Alzheimer's and dementia detection and treatment. For example, an NIH-funded study found that people who participated in an annual wellness visit had a 21 percent higher rate of first-time mild cognitive impairment (MCI) diagnosis than those who did not.[5] These data suggest that annual wellness visits improve early dementia diagnosis among Medicare beneficiaries, which can lead to more proactive care for these older adults.

Understanding risk and protective factors for dementia

The identification of genetic risk and protective factors enables better risk assessment and discovery of new therapeutic targets and mechanisms. NIH-funded researchers recently described the case of a woman with Down syndrome who remained cognitively stable into her 60s despite having high levels of Alzheimer's biomarkers, potentially attributable to the individual's unique genetic and environmental background. This study provides insight into resilience in Alzheimer's neuropathology and builds on other recent NIH-funded findings involving rare genetic variants that appear to protect against dementia. For example, a pair of siblings carrying a gene variant known as *Reelin-COLBOS* did not develop mild cognitive

[5] pubmed.ncbi.nlm.nih.gov/39378037/

impairment until more than a decade later than expected given the family's genetic susceptibility to early-onset Alzheimer's. These findings add to the growing body of knowledge on Alzheimer's risk and protective factors. Thanks in large part to the work of NIH-funded researchers, we know of at least 100 genetic areas associated with Alzheimer's. Understanding how these and other variants work helps researchers develop new therapeutic strategies for preventing and treating Alzheimer's and related dementias.

NIH also invests in research to further explore the role of psychological, social, behavioral, and environmental factors on dementia risk and resilience. Recent studies have provided important insights, including further evidence that healthy lifestyles, active social environment, and participating in cognitively stimulating activities may be linked to better cognitive function in older adults and may also mediate risk among those at an otherwise increased risk for dementia. For example, persistent loneliness in people, especially women, ages 70 and older was associated with a higher risk of dementia and cognitive decline, while greater social activity was associated with a 5-year delay in dementia onset.

Investigating disease mechanisms

Researchers are investigating the biological mechanisms underlying dementia. For example, traumatic brain injury (TBI) increases the risk of developing dementia, including Alzheimer's disease. Recent evidence from NIH-funded research points to impaired lymphatic drainage and inflammation as potential mechanisms for post-TBI dementia. NIH researchers have also identified proteins associated with cognitive resilience in women who carry the *APOE4* gene variant. Two of the proteins are involved in immune system signaling, were unique to women with the *APOE4* gene, and are distinct from proteins associated with cognitive resilience in women with the protective gene variant *APOE3*. These findings suggest that specific immune responses may play a role in preserving normal cognition in women despite an elevated genetic risk for Alzheimer's.

Supporting advances in dementia care and caregiving

Just as critical as ongoing efforts to pursue breakthroughs in prevention and treatment for Alzheimer's and related dementias are efforts to ensure that the millions of Americans currently living with these diseases receive quality, person-centered care. NIA currently funds a broad portfolio of care and caregiving research, from developing new research tools and measures to support clinical trials of promising care and caregiving interventions. As of March 2025, NIA was funding 200+ clinical trials to assess novel dementia care and caregiving interventions in a variety of settings.[6] In addition, NIH renewed its support in 2025 for the IMbedded Pragmatic Alzheimer's Disease and AD-Related Dementias Clinical Trials (IMPACT) Collaboratory, which conducts clinical trials to evaluate novel dementia care approaches directly within the systems in which people already live and receive care. This approach ensures real-world applicability of new care interventions.

NIA also supports research to improve home and community-based care (HCBS) such as home health care, respite care, and adult day care programs that allow individuals to live longer in their communities. For example, the Community Care Network for Dementia (CaN-D) is designed to foster knowledge-sharing, develop valuable data tools on structure, process, and outcome

[6] nia.nih.gov/research/ongoing-AD-trials#section4

measures of dementia HCBS, and to grow the care research community. Complementing this effort is the recently funded State Alzheimer‘s Research Support Center, which helps states and organizations examine and advance the accessibility, affordability, and effectiveness of their dementia care services and share best practices and policies across the country.

Developing research resources

NIH also supports the development of key tools and infrastructure to advance and accelerate dementia research. NIA funds Alzheimer's Disease Research Centers (ADRCs) at major medical institutions across the United States, which aim to translate research advances into improved diagnosis, treatment, care, and understanding of risk factors for people with dementia. The ADRCs work as a network to enhance research on dementia, sharing new ideas, approaches, and data through the National Alzheimer’s Coordinating Center.

Using tools developed by the BRAIN Initiative and donated brains from the NIH-funded Seattle Alzheimer’s Disease Brain Cell Atlas program, researchers are also working to create a highly detailed map of the brain damage that occurs during Alzheimer’s. This enhanced understanding of the disease can help researchers develop new therapeutic approaches to prevent and treat Alzheimer’s. In addition, researchers at the NIH Center for Alzheimer’s and Related Dementias (CARD) have made multiple research tools available to the broader scientific community, including AI and machine learning tools like GenoML as well as robust cell lines that can be used to model a broad range of dementia-related processes.

Conclusion

NIH continues to make significant progress in addressing Alzheimer’s and related dementias, thanks to sustained investments over the past several years. These recent achievements build on earlier advances and help sustain momentum in NIH’s efforts to prevent and treat dementia and enhance care for those living with the disease and their care partners. NIH will continue to explore new opportunities to advance dementia research and bring us closer to living in a world where Alzheimer’s and related dementias do not take the enormous tolls that they take today.

Autism Spectrum Disorder

Senate Language

The Committee encourages NIH to support greater investment in research on autism, particularly in areas outlined in the Interagency Autism Coordinating Committee's [IACC] Strategic Plan for ASD, and directs NIH to ensure that all research activities for autism follow widely-accepted scientific practices in order to ensure research integrity. The Committee encourages NIH to support greater investment in research, particularly in areas outlined in the IACC Strategic Plan for ASD, and directs NIH to ensure that all research activities for autism follow widely-accepted scientific practices in order to ensure research integrity. In addition, the Autism CARES Act of 2024 (Public Law 118–80) included several new directives that the NIH is directed to implement. These include releasing an annual budget estimate for autism research for fiscal year 2026 based on the IACC Strategic Plan, ensuring research efforts reflect the entire population of individuals with ASD, and creating a new process for the public to obtain information on all existing and planned autism research activities as well as allowing the public to provide comments. Pursuant to the Autism CARES Act of 2024, the Committee also directs the prompt re-establishment of the IACC and that among the non-public members, directs that the Secretary appoints experienced, leading licensed and board-certified researchers in the field of ASD. (Page 140, Senate Report 119-55)

House Language

The Committee encourages NIH to support greater investment in research related to autism, particularly in areas outlined in the Interagency Autism Coordinating Committee (IACC) Strategic Plan for Autism Spectrum Disorder (ASD). The Committee notes NIH's initiative to build a real-world data platform focused on autism. NIH is encouraged to ensure any large autism initiatives supplement existing funding for autism research. The Committee requests an update in the fiscal year 2027 congressional justification on the implementation of NIH-related provisions of the Autism Collaboration, Accountability, Research, Education, and Support Act of 2024 (P.L. 118–80), which include providing an annual budget estimate for autism research, ensuring research reflects the entire population of individuals with ASD, and establishing a process for the public to access information on existing and planned autism research activities and provide comments. The Committee also encourages the reestablishment of the IACC. (Page 119, House Report 119-271)

Action taken or to be taken

Autism spectrum disorder (ASD) research is a priority for the National Institutes of Health (NIH). The agency supports a robust portfolio of research that spans basic research into the pathophysiology of ASD to clinical and applied research that could lead to the development of new treatments and interventions. The portfolio encompasses several research areas. These include screening, early detection, and diagnosis and research on services and supports across the lifespan for individuals with ASD, including those with higher support needs. Researchers are also conducting studies on genetic and genomic components of ASD, as well as brain mechanisms and environmental factors that contribute to ASD, which may share neurobiological

mechanisms with other disorders. Other research focuses on social and cognitive development and communication and language.

NIH is actively implementing provisions of the Autism CARES Act of 2024. The agency continues to support ASD research that is reflective of the entire ASD population, including those with co-occurring disorders and those with a wide range of support and service needs. NIH currently supports a program of ten Autism Centers for Excellence (ACE), which include both research centers and research networks, each focusing on research projects related to the diagnosis, causes of, or services and interventions for ASD. The ACE program utilizes community engagement activities to enhance the research process. Each ACE has an External Advisory Committee that includes individuals with ASD and/or parents of individuals with ASD as members, in addition to other community members such as educators and practitioners. Through this bi-directional collaborative communication, ACE investigators learn about the needs and research concerns from the ASD community and, in turn, disseminate and inform the community about research findings and plans for future studies.[7] NIH is developing a budget estimate of research initiatives and programs that are complementary to the IACC Strategic Plan for Autism Research, Services, and Policy. The estimate will be submitted in 2026. In addition, the IACC has been re-established by the Department of Health and Human Services, and the Committee will hold its first meeting in April 2026.

[7] grants.nih.gov/grants/guide/rfa-files/RFA-HD-22-008.html

Basic Biology of Aging

The healthspan-lifespan gap—the average number of years that a person is burdened by disease—is growing globally and is wider in the United States than in any other country. This impacts the nation's economy, but closing this gap remains a challenge, because so much remains unknown about how best to target the underlying biology responsible for the transition from healthy to unhealthy life. The Committee urges the NIA to prioritize funding for the Division of Aging Biology and other divisions conducting work to explore the precipitating biology of the frailty and loss of resilience that defines ill health in people's later years. The Committee requests an update on such efforts in the fiscal year 2027 congressional budget justification. (Page 114, House Report 119-271)

Action taken or to be taken

NIA supports research to determine the biological mechanisms underlying the processes of aging at the molecular, cellular, tissue, and organismal levels, encompassing research from basic biology to clinical translation and implementation. In addition to studies that investigate these biological components individually, NIA-funded scientists are working to improve research models that showcase the whole picture of aging—through traditional models as well as new approach methodologies.

Researching frailty and the loss of resilience

Frailty, an aging-related syndrome associated with increased vulnerability to stressors and poor health outcomes, is common in older adults. NIA supports research that seeks to understand the underlying mechanisms of frailty to develop ways to diagnose, prevent, and treat frailty. For example, several NIA-funded longitudinal population studies are contributing data to help researchers better understand frailty and its associated risk factors. One of these studies, the Baltimore Longitudinal Study of Aging (BLSA), explores the determinants and measures of healthy biological aging over time and is the nation's longest running scientific study of human aging. The BLSA has produced thousands of scientific papers on changes seen in multiple parameters of aging over the lifespan. In addition, NIA-funded researchers recently used data from two other NIH-funded longitudinal studies to develop a panel of biomarkers to detect/predict frailty status.

Investigating the molecular basis of aging

NIA-supported investigators are studying genetic and epigenetic changes and the molecular and cellular structures and functions that characterize the aging process and its associated symptoms. Over the past several years, the premise that chronological age may not necessarily match biological age—the age that one's cells, tissues, and organ systems appear to be based on biochemistry—has continued to garner supportive evidence. NIA-funded researchers played key roles in developing the first biological clocks, algorithms that use molecular changes to DNA to estimate biological age, and NIA-funded researchers continue to refine biological clocks with the aim of broadening their use in research and clinical settings. For example, using an animal model, NIA-supported researchers recently developed a predictive biological clock that uses blood measures routinely collected during health care visits. This work can help lay the foundation for practical clinical tools to measure biological age.

NIA-funded researchers are also working to update and enhance the utility of first-generation biological clocks. One such model, Pace of Aging, helps researchers estimate how quickly someone is aging. NIA-supported researchers developed an adapted Pace of Aging model, based on data from the Health and Retirement Study and the English Longitudinal Study of Aging, to determine the rate of aging-related health declines across various populations. The adapted Pace of Aging model has the potential to serve as a supportive tool that informs how to better monitor and improve population health and healthy aging.

Finally, using data from multiple longitudinal studies that included more than 40,000 people, NIA-supported researchers also developed the Health OctoTool, which can help quantify biological age across different organ systems and potentially predict disability and other negative health outcomes. While more research is needed, these tools may offer a practical and accessible means to help physicians determine which patients are at greater risk for frailty and other aging-related health issues and suggest personalized interventions to improve health.

Translating the biology of aging into improved healthspan

Aging is a major risk factor for many disorders and chronic conditions, including Alzheimer's disease and related dementias, cancers, various types of heart disease, osteoporosis, hip fracture, kidney failure, and diabetes. The field of geroscience seeks to translate knowledge gained from biology of aging research into ways to prevent, minimize, or reverse detrimental age-related changes in older individuals. One promising avenue of research in geroscience involves studying cellular senescence, a cellular state during which damaged cells resist cell death, linger, and harm neighboring normal cells. NIA-funded research has been foundational to the development of drugs that remove senescent cells, called 'senolytics,' which have the potential to delay the onset of several age-related ailments. NIA-supported researchers have identified distinct types of senescent cells with differential responses to treatment. These findings highlight the importance of developing selective senolytics that can remove harmful cells that are associated with age-related diseases. Further, NIA participates in the NIH Common Fund's Cellular Senescence Network (SenNet) program,[8] which was established to identify and characterize the differences in senescent cells across the body, across various states of human health, and across the lifespan. SenNet provides data and resources developed through the program to the public to accelerate senolytic research and therapeutic development.

In addition, NIA funds research on mechanisms and interventions that may affect the rates of aging in humans as well as factors that contribute to healthy aging. For example, the NIA-supported Longevity Consortium and related efforts seek to identify factors underlying exceptional human longevity and healthy aging with the goal of informing the development of new interventions to promote healthy aging.

Supporting the study of the biology of aging

To support ongoing and additional research efforts and grow the scientific workforce for the basic biology of aging, NIA supports the Nathan Shock Centers of Excellence, which have provided 30 years of national leadership and research resources in basic research in the biology of aging. NIA also leads the NIH-wide Geroscience Interest Group, which explores the intersection between aging biology and the biology of disease.

[8] commonfund.nih.gov/senescence

Biomedical Research Workforce Training

Senate Language

Training programs at the NIH provide a quality standard of training for graduate students and postdoctoral fellows in biomedical research. The training grants that support these programs at research institutions across the country play a vital role in establishing a biomedical research ecosystem and train the next generation of researchers for health- related research needs. Despite the success of training programs, the number of students and postdoctoral scholars supported on training grants has remained constant over the years. The Committee applauds NIH efforts to increase funding for IDeA States and urges NIH to also emphasize the importance of supporting training grants in IDeA States. The Committee directs NIH Institutes and Centers to conduct and provide to the Committees, a portfolio analysis within 120 days of enactment. The analysis will assess the distribution of T32 training grants among States, including number of applicants and success rates per State to ensure NIH is supporting capacity building and a diverse workforce for the future biomedical research enterprise. In addition to the portfolio analysis, in the fiscal year 2027 CJ, NIH is directed to provide an update on specific actions NIH will take to identify and remove barriers for applying for training grants in IDeA States. (Page 127, Senate Report 119-55)

House Language

Training programs at the NIH provide a quality standard of training for graduate students and postdoctoral fellows in biomedical research. The training grants that support these programs at research institutions across the country play a vital role in establishing a biomedical research ecosystem and train the next generation of researchers for healthrelated research needs. Despite the success of training programs, the number of students and postdoctoral scholars supported on training grants has remained constant over the years. The Committee applauds NIH efforts to increase funding for institutional development awards (IDeA) States and urges the NIH to also emphasize the importance of supporting training grants in IDeA States. The Committee directs NIH to provide a portfolio analysis to the Committee within 60 days of enactment of this Act on the distribution of T32 training grants among States, including the number of applicants and success rates per State to ensure NIH is supporting capacity building and a robust workforce for the future biomedical research enterprise. In addition to the portfolio analysis, in the fiscal year 2027 congressional justification, NIH is instructed to provide an update on specific actions NIH will take to identify and remove barriers for applying for training grants in IDeA States. (Page 110, House Report 119-271)

Action taken or to be taken

NIH is committed to supporting as many promising future scientists in as many places as possible to foster a biomedical research enterprise that improves the health of all Americans. The National Institute of General Medical Sciences (NIGMS) leads the institutional development awards (IDeA) program and is a leader in training and workforce development.

NIGMS is committed to increasing research training support in IDeA States and considers IDeA-state status a positive factor in the potential impact of training programs when making funding

decisions. From FYs 2015 to 2024, NIGMS increased the number of NIGMS-supported training positions in IDeA states from 201 to 441. In FY 2025, the number decreased to 295 due to program discontinuations for nonalignment with agency priorities. In FY 2026, NIGMS is continuing its long-standing support of IDeA-state grantees through a combination of new and existing programs that align with Administration priorities, as described in the last paragraph of this response. Further, NIGMS has identified several barriers to research training at resource-limited institutions (RLIs), including institutions in IDeA states. Several NIGMS programs that address these barriers are described below.

One barrier to obtaining training grants in IDeA states is the need for a critical mass of biomedical research students and faculty that enables an institution to be competitive for standard institutional T32 training grants. To build a "pathway" of scientific research talent, the IDeA Networks for Biomedical Research Excellence (INBRE) program funds a network in each IDeA state with research-intensive institution(s) as hubs and primarily undergraduate institutions, including community colleges, as spokes. INBRE provides hands-on research experiences to over 1,400 undergraduates a year, most of whom go on to graduate school. In so doing, INBRE builds the student base IDeA-state institutions need to compete for T32 institutional training awards. Institutions in INBRE networks confer over 90 percent of the biomedical Bachelor's degrees, over 99 percent of Master's degrees, and the vast majority of Doctoral degrees within IDeA states.[9] Another IDeA program, the Centers of Biomedical Research Excellence (COBRE), supports scientific thematic centers to develop early-career researchers and research infrastructure, building a critical mass of faculty experts who can then act as mentors to research trainees. The Support for Research Excellence (SuRE) program, while not limited to IDeA states, similarly supports individual faculty at RLIs to conduct their research while providing students with meaningful research opportunities.

Another barrier NIGMS has identified is the lack of staff, resources, and/or institutional infrastructure for assembling a competitive grant application or administering an awarded grant. To address this challenge, NIGMS recently launched the Biomedical Research Environment & Sponsored Programs Administration Development (BRE-SPAD) program. BRE-SPAD supports RLIs, particularly those with few to no biomedical research doctoral students, to increase their capacity for administering sponsored programs and supporting both faculty research and student training. NIGMS has already received nearly 60 BRE-SPAD applications from RLIs in the first application cycle, highlighting the need and enthusiasm for this program. Thus, NIGMS will continue to conduct outreach to resource-limited IDeA-state institutions that could benefit from BRE-SPAD to increase awareness of the opportunities provided by the program. NIGMS also has programs that help RLIs assemble an application for specific funding mechanisms, such as the SuRE Resource Center administered by the University of Kentucky. This resource center provides RLIs with seed grants for establishing or strengthening Offices of Sponsored Programs (OSPs) to help institutions apply for and administer grants.

In addition to the needs and barriers identified above, NIGMS has identified the need for targeted programs to harness untapped talent at RLIs. As part of its Basic Biomedical Sciences Predoctoral T32 program, NIGMS has created a Trans-Departmental Basic Biomedical Sciences (TBB) track, which can support trainees across multiple departments at institutions that may not

[9] nigms.nih.gov/sites/nigms/files/migrated/INBRE-WG-report-slides.pdf

have a sufficient number of graduate students within any single biomedical department to qualify for a departmental training grant.[10] This track was designed, in part, to enable more IDeA-state institutions to compete for T32s. For example, the University of Maine at Orono has a TBB T32 that it uses to support graduate students across the entire state. Further, NIGMS awarded three new TBB awards to IDeA-state institutions in FY 2025. In addition, NIGMS recognized that few of the Institute's Medical Scientist Training Program (MSTP) T32 awards went to institutions in IDeA states. Therefore, to broaden the geographic distribution of rigorous clinician-scientist training programs, NIGMS created a new "Advancing Health and Development" track within the MSTP program in FY 2025, providing special consideration for the potential impact of applications from IDeA states.[11] For both the TBB and MSTP-AHeAD programs, NIGMS provides higher "training related expenses" ($12,500 per trainee vs. $4,750 for other predoctoral training grants) to provide these IDeA-state and RLI institutions the resources needed to develop strong training infrastructures.

Finally, to illustrate its ongoing commitment to the changing needs of IDeA states and the changing landscape of biomedical research training support, NIGMS has recently implemented measures that will help improve IDeA-state training opportunities while remaining in alignment with current Administration priorities. First, NIGMS recently launched the Biomedical Undergraduate Research Training (BURT) T34 program, which will support institutional training programs for undergraduate students at institutions with limited to no NIH research project grant funding. BURT also includes a community college partnership track to support research training for community college students planning to transfer to a four-year college and pursue a bachelor's degree in a biomedical science-related field. Current and former IDeA-state grantees that would be eligible for BURT are encouraged to apply in the current application cycle. In addition, NIGMS has been actively encouraging and assisting IDeA-state grantees to identify and apply to T32 opportunities for which they qualify, including the T32 programs described above. Many IDeA-state institutions have already begun applying for these new opportunities.

[10] grants.nih.gov/grants/guide/notice-files/NOT-GM-25-025.html
[11] grants.nih.gov/grants/guide/notice-files/NOT-GM-25-024.html

Biomedical Technology Development

The Committee is pleased with the success of the Rapid Acceleration of Diagnostics Tech program in accelerating the innovation and commercialization of COVID–19 diagnostic technologies. The Committee appreciates NIBIB's efforts to expand the innovation funnel model beyond COVID–19 testing to address other critical unmet needs in diagnostic testing and other biomedical technologies and encourages NIBIB to continue these efforts in fiscal year 2026 in consultation with other institutes and centers, including but not limited to NHLBI, NIAID, NICHD, NIA, NINDS, and NIMH. The Committee further directs NIBIB to provide an update in the fiscal year 2027 CJ on progress of these efforts. (Page 120, Senate Report 119-55)

Action taken or to be taken

At the start of the COVID-19 pandemic, the National Institute of Biomedical Imaging and Bioengineering (NIBIB) established the Rapid Acceleration of Diagnostics (RADx®) Tech program,[12] part of the NIH RADx initiative, with supplemental appropriations to rapidly increase the testing capacity in the United States. NIBIB invested a total of more than $1 billion through COVID-19 supplemental funding to support diagnostic projects. The foundational structure of RADx leveraged and expanded NIBIB's Point-of-Care Technologies Research Network (POCTRN) to accelerate the development, validation and manufacturing of COVID-19 diagnostics.

Driving biomedical technology innovation requires new approaches that embrace partnerships and provide more nimble funding structures. The program utilizes an "innovation funnel" approach with multistage review and milestone-based funding to assess, validate, and de-risk technology development. Between 2020 and 2023, the program bolstered the national testing capacity,[13] providing more than 8 billion COVID-19 tests and test products resulting from 56 COVID-19 and 15 COVID-19/flu emergency use authorizations[14] from the U.S. Food and Drug Administration (FDA). Additionally, with RADx support, the first at-home multiplex test for COVID-19 and flu was fully authorized by the FDA using traditional, non-emergency pathways, demonstrating the generalizability of the RADx approach. Through these efforts, RADx Tech enabled a shift in the testing landscape from centralized laboratories to more convenient at-home and Point-of-Care (POC) settings.

NIBIB continues to build on and expand the RADx Tech program, demonstrating its ability to address urgent biomedical technology needs beyond public health surveillance and preparedness. By applying RADx Tech acceleration strategies more broadly, NIBIB aims to greatly reduce the time to translate good science into products that positively impact the public improving their personal and collective health.

RADx Tech thrived because of close partnerships with government agencies, academia, industry and others to share expertise and funding as well as coordinate efforts across all stages of technology development. The close partnership with the FDA was especially impactful in informing regulatory policies and accelerating marketing authorizations. Currently, through

[12] nibib.nih.gov/covid-19/radx-tech-program
[13] nibib.nih.gov/covid-19/radx-tech-program/radx-tech-dashboard
[14] nibib.nih.gov/covid-19/radx-tech-program/authorized-tests

funding partnerships, NIBIB is applying the RADx Tech approach to address a range of health problems, including developing technologies to address the maternal health crisis, emergency diagnostics for viruses, and diagnostics to support the elimination of hepatitis C in the United States. RADx Tech has worked in close partnership with the Centers for Disease Control and Prevention on two hepatitis programs. One program conducted studies that supported FDA authorization of the first hepatitis C virus POC diagnostic, enabling both testing and the start of treatment in a single health care visit. This test will help to minimize the loss of vulnerable patients to follow-on care and enable the United States to achieve its goal of eliminating hepatitis C infections. The second program was recently launched to develop a similar diagnostic for hepatitis B virus. NIBIB will continue to build on and expand this model to address urgent biomedical technology needs and contribute to U.S. public health surveillance, preparedness, and response.

NIBIB is currently expanding the RADx Tech acceleration strategy for new programs, including the Biomaterials Network. Biomaterial-based technologies play a key role in medicine today and have a broad range of applications, from coatings on medical implants to molecular probes used in imaging. Novel classes of biomaterials require additional support to overcome barriers between the lab bench and patients' bedside. The Biomaterials Network consists of a set of connected resources that accelerate the progress of novel and refined technologies toward commercialization and clinical use. This support includes prototype development, validation, and translational resources for innovative biomaterials-based technologies. NIBIB has partnered with the NIH Blueprint for Neuroscience consortium of 12 institutes and centers to launch the Blueprint MedTech program[15] to develop technologies that treat disorders involving the nervous system. This program is designed to overcome barriers to the commercialization of therapeutic and diagnostic devices.[16]

[15] ninds.nih.gov/current-research/trans-agency-activities/nih-blueprint-neuroscience-research/bp-medtech
[16] nibib.nih.gov/news-events/newsroom/blueprint-medtech-continues-fuel-innovation-devices-treat-and-diagnose-conditions-affecting-nervous-system

Breast Cancer Screening Evidence Gaps

The United States Preventive Services Task Force (Task Force) breast cancer screening recommendation statement, published in April 2024, identifies several critical research gaps that restrict the Task Force from making evidence-based recommendations that address multiple important areas. For example, the Task Force notes that research is needed: to better understand whether and how the benefits quantitatively differ for annual vs. biennial breast cancer screening; to help clinicians and patients understand the best strategy for breast cancer screening in women found to have dense breasts on a screening mammogram, such as supplemental screening; and to understand and address the higher breast cancer mortality among Black women. Breast cancer is the second most common cancer among women in the U.S., and over 40,000 women are expected to die from breast cancer in 2024. For the Task Force to fulfill its mission to improve health through actionable preventive services recommendations, the Committee urges the NIH to continue to support research in the areas outlined in the Evidence Gaps Research Taxonomy Table from the USPSTF's 2024 Breast Cancer Screening Recommendation Statement to ensure the Task Force has the necessary evidence to create the strongest evidence-based recommendations for all women and further reduce breast cancer morbidity and mortality, especially among those with the greatest burden of disease. The Committee encourages that these efforts should continue to prioritize the inclusion of women of all racial and ethnic groups to investigate whether the effectiveness of screening, diagnosis, and treatment vary by group. The Committee requests an update on this effort in the fiscal year 2027 congressional justification. (Page 92, House Report 119-271)

Action taken or to be taken

Research supported by the National Cancer Institute (NCI) plays a critical role in helping to provide the scientific evidence base that informs cancer screening recommendations. NCI works with the U.S. Preventive Services Task Force (USPSTF) on an ongoing basis to ensure that evidence gaps identified by USPSTF are being addressed in NCI's research portfolio. The NCI-supported Cancer Intervention and Surveillance Modeling Network (CISNET) is a consortium of NCI-sponsored researchers conducting simulation modeling to improve our understanding of the impact of prevention, screening, and treatment on population trends in incidence and mortality.

In particular, the CISNET Breast Working Group models specific breast cancer screening scenarios based on USPSTF requests, including modeling the benefits of annual versus biennial screening. Notably, an NCI-funded CISNET study conducted modeling analyses to assess how the benefits and harms of different breast cancer screening strategies vary across a range of starting and stopping ages and screening intervals, including annual versus biennial screening.[17] Researchers recommended biennial mammography screening starting at age 40 based on their analyses, but more frequent surveillance may be beneficial to those at higher risk for breast cancer.

NCI also supports a number of other projects that are aligned with the current USPSTF Evidence Research Gaps Taxonomy Table for Breast Cancer Screening. For example, the NCI-supported Breast Cancer Surveillance Consortium (BCSC), a large observational cohort study in the United States, is partnering with CISNET to examine questions regarding screening frequency, as well

[17] pubmed.ncbi.nlm.nih.gov/38687505/

as new information about screening performance, new screening modalities, breast cancer risk factors, and survival.

In addition, NCI is supporting an ongoing trial, the Women Informed to Screen Depending on Measures of Risk (WISDOM) study, aimed at evaluating the potential benefits of a personalized screening plan versus traditional annual screening in women starting at age 40. The WISDOM study is using a personalized risk assessment, along with optional genetic testing, to develop a unique breast cancer screening plan for each woman, including whether it is more appropriate to screen annually or biennially. The study is also increasing participant diversity to ensure that findings benefit all women.

NCI is supporting the Tomosynthesis Mammographic Imaging Screening Trial (TMIST) to help researchers learn about the best way to find breast cancer in women who have no symptoms. The study compares two types of Food and Drug Administration (FDA)-approved digital mammograms for their ability to reduce advanced breast cancer: standard digital mammograms (2-D) and a newer technology called tomosynthesis mammograms (3-D). 2-D mammograms take pictures from two sides of the breast to create a flat image, while 3-D mammogram images are taken from different angles around the breast and then built into a 3-D-like image. Recently, TMIST announced that it has reached its enrollment goal of 108,508 women.[18] The study will complete regularly scheduled mammograms and follow-up on all participants through 2027. As part of the follow-up, biospecimens and data will be collected to help researchers learn how to personalize breast cancer screening for women.

NCI-supported researchers have established that dense breast tissue increases a woman's risk of breast cancer, and that dense breast tissue can make a mammogram more difficult to interpret. Black women are more likely to have dense breasts than women of other races and ethnicities. NIH is supporting and has completed several clinical trials to seek to identify better ways to detect breast cancer in women with dense breasts, as well as supporting intramural research focused on breast density.[19] Research questions include whether biomarkers can be identified that may help predict breast cancer risk in women with dense breasts and whether women with dense breasts can decrease their risk of developing breast cancer through medications. NCI-supported researchers have also used data on risk factors to develop the Black Women's Health Study Breast Cancer Risk Calculator, a tool to estimate the risk of breast cancer in U.S. Black women that may help guide more personalized decisions regarding breast cancer screening.

While studies have shown routine screening mammography does reduce breast cancer deaths in women aged 40 to 75, more research is needed to determine the potential benefits and harms of screening for breast cancer in women aged 75 years or older. One study suggests the risk of overdiagnosis – the detection of a cancer that would grow very slowly and never cause health problems during a person's lifetime – is substantial for women 70 and over. However, the study design focused only on estimating overdiagnosis, and more research is underway to understand the overall benefits and harms of breast cancer screening in this population.

[18] ecog-acrin.org/press-release-large-scale-tmist-breast-cancer-screening-trial-achieves-enrollment-goal/
[19] dceg.cancer.gov/research/cancer-types/breast-cancer/breast-density

Ductal carcinoma *in situ*, or DCIS, is a condition in which abnormal cells are found in the lining of a breast duct and have not spread outside the duct to other tissues in the breast.; it is also known as noninvasive or stage 0 breast cancer. In some cases, DCIS may become invasive breast cancer, but little is known about how to determine which abnormal cells could become invasive. Screening mammograms can find cases of DCIS, but because doctors cannot easily distinguish cases of DCIS that need to be treated from those that do not, they are all treated, which leads to overdiagnosis and overtreatment. To better understand DCIS progression and how to approach its treatment, NCI is supporting a number of studies focused on better understanding the transition of DCIS to invasive tumor cells, including development of a machine learning tool that can predict which DCIS lesions will become invasive. NCI is also supporting over 20 clinical studies looking at DCIS that are examining strategies for reducing risk, ways to improve MRI screening and lesion characterization, and comparative treatment approaches.

Buildings and Facilities

The Committee includes $350,000,000, the same as the fiscal year 2024 enacted level, for Buildings and Facilities. For the fifth time in as many years, the recommendation does not include authority for NIH to transfer up to 1 percent of its research funding to the Buildings and Facilities account. This is extraordinary authority for a Federal agency and NIH has yet to provide an explanation for why this mechanism would be appropriate. Funding provided for research should not be unilaterally transferred without a sound explanation and robust justification of need. The Committee commends the agency for continuing to develop a sound capital planning process and for keeping the Committee informed on such activities. These efforts have been supported by the Committee with modifications of section 216 of this act which permit NIH to use up to $100,000,000 of research funding for alterations and repairs. The Committee directs NIH to continue to provide biannual updates of its efforts to develop best practices and its maintenance and construction plans for projects whose cost exceeds $5,000,000, including any changes to those plans and the original baseline estimates for individual projects. Finally, the Committee also directs NIH to describe in its fiscal year 2027 and future CJs how the projects requested in its budgets tie to its capital planning process, including the Research Facilities Advisory Committee's role in determining which projects are selected for inclusion in the budget. (Page 169, Senate Report 119-55)

Action taken or to be taken

NIH's capital planning process is informed by site-specific master plans developed in collaboration with the NIH Facilities Working Group and its subcommittee, the Research Facilities Advisory Committee (RFAC), for all NIH campuses. These plans establish a long-range framework for orderly campus development but do not represent a commitment to fund specific projects in a given fiscal year. Consistent with the HHS Facilities Program Manual, NIH briefs the HHS Capital Investment Review Board when developing a new master plan or substantially revising an existing one to ensure future capital decisions support mission needs without constraining long term development options.

While aligning with NIH master plans, NIH capital facilities planning also leverages an updated scoring and prioritization model to ensure that precious budgetary resources are provided to the most meritorious projects. The NIH scoring and prioritization model ties to NIH's capital planning process through a governance framework which most importantly relies on frequent engagement with the RFAC for scoring projects, which are then prioritized based upon their score. All projects with a construction cost in excess of $5 million are compiled in a single prioritized list for construction funding. The projects are scored leveraging criteria based on a 1,000-point scale consisting of mission criticality (450 maximum score), facility condition (350 maximum score), and project executability (200 maximum score). Mission criticality (dependency) and facility condition (condition index) each comprise more than one third of a project's score, aligning with the National Academies of Science, Engineering and Medicine recommendation 5.1. of the consensus study undertaken at the behest of Congressional Staff. This study was published in 2019.[20]

[20] nationalacademies.org/projects/DEPS-BICE-17-01

Furthermore, the NIH capital planning process engages subject matter expertise in facility conditions, stewardship, and development to provide consultation and make recommendations for the RFAC's consideration. The priority for a project and the score for the project are always aligned. The Office of Research Facilities recommends the scores and priority for new projects and updates to existing projects for RFAC members' consideration for revisions and approval. The highest scoring projects are then selected for funding in priority order with only limited exceptions. An exception includes a project not being affordable within the current year budget.

The B&F projects for which NIH is requesting funding in the FY 2027 CJ are described in the B&F chapter of the CJ, including construction priority numbers assigned through the capital planning process for projects not already funded for construction.

NIH will continue to provide biannual updates of its efforts to develop best practices and its maintenance and construction plans for projects whose cost exceeds $5,000,000, including any changes to those plans and the original baseline estimates for individual projects.

Celiac Disease

Senate Language

The Committee commends NIH for issuing a Notice of Special Interest to spur additional research on the study of celiac disease. Today, the only known treatment is a gluten-free diet; however, recent public and private sector research confirms that such a ‘‘treatment’’ is insufficient for many who suffer from celiac disease. The Committee encourages NIH to devote focused research on the study of celiac disease and continues to urge the newly created NIH Office of Autoimmune Disease Research [OADR] to work with NIAID and other NIH Institutes to: support new research on celiac disease; better coordinate existing research; and focus new research efforts toward causation, diagnosis, management, treatment, and, ultimately, a cure of this disease. The Committee directs NIH to include updates on research, projects, and programs for celiac disease in the fiscal year 2027 CJ. (Page 123, Senate Report 119-55)

House Language

The Committee commends the NIH for issuing a Notice of Special Interest to spur additional research on the study of celiac disease. Today, the only known treatment is a gluten-free diet; however, recent public and private sector research confirms that this is insufficient for many who suffer from this disease. The Committee supports focused research celiac disease and encourages the newly created NIH Office of Autoimmune Disease Research to work with NIAID and other NIH Institutes to support new research on celiac disease, coordinate existing research, and focus new research efforts on causation, diagnosis, management, treatment, and a cure of this disease. The Committee requests an update in the fiscal year 2027 congressional justification on celiac disease research, projects, and programs. (Page 106, House Report 119-271)

Action taken or to be taken

As one of the 14 cross-cutting offices in OD’s Division of Program Coordination, Planning, and Strategic Initiatives, the Office of Research on Women’s Health (ORWH) coordinates across the National Institutes of Health (NIH) to advance the health of women. Given the higher prevalence of autoimmune disease in women, Congress directed NIH to establish the Office of Autoimmune Disease Research (OADR) within ORWH through the Consolidated Appropriations Act of 2023 (Public Law 117-328).[21] OADR coordinated and launched the inaugural NIH-Wide Strategic Plan for Autoimmune Disease Research FY 2026 – FY 2030,[22] which sets forth a coordinated approach to accelerate discovery, expand capacity, and catalyze critical partnerships and collaborations for autoimmune disease research.

OADR collaborates across NIH to support celiac disease research. NIH recently published several highlighted topics of relevance to the celiac disease research community, with multiple collaborating NIH Institutes, Centers, and Offices engaged in these efforts.[23,24] In September 2025, OADR also

[21] appropriations.senate.gov/imo/media/doc/Division H - LHHS Statement FY23.pdf
[22] orwh.od.nih.gov/sites/orwh/files/docs/NIH-Wide-Strategic-Plan-for-Autoimmune-Disease-Research-Fiscal-Years- 2026-2030.pdf
[23] grants.nih.gov/funding/find-a-fit-for-your-research/highlighted-topics/23
[24] grants.nih.gov/funding/find-a-fit-for-your-research/highlighted-topics/43

launched the Nutrition for OUR Immune System Health (NOURISH) Autoimmunity Challenge,[25] a crowdsourcing ideation competition to engage the community and generate bold ideas on integrating diet and nutrition into autoimmune disease research. The goals of this challenge were to develop a cadre of innovative ideas and engage interdisciplinary problem solver communities on how to best integrate diet and nutrition studies into autoimmune disease research. Several submissions focused on celiac disease, and we hope this challenge will catalyze further collaboration in this space.

The National Institute of Allergy and Infectious Diseases (NIAID) and the National Institute of Diabetes, Digestive and Kidney Diseases (NIDDK) are the two major NIH institutes funding research in celiac disease with some projects receiving co-funding from OADR.

NIAID supports a diverse portfolio of research to better understand the pathology of celiac disease and to evaluate potential therapies. This includes development of a novel human organoid model of celiac disease that has helped identify potential therapeutic targets, as well as research on the effects of different microfauna in the gut on viral infection and gluten tolerance in a mouse model. Additional NIAID-supported research is investigating ways to increase gluten tolerance through the modulation of the immune response to gluten. This includes development of immune tolerance-producing adjuvants, substances that can re-direct the immune response to specific antigens, and the identification of regulatory T-cells that could help dampen the activity of gluten-specific immune cells that contribute to disease.

NIAID also supports several large-scale research programs focused on better understanding the underlying causes of, and developing therapeutics for, autoimmune diseases including celiac disease. One such program is the NIAID Mucosal Immunology Studies Team, which conducts research to define immune mechanisms at mucosal surfaces, including intestinal tissue affected by celiac disease. In January 2026, NIAID hosted the "NIH-FDA 2026 Annual Immunology Interest Group Workshop/Retreat" which discussed infectious disease triggers of autoimmune disease and included celiac disease presentations focused on the role of host-microbial interactions.

NIDDK supports a robust research portfolio that is investigating potential causes of—and treatments for—celiac disease. This includes the use of new biologically accurate laboratory models to help understand celiac disease and test potential therapeutics, as well as efforts to identify genes involved in disease susceptibility. NIDDK-supported researchers also are investigating the role of immune cells in gut inflammation and how the damaged gut heals differently across individuals with celiac disease. A major NIDDK clinical trial also is testing an available, novel technology for gluten detection in urine to determine its effectiveness, when combined with telemedicine, in managing celiac disease and facilitating gluten avoidance in newly diagnosed adults. Such an approach could help alleviate the disease's physical and psychological consequences for these individuals. NIDDK also supports trainees and early career investigators studying celiac disease to help build the next generation of researchers.

Additionally, NIDDK continues to support celiac disease research through The Environmental Determinants of Diabetes in the Young (TEDDY) study. The TEDDY study is a long-term, international study investigating environmental contributors (such as diet and the microbiome) to

[25] nourishchallenge.org/

both type 1 diabetes and celiac disease, as these autoimmune diseases share many risk genes. Findings from TEDDY could identify new avenues for research into prevention and treatment of celiac disease.

Cell and Gene Therapies

Newly approved cell and gene therapies provide enormous promise for patients with conditions ranging from various cancers such as lymphoma and multiple myeloma to inherited blood disorders like hemophilia, sickle cell disease and beta thalassemia. Long-term data from clinical trials and real world experience are needed for researchers, practitioners, and patients to understand the long-term effects and potential toxicities associated with these therapies. The Committee encourages NIH to explore these issues by holding a workshop with the relevant Federal agency representatives, including FDA and NIH, and expert stakeholders on this topic and requests an update in the fiscal year 2027 CJ. (Page 152, Senate Report 119-55)

Action taken or to be taken

Cell and gene therapies offer promising treatment options for many types of rare diseases and cancers. Gene therapies work by correcting an inherited mutation or by restoring the missing or faulty function of a gene, and cell therapies take advantage of the immune system's intrinsic ability to seek out and destroy abnormal cells in the body. Currently, only cellular therapies are approved for cancer treatment, while there are approved gene therapies for a number of diseases including sickle cell disease (SCD). Efforts supported by the NIH Common Fund, National Cancer Institute (NCI), and National Heart Lung and Blood Institute (NHLBI) represent some of the critical ongoing NIH investments in the study of cell and gene therapies.

NIH has held several workshops in recent years, bringing together internal and external scientists and public and private partners, to discuss emerging gene and cell therapies and identify challenges and potential solutions to advancing new therapies. NCI hosted a workshop on "In Vivo Engineering of Immune Cells for Cancer Immunotherapy" in and co-hosted an international conference on "Molecular Targets and Cancer Therapeutics" in 2025, both of which included NCI and external experts and were open to the public.[26,27] In 2026, NHLBI held a workshop where multidisciplinary experts and NIH staff came together to explore groundbreaking research and chart the future of gene therapy in SCD and hematopoietic stem cell transplantation.[28]

The NIH Common Fund Somatic Cell Genome Editing (SCGE) program is accelerating the translation of genome editing therapies into the clinic.[29] By advancing targeted delivery technologies and supporting clinical development, the program is enabling novel therapeutic approaches for conditions such as hearing loss, prion diseases, and amyotrophic lateral sclerosis (ALS). The SCGE program is addressing barriers to the application of genome editing therapies by establishing streamlined approaches for regulatory approval, laying the groundwork for clinical trials that evaluate promising therapies, and disseminating successful strategies through a publicly accessible database. Research supported by the SCGE program recently contributed to a landmark first-in-human study in which a personalized gene editing therapy was safely administered to treat an infant with a life-threatening, incurable genetic disease.[30]

[26] events.cancer.gov/nci/iveic-cancerimmunotherapy
[27] aacr.org/meeting/aacr-nci-eortc-international-conference-on-molecular-targets-and-cancer-therapeutics-2025/
[28] nhlbi.nih.gov/events/2026/cardiopulmonary-complications-hematopoietic-stem-cell-transplantation-hct-and-gene
[29] commonfund.nih.gov/editing
[30] chop.edu/news/worlds-first-patient-treated-personalized-crispr-gene-editing-therapy-childrens-hospital

NCI-funded studies have established cell therapy as a viable cancer treatment strategy, and NCI-supported researchers continue to expand on that work in both preclinical and clinical settings. CAR T-cell therapies, an immunotherapy that uses a patient's modified immune cells, have proven to be a transformative treatment for some cancers. However, they have been less effective for solid tumors like breast, colorectal, or pancreatic cancer, which make up about 90 percent of cancer cases. Several NCI-supported preclinical studies have found ways to genetically engineer immune cells to make them more effective at killing cancer cells in solid tumors and improve responses to existing treatments like radiation therapy and immunotherapy.[31,32] Researchers continue to explore new ways to manipulate the immune system to make existing therapies more effective for cancer patients. NCI supports a Cell-based Therapy Center and the Cancer Adoptive Cell Therapy (Can-ACT) Network to facilitate the discovery and development of cell-based therapies for people with cancer, and many NCI-Designated Comprehensive Cancer Centers have cell therapy programs. The Can-ACT Network aims to accelerate the development and testing of immunotherapy treatments that use a patient's own cells to fight cancer for solid tumors in adult and pediatric patients and leverage NCI resources to support the cell therapy community.

NCI researchers conducted decades of pioneering research that led to the FDA approval of a first-of-its-kind personalized cell therapy called lifileucel to treat advanced melanoma.[33] Lifileucel is the first treatment for cancer that uses a patient's own immune cells to target cancer cells. For therapies like lifileucel, immune cells are collected from a patient's tumor, expanded in a laboratory, and given back to the patient by intravenous infusion to fight the cancer. Lifileucel, is now being tested as a treatment for several other cancer types including advanced lung cancer, ovarian cancer, and head and neck cancers. The FDA approved another cellular therapy (afami-cel) to treat adults with metastatic synovial sarcoma rare cancer that develops in different types of soft tissue, such as muscle or ligaments. An NCI-supported clinical study at an NCI-Designated Cancer Center was one of the first clinical trials to evaluate afami-cel in people.[34] This cutting-edge therapy represents the first new treatment option for patients with metastatic synovial sarcoma in more than a decade.

Gene therapies for inherited blood disorders such as hemophilia, SCD, and beta thalassemia rely on the alteration of inherited mutations in non-immune blood cells. Thanks to NHLBI-funded research on these disorders for many years, there are now multiple FDA-approved gene therapies for individuals in the United States with inherited blood disorders including therapies for SCD, transfusion-dependent beta thalassemia, hemophilia A, and hemophilia B. NHLBI continues to support research to improve gene therapies and make them applicable to other inherited blood disorders and genetic-based diseases such as alpha thalassemia, pyruvate kinase deficiency, Diamond Blackfan Anemia, Fanconi Anemia, and rare bleeding disorders.

A major effort to support the development of gene therapy for individuals living with SCD is the NHLBI-supported Cure Sickle Cell Initiative (CureSCi).[35] CureSCi supports a range of

[31] cancer.gov/news-events/cancer-currents-blog/2024/radiation-cancer-bambi-immune-response
[32] cancer.gov/news-events/cancer-currents-blog/2024/gene-alteration-boosts-t-cell-therapy
[33] cancer.gov/news-events/cancer-currents-blog/2024/fda-amtagvi-til-therapy-melanoma
[34] pubmed.ncbi.nlm.nih.gov/36624315/
[35] nhlbi.nih.gov/science/cure-sickle-cell-initiative

preclinical and translational research on SCD. The FDA requires all gene therapy trials conduct long-term follow-up studies. CureSCi aims to support collection of long-term data on 1) how well the therapy works to mitigate SCD complications such as pain, organ damage in the kidneys, lung and brain, and shortened lifespan; 2) how long the therapy works; 3) if there are long-term toxicities such as cancer and infertility; and 4) other patient-centered outcomes, such as quality of life. Currently, NHLBI supports collection of core data elements on individuals treated with these therapies that provide needed information on survival, efficacy of the treatment, and treatment side effects. Additionally, CureSCi is supporting a natural history study to collect real world experience comparison data from a cohort of patients that did not receive gene therapy or a stem cell transplant, which will provide data to demonstrate the effects of gene therapies compared to other available treatments.

Chronic Kidney Disease

The Committee notes the significant health burden caused by chronic kidney disease (CKD) on individuals. According to the CDC, an estimated 35.5 million people, or more than 1 in 7 U.S. adults, have CKD. The Committee is also aware that poor kidney function can also lead to other burdensome or debilitating conditions. Therefore, the Committee encourages robust support for kidney research at NIDDK. The Committee requests an update on such research in the fiscal year 2027 congressional justification. (Page 101, House Report 119-271)

Action taken or to be taken

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) supports a variety of research activities aimed at improving the diagnosis and treatment of chronic kidney disease (CKD). For example, the NIDDK-funded Kidney Precision Medicine Program (KPMP) is combining vast quantities of single cell data to identify the many paths that can lead to kidney dysfunction. NIDDK held a workshop in March 2024 to explore ways to turn these KPMP findings into potential personalized interventions for kidney disease. Since then, KPMP has collected nearly 700 biopsies to better understand kidney disease. Additionally, KPMP data has been used or referenced in 450 scientific publications to date. Other ongoing NIDDK-funded studies include Fit4Kids, which is testing ferric citrate for the treatment of mineral bone disorder in children with CKD.

Through the Chronic Renal Insufficiency Cohort and the CKD Biomarkers Consortium, NIDDK continues to support the development of new and better ways to diagnose and monitor CKD and acute kidney injury. In February 2024, NIDDK held a "Reimagining Kidney Function Assessment Workshop," to help delineate a path toward more comprehensive assessment of various kidney functions, including standardization of glomerular filtration rate measurements and development of novel technologies and biomarkers for comprehensive assessment of all kidney functions. NIDDK leads the Kidney Interagency Coordinating Committee, which brings together the Centers for Medicare & Medicaid Services, the Food and Drug Administration, the Agency for Healthcare Research and Quality, and other federal partners to identify approaches to recognize the spectrum of kidney health and disease to improve detection of problems before they become serious. This includes reviewing and updating kidney care models and identifying and supporting datasets to monitor and research kidney disease.

If not adequately treated, CKD can progress to End Stage Kidney Disease (ESKD), which places an enormous burden on those who have it. Far too few people with ESKD can obtain transplants, and for those who cannot, the condition requires many hours of dialysis every week. Apart from the extreme inconvenience, dialysis can cause severe pain and fatigue. The Hemodialysis Pain Reduction Effort, a clinical trial exploring new approaches to treating dialysis pain and improving quality of life without the use of addictive opioids, has found that pain coping skills training, a cognitive behavioral intervention, can result in a modest but meaningful improvement in pain for a significant number of patients.[36] NIDDK further seeks to address quality of life issues for people with ESKD by exploring promising clinical research avenues suggested in its May 2023 workshop on post-dialysis fatigue, including comparing different dialysis processes,

[36] pubmed.ncbi.nlm.nih.gov/39786400/

prioritizing interventions that provide significant improvements that matter to patients, and leveraging implementation science.

NIDDK supports several consortia that seek to better understand and improve treatment for a variety of rare kidney diseases. Two prominent examples are the Nephrotic Syndrome Study Network (NEPTUNE) and the Cure Glomerulonephropathy Network (CureGN). NEPTUNE conducts clinical and translational research on focal segmental glomerulosclerosis (FSGS), minimal change disease (MCD), membranous nephropathy (MN), and Alport syndrome in children and adults. The Network identifies activated molecular pathways in participants with these diseases and matches them with clinical trials that target candidate mechanisms. Likewise, CureGN is a multi-center, international consortium of children and adults with MCD, FSGS, MN, or IgA nephropathy/vasculitis that is providing valuable information to better understand the causes, responses to therapies, and disease progression of these rare kidney diseases.

Chronic Numbness and Pain after Mastectomy

The Committee recognizes research demonstrating that long-term impacts after mastectomy can lead to significant functional impairment and quality of life issues for breast cancer survivors. The Committee is aware of technological procedure advancements that can restore normal breast functions, such as sensation, and improve functional impairment, physical safety, and quality of life for breast cancer survivors. The Committee encourages the Secretary, in collaboration with other relevant HHS agencies, to explore technological advances impacting health outcomes after mastectomy and requests an update in the fiscal year 2027 CJ about this issue. (Page 249, Senate Report 119-55)

Action taken or to be taken

A mastectomy is an important and lifesaving option for someone being treated for or at a very high risk of developing breast cancer, but it can have a significant impact on the person's quality of life, including causing chronic numbness and pain. NIH, primarily through the National Cancer Institute (NCI), continues to explore technological and research advances that can positively impact patient health outcomes after having a mastectomy.

There are currently limited options available to breast cancer patients for breast reconstruction after having a mastectomy. These options often lead to complications, lack mechanical similarity to normal breast tissue, and require additional surgeries. However, NIH is exploring multiple techniques to improve breast reconstruction surgery options and patient outcomes. For example, an NIH-supported award is developing a novel implant material that would be a biocompatible, non-leaching, and minimally invasive approach that mimics breast cancer tissue, offering improved options for patients and an improved quality of life following surgery. Another study is developing an advanced 3-D biodegradable implant for large volume breast reconstruction. This NCI-supported project is testing the feasibility of scaling up a tissue engineering approach for a larger volume of soft tissue engineering and offers an alternative to the current breast reconstruction methodologies and associated challenges. Another NCI-funded project is studying the use of mesh in breast reconstruction after mastectomy; mesh is often used in this type of surgery, but it is not approved by the U.S. Food and Drug Administration (FDA) and there have been no randomized clinical trials to determine the risks and benefits for patients. This study fills that gap and will look at the safety and effectiveness of mesh in this context for women's health outcomes. Another study is developing clinical decision-support algorithms for interactive design of patient-specific breast molds for tissue shaping during breast reconstruction. A *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD)-funded study plans to develop a personalized, bioprinted nipple and areola complex (NAC) that can be implanted as part of breast reconstruction surgery and will eventually degrade to leave reconstructed tissue similar to the original NAC size, shape, and texture, providing an option for a sometimes neglected part of reconstruction surgery.

All women who undergo mastectomy for breast cancer experience varying degrees of numbness and loss of feeling in the breast because nerves that provide sensation to the breast are cut when breast tissue is removed during surgery. However, some breast sensation may be regained as the severed nerves grow and regenerate, and technical advances are helping to spare or repair damage to nerves. An NCI-supported study is developing a neuroprosthesis to restore touch

sensation and reduce chronic pain after mastectomy. It aims to lay the groundwork to activate breast nerves in women who have recently had a mastectomy using bionics to improve quality of life and hopefully alleviate major side effects normally associated with mastectomies. Many women also have chronic nerve pain following a mastectomy. NCI-supported researchers are testing a novel pain coping skills training intervention for women with persistent pain after breast cancer surgery; an associated clinical trial is underway that aims to alleviate the emotional, physical, and financial tolls this chronic pain can enact on patients.[37]

Breast implants can cause major adverse effects in breast cancer patients who undergo a mastectomy and breast reconstruction surgery. An NIAID-supported study is investigating the development of bacterial biofilms, which often cause complications in breast reconstruction surgeries, and their interaction with and impact on the immune system. A clinical trial currently in the recruitment stage is investigating the possible role of bacterial biofilm as a factor in development of breast implant illness.[38] By better understanding how these biofilms contribute to implant-related illness, the complications following reconstruction surgery can potentially be lessened and patient outcomes and quality of life can be improved.

NCI is also supporting the development of digital tools that can aid risk assessment and patient decisions around mastectomy or breast reconstruction surgery. Breast reconstruction after a mastectomy is an important part of breast cancer treatment and can help improve the quality of a patient's life and body image after surgery. An NCI-supported study aims to use technology and social media to disseminate a breast reconstruction decision aid that helps breast cancer patients make informed decisions about breast reconstruction to best align with their needs.[39] Another study is examining the effectiveness and implementation of a decision support tool (risks versus benefits) to improve surgical decision-making in young women with breast cancer, including around removal of their unaffected breast.[40]

Reducing the amount of breast tissue removed during surgery is one way to reduce the impact of a mastectomy. An NCI-supported study is working to develop a new kind of imaging tool that can be used during a lumpectomy to improve the accuracy of cancer margin identification, decreasing the likelihood that additional surgery will be necessary and improving post-treatment outcomes. Another study is using a non-invasive fluorescent probe and imaging system to help identify cancer cells that may remain after breast conservation surgery. This technology has the potential to reduce repeat procedure rates due to incomplete breast cancer removal and could also significantly reduce healthcare costs due to repeat surgeries. It could also lead to associated reductions in risks of mortality/morbidity and enhancement in patient quality of life.

[37] clinicaltrials.gov/study/NCT04225585
[38] clinicaltrials.gov/study/NCT05736354
[39] clinicaltrials.gov/study/NCT07396766
[40] clinicaltrials.gov/study/NCT06275126

Collaborations with the Department of Energy

The Committee supports collaborations between the NIH and the Department of Energy (DOE) to strategically leverage NIH's research needs in cancer research, brain mapping, drug development that requires DOE's high frequency imaging, supercomputing, instrumentation, materials, modeling simulation, and data science. Increased coordination could be instrumental to assist in the development of the nation's health, security, biomedical technologies, and in the development of more strategic enabling technologies. The Committee requests an update from NIH regarding their current and projected collaborations with DOE, including the identification of future opportunities for continued partnership growth as part of the fiscal year 2027 congressional justification. (Page 126, House Report 119-271)

Action taken or to be taken

The National Institutes of Health (NIH) continues to collaborate with the Department of Energy's (DOE) National Laboratories. NIH is actively leveraging many opportunities at the intersection of high-performance computing, big data, and biomedical research in the next generation of brain mapping, emerging technologies, cancer research, and many other areas. Synergistic collaboration capitalizes on state-of-the-art technology for medical applications and spurs the development of new technology of interest to both the medical and physical sciences. Selected examples of ongoing partnerships are described below but are far from a complete list of NIH's coordination with DOE and the National Laboratories.

Emerging Technologies

The Interagency Modeling and Analysis Group (IMAG) is comprised of program directors from over 10 government agencies including NIH and DOE. The purpose of IMAG is to bring together program staff who have a shared interest in supporting modeling and analysis methods in biomedical, biological, and behavioral systems. Since 2003, IMAG has promoted and supported a wide variety of modeling, notably multi-scale modeling (MSM) through agency-specific funding opportunity announcements.

In another key area, NIH continues to have fruitful collaborations with DOE in structural biology, or the study of how biological materials are built. Research on structural biology reveals how the thousands of different molecules in each of our cells work together to keep us healthy, and how misshapen molecules make us sick. As a result, these studies have prompted new treatments for many diseases. The National Institute of General Medical Studies (NIGMS) supports resources at synchrotrons, a type of particle accelerator, that enable the research use of beam lines and radiation to determine the structure of various biological molecules. Also in structural biology, NIGMS-led support of Cryo-Electron Microscopy technologies involves building centers for data collection and training at two DOE-supported national labs, Pacific Northwest National Laboratory and the Stanford Synchrotron Radiation Lightsource at the SLAC National Accelerator Laboratory.

The National Institute of Biomedical Imaging and Bioengineering (NIBIB) supports the Medical Imaging & Data Resource Center (MIDRC), which curates medical images and develops artificial intelligence (AI)-ready data and AI/machine learning (AI/ML) algorithms for helping with the clinical management of COVID-19 patients, including Long COVID patients. Current

work includes the expansion to become a wider comprehensive resource for all Institutes and Centers at NIH and has expanded interoperability with other data resources in infectious and chronic disease (e.g., diabetes, chronic liver disease, coronary artery disease, and chronic obstructive pulmonary disease). In a DOE funded effort, MIDRC participated in the development and testing of PALISADE-X, an open-source framework from Argonne National Laboratory that enables privacy-preserving federated learning that allows multiple institutions to collaboratively train AI models on decentralized data without sharing sensitive information.

Emerging Technologies for Brain Mapping

The NIH Brain Research Through Advancing Innovative Neurotechnologies (BRAIN) Initiative is a coordinated program of 10 NIH ICs to develop and apply innovative technologies to understand brain circuits in health and disease. In September 2023, the NIH BRAIN Initiative launched the BRAIN CONNECTS program. To date, this program supports a suite of 20 awards projected to total $207 million over 5 years, guided in part by the joint NIH-DOE 2021 Brain Connectivity Workshop Series.

In addition, eight key personnel from the Pacific Northwest National Laboratory were involved in a BRAIN Initiative Cell Census Network project to develop a scalable mass spectrometry platform for proteome mapping of brain tissues, promising a comprehensive approach to identify all proteins in brain cells, which aligns within the Initiative's larger brain atlas effort. In addition, a recent grant award was made in the BRAIN CONNECTS program supporting a collaboration with NIH-funded researchers and Argonne National Laboratory to explore the use of the Advanced Photon Source to map brain connectivity at high resolution. Overall, these efforts set the stage for more extensive engagements and collaborations between the two agencies on large-scale BRAIN Initiative projects.

In FY 2025, the NIH BRAIN Initiative supported seven active projects involving scientists at the Lawrence Livermore, Lawrence Berkeley, and Argonne National Laboratories that advance new technologies for collecting, analyzing, and/or disseminating highly complex brain activity and behavioral data.

Computational neuroscience provides a theoretical foundation and a rich set of technical approaches for understanding complex neurobiological systems, building on the theory, methods, and findings of computer science, neuroscience, and numerous other disciplines. Through the Collaborative Research in Computational Neuroscience (CRCNS) program, the National Science Foundation (NSF), NIH, and DOE, along with numerous international partners, support collaborative activities that will span the full spectrum of computational neuroscience research to advance understanding of nervous system structure and function, mechanisms underlying nervous system disorders, and computational strategies used by the nervous system.

Emerging Technologies for Cancer Research

The National Cancer Institute (NCI) and DOE worked together from FY 2017-2025 on an interagency strategic partnership to simultaneously accelerate advances in precision oncology and scientific computing, including the use of artificial intelligence. The collaboration produced several focused initiatives.

The AI-Driven Multi-scale Investigation of RAS/RAF Activation Lifecycle (ADMIRRAL) project built and tested a predictive computational biology platform that probes unknown biology and generates mechanistic insights into the basis of cancer-specifically cancers driven by the commonly mutated *RAS* gene. Researchers continue to use this knowledge to identify novel ways to target mutant RAS protein for drug discovery, including discoveries that led to a phase 1 clinical trial studying a new drug targeting mutant RAS in lung cancer.

The Innovative Methodologies and New Data for Predictive Oncology Model Evaluation (IMPROVE) project developed a computational framework to evaluate and compare drug response prediction models and generate large training datasets on drug responses in patient-derived models to improve future drug response modeling.

In line with NIH's priority to improve research reproducibility, a standardized framework for better benchmarking and reproducibility of AI models is needed to achieve the most accurate outcomes for predicting patient response to treatments. The Modeling Outcomes using Surveillance data and Scalable AI for Cancer (MOSSAIC) project modernized the NCI Surveillance, Epidemiology, and End Results (SEER) cancer registry and health statistics program to enable near real-time cancer surveillance and used natural language processing (NLP) foundation models to automatically incorporate additional clinical endpoints into SEER.

These tools are vital for population-scale identification of patients eligible for research studies and clinical trials as well as the ethical deployment of AI tools for cancer surveillance. The datasets, software, and validated computational models resulting from these projects are housed in an open-source repository, the NCI Predictive Oncology Model and Data Clearinghouse (MoDaC), and additional related resources are publicly available through the Computational Resources for Cancer Research portal for use by the entire research community.

Common Fund

The Committee acknowledges the role of the NIH Common Fund in advancing biomedical research and fostering innovative research collaborations across various NIH Institutes, Centers, and Offices to catalyze discovery across all biomedical research, and to create a space where investigators and multiple NIH Institutes, Centers, and Offices collaborate to address scientific challenges and opportunities that are high-priority for NIH as a whole. The Committee encourages the Common Fund to consider establishing an RNA Project [RNOME] to support this work. The Committee requests an update on Common Fund projects in the fiscal year 2027 CJ. (Page 154, Senate Report 119-55)

Action taken or to be taken

The National Institutes of Health (NIH) Common Fund, housed in the Office of Strategic Coordination (OSC), is designed to address challenges and opportunities that are of high priority for NIH, supporting time-limited, goal-driven programs intended to transform the biomedical and behavioral research landscape. Common Fund programs often develop widely available resources that lead to new insights into human biology, pilot new ways of supporting a robust biomedical and behavioral research workforce and accelerate promising new areas of science. The Common Fund currently has over 20 active programs, ranging from a program to integrate innovative clinical research into primary care settings to a program focused on development and validation of human-based New Approach Methodologies (NAMs) that will more accurately model human biology.

Many Common Fund programs produce specific deliverables, such as data sets, tools, or technologies, that fill a significant need across multiple research fields. Although OSC support for Common Fund programs is time-limited, the catalytic nature of these programs frequently allows them to spur subsequent discoveries with far-reaching impacts that last beyond their lifespan. For example, the Extracellular RNA Communication program has identified potential biomarkers for nearly 30 diseases and conditions, including cardiovascular disease, pregnancy complications, glaucoma, diabetes, and multiple types of cancer. These RNA molecules can allow us to learn valuable information about healthy functioning and disease development throughout the body. Future research may lead to these RNAs being harnessed to deliver information to parts of the body to treat diseases.

The Common Fund is well-poised to address emerging scientific opportunities and challenges of the future when funding is available. Through a robust strategic planning process involving broad input and prioritization from across NIH, new high priority concepts are identified. One recent concept that emerged from this process is the RNomics program, which received advisory council approval in December 2025 and is slated to make awards in FY 2027, pending the availability of funds.[41] This program aims to build the tools and technologies needed to study the human RNome—the entire catalogue of RNA molecules in the body—including how various RNA structural forms and modifications impact human health. Current tools cannot adequately sequence full-length RNA and study these modifications in detail, so the RNomics program would support the development of tools to address this gap. Through several initiatives, the RNomics program would provide a comprehensive platform of technologies and data

[41] commonfund.nih.gov/rnomics

infrastructure for complete RNA sequencing from any sample. These advances would set the stage to understand the role of RNA and its modifications in human health and disease. The RNomics program would also enhance our ability to understand the influence of environmental exposures on human health. By improving how we study RNA, this program aims to open the door to better, more personalized therapies and advance precision medicine.

Targeting RNA in Disease with Novel Technologies (TRDNT) is the latest initiative from the Common Fund's Venture Program, a program that supports short-term projects with significant impact.[42] RNA-targeting therapies have the potential to treat diseases that currently have limited or no effective treatments and could be life-changing for patients suffering from these conditions. RNA dysfunction has been linked to many diseases, including rare diseases like myotonic dystrophy, neurological disorders like Parkinson's disease, certain aggressive forms of cancer, such as triple negative breast cancer, and heart failure, among others. The TRDNT initiative addresses a need to develop precision medicine therapies to treat diseases caused by RNA dysfunction or by proteins that are difficult to target with traditional drugs. The TRDNT initiative is hosting a challenge that opens in March 2026, which will spur innovative approaches to modulating RNA in cells as a treatment for diseases and adverse conditions.

[42] commonfund.nih.gov/venture/trdnt

Congenital Heart Disease

The Committee commends NHLBI for its continued work to better understand causation, improve treatments and outcomes, support the growth of the clinical and research workforce, and integrate registry data and research datasets to facilitate research on congenital heart disease across the lifespan, including through the Pediatric Heart Network and the Pediatric Cardiac Genomics Consortium. The Committee encourages NHLBI to prioritize CHD activities outlined in its strategic plan, including improving understanding of outcomes and co- morbidities, improving treatment options across the lifespan, and accelerating discovery, analysis, and translation by leveraging CHD registries and networks. The Committee requests NHLBI include in its fiscal year 2027 CJ a report on steps being taken to close these research gaps. (Page 113, Senate Report 119-55)

Action taken or to be taken

There are two to three million children and adults living with congenital heart disease (CHD) in the United States who face a high risk of early death and disability with increasing age. One of the National Heart, Lung, and Blood Institute's (NHLBI) strategic objectives is to investigate newly discovered pathobiological mechanisms important to the onset and progressions of heart, lung, blood, and sleep diseases including congenital heart disease. Guided by this objective, the Institute's Bench to Bassinet program supports basic, clinical, and translational research focused on understanding the causes of CHD and its comorbidities and improving CHD diagnosis and treatment outcomes across the lifespan.

The Bench to Bassinet program includes the Pediatric Cardiac Genomics Consortium (PCGC) and the Pediatric Heart Network (PHN). The PCGC has recruited over 13,000 children with CHD, as well as over 18,000 of their parents, to assemble one of the world's largest cohorts for genomic analysis of CHD. The Consortium has made significant progress in improving our understanding of the genetic underpinnings of CHD and findings from the PCGC have begun to elucidate the impact of genomics on clinical outcomes, including risk for adverse post-operative outcomes and one of the most common co-morbidities, neurodevelopmental disability.[43,44]

The PCGC has harnessed big data from electronic health records and other existing databases and registries. In addition, the PHN works together with the PCGC to capture and analyze biospecimens and clinical phenotype data on all individuals enrolled in its studies and trials. The hope is to apply the findings from the PCGC to future PHN research protocols, thereby moving closer to applying personalized medicine to individuals affected with CHD across the lifespan. In 2026, NHLBI will leverage its investment in PCGC and evolve it into a longitudinal cohort study, called the Bench to Bassinet CHANGE cohort.

PHN research, including clinical trials, is leading to the development of improved treatment and care of children with CHD. In 2024, the Network began the next 7-year funding cycle, which will focus on three important pillars: 1) improving outcomes for everyone with CHD; 2) incorporating data science approaches to trials and studies; and 3) collaborating with the PCGC to inform precision medicine approaches to CHD care. The PHN is launching two new clinical

[43] pubmed.ncbi.nlm.nih.gov/33084842/
[44] pubmed.ncbi.nlm.nih.gov/40640177/

trials focused on mental health and resilience in CHD, important aspects of chronic disease that are high priority research areas for patients and families.

About half of children with Down syndrome have CHD. PHN continues to partner with the National Institute of Health INvestigation of Co-occurring conditions across the Lifespan to Understand Down SyndromE (INCLUDE) program to conduct the Congenital Heart Disease: Impact on Learning and Development in Down Syndrome (CHILD-DS) study. The CHILD-DS study has completed enrollment and analyses are underway. This study will help determine if having CHD and infant heart surgery affects the way children with Down syndrome develop and learn.

NHLBI's CHD research portfolio extends far beyond the Bench to Bassinet program. The Institute is funding cutting-edge trials of stem cell therapy for infants with CHD and tissue engineered vascular grafts for children with Fontan, a palliative surgical procedure used in children with single ventricle heart disease that bypasses the heart and delivers oxygen-poor blood directly to the lungs to gather oxygen, as well as developing a Fontan blood pump to improve circulation to the lungs. The Institute also funds trials aimed at improving exercise capacity in adolescents using Fontan.

NHLBI continues efforts to identify key scientific opportunities and address research gaps for improving CHD outcomes identified in the 2021 Future of Pediatric Cardiovascular Research workshop. These include addressing gaps in pediatric cardiovascular research by implementing targeted recruitment efforts to increase the range of backgrounds of participants in clinical trials, incorporating the perspectives of communities more deeply into study design and performance, and aligning pediatric cardiovascular research with patient priorities.

Deadliest Cancers

Senate Language

The Recalcitrant Cancer Research Act [RCRA] of 2012 (Public Law 112–239) focuses on cancers with a 5- year survival rate below 50 percent, which account for over 40 percent of all U.S. cancer deaths. While advances in some cancers have made it possible to reduce the overall rate of cancer deaths over the last several decades, there has been limited progress reducing mortality for these diseases. In fiscal year 2020 (Public Law 116–94), Congress directed NCI to develop a scientific framework using the process outlined in the RCRA for stomach and esophageal cancers. The Committee commends NCI for developing the framework and notes that NCI has also launched a Program in Origins of Gastroesophageal Cancers. Given the devastating toll of all recalcitrant cancers and the lack of diagnostic and treatment resources currently available, the Committee, alongside the research and advocacy communities, encourages a continued focus on these cancers and requests an update on research on each of the deadliest cancers-brain, liver (including cholangiocarcinoma), lung, ovary, pancreas, and stomach and esophageal cancers in the fiscal year 2027 CJ. Further, given the high mortality rates for these cancers, the Committee is particularly concerned about reports of increased incidence of esophageal, liver, pancreas, and stomach cancer among the adolescent and young adult population and directs NCI to develop a plan with specific actions to understand the causes and risk factors that are leading to these increases as well as potential interventions. (Page 108, Senate Report 119-55)

House Language

The Recalcitrant Cancer Research Act of 2012 (P.L. 112–239) focuses on cancers with a 5-year survival rate below 50 percent, which account for over 40 percent of all U.S. cancer deaths. While advances in some cancers have made it possible to reduce the overall rate of cancer deaths over the last several decades, there has been limited progress in reducing mortality for these diseases. The Committee encourages NCI to continue its focus on these cancers, which include cancers of the brain (including glioblastoma), esophagus, liver (including cholangiocarcinoma), lung, ovaries, pancreas, stomach, and mesothelioma and requests an update on research focused on each of these areas in the fiscal year 2027 congressional justification. Further, given the high mortality rates for these cancers, the Committee is particularly concerned about reports of increased incidence of esophageal, liver, pancreas, and stomach cancer among young adults and urges the NCI to continue to support much needed research to understand the causes and risk factors leading to these increases, as well as potential interventions. (Page 93, House Report 119-271)

Action taken or to be taken

Brain, including adult and pediatric brain tumors

Only one third of people survive five or more years after being diagnosed with brain or other nervous system cancers. These outcomes reflect the inherent challenges in detecting, diagnosing, and treating brain cancer. For example, some brain cancer cells look similar under the microscope but may require different treatments, the blood brain barrier poses a unique obstacle

for treatment delivery, and sufficient surgical removal of the tumor can be difficult without damage to normal brain tissue. NCI-funded researchers address these challenges by studying ways to improve brain cancer diagnosis and optimize treatments. For example, scientists have recently developed a method to rapidly measure the levels of certain genetic mutations in brain tissue samples collected from patients during surgery, which could potentially be used to help guide surgeons' real-time decision-making during surgery to remove cancerous tissue from the brain.[45] In addition, brain tumors are the most common solid tumors in children and adolescents, and people who receive treatment for childhood brain cancer may face long-term impacts from the cancer and its treatment, highlighting the importance of NCI-supported research that is focused on improving the quality of life for adults and children with brain cancer.

There are over 130 different types of adult and childhood brain cancers. This diversity combined with the rarity of some types leads to as many as 10 percent of people with brain cancer initially receiving the wrong diagnosis. An NCI-supported Artificial Intelligence (AI) tool called APOLLO identifies types of gliomas, tumors that form from the brain's glial cells. The tool differentiates glioma subtypes with about 80 percent accuracy, which may one day help doctors recommend better and more targeted therapies.

Gliomas are a common type of brain tumor. Few treatment options exist to help people with gliomas live longer, especially for gliomas that return after standard treatments. An NCI clinical trial is testing a new treatment for recurrent gliomas with certain genetic mutations that make the tumors vulnerable to a specific oral drug. The study researchers, who are part of the NCI-CONNECT Rare Brain and Spine Tumor Network, hope to use this precision medicine approach to control tumor growth and improve the quality of life for people with this specific glioma subtype.

The most aggressive type of glioma—and most common type of malignant brain tumor—is glioblastoma. This cancer is resistant to nearly all treatments. To address this, NCI's Brain Specialized Programs of Research Excellence (SPOREs) aim to improve outcomes for people with gliomas through innovative approaches to treatment. Within the University of California, Los Angeles, SPORE, researchers are working on the development of a promising new treatment strategy to treat glioblastoma by combining radiation therapy with a plant-derived compound called forskolin.[46] An early-stage study found when tested in mice, the addition of forskolin to radiation significantly slowed tumor growth and, in some cases, led to long-term tumor control.[47] At the Northwestern University SPORE, researchers have developed an ultrasound-based approach to open the blood-brain barrier when delivering chemotherapy and immunotherapy drugs. Their approach, which they tested in mice, increased the brain concentrations of the drugs and helped the mice with gliomas live longer. Other approaches have also shown promise in preclinical studies using mice with gliomas, such as a cancer-seeking virus that evades immune detection, developed in the MD Anderson Cancer Center SPORE.

One NCI-supported approach, an experimental mRNA vaccine, helped the immune system mount an attack against glioblastoma tumors naturally occurring in dogs and in humans. Other

[45] cancer.gov/news-events/cancer-currents-blog/2025/brain-cancer-surgery-rapid-test-mutations-tumor-cells
[46] uclahealth.org/news/article/inside-latest-research-advancements-help-combat-brain-cancer
[47] uclahealth.org/news/release/treatment-strategy-reprograms-brain-cancer-cells-halting

NCI-supported researchers are exploring vaccines to promote immune activity against glioblastoma and learning how to better activate cancer-fighting immune cells in the tumor's environment so that glioblastoma vaccines are more likely to work.

Some brain tumors are more common in children, such as diffuse midline glioma, neuroblastoma, and medulloblastoma. In a small clinical trial by long-time NCI-funded researchers, a CAR T-cell therapy—a type of immunotherapy that uses a patient's own immune cells to fight cancer—shrank tumors in several children and young adults with diffuse midline gliomas. This fast-growing form of brain and spinal cord cancer typically causes death within a year of diagnosis. In the trial, several participants were still alive two years or more after receiving the treatment.[48] NCI also continues to support the Pediatric Brain Tumor Consortium (PBTC) to develop and implement clinical trials to evaluate new agents and new treatment approaches for children with brain tumors. With over 2,000 patients enrolled, the consortium has 9 therapeutic studies that are actively enrolling patients.

The goal of treating brain cancer is to help people live longer, healthier lives, but survivors of childhood brain cancer are more likely to have cognitive impairment, poor health, and disabilities compared to those who did not have cancer. As part of a multi-site collaboration, NCI-supported researchers are studying how environmental resources, clinical factors, and individual genetics affect cognitive impairment in pediatric, adolescent, and young adult survivors of medulloblastoma, the most common malignant brain tumor in children. The NCI-supported Children's Oncology Group is testing a drug that blocks receptors in the brain involved with cognitive decline to see if it improves outcomes for children and adolescents receiving brain radiation therapy for primary central nervous system tumors. Other NCI-supported researchers are examining how the conditions in which people are born, work, live, and age influence symptoms that people with brain tumors experience. An important part of their work is learning how to conduct studies that accurately capture this data, which could provide information about how to tailor care to patient needs.

Liver, including cholangiocarcinoma

Liver cancer, including cancer of the bile ducts, remains a deadly disease with poor patient survival. Although rates for new cases of liver cancer have decreased for some groups, the rates are trending upwards for others, including for young adults. Hepatocellular carcinoma is the most common type of liver cancer and one of the few cancers with rising incidence and mortality rates. NCI-funded studies aim to improve prevention, detection, and treatment for hepatocellular carcinoma and other liver and bile duct cancers in adults and children.

Improving prevention, detection, and treatment outcomes for people with these cancers begins with understanding the biology of healthy liver tissue and potential triggers of disease. A recent NCI-supported study shed light on liver cell diversity, which could help scientists understand liver tumor complexity. Other NCI-funded researchers found that dysfunctional sleep patterns increased risk for developing hepatocellular carcinoma in mice. The cancer's genetic features in "jet lagged" mice matched the genetic features of hepatocellular carcinoma in humans who had the worst outcomes. The work suggests that sleep affects cancer development on a molecular level, which has implications for prevention and treatment approaches.

[48] cancer.gov/news-events/cancer-currents-blog/2025/car-t-cell-therapy-gd2-diffuse-midline-gliomas

Other ongoing NCI-funded studies aim to understand and develop effective screening methods for the early detection of liver cancer in people who are at increased risk for the disease. One NCI-supported group conducted a study further confirming that HCC screening is associated with earlier detection and improved survival, even after accounting for statistical factors, indicating that screening strategies remain an important target for multilevel interventions. A separate NCI-supported group recently identified a panel of blood biomarkers that, when levels of which are measured and used to train a machine-learning model, have the potential to serve as an important tool for HCC screening and monitoring the effectiveness of HCC treatment. With advances in artificial intelligence and machine learning, NCI-funded researchers are now developing a biomarker screening algorithm that looks at changes in biomarkers over time to improve the likelihood that hepatocellular carcinoma is caught early.

NCI established the Translational Liver Cancer Consortium to advance translational research on early detection of liver cancer. The Consortium consists of five Translational Research Centers and a Data Management and Coordinating Center. It aims to improve the surveillance of liver cancer in high-risk populations, increase the fraction of liver cancer detected at an early stage, and identify patients at risk of developing the disease. For example, Consortium researchers associated dietary patterns with liver disease severity, and therefore liver cancer risk, in Hispanic populations.

The Liver Cirrhosis Network—a collaborative partnership sponsored by NCI, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), and National Institute on Alcohol Abuse and Alcoholism (NIAAA)—brings together 10 clinical centers across the nation to study why people with cirrhosis develop complications, like cancer, and to investigate if a statin drug can help improve the health of people with cirrhosis. Their ongoing RESCU Trial is studying if a specific statin is safe and beneficial for people living with the disease. NCI is also funding studies to determine the molecular mechanism by which statins may prevent, or even reverse, hepatocellular carcinoma. The work led to the recent discovery of a potential druggable mechanism in hepatocellular carcinomas driven by a specific cancer-promoting gene.

NCI supports two liver cancer SPOREs that focus on novel early intervention and prevention strategies as well as new approaches to liver cancer diagnosis and therapy. In addition, the Liver SPOREs aim to develop biomarkers for response to treatment and posttreatment recurrence of the disease. One Liver SPORE project recently reported that analysis of tumor DNA found in the bloodstream of people treated with a specific immunotherapy for hepatocellular carcinoma may help predict the likelihood of cancer progression.

The liver connects to the gallbladder and small intestine through a network of vessels called bile ducts. Cholangiocarcinoma is an aggressive cancer that forms in these bile ducts, and NCI-supported research has shown that the incidence of cholangiocarcinoma has significantly increased over the past four decades. Ongoing work is exploring novel ways to treat and improve outcomes for people with this disease. For example, NCI researchers found that the addition of anti-VEGF treatment, which inhibits the growth of blood vessels in tumors, to two immune checkpoint inhibitors delayed tumor growth and prolonged survival compared to other

treatments, including immune checkpoint inhibitors alone in mice and in a phase 2 clinical trial that enrolled people with cholangiocarcinoma.[49] Additionally, one of the Liver SPOREs has a project focused on understanding the molecular pathways that lead to cholangiocarcinoma development to identify targeted treatment interventions.

Lung, including mesothelioma

Lung cancer is the second most common cancer in both men and women in the United States. There are two main types of lung cancer: non-small cell lung cancer (NSCLC), which is the most common form, and small cell lung cancer (SCLC). NCI supports a range of efforts to investigate lung cancer risk factors and targeted treatments against specific lung cancer associated genes.

Smoking is the leading risk factor for lung cancer, but data shows that for most people, quitting smoking is extremely difficult. Recently published results[50] from a large clinical trial – part of the Smoking Cessation at Lung Examination (SCALE) Collaboration[51] launched by NCI in 2016 – indicate that when current smokers undergo lung cancer screening, screening visits that also offer access to programs that integrate intensive counseling and cessation medications are effective at helping smokers quit.[52] The study included more than 600 adults who were current smokers. By the end of the 3-month treatment period, nearly 40 percent of those randomly assigned to participate in an intensive cessation program had quit smoking and had not started up again, in contrast to about 25 percent of those who were referred to a tobacco use quitline instead.

Other NCI-supported studies aim to identify additional factors that may increase a person's chance of developing lung cancer. For example, one NCI-funded study found that occupational exposure to certain amounts of acrylonitrile—which is used to manufacture items like nitrile gloves, toys, and plumbing materials—was associated with increased risk of death from lung cancer. Another NCI-supported study found an association between long-term exposure to ultrafine particulate matter, a traffic-related air pollutant, and the risk of lung cancer.

NSCLC makes up about 85 percent of all lung cancer diagnoses. For most patients with NSCLC, current treatments do not cure their disease, and more effective therapies are needed. NCI-supported studies are exploring new approaches that tailor a person's treatment to the genetic features of their tumors. For example, a recent NCI-supported study compared a treatment option designed for people whose cancers contain specific changes in a gene called *RET* to standard treatments for NSCLC. The targeted treatment more than doubled the median amount of time that patients remained alive without their cancer getting worse, compared to standard treatments.

NCI has launched and continues to support several clinical studies that use a targeted treatment approach for NSCLC, including the Pragmatica-Lung Study, Lung-MAP, and ALCHEMIST. The Pragmatica-Lung Study compares the combination of a targeted therapy and an immunotherapy with standard chemotherapy in people whose NSCLC got worse after previous

[49] ccr.cancer.gov/news/article/study-uncovers-mechanism-behind-effectiveness-of-three-drug-combination-in-patients-with-a-rare-bile-duct-cancer
[50] pubmed.ncbi.nlm.nih.gov/39804633/
[51] cancercontrol.cancer.gov/brp/tcrb/scale-collaboration
[52] cancer.gov/news-events/cancer-currents-blog/2025/lung-cancer-screening-helping-people-quit-smoking

treatment. The study is designed to remove many of the barriers that prevent people from joining clinical trials by allowing the participation of people with lower performance status, a measure of how well an individual can perform the functions of daily life. In addition, NCI continues to support the Lung-MAP Screening Study, which allows people who have already been treated for NSCLC to join one of multiple sub-studies based on genetic screening that matches patients to investigational new treatments. Like the Pragmatica-Lung Study, Lung-MAP has been able to increase patient accrual from traditionally underrepresented groups compared to standard NSCLC trials. Finally, ALCHEMIST is a multicenter NCI trial for patients with early-stage NSCLC that was removed by surgery. The study is testing the benefit of adding a targeted therapy after surgery, based on the genetics of the patient's tumor.

NCI continues to fund five lung cancer SPOREs. Multiple projects across lung cancer types are underway through the SPORE program, including work on a subtype of NSCLC called lung adenocarcinoma—the most common lung cancer in the United States and the leading cause of cancer deaths in the country. One SPORE project examined hundreds of thousands of single cells from early-stage lung adenocarcinoma tumors to learn about the early cellular processes that lead to this cancer. Through their work, they uncovered new information about the root of lung adenocarcinoma development, which could inform potential targets for prevention and interventions.

In addition to NSCLC and SCLC, NCI supports research on mesothelioma, a rare, fast-growing form of cancer that forms in the membrane that surrounds the lungs. Several NCI-supported projects focus on studying immunotherapy approaches to treat the disease, including early clinical trials testing CAR T cells against mesothelioma as well as novel ways to block energy production in mesothelioma cells to prevent their resistance to immunotherapy.

Ovary

Most ovarian cancers begin in the cells that line the ovaries and fallopian tubes. Collectively, these are called epithelial ovarian cancers. Nearly 70 percent of women with this type of ovarian cancer are diagnosed in the advanced stages. High-grade serous ovarian cancers, the most common type, are difficult to treat and have poor survival rates.

Researchers are considering different ways to reduce ovarian cancer in high-risk women with a genetic predisposition for the disease. One approach involves genetic testing for inherited mutations that are known to contribute to ovarian cancer development. NCI recently funded studies to understand the benefits and challenges associated with uptake of genetic testing by the relatives of women who have been diagnosed with ovarian cancer, as they may be at a higher risk for developing the disease themselves. These "traceback" studies can help patients identify family members who carry the same genetic risk factors so they can take steps to reduce their risks.

However, there is no reliable way to screen for ovarian cancer in women who do not have any signs or symptoms. NCI-supported studies are investigating potential biomarkers for early ovarian cancer detection. For example, NCI-funded researchers identified a type of stem cell that they called high-risk mesenchymal stem cells (MSCs) and appear to be a critical driver of the formation of ovarian cancer tumors and could potentially help indicate the early stages of high

grade serous ovarian cancer.[53] Another NCI-funded group created a four-biomarker panel that could detect 75 percent of early-stage ovarian cancers during pre-clinical testing, a 13 percent improvement over a current blood test for the disease.

NCI also funds research to ensure that ovarian cancer screening tests work equally well for all people. Some of this research is funded through the ovarian SPOREs. In total, NCI funds six ovarian SPOREs that focus on early detection, risk assessment, imaging technologies, targeted therapies, and novel therapeutic approaches for patients with newly diagnosed and relapsed ovarian cancer.

Advances in immunotherapy are bringing new treatment options to solid tumors, but overcoming ovarian cancer resistance to immunotherapy remains a challenge. Recently, NCI-supported researchers found a way to sensitize ovarian tumors in mice to immune checkpoint blockade, a type of immunotherapy that prevents immune system suppression. Another NCI-supported group investigated a new type of vaccine against ovarian cancer in mice and found that the vaccine also made the ovarian tumors more responsive to immune checkpoint blockade.

For people with early-stage ovarian cancer, surgery to remove the cancer is often the first treatment. A new technology called CYTALUX, developed with NCI support, received FDA approval to help doctors locate ovarian and lung cancer tumors during surgery. CYTALUX binds to cancer and glows brightly under a special camera in the operating room. During clinical trials, it revealed the border of tumors in real time and exposed cancers that may have been missed during surgery because the tumors were not visible on prior scans.

Pancreas

Pancreatic cancer remains one of the deadliest cancers for both men and women. While there have been modest improvements in pancreatic cancer survival, incidence rates have increased by 1 percent per year from 2001 to 2018. The most common and lethal type of pancreatic cancer, called pancreatic ductal adenocarcinoma (PDAC), forms from pancreas cells that make enzymes to help the body digest food, whereas less common pancreatic cancers form from the hormone-making cells of the pancreas. These are called pancreatic neuroendocrine tumors (NETs) and have a better prognosis than PDAC. NCI supports a range of programs that aim to better understand pancreatic cancer biology, advance pancreatic cancer screening and detection, and develop better therapies.

Researchers in the NCI's Pancreatic Cancer Microenvironment Network (PaCMEN) studied the pancreatic tumor microenvironment in pre-clinical research to improve immunotherapies and overcome pancreatic cancer's resistance to most available treatments. NCI continues to build upon these research efforts through support of the PDAC Stromal Reprogramming Consortium (PSRC). The PSRC expands upon traditional tumor-centric studies and ongoing immuno-oncology efforts by investigating additional ways the tumor microenvironment drives PDAC progression and response to therapy. PSRC researchers recently identified subtypes of PDAC by studying PDAC tumors at the single cell level. Their findings inform a way to advance precision treatments against PDAC based on the molecular features of the patient's tumor. Other PSRC

[53] cancer.gov/news-events/cancer-currents-blog/2025/ovarian-cancer-stic-high-risk-mscs

researchers revealed some of the mechanisms by which PDAC tumors sculpt the tumor microenvironment in a way that likely contributes to the cancer's ability to resist many therapies.

Given the complex biology of pancreatic cancer and its resistance to treatment, detection of the disease before it has spread to other parts of the body is critical. Screening people at high risk for pancreatic cancer may help them live longer, based on a recent NCI-supported study. However, early pancreatic cancer detection relies on technologies that can identify pancreatic cancer before symptoms emerge. For these methods to work, researchers must establish risk factors and biomarkers for pancreatic cancer screening.

The Pancreatic Cancer Detection Consortium (PCDC) develops and tests new molecular and imaging biomarkers to detect early stage PDAC and its precursor lesions. As of 2025, the Consortium has supported three completed grants and 11 active grants to researchers across the country. One group of scientists supported through the PCDC recently developed a blood test that can detect early-stage pancreatic cancer. When the researchers combined their blood test with another test often used to monitor pancreatic cancer, they were able to identify 97 percent of people with early-stage disease. Although the test needs to be further verified and studied in more detail before it can be adopted for screening, it holds promise especially for screening higher-risk individuals.

One known risk factor for pancreatic cancer is a new diagnosis of diabetes. The New Onset Diabetes (NOD) Study is creating a large cohort and biobank of blood samples and patient data. Researchers will monitor participants for PDAC onset and use blood samples for future biomarker testing. Similarly, one of the aims of the Consortium for the Study of Chronic Pancreatitis, Diabetes and Pancreatic Cancer (CPDPC), a partnership between NCI and NIDDK, is the comprehensive characterization of patients with chronic pancreatitis to gain insight into the diabetes and pancreatic cancer association.

Mutations in a single family of genes, known as the RAS family, drive 95 percent of pancreatic cancers. Over the last several years, NCI's RAS Initiative has made significant advances in targeting these genes in cancer treatments. The most prevalent mutations in the development of PDAC occur in the KRAS gene. Two new NCI-supported research studies in mice found that adding chemotherapy to a drug that blocks KRAS reduces the progression of pancreatic cancer better than either treatment alone. The combination works because chemotherapy and KRAS inhibitors each tackle different ways that cancer cells grow in pancreatic tumors.

There is also a need for new systemic treatment of pancreatic cancer to improve patient outcomes. NCI is supporting several efforts to identify new treatments. For example, NCI's National Clinical Trials Network is supporting the CABINET Study. This study is testing a targeted chemotherapy drug to treat people with advanced pancreatic neuroendocrine and carcinoid tumors. The researchers recently reported initial results, which showed that the drug improved how long people lived without their advanced pancreatic neuroendocrine cancer getting worse.

Gastric, esophageal, and GE junction

Gastric (stomach) cancer is the fifth most common cancer worldwide. In the United States, stomach cancer occurs more often among black, Hispanic, Asian and Pacific Islander, and American Indian and Alaska Native people than among white people. Males are nearly twice as likely as females to be diagnosed with the disease, and black males are nearly twice as likely as white males to die of it. In recent years, stomach cancer rates have been increasing in younger females, particularly for the Hispanic community.

NCI supports several promising research efforts to address challenges in understanding and making progress against stomach cancer, as well as cancers of the esophagus and gastroesophageal junction. In 2022, the Gastric and Esophageal Cancers Working Group of NCI's Clinical and Translational Research Advisory Committee (CTAC) outlined three goals for stomach cancer research. These include finding biomarkers and treatment targets based on gastroesophageal cancer biology; developing tailored assessment tools and therapies; and improving tools for risk stratification, screening, early detection, and surveillance of stomach and esophageal cancers.

NCI's Program on the Origins of Gastroesophageal Cancers provides a foundation for the identification of new biomarkers and targets for further evaluation. In a preclinical study supported by the program, researchers found that a common pinworm treatment may help prevent stomach cancer development. The drug, they found, simultaneously blocks two different cellular processes that stomach cancer cells use to grow and survive. In another preclinical study, researchers showed that a prebiotic found in cranberries reshapes the gut microbiome and may prevent esophageal cancer caused by bile reflux.

Barrett's esophagus is a precancerous condition associated with chronic reflux. Ongoing NCI-supported studies are addressing the causes of Barrett's esophagus, including research on cells in the junction between the stomach and esophagus. One study is investigating the molecular profile of junction cells that may contribute to this condition. With this information, the researchers aim to identify new therapies for reducing the risk of Barrett's esophagus progression to esophageal cancer.

Since the 1990s in the United States, the rates of stomach and esophageal cancers in people younger than 50 years of age have steadily increased. NCI-supported research aims to identify clinical and molecular features that differ between gastroesophageal cancers that begin before the age of 50 versus later. In one such study, investigators found differences in demographics, symptoms, tumor location, and tumor subtypes between earlier-onset versus average-onset gastroesophageal cancers. However, the molecular features and patient outcomes were similar between the early-onset and average-onset groups.

In addition to investigating the biology of stomach and esophageal cancers, NCI-supported scientists are also studying the underlying factors contributing to varying stomach and esophageal cancer rates. For example, one project is focused on understanding the role of infection with certain variants of *H. pylori* in the development of stomach cancer in specific populations.

For people with inherited risk of stomach cancer, surgery to remove the stomach completely is a preventive option. However, the long-term consequences of this procedure were not well understood. Recently, NCI researchers found that more than 90 percent of people who were followed for more than two years after surgery had at least one chronic complication, and the complications were life-altering for about a quarter of them. The work highlights the need for better surveillance methods and more preventive therapy options for people with inherited risk of stomach cancer.

Advanced gastroesophageal cancers can be difficult to treat and commonly come back after chemoradiation and surgery. Therefore, scientists are looking for more therapy options. For example, NCI-supported researchers are studying a combination vaccine and drug therapy for esophageal cancers. Additionally, within NCI's Gastrointestinal SPORE program, researchers are investigating ways to overcome treatment resistance and develop targeted therapies for advanced stomach and esophageal cancers with certain genetic features. Other NCI-supported researchers are studying ways to predict if stomach cancer is likely to respond to treatment. Recently, researchers found that stomach tumors with lower amounts of a specific biomarker were more likely to respond to immune checkpoint inhibitor therapy. As part of the same study, the researchers also showed that people whose stomach tumors had less of the biomarker lived longer after this treatment.

Dystonia

The Committee requests an update in the fiscal year 2027 congressional justification on the implementation of the recommendations from the NINDS workshop Defining Emergent Opportunities in Dystonia Research that was held in 2018 and encourages NINDS to continue collaboration with stakeholders. (Page 103, House Report 119-271)

Action taken or to be taken

In October of 2018, the National Institute of Neurological Disorders and Stroke (NINDS) and the Dystonia Medical Research Foundation convened a workshop that engaged representatives from academic research, industry, and advocacy organizations. Research priorities identified at the workshop include increasing the genetic, phenotypic, and pathophysiological data available to researchers, improving cellular and animal models, improving clinical trial readiness, leveraging new research technologies, and targeting circuit-level dysfunction with therapeutic interventions. NINDS is planning a subsequent workshop in dystonia research to facilitate continued collaboration across the public, nonprofit, and private sectors.

The Dystonia Coalition, a large research consortium funded by NIH, enabled the collection of clinical data and blood-based biospecimens that are being used to better understand the heterogeneity of dystonia and develop personalized therapies. Using data and biospecimens collected by the Dystonia Coalition, researchers have increased our understanding of how non-localized dystonia affects different areas of the body and how age and genetics contribute to sex differences in dystonia incidence. Additionally, NIH-funded projects are building upon Dystonia Coalition data to further characterize different forms of dystonia, such as blepharospasm (a form of dystonia that affects the face) and to build tools to facilitate therapy development.

Developing new animal and cell models that reproduce human pathophysiology will help researchers improve our understanding of the molecular and cellular mechanisms of dystonia and identify new therapeutic targets. NINDS-funded researchers are studying how certain genetic changes can cause or raise the risk of dystonia. They use mouse models that carry these genetic changes, including changes in the *DYT1*, *GNAL*, and *ATP5G3* genes. They also study cells grown in the lab from skin samples donated by people with dystonia-related gene changes. Using these models, researchers are learning how these genetic changes affect how cells get rid of waste, use energy, move proteins inside the cell, and communicate with each other. They are also studying how these changes disrupt normal electrical activity in brain cells.

Several NINDS projects focus on conducting clinical research to improve diagnosis, to identify dystonia subgroups that may respond to different therapies, and to test potential therapies to reduce dystonia symptoms. NINDS funds research to clinically validate a platform that uses brain imaging and deep machine learning to improve dystonia diagnosis. Other NINDS-funded investigators are using advanced brain imaging to correlate changes in brain function with clinical symptoms. Building upon the results of a Dystonia Coalition study of blepharospasm, NINDS-funded researchers are integrating clinical data, data from wearable devices, and blood-based biomarkers to characterize blepharospasm and to identify subgroups that may respond to different therapies. NINDS-supported investigators are studying whether resistance exercise (such as strength training) can change brain circuits involved in focal cervical dystonia, a

condition that causes painful, involuntary muscle contractions in the neck that make the head twist or tilt. They use advanced brain imaging and a noninvasive technique called transcranial magnetic stimulation to measure changes in brain activity. This research may help determine whether a larger clinical trial should be conducted. Furthermore, the Brain Research Through Advancing Innovative Neurotechnologies® Initiative, or The BRAIN Initiative®, with its mission to understand brain circuits and networks, is uniquely positioned to facilitate research progress in characterizing and manipulating the abnormal circuits underlying the disorder. For example, NIH BRAIN Initiative-supported researchers are developing a new technology that combines optical imaging with recordings of brain activity to study how brain circuits work, from small groups of cells to larger networks. This could improve understanding of the brain changes involved in dystonia and help guide the development of new treatments.

The National Institute of Deafness and Communication Disorders (NIDCD) funds research to better understand, diagnose, and treat laryngeal dystonia (a neurological disorder that affects the voice). NIDCD-supported scientists are conducting research to identify neural and genetic markers that cause laryngeal dystonia. One such study identified a potential role for abnormal iron accumulation and subsequent imbalance of neural signaling in neural circuitry underlying laryngeal dystonia. Other NIDCD-funded scientists are developing new therapies and surgical interventions by identifying specific brain areas involved in regulating abnormal laryngeal muscle activity using advanced neuroimaging techniques. Another group is using a brain-computer interface paradigm to help a person learn to control their brain function and in turn regulate their dystonia. Researchers are also working to determine if deficits in auditory and sensory feedback processing contribute to laryngeal dystonia symptoms.

Early Detection, Screening, and Prevention for Liver Cancer

The Committee commends NCI for seeking input on how best to address the need to prioritize early detection, screening, and prevention sciences for primary liver cancer. Primary liver cancer has a dismal 5-year survival rate of only 22 percent, is the third most common cause of cancer death in the U.S., and unlike most cancers the rate of liver cancer mortality continues to increase. Therefore, the Committee urges NCI to use submitted expert feedback to inform a national agenda for early detection, screening, and prevention of primary pancreatic and liver cancers. The Committee commends NCI for its Early Detection of Liver Cancer consortia initiatives as a means of fostering progress and collaboration. The Committee encourages NCI to continue such programs as well as program projects, cooperative research, and broad agency announcements, and other mechanisms. The Committee requests an update on this effort in the fiscal year 2027 congressional justification. (Page 94, House Report 119-271)

Action taken or to be taken

NCI-supported research aims to address critical challenges in addressing liver cancer, including improving screening and early detection and using tailored approaches for populations most affected by the disease.

NCI utilizes a variety of scientific planning approaches and regularly convenes experts from across the cancer research community to identify research opportunities across the cancer continuum, including focusing on opportunities to advance progress in areas relevant to many cancer types, such as immunotherapy, or against specific cancer types. For example, NCI convened a scientific workshop in June 2019 to understand the mechanisms and epidemiology of viral and non-viral causes of liver fibrosis and the progression to liver cancer; identify opportunities for interventions that could combine basic research with translational research; and highlight funding opportunities, clinical trials, and other NCI resources that may be useful to the liver cancer community. Workshops like this complement NCI's broader strategic planning approach that spans cancer types and cross-cutting research opportunities.

Many of NCI's ongoing investments in liver cancer research align with these goals, including the Early Detection of Liver Cancer consortium, which was launched in 2017 and renewed in 2022. The consortium, also known as the Translational Liver Cancer (TLC) Consortium, is conducting studies to better stratify patients at risk of developing liver cancer, to improve the surveillance of liver cancer in high-risk populations, and to increase the fraction of liver cancer detected at an early stage. Since 2017, seven Translational Research Centers have been funded, and five are still active.[54] Award focus areas include hepatocellular carcinoma (HCC) risk stratification and early detection in cirrhosis (liver scarring) populations, development of novel methods for distinguishing cancerous from non-cancerous liver nodules, identification of new candidate predictive biomarkers, and use of liquid biopsy and magnetic resonance imaging (MRI) to improve early HCC detection.

Researchers in the TLC Consortium have made important progress. One study developed an assay to stratify HCC risk in liver cirrhosis patients. Researchers focused on a specific pathway that is known to have a role in liver disease and cancer and used machine learning to identify 31

[54] prevention.cancer.gov/major-programs/translational-liver-cancer-tlc-consortium

biomarkers in a patient cohort that together could differentiate HCC from non-HCC. They also identified two additional biomarkers that could indicate development of HCC before it can be physically detected, offering another approach for early detection. In another study, TLC researchers developed a new predictive score that is more sensitive at identifying new and early-stage HCC than pre-existing algorithms.[55] Additionally, a third study found that the HCC incidence threshold for surveillance in individuals with cured hepatitis C could be lowered to account for increased HCC rates. This would allow many more patients to be surveilled and lead to earlier HCC detection, could add thousands of additional life-years for this patient group, and would be cost effective.

The Liver Cancer Program within NCI's intramural research program is a multidisciplinary network that collaborates with extramural investigators to develop diverse approaches to the prevention, early detection, diagnosis, and treatment of liver cancer. For example, using data from liver cancer patients treated with immunotherapy, researchers developed a tool called CASCADE that models the combined dynamics of tumor cells and the tumor microenvironment as they change over time in response to treatment. Tumors were also classified into one of four different states, which were correlated with clinical outcomes. In the future, this framework could potentially be used for treatment decisions and monitoring tumor evolution after treatment.

NCI also funds three liver cancer Specialized Programs of Research Excellence (SPOREs)[56] that focus on new approaches to liver cancer diagnosis and therapy as well as the development of biomarkers for postoperative recurrence of the disease. The liver SPOREs additionally aim to reduce deaths from liver cancer through research that explores novel early intervention and prevention strategies. SPORE researchers have identified candidate biomarkers in the blood for early detection of HCC in cirrhosis patients undergoing surveillance. Using this biomarker panel may improve detection of early-stage liver cancer in this patient population, potentially improving outcomes for these individuals.

NCI supports clinical studies that cover multiple aspects of liver cancer, from screening and prevention through treatment. A few of the Phase 0/I/II Cancer Prevention Clinical Trials Program studies are focused on preventing liver cirrhosis from leading to liver cancer, including one testing a cholesterol-lowering medication (statin) to determine if it can lower the risk of developing HCC in patients with advanced cirrhosis or liver fibroids.[57] Another clinical study is comparing an abbreviated MRI to ultrasound for screening of liver cancer, with an aim to have both a cost-effective and more sensitive surveillance tool.[58] Additionally, the HCC Early Detection Strategy (HEDS) study,[59] a multicenter initiative part of NCI's Early Detection Research Network (EDRN), is a follow-up to a previous EDRN study looking at biomarkers for detecting HCC. HEDS will longitudinally collect biospecimens and clinical data from patients who are at high-risk for HCC and examine the effectiveness of biomarkers in preclinical HCC detection and prognosis. With over 100,000 biospecimens,[60] this is the largest biorepository for high-risk HCC patients in the United States.

[55] pubmed.ncbi.nlm.nih.gov/38899967/
[56] dctd.cancer.gov/research/spores/focus-area/liver
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Epitranscriptomics Database Standards

The Committee recognizes the recent release of the National Academies of Sciences, Engineering, and Medicine [NASEM] report "Charting a Future for Sequencing RNA and Its Modifications" in March 2024. The Committee notes the report's recommendation that clear and consistent standards for data and databases need to be established to facilitate data access and sharing. Given that NLM's National Center for Biotechnology Information [NCBI] collaborates with the scientific community to support development of standards for databases and biological nomenclature, among other responsibilities, the Committee urges NCBI to support the establishment of data and database standards for epitranscriptomics in collaboration with the scientific community consistent with the NASEM report recommendation, and include an update on this effort in the fiscal year 2027 CJ. (Page 144, Senate Report 119-55)

Action taken or to be taken

The National Library of Medicine's (NLM) National Center for Biotechnology Information (NCBI) advances science and health by providing access to biomedical information, including genetic sequence data. NLM-NCBI actively participates and collaborates in scientific community-led efforts to develop consensus-based standards that are relevant to the data repositories and services that NLM manages. As part of its participation, NLM-NCBI works to ensure developed standards meet a need identified by the scientific community and are widely adopted prior to incorporating into the databases it manages.

To advance establishment of data and database standards for epitranscriptomics in collaboration with the scientific community, NLM-NCBI is planning a symposium in collaboration with relevant NIH Institutes, Centers, and Offices. The symposium will focus on data and database models and standards needs for epitranscriptomics and could inform future planning to expand NLM capacity to manage, provide access to, and increase technical expertise on epitranscriptomic data and related standards.

NLM-NCBI has engaged in recent and ongoing genetic sequence data development activities that have advanced consistency of these data and facilitated their submission to and retrieval from relevant repositories. For example, NLM-NCBI collaborated with the Sequencing for Public Health Emergency Response, Epidemiology and Surveillance (SPHERES) Consortium and the Public Health Alliance for Genomic Epidemiology (PHA4GE) coalition to develop standards that describe biological samples and sequencing methodology for pathogens. NLM-NCBI also implemented processes to ensure that data submitted to NLM-NCBI managed repositories adhered to existing standards, resulting in improved data quality and retrieval. Additionally, NLM-NCBI has participated in development of data standards for file types used to submit descriptions of nucleic acid sequence features, for naming proteins, and for the terms used to describe biological sequence data.

NLM-NCBI has also participated in standards development for databases housing nucleic acid sequencing data as a member of the International Nucleotide Sequence Database Collaboration (INSDC). As part of this work NLM-NCBI has contributed to critical standards for many elements of database management currently in use, including data models, data quality and integrity, data exchange, backup and recovery, and replication and synchronization.

Focused Ultrasound

The Committee understands focused ultrasound is a noninvasive, non-pharmacological, safe, and cost-effective alternative or complement to conventional surgery, radiation therapy, or drug-based treatments. It is a promising intervention for patients suffering from serious conditions like Parkinson's disease, essential tremor, and prostate cancer, as well as for conditions and diseases affecting women such as breast cancer, gynecological cancers, uterine fibroids, and endometriosis, and it is being explored for many other indications. The Committee encourages NIH to continue engaging with the focused ultrasound stakeholder community, explore existing focused ultrasound research groups, and ensure coordinated cross-NIH research. The Committee directs NIH to provide an update in the fiscal year 2027 congressional justification, including an NIH-wide overview of grants awarded to support focused ultrasound research and research opportunities for advancing increased focused ultrasound research across the institutes and centers. The Committee also encourages the development and implementation of effective approaches to integrate patient perspectives into research, which could include the establishment of a Focused Ultrasound Patient Engagement Advisory Board. (Page 129, House Report 119-271)

Action taken or to be taken

Focused Ultrasound (FUS) is a versatile, noninvasive therapeutic technology with the potential to treat serious conditions that span the mission areas of multiple NIH Institutes, Centers, and Offices (ICOs). NIH remains committed to supporting meritorious research into FUS with the potential to improve lives and effectively treat disease. Below are a few examples of the research efforts across NIH, but this is not meant to be an exhaustive list.

Many NIH ICOs are supporting alternative treatments for chronic pain using FUS. The National Institute of Neurological Disorders and Stroke (NINDS) and the National Cancer Institute (NCI) are supporting researchers who are using noninvasive FUS to decrease pain sensitivity for chronic conditions like sickle cell disease. This type of work has also been supported by the National Institute for Biomedical Imaging and Bioengineering (NIBIB) and the National Heart, Lung, and Blood Institute (NHLBI). NINDS is also supporting a project that uses FUS to release ketamine in a very specific brain region involved in chronic pain. Instead of giving ketamine throughout the whole body, ultrasound activates the drug only where it is needed and could provide another non-opioid treatment for chronic pain.

NIBIB and NCI are currently supporting research to accelerate the diagnosis of glioblastoma, an aggressive type of brain tumor, by developing new liquid biopsy techniques that use FUS to open the blood-brain barrier and allow a small number of tumor cells to enter the bloodstream for detection. NCI-funded researchers are also developing a new type of breast ultrasound scanner that can measure changes in tumors during chemotherapy. The goal is to determine early on whether the treatment is working. Instead of waiting months to see if a tumor shrinks, doctors could use this advanced ultrasound imaging tool to detect changes in tumor structure much sooner.

NHLBI-funded researchers are helping doctors improve diagnosis and treatment of life-threatening blood clots in cardiovascular disease. The project uses tiny droplets that respond to

ultrasound waves to help better detect and measure blood clots (thrombi). This technology aims to identify how stiff or mature a clot is without the need for surgery to inform treatment. In a different project, researchers supported by NHLBI are developing an ultrasound-guided laser device that can open blocked coronary arteries. Current treatments are complex and come at a high risk. This device has the potential to improve precision and safety of the treatment and restore blood flow with severe coronary disease. Furthermore, the Advanced Technologies and Surgery Branch in the Division of Cardiovascular Sciences is funding two projects to develop treatments for various types of abnormal heart rhythms and tissue regeneration. One long-term goal of this work is to develop implantable biomaterials for tissue regeneration using FUS.

The National Institute of Mental Health (NIMH) is committed to developing and optimizing novel mental health interventions, including noninvasive neuromodulation approaches like FUS.[61] NIMH currently supports research which could lead to more personalized and effective treatments for severe depression by directly targeting the brain circuits involved in emotional processing, and to develop and test the effectiveness of novel FUS approaches for a wide range of mental and behavioral disorders, including substance use disorders, depression, anxiety disorders, and obsessive compulsive disorder.

NIH also supports FUS research through agency-wide programs, such as the NIH BRAIN Initiative, that contributes to the missions of multiple ICs. Since its inception, the BRAIN Initiative has supported about 50 projects in FUS research, including tools and technologies that are paving the way for a new generation of safer treatments for Alzheimer's disease, major depression, obsessive compulsive disorder, substance use disorder, Parkinson's disease, retinal degenerative diseases, stroke, and others. For example, BRAIN-funded researchers have utilized a device using multifocal ultrasound to treat major depression and have also demonstrated the safety of low-intensity FUS as a method to open the blood-brain barrier to precisely deliver drugs and genomic therapies such as gene editing to specific brain regions.

[61] nimh.nih.gov/sites/default/files/documents/about/strategic-planning-reports/nimh-strategic-plan-for-research-2024-update.pdf

Food as Medicine and Office of Nutrition Research

Senate Language

The Committee supports ONR's plan to establish Centers of Excellence in Food Is Medicine to advance research, education, patient care, and community outreach on the role of nutrition in preventing and treating diet-related chronic diseases. The Committee recognizes that food is medicine services, such as medically tailored meals and produce prescriptions, may improve health outcomes, reduce healthcare costs, and address health disparities among vulnerable populations. The Committee encourages NIH to collaborate with existing Food Is Medicine stakeholders in academia, healthcare, and the nonprofit sector to leverage their expertise and experience in this field. The Committee urges NIH to support research on the efficacy of 'food as medicine' strategies to treat various diseases and conditions, including Crohn's disease and ulcerative colitis. The Committee urges NIH to provide an update in the fiscal year 2027 CJ on the agency's plans to comprehensively invest in food is medicine research, including through Food is Medicine Centers of Excellence and collaborations with existing external stakeholders. (Page 120, Senate Report 119-55)

House Language

The Committee understands the potential for food as medicine interventions such as medically tailored meals, medically tailored groceries, and produce prescriptions, to improve health outcomes and treat diet-related chronic diseases. The Committee encourages NIH to provide an update in the fiscal year 2027 congressional justification on its food as medicine research, including consideration of Food as Medicine Centers of Excellence and collaborations with the scientific community. (Page 120, House Report 119-271)

Action taken or to be taken

Food is Medicine (FIM) is a paradigm that integrates nutrition and health care through services such as medically tailored meals and groceries, produce prescriptions, and teaching kitchens tethered to nutrition or lifestyle medicine programs and services within communities. FIM has gained considerable traction across the public and private sectors in recent years as a viable solution for addressing diet-related chronic diseases, and NIH is committed to supporting rigorous research on FIM interventions and services, and their effects on promoting health and preventing disease.

In 2023, NIH released a request for information in collaboration with other federal agencies to solicit input from the public on challenges, research gaps, and opportunities to advance FIM research. This helped identify gaps related to FIM intervention and implementation effectiveness, including how to scale and sustain effective initiatives. It also outlined areas for future research.[62] NIH has used this information to build a successful FIM research portfolio working to fill these gaps.

[62] odphp.health.gov/sites/default/files/2025-02/FoodIsMedicine-RFI%20Whitepaper%20FINAL_508%202%204%202025_0.pdf

NIH-funded research focused on FIM has increased in recent years, from 13 projects in FY 2022 ($6.9 million) to 20 projects in FY 2025 ($17.8 million). Ongoing research includes projects to evaluate FIM interventions and their effectiveness on a variety of different health outcomes and diseases, including inflammatory bowel disease, colorectal cancer, hypertension, kidney disease, diabetes, and obesity. The FIM interventions being tested range from chronic disease prevention to treatment and reflect the critical links between food security and health, and how these can be integrated into health care delivery. NIH-funded projects involve studies on the health impacts and implementation of various interventions along the FIM spectrum to support future incorporation of effective interventions into communities and health care systems.

The Office of Nutrition Research (ONR) leads efforts across NIH and the federal government, as well as with external partners, to coordinate and support actionable and solution-focused research that the American public can trust to guide what and how they eat. A major goal for ONR is to improve the rigor, reliability, and reproducibility of nutritional assessment, attribution, and interventions, which are necessary to optimize FIM and Precision Nutrition efforts. ONR also leads NIH's participation in the Department of Health and Human Services (HHS) FIM Federal Agencies Working Group. As FIM efforts across the public and private sector grow, ONR will continue to support agency-wide collaboration to facilitate actionable research findings. NIH's continued investment in FIM studies will build the evidence base to inform the development and implementation of effective FIM strategies to advance disease prevention and treatment.

Functional Precision Medicine

The Committee has a long history of working to address refractory cancers and the lack of treatment options currently available when standard of care has been exhausted. The Committee is encouraged by the promise of functional precision medicine approaches to identify individualized treatment options more rapidly for hard-to-treat cancers, especially with minority populations. Recent data showing the clinical utility of combining patient-specific drug sensitivity testing and genomic profiling to treat refractory cancers has proven to be potentially lifesaving. The Committee supports efforts to establish a unique clinical program across institutes that could further validate the clinical utility and accessibility of functional precision drug testing approaches, to guide therapeutic interventions and accelerate collaboration across research and clinical institutions in the nation. The Committee requests an update on this topic in the fiscal year 2027 congressional justification. (Page 94, House Report 119-271)

Action taken or to be taken

Decades of NCI-supported research to understand the biology of cancer have led to the development of precision medicine, *i.e.*, the use of therapies that target specific genetic alterations identified within an individual patient's cancer. NCI-supported research has also helped develop the technologies and infrastructure needed to rapidly and affordably sequence a person's cancer to determine their personalized course of treatment.

Despite the promise of precision medicine, many patients will not benefit from this approach as the genetic mutations identified in their individual tumors do not have an actionable course of treatment. The NCI Molecular Analysis for Therapy Choice (MATCH) trial was the first-of-its-kind, large precision medicine cancer treatment clinical trial that sought to determine if treating cancer based on specific genetic changes in a person's tumor is effective, no matter the cancer type.[63] Launched in 2015, MATCH was an ambitious undertaking where people with advanced cancer had genomic sequencing and other tests done to determine if their tumors had genetic changes that matched one of the treatments available in the trial. While results from the MATCH trial showed that people with advanced cancer may benefit from genomic sequencing to help plan their treatment, and that using targeted therapies in combination should be the next important component of precision medicine, many patients screened were not able to participate in the trial. Of around 6,000 patients whose cancers were genomically screened, the treatment assignment rate was 17.8 percent; patients were excluded if it was already known that the drug was either active or inactive in that patient's cancer type. The proportion of patients with an actionable mutation (one for which any targeted therapy was available within NCI-MATCH or outside the trial) was 37.6 percent, indicating that many patients with advanced cancer may not have a current candidate treatment revealed by genomic profiling of their tumor.

Functional precision medicine (FPM) serves to complement precision medicine when possible or offer an alternative means to identifying a personalized cancer treatment. The aim of FPM is to test a panel of therapeutics in *ex vivo* assays, where individual patient tumor samples are grown in the lab, to determine which treatments initiate a robust response. This can speed up the time it takes for patients to receive the most appropriate drug for their cancer. NCI is funding research into the development of reliable FPM assays and has multiple on-going FPM clinical trials and

[63] cancer.gov/research/infrastructure/clinical-trials/featured/nci-match

research studies. For example, an NCI-funded study is developing a novel tumor-chip device that recreates a patient's tumor and its microenvironment and can then be used to characterize tumor response to a variety of treatment options. This *ex vivo* approach where patient cells are maintained outside the body is being tested for pancreatic cancer, but has the potential to inform treatment options for patients with other solid tumor types.

Before FPM can be implemented in the clinic, the required assays and technology need to be developed and tested. NCI is supporting a number of studies examining different functional precision medicine approaches to patient treatment. For example, one currently recruiting clinical trial is investigating whether it is possible to predict the sensitivity of osteosarcoma, a type of bone cancer, to different chemotherapy agents using lab-grown tissue cultures from routine patient biopsies or surgeries.[64] Another NCI-funded project is developing a new microscopy approach for 3-dimensional (3D) tissue cultures that has the potential to test the sensitivity of patient tumor cells to a variety of cancer drugs to better and more quickly inform treatment strategies. Another study is developing a platform that can help clinicians quickly decide which of two standard treatment options is more effective for melanoma patients with a specific genetic mutation by using cells from patient biopsies; either treatment option has the potential to cure most patients, but neither option works for all patients and this approach would potentially predict which treatment patients could have a response to or develop resistance to, addressing a critical question in melanoma care. A Small Business Innovation Research (SBIR)-funded project aims to create a benchtop instrument that can quickly create micro-organoids that act as avatars of patient tumors and can be used to test patient response to treatments.

In 2025, NIH announced the establishment of the Standardized Organoid Modeling (SOM) Center, to be housed at the Frederick National Laboratory for Cancer Research. This will be a national resource dedicated to using cutting-edge technologies to develop standardized organoid-based new approach methodologies (NAMs) that deliver robust, reproducible, and patient-centered research findings. The SOM Center will develop organoids using technologies including artificial intelligence, robotics, and a variety of human cell sources to establish standardized organoid models that can be used widely by researchers and accepted by regulators, accelerating scientific discoveries and decisions. Patient-derived organoids could be used for applications like functional precision medicine. This initiative is led by NIH with collaboration including NCI, the National Institute of Allergy and Infectious Diseases (NIAID), the National Human Genome Research Institute (NHGRI), and the National Center for Advancing Translational Sciences (NCATS), among others.[65]

[64] clinicaltrials.gov/study/NCT06064682
[65] frederick.cancer.gov/news/nih-establishes-nations-first-dedicated-organoid-development-center-reduce

Gene Expression

The Committee notes recent precision medicine developments focused on commercialized blood/biopsy tests that provide clinical decision support by analyzing gene expression, for example RNA, to determine disease status, identify abnormalities in drug targets, and predict drug options. The benefits of this technology include the ability to stretch clinical trial resources efficiently to address patient needs. The Committee acknowledges that if properly implemented during the drug development process, this technology could increase the likelihood that a drug will be approved by the FDA and that, after approval, it will reach patients who desperately need the drug to improve their condition. The Committee directs NIH to provide an update in the fiscal year 2027 congressional justification on efforts and progress made to implement clinical decision support that incorporates genomic information. (Page 120, House Report 119-271)

Action taken or to be taken

National Institutes of Health (NIH) is committed to being at the forefront of genomics, especially through the work of the National Human Genome Research Institute (NHGRI), which continues to work to promote the widespread adoption of genomics in mainstream medical practices and clinical decision-making. The increased application of genomic analysis in medicine has contributed to significant progress in improving disease diagnosis, developing target-specific drugs, and ensuring that drugs are used to treat the appropriate patient population.

NHGRI has pioneered and funded research into technical advances that have reduced the cost of sequencing the human genome from close to $1 billion in 2003 when the human genome was first sequenced down to approximately $500 in 2023 for clinical sequencing.[66] More affordable genetic and genomic data generation has made it easier to develop new precision medicine technologies and to identify drug candidates. NIH awards have helped build the genomic technology and infrastructure to capture and sequence single cells. NIH-supported clinical decision support tools are streamlining the analysis of genomic data to make cost-effective predictions for drug options.

Advanced genomic technologies can now sequence all RNA in a sample and determine which of the 22,000 human genes are being actively used by a tissue or cell. This method, called RNAseq, helps clinicians diagnose disease and provide prognostic information on how patients respond to drug treatments. Researchers are also using other types of sequencing to study complicated interactions between genes and how they are regulated. This allows regulatory elements to be visualized, including microRNAs that are not detectable by standard RNAseq. In addition, the NIH's Common Fund in the Office of the Director plans to launch an RNomics Program to build the tools and technologies needed to study the entire set of RNA molecules in the human body.

Research into human genetics has revealed that many genes have variants that affect their function. The field of pharmacogenomics studies the subset of genes and gene variants that affects how individuals process medications in the body. NHGRI funds the Pharmacogenomics Knowledge Base (PharmGKB), an interactive tool for researchers investigating how genetic variation affects drug response. This resource informed a collaborative study with the United

[66] wipo.int/en/web/global-health/w/news/2025/measuring-genome-sequencing-costs-and-its-health-impact

Kingdom that reduced adverse events related to drug dose and toxicity, demonstrating a benefit to implementing pharmacogenomics into routine primary care.

One program among several across NIH that uses genetic and gene expression data to diagnose patients with long standing, unexplained conditions is the Undiagnosed Diseases Network (UDN). Led by the National Institute of Neurological Disorders and Stroke (NINDS), this trans-NIH program is a nationwide consortium of clinicians and researchers that uses team science to diagnose difficult-to-diagnose diseases. With support from 17 NIH institutes and centers, the UDN remains at the forefront of integrating advanced genomic and transcriptomic tools (e.g., optical genome mapping, long read sequencing, and RNA-seq) into the diagnostic process for undiagnosed diseases. These approaches often provide the key functional evidence needed to reclassify variants of uncertain significance, establish or support new gene-disease relationships, and clarify disease mechanisms. Depending on tissue analyzed and patient's clinical presentation, RNAseq has improved the UDN's detection rates up to 36 percent. In collaboration with the UDN, one clinical site recently developed and clinically validated a diagnostic RNA-seq test for individuals with suspected genetic disorders, bringing the field closer to widespread clinical use of RNA-seq for diagnosing rare diseases caused by a mutation in a single gene.

Global Cohort for Alzheimer's Treatment

More than 57 million people worldwide are living with dementia, including more than 7.2 million Americans with Alzheimer's disease. The disease does not affect everyone equally: in the United States two-thirds of people living with Alzheimer's disease are women. Black people are twice as likely and Latino people are one and one-half times as likely to develop Alzheimer's than Caucasian people. It is believed that there are disparities in Alzheimer's disease both between and within nations around the world, including between men and women and members of different ethnic groups. In order to ensure that treatments work for the greatest number of people possible, the Committee urges the National Institutes of Health to provide an update in the fiscal year 2027 Congressional Justification on activities related to global cohort studies or networks with high-quality data on a well-characterized, diverse population, readily available to researchers. The Committee expects that one potential outcome for such a cohort or network of global cohorts would be an increase discovery of targets for drug development and associated biomarkers. (Page 158, Senate Report 119-55)

Action taken or to be taken

The National Institute on Aging (NIA) recognizes the critical importance of engaging global populations in biomedical, social, behavioral, and clinical research on Alzheimer's disease and related dementias (AD/ADRD). NIA-funded global cohort studies and networks play a key role in advancing research on Alzheimer's and related dementias. NIA will continue to advance key research efforts that accelerate both the identification of new therapeutic targets and biomarkers and the development of prevention and treatment approaches that work for all people.

Genetic factors

To better understand the causes of dementia across various ancestry groups, NIA leads a global effort to identify and describe the full range of genetic contributions to AD/ADRD. The Alzheimer's Disease Sequencing Project (ADSP) and the ADSP Diverse Population Initiative Follow Up Study (ADSP FUS 2.0) aim to define disease subtypes and genetic risk factors, and how they differ across populations and ancestries. Ongoing ADSP studies are collecting samples from the United States, Africa, Mexico, South America, Australia, and Asia, and are actively recruiting new cohorts of diverse ancestries and genetic backgrounds. As of December 2025, ADSP has made 58,507 whole-genome sequences and 20,503 whole-exome sequences available to researchers.[67] Data from these projects show that genetic risk and protective factors can differ across populations. This research follows the principles NIH established in its August 2025 guidance on research collaborations abroad.[68]

Insights from past and future ADSP studies may help identify new targets for drug discovery and biomarker development, as well as potential novel avenues for dementia prevention and treatment in different populations. Collectively, this work helps establish the foundation for precision medicine approaches in AD/ADRD.

[67] adsp.niagads.org/data/data-summary/

[68] nih.gov/about-nih/nih-director/statements/maximizing-safeguarding-nihs-investment-foreign-collaborations

Social and environmental factors

As with genetics, the social and environmental factors that contribute to AD/ADRD can differ across varying global contexts. To better understand how these factors impact health, NIA supports the long-running Health and Retirement Study (HRS) and associated partner studies that collect longitudinal multi-disciplinary data on nationally representative cohorts of adults over the age of 50. To date, HRS studies have been conducted in over 40 countries. The Harmonized Cognitive Assessment Protocol (HCAP), an HRS sub-study, helps measure and understand dementia risk within ongoing longitudinal studies of aging around the world by harmonizing methods and content to facilitate cross-national comparisons that help identify the factors driving differences in health and aging.

Further, NIA facilitates collaboration between global longitudinal studies of aging and dementia through support for the HCAP Network. This network develops international data resources for studying AD/ADRD and expands research opportunities to explore cross-country variation in key life course factors (e.g., educational attainment, diet) that affect cognitive function and dementia risk. Currently, there are 16 active studies across the globe participating in Network activities. The Network is also advising nascent studies in Afghanistan, Brazil, Ghana, Malawi, Malaysia, the Philippines, and Vietnam. NIA recently renewed support for the HCAP Network.

NIH is committed to ensuring that research, data, and other resources generated using NIH funds are widely available to the research community and other strategic partners. HRS and the HCAP Network are designed to facilitate comparisons across studies by using standardized tools and data collection approaches. The data and tools developed from HRS and HCAP are shared widely through a digital library called the Gateway to Global Aging Data. This centralized resource helps researchers identify potential targets for the development of novel biomarkers and new prevention and treatment strategies, including for AD/ADRD.

Emerging studies and efforts to build global research capacity

While the ADSP, HRS, and HCAP have generated significant advances, additional research is needed to further our understanding of how different factors affect the trajectory of AD/ADRD around the world. In addition to expanding ongoing initiatives, NIA is advancing new research by supporting efforts to harmonize and enable comparison of data collected across studies. NIA also supports researchers interested in leveraging existing data by developing new resources, including short courses to train researchers to analyze complex, longitudinal data sets, such as those generated through HRS and HCAP studies. NIA is committed to ensuring that the global research community has sufficient resources, training, and support to conduct high quality dementia research.

Indoor Air

The Committee urges NIEHS to continue researching indoor pollutants, including from combustion indoors, to better understand the indoor air landscape and its impacts. The Committee requests an update on these activities in the fiscal year 2027 CJ. (Page 133, Senate Report 119-55)

Action taken or to be taken

Exposure to indoor air pollution is a significant health hazard and poses risks across the life span. NIEHS continues to support research investigating the human health impacts of exposure to indoor air pollutants, including efforts to understand mechanisms of exposure and the effectiveness of interventions. Indoor air pollution can arise from a wide range of sources including naturally occurring radon in soil, smoke from burning of biomass such as wood stove pellets, chemicals used in fabric fireproofing, natural gas fuels, chemicals in cleaning products, and the mixing of outdoor pollutants with indoor air. Scientists continue to increase our understanding of long-known health effects of indoor air pollution including asthma, chronic obstructive pulmonary disease (COPD), lung cancer, and cardiovascular diseases, as well as identifying potential effects of new sources of concern including micro and nanoplastics (MNPs) and vaporized chemicals from household water supplies.

Recent research suggests that the threat of indoor air pollution may begin before a child is born. NIEHS-funded scientists are demonstrating that MNPs that result from burning of plastic can be breathed in by the mother and cross the placenta to the fetus. These researchers are using a model of maternal inhalation to determine how fetal exposure to MNPs modifies blood vessel development, potentially leading to cardiovascular effects later in life. Another source of indoor air pollution, wood pellets, may pose a threat to the health of children in communities where they are burned in stoves for cooking and heating. New studies are aimed at assessing the health impacts of exposure to burned biomass in combination with addressing external factors, including societal influences, such as stress. Another NIEHS-funded researcher is investigating how exposures to environmental agents within the home, such as microbial products and air pollutants, influence peanut allergy development. This research aims to further the understanding of the role of the indoor exposome in food allergy development and help guide environmental remediation strategies aimed at reducing food allergy risk in children.

NIEHS-funded researchers are also looking at interventions, such as use of high efficiency particulate air (HEPA) filters, to help improve indoor air quality and potentially help improve health outcomes. In one NIEHS-funded study, the use of in-home HEPA purifiers resulted in clinically important reductions in systolic blood pressure for people with elevated systolic blood pressure. Another recent NIEHS-funded study found that air cleaner interventions effectively reduced indoor air pollution but did not decrease respiratory symptoms in children with asthma. This study suggests that efforts to improve indoor air quality must be part of an integrated treatment plan for children with asthma to help reduce symptoms.

An NIEHS-funded study is investigating whether the home indoor air environment of COPD patients may influence the need for repeat hospitalization risk, and whether modifications in the home environment may improve this risk. NIEHS-funded researchers are studying whether

exposure to indoor air pollution accelerates atherosclerosis and development of coronary events, such as heart attacks. The study aims to use the knowledge it gains to generate new knowledge about modifiable environmental factors to help develop effective prevention methods. Recent media stories of natural gas stoves in some cities have focused the public's attention on the potential for harmful respiratory and cognitive effects from indoor exposure to nitrogen oxides and carbon monoxide. NIEHS-supported studies are investigating how breathing indoor chemicals such as benzene, carbon dioxide, and nitrogen dioxide affects the body's exposure at the cellular and biochemical level. This research may also help scientists to identify the mechanisms through which these pollutants affect health and the implications for public health.

Institutional Development Award

Senate Language

The Committee recognizes the importance of the IDeA program in enhancing geographical representation across NIH's research portfolio and provides continued funding for the program. In order to ensure that research investments from IDeA programs provide maximum benefit, the Committee urges NIH to examine ways to increase NIH IDeA State participation in major grant programs across NIH's portfolio, including those that support biomedical research facilities, instrumentation, and training. The Committee notes the Biomedical Research Workforce Working Group report and supports growing the IDeA funding level to its minimum recommended level, which will allow NIH to take advantage of the full diversity of the nation's assets: diversity of individuals, diversity of institutions, and diversity of geography. Currently eligible States have historically had low aggregate success rates for grant applications to NIH and rely on the IDeA program to help build a research infrastructure and enhance research capacity at institutions in those States. Finally, the Committee opposes any efforts within NIH to change eligibility for the IDeA program to a system that would be based on States' populations. (Page 128, Senate Report 119-55)

House Language

The Committee provides $455,956,000 for IDeA, which is $25,000,000 above the fiscal year 2024 enacted level. The IDeA program increases our nation's biomedical research capability by improving research capacity in States that have historically had lower levels of NIH biomedical research funding. IDeA supports competitive basic, clinical, and translational research, faculty development, and infrastructure improvements. The IDeA program aims to strengthen States' and institutions' abilities to support biomedical research, enhance the competitiveness of investigators in securing research funding, and enable clinical and translational research that addresses the needs of medically underserved communities. The Committee does not support changes to eligibility for the IDeA program to any system that would deviate from the original goal of supporting more NIH research in States with the lowest levels of NIH funding. The Committee urges NIH to take steps to ensure robust participation by institutions located throughout a State when awarding grants as part of the IDeA program and requests an update on this effort in the fiscal year 2027 congressional justification. (Page 110, House Report 119-271)

Action taken or to be taken

The Congressionally-mandated IDeA program broadens the geographic distribution of NIH funding by supporting biomedical research in 23 states and Puerto Rico. The program is comprised of four major initiatives: (1) Centers of Biomedical Research Excellence (COBRE), (2) IDeA Networks of Biomedical Research Excellence (INBRE), (3) the IDeA Clinical and Translational Research (CTR) programs, and (4) IDeA co-funding, which aims to increase the pool of IDeA-state investigators supported by all NIH institutes and centers.

Efforts to ensure statewide participation in the IDeA program cut across all four of these components, but INBRE is particularly relevant. INBRE builds statewide research networks to expand research capacity and strengthen the biomedical research workforce within a state. This

program requires recipients to create and administer a statewide research network with research intensive institution(s) as a hub and primarily undergraduate institutions (PUIs) as spokes to develop faculty expertise, increase student participation in research, and enhance institutional research infrastructure. Currently, there are 24 INBREs, with one in each IDeA-eligible state or U.S. territory. In 2024, the National Institute of General Medical Sciences (NIGMS) completed an evaluation of the INBRE program led by a working group of the National Advisory General Medical Sciences Council. The evaluation found that NIGMS' long-standing commitment to INBREs has been transformative for the institutional research ecosystem, especially at primarily undergraduate institutions, as evidenced by increasing numbers of IDeA-state faculty competing successfully for independent NIH research funding.[69]

As an illustrative example of INBRE's impact, a recent analysis found that INBRE participation by undergraduate institutions across the state of Maine has led to more than 2,600 students receiving hands-on biomedical research experiences. These experiences have contributed to a 65 percent increase in science majors at participating colleges over the past five years, with 90 percent of Maine INBRE graduates pursuing advanced degrees/careers in scientific/medical fields.[70]

In addition to continuing support for INBRE, NIGMS has created tracks within its COBRE and CTR programs that can serve as an on-ramp for less-resourced institutions to build research capacity in specific scientific areas. COBREs focus on strengthening institutional biomedical research capacity in a scientific area of strategic importance to the institution through awards made in two or three sequential phases. While institutions that have some existing research capacity can apply directly for the COBRE Expansion/Sustainability Phases (COBRE E/S), less-resourced institutions without capacity in the scientific area can apply to the COBRE Development Phase (COBRE-D). COBRE-D is intended to support institutional development that is focused on the recruitment and mentoring of early-career investigators by supplementing start-up packages for new hires, establishing research facilities, and enhancing research administration support services. Unlike INBRE or Clinical and Translational Research Network (CTR-N) awards, which both focus on building a statewide network and are thus limited to a maximum of one per state, any number of institutions within an IDeA state may apply for COBRE-D awards.

Similarly, to ensure greater participation by IDeA-state institutions, NIGMS is also broadening the CTR program. This program advances clinical and translational research that addresses IDeA-state specific health concerns such as rural health. While CTR-N awards will continue to support statewide or multi-state networks of health research, the more recently launched CTR-Development (CTR-D) track has allowed additional institutions in those states to build clinical and translational research capacity. The purpose of CTR-D is to assist IDeA-state institutions that currently have limited clinical research capacity by building a foundation of clinical and translational research expertise and infrastructure to conduct research on diseases and health challenges faced by the communities that they serve. As with CTR-Ns, CTR-D recipients are encouraged to work with community health clinics, such as those in a Practice-Based Research Network (PBRN), with the goal of engaging both clinical staff and patients in meaningful

[69] nigms.nih.gov/sites/nigms/files/migrated/INBRE-WG-report-slides.pdf
[70] maineinbre.org/maine-inbre-impact/

research. By establishing or working with entities like PBRNs, CTRs can increase their ability to reach study participants across the state and bring the benefits of clinical research to community clinics in rural areas.

Lung Health

The Committee is concerned about the disproportionate impact of lung conditions, such as asthma, COPD, and lung cancer on populations experiencing health disparities, and encourages NHLBI to work with NIMHD to advance research in this area. The Committee requests an update from both NHLBI and NIMHD in the fiscal year 2027 CJ. (Page 113, Senate Report 119-55)

Action taken or to be taken

The National Heart, Lung, and Blood Institute (NHLBI) and the National Institute on Minority Health and Health Disparities (NIMHD) have long-standing commitments to improve lung health for all Americans by advancing our understanding of lung health risks and outcomes among different groups of people and identifying effective interventions to improve lung health. Lung diseases, including several types of chronic respiratory diseases or disorders like asthma, lung cancer, chronic obstructive pulmonary disease (COPD), and chronic bronchitis, are common medical conditions in the United States and disproportionately impact some populations.

NHLBI is funding a range of research approaches that test the effectiveness of different community-based programs to improve lung health. One trial is Colorado's Better Asthma Control for Kids (BACK) program, a community-engaged partnership between schools, community health workers, and pediatric asthma experts to test ways to improve asthma outcomes for all children in Colorado. To examine how to eliminate a potentially negative exposure, DECIPHeR is testing an intervention to connect people who smoke and receive care in federally qualified health centers in Chicago to smoking cessation resources. Lung health issues may also result from occupational exposures. The NHLBI-funded Measurement of Exposures, Lung hEalth, and function in hAirdressers (MELENA) is assessing chemical exposures in a cohort of hairdressers to determine whether these exposures are correlated with lung health outcomes.

Other NHLBI-funded research addresses limitations in access to care. Several NHLBI-funded studies have used data from longitudinal cohorts to conclude that race-specific approaches for estimating lung function may underestimate COPD prevalence and severity in Black populations, which may in turn result in worse access to care and poorer health outcomes.[71,72] In addition, NHLBI-supported research focuses on access to care for people with chronic lung and heart disease in rural communities. The Risk Underlying Rural Areas Longitudinal (RURAL) Study is researching ways to address the disproportionately high burden of chronic heart and lung disease in 10 rural counties in Alabama, Kentucky, Louisiana, and Mississippi by working with community partners and high-tech mobile research units to collect data, including pulmonary and cardiac imaging and testing with a mobile CT scanner.

NIMHD supports a wide range of research related to lung health , such as studies on epigenomics, or how environmental factors can influence expression of an individual's genes, and studies developing and testing interventions to improve lung health. For example, low-

[71] pubmed.ncbi.nlm.nih.gov/37072532/
[72] pubmed.ncbi.nlm.nih.gov/34913855/

income individuals are disproportionately affected by COPD and tend to have worse health outcomes compared to those with higher incomes. A NIMHD-supported project is testing if epigenetic changes from environmental stressors affect respiratory and quality-of-life health outcomes in COPD, which may identify potential biomarkers to target and new treatment strategies. Children from low socioeconomic communities are adversely impacted by asthma, and often lack access to needed medical care, including medication management. The Aligning with Schools To Help Manage Asthma (ASTHMA) Study is testing the effectiveness of school-based health centers as a delivery model to improve asthma outcomes for all children. Results could shape the development of a cost-effective and sustainable intervention model through school-based health centers to reduce asthma in communities disproportionately affected by the disease.

Tobacco smoking is a significant risk factor for lung diseases, and cigarette smoking among American Indian and Alaska Native (AI/AN) communities is significantly higher compared to other populations, contributing to an elevated prevalence of lung diseases. A project supported by the NIMHD Initiative for Improving Native American Cancer Outcomes is providing personalized support and skills training on smoking cessation through a tailored artificial intelligence-based smartphone app to determine if the app helps AI/AN participants quit smoking. Findings will provide important insights into how artificial intelligence-based technology can be harnessed to support smoking cessation and cancer prevention efforts in this community.

NHLBI and NIMHD also collaborate on research initiatives to address lung health, including the Hispanic Community Health Study/Study of Latinos, the largest, most comprehensive long-term study of Hispanic and Latino health and disease in the United States. This effort explores various factors in addressing lung conditions including risk and protective factors for conditions like asthma and COPD.[73] NIH is committed to supporting research that improves health, and NHLBI and NIMHD will continue working together to invest in research to support this mission.

[73] nhlbi.nih.gov/science/hispanic-community-health-studystudy-latinos-hchssol

Lyme Disease and Other Tick-Borne Diseases

The Committee encourages NIH to periodically review progress on activity to address tick-borne infection-triggered chronic illnesses and to include a status report in the fiscal year 2027 congressional justification. (Page 107, House Report 119-271)

Action taken or to be taken

The National Institutes of Health (NIH) supports a broad research portfolio on Lyme disease and other tick-borne diseases (TBDs), including newly emerging diseases. Guided by the NIH Strategic Plan for Tickborne Disease Research,[74] extramural and intramural investigators support or conduct studies that span basic science through human clinical research. Many projects are investigator-initiated efforts, but several are the result of targeted grant initiatives. These NIH efforts support improved prevention, diagnostic, treatment, and vaccine strategies and provide better understanding of potential causes and long-term consequences of tick-borne diseases.

NIH supports research on Lyme pathogen biology and the complex vector-host-pathogen interactions of *Borrelia burgdorferi*, the bacterium that causes Lyme Disease, and ticks to understand transmission, identify influences on disease, and discover new targets for diagnosis, treatment and prevention. NIH leads clinical studies to investigate the immune response to tick bites, evaluate patients with Lyme disease before and after treatment, and assess patients with suspected Post-Treatment Lyme Disease Syndrome (PTLDS), a range of potentially debilitating symptoms following treatment. These studies include research to better understand the underlying causes, symptoms, and biomarkers of PTLDS.[75] National Institute of Allergy and Infectious Diseases (NIAID)-supported investigators found that a component of the Lyme disease bacteria's cell wall, called peptidoglycan, may trigger a person's immune cells to produce antibodies that target their own tissue, contributing to the signs and symptoms of PTLDS.

NIH also funds a large prospective study called the Prospective Study of Symptoms, Events, and Clinical Outcomes with Lyme Disease (PROSSECO).[76,77] PROSSECO follows people from the moment of Lyme disease diagnosis to either recovery or persistence. While most people who contract Lyme disease feel better within months after antibiotic treatment, this study will provide information on those who do not improve and instead develop PTLDS. This study also includes a Cross-Sectional Community Cohort – a study of people living in Lyme-endemic areas who provide samples at a single point in time. Researchers will compare samples across the Community Cohort and acute Lyme disease participants to help develop diagnostic tests that can identify PTLDS and predict recovery outcomes.

Current treatment for Lyme disease involves oral antibiotics that are safe and effective when the disease is caught early. However, some people report continuing treatment with aggressive, non-specific antibiotics taken for a long period of time. This approach may destroy the body's helpful

[74] www.niaid.nih.gov/sites/default/files/nih-strategic-plan-for-tickborne-disease-research-2025-update.pdf
[75] hhs.gov/oidp/initiatives/tick-borne-diseases-associated-illnesses-national-community-engagement-initiative/index.html
[76] reporter.nih.gov/search/7GAmpuq4C0C23oVILRfKgQ/project-details/11184277
[77] tuftslymedisease.org/prosseco/

bacteria and can cause significant side effects. NIH scientists have identified a potential new strategy to treat Lyme disease by targeting the *B. burgdorferi*'s internal nutritional transport system. These scientists have identified two compounds that significantly slow the bacteria's growth in culture without the need for broad-spectrum antibiotics. Future studies in animals and humans will determine if this strategy can be used as a new treatment for Lyme disease. NIH has also funded research on protective monoclonal antibodies, which may improve upon current treatments for Lyme Disease. Like antibiotics, monoclonal antibodies target the pathogen, but with greater specificity, and rely on the patient's immune response to help clear the infection.

In addition to treatment efforts, NIH supports research focused on preventing Lyme disease through vaccines. NIH has advanced TBD vaccine development using several approaches: 1) identifying new antigens for improved traditional vaccine strategies, 2) identifying novel tick antigens that could generate immune protection against tick bites, and 3) enhancing the efficacy and durability of vaccines. This has led to the development of several vaccine candidates, including an intranasal vaccine candidate that has been shown to induce robust and protective immune responses in mice. Additional studies are needed to determine if the intranasal vaccine candidate can protect humans from disease.

While Lyme disease is by far the most common tick-borne infection in the United States, other diseases are transmitted by ticks across the country. These include bacterial, viral, and parasitic infections, some of which are capable of causing severe illness or death. NIAID supports research programs for all of these conditions, ranging from basic studies of pathogen biology and the factors that lead to human infection to new ways to diagnose, prevent or treat these diseases.

NIAID is specifically addressing the emergence of alpha gal syndrome (AGS), a unique food allergy to a specific sugar present in mammalian red meat that is triggered by the bite of a certain type of tick. NIH supports research to characterize the factors that contribute to AGS and develop reliable AGS diagnostics and immune-mediated therapies. The NIAID-supported Consortium for Food Allergy Research (CoFAR) is supporting a clinical trial to develop a diagnostic for AGS and convenes regular scientific workshops for AGS researchers.

Made in America Research Equipment

The Committee continues to support efforts to reinforce the Nation's limited infrastructure to produce essential products for biomedical research such as medical devices, equipment, reagents, and consumables. The Committee strongly encourages NIH to develop a long-term plan for NIH grantees to give preference to and result in purchases directly from domestic manufacturers to the maximum extent possible. The Committee directs NIH to provide an update in the fiscal year 2027 CJ on steps it has taken to support this goal. (Page 160, Senate Report 119-55)

Action taken or to be taken

NIH encourages grant recipients to give preference to and purchase directly from domestic manufacturers. These expectations are outlined in the Grants Policy Statement (GPS),[78] which sets forth the policy requirements that serve as the terms and conditions of NIH grant awards. These terms and conditions apply not only to the recipients of NIH grant awards but also flow down to any subawards as well as to subrecipients unless specified otherwise in the regulation or the terms and conditions of the specific NIH award.

Grant recipients may acquire a variety of goods or services in connection with a grant-supported project.[79] This can range from routinely purchased goods or services to those that involve substantive programmatic work. Under the GPS, as appropriate and to the extent consistent with the law, grant recipients should, to the greatest extent practicable under an NIH award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States.[80] The requirements of this GPS section must be included in all subawards including all contracts and purchase orders for work or products under their award.[81]

Relatedly, organizations receiving Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards are generally subject to the same public policy requirements. Consistent with Small Business Administration program policy directives, when purchasing equipment or a product under the SBIR/STTR award, the small business concern should purchase only American-made items whenever possible.[82]

Beyond requirements that grantees purchase from domestic manufacturers to the maximum extent possible, NIH implements other requirements and policies to enable more purchasing of research equipment from domestic manufacturers. For example, through the GPS and other agency procedures, NIH expects recipients to comply fully with the U.S. industry preference requirements of the Bayh-Dole Act (35 U.S.C. § 204).[83] Grant recipients cannot grant to any person, unless approved by NIH in advance, the exclusive right to use or sell any Subject Invention in the United States unless any such product embodying the Subject Invention or produced through the use of the Subject Invention is manufactured substantially in the United

[78] grants.nih.gov/grants/policy/nihgps/HTML5/introduction.htm
[79] grants.nih.gov/grants/policy/nihgps/html5/section_8/8.3.4_procurement_system_standards_and_requirements.htm
[80] grants.nih.gov/grants/policy/nihgps/html5/section_8/8.3.4_procurement_system_standards_and_requirements.htm#Domestic_Preferences
[81] ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200/subpart-D/subject-group-ECFR45ddd4419ad436d/section-200.322
[82] grants.nih.gov/grants/policy/nihgps/html5/section_18/18.5.3_public_policy_requirements_and_objectives.htm
[83] law.cornell.edu/uscode/text/35/204

States.[84] Likewise, for inventions developed in the NIH Intramural Research Program (IRP), consistent with 37 CFR Part 404.5(a)(2), licenses will normally include a commitment that any products embodying the invention or produced through the use of the invention will be manufactured substantially in the United States.[85] In this way, the agency is also using its leverage as a funder of new invention and innovation to ensure that more things will be manufactured in the United States.

[84] grants.nih.gov/grants/policy/nihgps/HTML5/section_8/8.2.4_inventions_and_patents.htm

[85] techtransfer.nih.gov/sites/default/files/files/Chapter%20309%20-PHS%20Policy%20for%20Handling%20Requests%20Related%20to%20the%20U.S.%20Manufacturing%20Requirement%20for%20PHS%20Inventions..pdf

Menopause Research

The Committee is aware of the research gaps related to basic research into and knowledge and understanding of menopause and perimenopause and treatments. Addressing this gap could improve health outcomes and the quality of life for the nation's middle aged and older women. The Committee encourages NIH to research more into the different stages of menopause, including research related to symptoms and treatments for menopause at its different stages. As part of the fiscal year 2027 congressional justification, the Committee requests an update on recent NIH research into menopause and its treatments. (Page 131, House Report 119-271)

Action taken or to be taken

NIH has an extensive history of funding research on women's midlife health, menopause, and associated women's health conditions in later life. NIH-funded researchers are working to better understand factors that contribute to the menopausal transition, signs and symptoms associated with menopause and perimenopause, and how menopause influences trajectories of health and aging.

Study of Women's Health Across the Nation

Initiated in 1994, the flagship Study of Women's Health Across the Nation (SWAN) has played a key role in advancing our understanding of women's health as it unfolds across midlife and the menopausal transition. SWAN data has been used to examine the duration of menopausal vasomotor symptoms (VMS) – including hot flashes and night sweats – across menopause. Results indicated that VMS lasted more than 7 years for at least half of the women and persisted for 4.5 years after the final menstrual period. Frequent and persistent VMS have also been linked to a 50 percent increased risk of diabetes among SWAN participants. Further studies using SWAN data found that women's risk for cardiovascular disease is increased following menopause.

Analysis of longitudinal SWAN data has revealed promising approaches for improving health outcomes in later life, including the importance of maintaining social and psychological well-being across the menopausal transition. SWAN has also generated critical insights regarding women's brain health throughout menopause. SWAN investigators found that diabetes, elevated fasting glucose, central obesity, and heart age greater than chronological age were associated with declines in the brain's information processing speed during midlife, suggesting that midlife may be a critical time of intervention for cardiometabolic risk factors for brain health later in life.

The current phase of the ongoing SWAN study aims to examine how the menopausal transition and midlife health more broadly influence longer-term trajectories of health — including cognitive function, physical abilities, psychological well-being, and other outcomes — at older ages. In addition to the core study, SWAN includes ongoing substudies in key areas of focus, such as the Daily Hormone Study, Sleep Study, Heart Study, Cardiovascular Fat Study, and Mental Health Study. The goal of this work is to translate SWAN findings into practical interventions and information for the benefit of women and their health care providers.

Research on Treatments for Menopause Symptoms
NIH also supports efforts to better understand hormonal and non-hormonal treatment options to prevent and address the symptoms of menopause. The Women's Health Initiative (WHI) is the largest women's health prevention study ever conducted, enrolling more than 161,000 women. Major findings from the WHI included a large clinical trial specifically assessing the health impacts of hormone therapy (HT) on disease prevention, though results did not support the use of HT for this purpose. Other National Institute on Aging (NIA)-funded WHI substudies sought to further assess the effects of HT on outcomes related to cognitive functioning and dementia risk, though findings have been inconsistent. NIH recognizes the need to understand the full effects of menopause and hormone therapy and is committed to funding research in this field. Researchers are actively investigating personalized approaches to hormone therapy preparations, which account for unique factors and conditions (e.g., lifestyle, genetic risk, medical history, timing and dosage of therapy) for each woman, in keeping with a growing scientific emphasis on precision medicine.

NIH has also funded research investigating multiple types of non-hormonal therapies for treating the symptoms of menopause, including mental health therapies, lifestyle interventions, and other nonhormone medications. For example, findings from the clinical trials network known as Menopause Strategies: Finding Lasting Answers for Symptoms and Health (MsFLASH) found that some nonhormone treatments, like exercise, cognitive behavioral therapy, and two antidepressants, as well as a low-dose formulation of estradiol, reduced the frequency and severity of hot flashes and sleep problems. This research has helped inform the development of MyMenoplan, an online tool that helps people create a personalized plan for addressing their menopause symptoms.

The Link Between Menopausal VMS and Brain Aging in Women
The NIA-funded Menopausal Vasomotor Symptoms and Brain Aging in Women (MsBrain) initiative seeks to understand why women who experience menopausal VMS may be more likely to develop cognitive impairment and dementia. To date, findings from MsBrain indicate that VMS, especially VMS during sleep, predict a greater number of white matter hyperintensities in the brain, a risk factor for dementia. Associations between nighttime VMS and Alzheimer's biomarkers were also found, suggesting that women who experience such symptoms may be at heightened risk for Alzheimer's. Sleep inefficiency among MsBrain participants was also associated with lesser connectivity between the areas of the brain important for memory, potentially contributing to memory impairment.

MsBrain investigators are also assessing the potential role that estrogen plays in the maintenance of brain structure and function. For instance, one study found that higher estrogen levels were associated with greater brain volume among participants, but not in participants who carry the *APOE4* gene variant, a genetic risk factor for Alzheimer's. Another investigation leveraged functional MRI scans to track associations between estrogen levels and brain activation during memory tasks. Researchers found a direct relationship between estrogen levels and activation in areas of the brain tied to memory, with higher levels of estrogen promoting enhanced memory performance. A second iteration of MsBrain is leveraging a longitudinal design to test whether a greater burden of menopausal symptoms assessed over a period of 10 years is associated with declines in brain and cognitive health. The study will also examine the role of estrogen and

cardiovascular disease risk in the relationships of sleep VMS and sleep to brain and cognitive health, and associations between mitochondrial function and brain health. The goal of this work is to assist in early intervention efforts to improve cognition, enhance brain reserve, and reduce Alzheimer's risk across the menopausal transition.

Other recent efforts related to menopause research

NIH-funded research is also looking into how menopause influences the aging of other body systems. As one example, NIA supports research on osteoporosis, a condition in which bones become weak or brittle. Women are at especially high risk of osteoporosis after menopause due to declining levels of estrogen, which helps keep bones strong and dense. An NIA-funded study recently identified a hormone which is responsible for maintaining and rebuilding bone in lactating female mice. The findings suggest that this hormone, or a drug that acts similarly, could be key to treating or preventing osteoporosis.

More research is needed to help women and their health care providers navigate the menopausal transition while also providing for their longer-term health and well-being. To this end, multiple NIH institutes and offices are collaborating on a Pathways to Prevention Workshop on menopause and the treatment of menopausal symptoms, slated to take place in April 2026.

Mental Health Research

The Committee supports NIMH's high-quality basic research on serious mental illnesses. The Committee requests an update in the fiscal year 2027 congressional justification on the funding allocations at NIMH detailing the percentage of funds spent on basic, translational, and clinical research. (Page 119, House Report 119-271)

Action taken or to be taken

The National Institute of Mental Health (NIMH) maintains a diverse portfolio of basic, translational, and clinical research projects to maximize the institute's long-, medium-, and short-term impacts on public mental health. This range of timeframes reflects the need to relieve the burden for those who suffer from mental disorders now, while also supporting research that leads to more effective treatment and prevention programs in the future. This research is guided by the NIMH Strategic Plan for Research. In fiscal year 2024, NIMH spent approximately $701.1 million (34.0 percent) on basic research, $738.3 million (35.8. percent) on translational research, and $621.3 million (30.1 percent) on clinical research.

Metastatic Breast Cancer

The Committee is aware that clinical research is of utmost importance to those living with metastatic breast cancer (MBC), which is breast cancer that has spread to other organs and become incurable. An estimated 168,000 Americans live with MBC, and nearly all of the more than 43,000 deaths from breast cancer are attributed to this late stage of disease. Given the mortality associated with MBC and the lack of treatment options, research offers the best possibility of therapeutic advances and extended life for these patients. MBC is also associated with startling health disparities, since breast cancer mortality is about 40 percent higher for Black women in the U.S. than Caucasian women and breast cancer is the second most common cause of death by cancer for Black women. The Committee encourages a continued emphasis by NCI on research for MBC, to discover better treatments and a cure for MBC and to address health disparities in this population. The Committee requests an update on NCI's activities regarding MBC in the fiscal year 2027 congressional justification, including updates on actions NCI is taking to achieve representation of the demographics of the U.S. population in clinical trials. (Page 95, House Report 119-271)

Action taken or to be taken

The National Cancer Institute (NCI) supports a robust breast cancer research portfolio, including research on metastasis, and it also supports clinical studies to test new treatments for all types (estrogen receptor positive, HER-2 overexpressing, and triple-negative) of metastatic breast cancer.

Metastatic breast cancer patients are benefiting from the numerous immunotherapies that have been approved by the U.S. Food and Drug Administration (FDA) over the last decade, including the use of immune checkpoint inhibitor drugs and antibody-drug conjugates (substances made of monoclonal antibodies, which bind to specific receptors on cancer cells, linked to drug therapies) for the treatment of metastatic triple-negative breast cancer. Decades of NCI-supported basic research played a role in bringing these drugs to patients, and this type of research continues to be critical for understanding the complexities of the disease so that new and improved therapies can be developed. Recent NCI-funded studies have identified strategies that breast cancer cells use to evade the immune system and establish metastases. For example, one NCI-supported study demonstrated that respiratory viral infections can cause dormant ("sleeping") breast cancer cells that have traveled to the lung to come out of dormancy and start proliferating to become metastatic lesions, and another study identified a mechanism by which dormant metastatic breast cancer cells become resistant to specific immune cells and showed this resistance can be reversed by a certain drug. The results of these and other studies are being used to find ways to prevent cancer cell evasion from the immune system and metastasis.

The NCI Metastasis Research Network (MetNet) seeks to develop a comprehensive understanding of cancer metastasis as a whole body, systems-level disease.[86] Several of the MetNet projects focus on aspects of breast cancer metastasis, including how breast cancer cells survive and grow in particular organs in the body. A recent MetNet study showed that an already-approved drug can suppress activation of sensory nerves in the breast caused by nearby

[86] cancer.gov/about-nci/organization/dcb/research-programs/metnet

cancer cells and therefore help stop the resulting metastatic tumor growth, warranting future consideration in combination with the current standard of care to prevent metastasis.

In addition, NCI-supported researchers have developed a device that could help oncologists make better decisions about how to treat patients with cancer that has not yet spread to other parts of their body.[87] The device measures the "stickiness" of cancer cells in tumor samples to determine how likely the cells are to escape from the tumor and travel, or metastasize, to other organs. Using animal models, scientists found that healthy breast tissue was very sticky, while tissue from advanced tumors was far less sticky. Further research with this device could help clinicians predict whether breast cancer could become invasive and metastasize, or if patients are at lower risk, to better inform treatment. A separate NCI-funded trial repurposed existing drugs to clear dormant tumor cells that had spread from the primary breast tumor site to the bone marrow. The 3-year survival rate for patients who received 1 drug was over 90 percent and 100 percent for patients who received both study drugs; 2 larger clinical trials are currently enrolling patients to confirm and extend the results of this promising study.

NCI remains committed to increasing participation in clinical trials. Participation of racial and ethnic minority patients has increased from 14 percent at the beginning of this century to 25 percent in 2019 and is approaching 30 percent for NCI's National Clinical Trials Network and the NCI Community Oncology Research Program (NCORP) clinical trials. NCORP conducts multisite cancer clinical trials in community-based health care systems across the United States and Puerto Rico, bringing cancer clinical trials and cancer care delivery research to individuals in their own communities. The Connecting Underrepresented Populations to Clinical Trials (CUSP2CT) program implements and evaluates culturally tailored outreach and education interventions with the goal of increasing referral and accrual of underrepresented racial/ethnic populations to NCI-supported clinical trials including NCORP.[88] Additionally, NCI's Comprehensive Partnerships to Advance Cancer Health (CPACH) program provides institutional awards for the development of research partnerships between institutions serving underserved populations and NCI-Designated Cancer Centers. This is just one part of NCI's long-term effort to meaningfully increase the participation of populations historically underrepresented in cancer clinical trials.

[87] cancer.gov/news-events/cancer-currents-blog/2025/tumor-cell-adhesion-predict-metastasis
[88] cancer.gov/about-nci/organization/cche/community-outreach/cusp2ct

Morgan Island

The Committee is concerned about the Morgan Island rhesus macaque breeding colony supported by NIAID and available for other institutes and centers to use for research purposes. The Committee understands that the more than 3,000 NIAID-owned rhesus monkeys currently held there are considered an invasive species that may pose health and environmental risks. The Committee is aware other Federal agencies such as the FDA and Department of Veterans Affairs are implementing initiatives to reduce animal testing and research in animals, respectively, and in the case of the FDA to advance new alternative methods (NAMs), too. The Committee commends NIH's recently announced efforts to advance human-focused research, such as NAMs, and reduce the use of animals. Such efforts will encourage research investigators to consider and use the models that best translate research findings to human health and disease. The Committee urges NIH to assess whether there remains a scientific need to continue breeding primates on Morgan Island. Such assessment should be included in the fiscal year congressional justification. (Page 131, House Report 119-271)

Action taken or to be taken

NIH is committed to ensuring the research it supports is of the highest quality, is efficient, and that results can be interpreted, are reproducible, and are translatable to treatment and diagnosis of human diseases and conditions. NIH and NIAID are fully committed to expanding innovative, human-based science while also reducing animal use in research.[89]

The free-ranging colony of rhesus macaques on Morgan Island, South Carolina, was originally established in 1979. The maintenance of the colony is conducted through a contract in accordance with all federal laws, regulations, and policies, and the animals on Morgan Island are provided food, water, and veterinary and other care. Breeding primates on Morgan Island currently remains necessary for research projects that use nonhuman primates (NHPs), such as research into testing and development of vaccines, as well as projects exploring disease mechanisms and biological therapeutics.

NIH takes the welfare of animals that are used in research seriously and employs a multi-layered process to establish the highest possible standards for humane care and use of animals in NIH-funded research. When using NHPs and other animals in research, NIH has developed guidance, procedures, and protocols to ensure that NIH intramural and extramural scientists comply with all relevant policies and regulations, including the Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animals (the PHS Policy).[90] Research studies involving the use of NHPs by NIH intramural researchers undergo rigorous scientific merit review prior to review by the Institutional Animal Care and Use Committees (IACUCs). With regards to extramural research, NIH funding is dependent on IACUC review and approval, a decision by NIH scientific peer review that the application is highly meritorious, and acceptance of terms and conditions that require researchers to abide by all relevant animal care laws and policies.

[89] nih.gov/news-events/news-releases/nih-prioritize-human-based-research-technologies
[90] olaw.nih.gov/policies-laws/phs-policy.htm

The use of NHPs in biomedical research has historically led to major advancements in medicine. A report released by the National Academies of Sciences, Engineering, and Medicine in 2023 concluded that NHPs continue to be essential models for understanding disease biology and enabling innovations in human health, especially for research questions requiring multiorgan interactions and integrated biology. An abrupt cessation of animal work risks delaying medical breakthroughs and clinical trials to test new treatments. For example, ongoing research evaluates the safety and efficacy of transplanting animal organs and tissues such as kidneys and pancreatic islet cells into NHPs, which represents a critical preclinical step toward in-human trials. This would be a significant advance for the more than 100,000 people awaiting transplant in the United States due to limited donor organ supply and for individuals with type 1 diabetes.

While traditional animal models, including NHPs, continue to be important to advancing scientific knowledge, NIH recognizes that new and emerging technologies offer unique opportunities to expand the toolbox for researchers to answer difficult or previously unanswerable biomedical research questions. These new approach methodologies (NAMs) are likely to provide complementary approaches to traditional models, but will need confirmation in gold-standard trials. NIH recognizes and is pursuing the opportunity to transparently assess where the use of NHPs can be reduced or eliminated by transitioning to NAMs. Areas in which NHPs continue to be necessary represent opportunities for prioritization and investment in additional NAMs.

Efforts are also underway to stand up an internal Executive Committee on Advancing the replacement, reduction, and refinement (3Rs) in NIH-Supported Research. Concurrently, prioritizations for the development and advancement of NAMs are occurring throughout all research portfolios.

Despite recent advances and investments in NAMs, research on many critical physiologic and immune processes still require animal models. NIH is committed to continue prioritizing the development of human-based science and reducing animal use in research.

Neuroblastoma

The Committee commends NCI for its support of neuroblastoma research and recognizes the many complex challenges presented by this deadly pediatric cancer. The Committee encourages NCI to continue investments in this area and requests an update in the fiscal year 2027 CJ on efforts to improve outcomes for CNS relapse patients. (Page 109, Senate Report 119-55)

Action taken or to be taken

Neuroblastoma (NB) is the most common extracranial (outside of the skull) solid tumor in children and develops from immature nerve cells. NB tumors are unpredictable: some regress spontaneously, whereas others, such as high-risk neuroblastoma, spread aggressively. About half of NB patients are classified as high-risk, and these patients are also more likely to relapse. Standard treatment for high-risk NB includes chemotherapy, surgery, radiation, and immunotherapy and, although these treatments produce severe side effects, they put most patients into remission. Unfortunately, more than half of treated patients relapse, and this group has a poor prognosis.

NCI has invested decades of research to develop therapies for high-risk and relapsed NB. In 2015, these efforts paid off with the FDA approval of dinutuximab – the first immunotherapy for high-risk NB. Dinutuximab is a monoclonal antibody that binds to GD-2, a protein overexpressed on the surface of neuroblastoma cells, inducing the patient's immune system to attack the tumor. NCI supported the basic research that informed development, conducted initial preclinical studies on the drug, manufactured it through the Biopharmaceutical Development Program at NCI's Frederick National Laboratory for Cancer Research, and tested it in an NCI-supported Children's Oncology Group (COG)-led clinical trial. The COG trial showed that dinutuximab significantly increased the 5-year survival of patients with high-risk NB. Based on the promising results, NCI is now funding a series of new dinutuximab trials to improve outcomes in relapsed NB patients. These trials combine dinutuximab with other therapies in patients with relapsed NB or NB that does not respond to treatment. Another trial is investigating whether adding another antibody in combination with dinutuximab shrinks or stabilizes relapsed neuroblastoma.

The New Approaches to Neuroblastoma Therapy (NANT) pediatric cancer consortium tests promising new therapies for NB through early phase (phase 1 and 2) clinical trials and rapidly incorporates results into larger COG phase 2 and 3 trials to test new therapies. A recently completed phase 1 trial found that dinutuximab in combination with a radiopharmaceutical (radioactive drug used to treat cancer) and an inhibitor that alters gene expression was well tolerated and showed promising efficacy in treating patients with NB that had relapsed or was resistant to previous treatment; a phase 2 trial to further test this combination is in development.

In addition to dinutuximab, NCI researchers are also targeting the GD-2 protein with a type of immunotherapy called chimeric antigen receptor (CAR) T-cell therapy, where T cells (white blood cells that are part of the immune system) from the patient are modified in the laboratory to target GD-2 on cancer cells and given back to the patient through an infusion. An NCI-supported clinical trial is studying this approach utilizing a GD-2-targeted CAR T-cell therapy modified with certain genes to make the T cells live longer, thereby increasing the chances that they will

find and kill the NB tumors. Another CAR-T trial is targeting GPC2, a cell-surface protein highly expressed on most high-risk neuroblastoma, but not significantly expressed in normal tissues, making it an optimal target. These CAR-T trials and the dinutuximab efforts may result in more effective therapies for relapsed NB.

Obstetric Fistula Research

The Committee notes that an estimated 500,000 women and girls worldwide live with obstetric fistula—with thousands of additional cases occurring annually. Obstetric fistula occurs disproportionately among impoverished, vulnerable, and marginalized women and girls. It can be prevented by skilled health personnel at birth and emergency obstetric and newborn care. The Committee is concerned that fistula repairs were widely halted or slowed down due to COVID, as they were deemed non-urgent and unsafe during the pandemic. This may have resulted in an increased backlog of fistula cases. The Committee requests an update in the fiscal year 2027 congressional justification on the annual funding level for training on obstetric fistula over the preceding five fiscal years, including the types of grants supported during this period. (Page 121, House Report 119-271)

Action taken or to be taken

The prevalence of obstetric vesicovaginal fistula is directly related to the prevalence of obstructed labor and the accessibility of emergency obstetric care, including facilities capable of performing cesarean delivery.

It increases stigma, reduces the quality of life, and often impacts the sex lives of affected individuals. While surgical repair may be successful at relieving physical symptoms, women who have experienced obstetric fistula often suffer significant psychological and social consequences, and little is known about women's sexuality following surgery. Obstetric fistula is common in low-income and middle-income countries, but the number of affected women is difficult to determine. Because the symptoms associated with obstetric fistula are highly stigmatized and can also result from other conditions, it is difficult to identify how many women have obstetric fistula.

The *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD) is the leading institute funder by proportion of budget for female-specific conditions, including obstetric fistula, endometriosis, polycystic ovarian syndrome, and uterine fibroids. NICHD supports research and training to improve gynecologic health, including obstetric fistula, and to develop more treatment methods and provide clinical and counseling interventions and psychological support.

The types of grants supported by NIH on obstetric fistula include studies to develop devices for non-surgical management and to understand and address the mental health and quality of life concerns for patients. In a current NICHD-funded study, researchers are testing the effectiveness of an insertable vaginal cup to manage fistula urinary incontinence, examine user and implementer acceptability, and quantify fistula management cost. The two intervention models will be compared among women awaiting fistula surgery or whose surgery was unsuccessful. The long-term goal of this research is to overcome barriers to comprehensive fistula care and increase quality of life through an acceptable, non-surgical option for therapeutic management of fistula.

In another study, researchers recruited 60 women who were undergoing fistula repair surgery. The women answered questions about their sexual activity every three months for the year

following their surgery, and a subset of women participated in an in-depth interview about their recovery experience after the one-year follow-up. One year after surgery, more women reported that they were sexually active than not, and the proportion of women reporting that they were satisfied with their sex life more than doubled compared to prior to the repair. Common fears around sexual activity included fistula recurrence and unwanted pregnancy. This suggests that ongoing psychosocial support may be needed for some women to help restore their desired sexual function following surgical treatment for obstetric fistula. Another group of researchers are developing and testing a nurse-delivered mental health intervention versus standard of care counseling for women receiving surgical care. Primary outcomes being measured are depression, PTSD, and somatic symptoms.

Office of Research on Women's Health

The Committee provides $100,000,000 for the Office of Research on Women's Health, which is $23,520,000 above the fiscal year 2024 enacted level. The Committee recognizes that women's health includes conditions and diseases that disproportionately or differently affect women and that sex differences are at the cellular level. Despite prior investments and progress made, gaps remain in research, scientific understanding, and medical care due to factors such as a lack of consistent sex-based data, coordination across disciplines, and representative participation in clinical trials. The Committee notes that opportunities to enhance NIH efforts focused on the health of women across the lifespan could address these gaps and urges NIH to prioritize research that addresses the most pressing research gaps. The Committee supports expanded, integrated NIH-wide investment in women's health research focused on accelerating innovative biomedical discoveries and solutions and requests an update in the fiscal year 2027 congressional justification on such research. (Page 134, House Report 119-271)

Action taken or to be taken

The Office of Research on Women's Health (ORWH) works across NIH Institutes, Centers, and Offices (ICOs) to promote the prioritization of women's health across research portfolios, the inclusion of women in research populations, and the consideration of sex as a critical factor in health and disease. Additionally, ORWH also works across ICOs to promote a well-trained and robust research workforce to advance science for the health of women. women. Several ongoing ORWH-led and NIH-wide collaborative activities and programs that provide career support also accelerate the translation of research findings to improve the health of women.

Building Interdisciplinary Research Careers in Women's Health (BIRCWH)

The BIRCWH (pronounced "birch") program is an institutional mentored career-development program designed to connect scholars who are junior faculty to senior faculty with a shared interest in women's health and sex differences research. The program provides research support for scholars as they conduct interdisciplinary basic, translational, behavioral, clinical, and/or health services research relevant to women's health and sex differences. BIRCWH has graduated more than 800 scholars, the vast majority achieving productive research careers, having impactful publications, and receiving at least one NIH-level research grant.

There are currently 23 active BIRCWH sites co-sponsored by 10 ICOs.[91] BIRCWH participation has steadily increased with over 90 scholars supported in 2025. These scholars are engaged in basic, translational, clinical, and implementation science research across a wide range of scientific topics. Topics include chronic diseases such as cardiovascular and pulmonary diseases, neurologic, metabolic, and autoimmune disorders, cancer, gynecologic and reproductive health, substance use, infectious diseases, violence, and sexual trauma. Consideration of life course and differences based on sex are integral to their research.

[91] Current BIRCWH co-sponsors are: National Cancer Institute (NCI), National Institute on Aging (NIA), National Institute on Alcohol Abuse and Alcoholism (NIAAA), National Institute of Allergy and Infectious Diseases (NIAID), National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), National Institute on Drug Abuse (NIDA), National Institute of Environmental Health Sciences (NIEHS), National Institute of Mental Health (NIMH), and the Office of AIDS Research (OAR) in the NIH Office of the Director.

In June 2025, ORWH established a landmark collaboration with the U.S. Department of Veterans Affairs (VA) to initiate the NIH VA-BIRCWH Scholars Program. This collaboration provides women's health research career development opportunities to VA scientists and is the first inter-agency collaboration for the BIRCWH program. It capitalizes upon the proven success of the BIRCWH program and has a bidirectional benefit – VA scholars can join BIRCWH projects and existing BIRCWH scholars can access VA-provided didactic course work – thus supporting the nation's women's health research workforce at universities and the VA.

Science for the Health of Women
The Specialized Centers of Research Excellence (SCORE) on Sex Differences program serves as a national resource to identify and better understand the role of biological sex on health and disease. The SCORE program supports disease-agnostic research on female-specific conditions and diseases that manifest differently in males and females. Another hallmark of the SCORE program is its leadership in the development and promotion of standards for the consideration of sex as a biological variable[92] in biomedical research. Identifying the contributions of biological sex is essential to rigor and reproducibility in science. A complete body of knowledge on the contribution of sex informs our understanding of differences in women's health outcomes and advances the development of next-generation interventions and treatments to improve human health.

IDeA States and Women's Health
ORWH has partnered with the National Institute of General Medical Sciences (NIGMS), along with other NIH ICOs, to advance women's health research by expanding research and research capacityin Institutional Development Award (IDeA) States. Through the IDeA Program's Centers of Biomedical Research Excellence funding mechanism (NOT-GM-23-012),[93] several awards focused on women's health were made in FY 2024 and FY 2025, expanding NIH's funding distribution for women's health research across the country.

Chronic Conditions
ORWH led development of the first-ever NIH funding opportunities specific to preventing and reducing chronic conditions in women. Across FY 2024 and FY 2025, ORWH partnered with six NIH Institutes[94] to make a total of 42 awards for a total investment of over $27 million. Awarded projects reflect NIH and HHS priorities related to promoting well-being during midlife and menopausal transition, improving population health and new approach methodologies. Projects include research on cardiovascular disease, systemic lupus erythematosus, and female-specific conditions such as endometriosis and polycystic ovary syndrome.

NIH Pathways to Prevention Health Initiative (P2P): Managing Menopausal Symptoms
More than 1 million women in the United States experience menopause each year, but only 15 percent receive evidence-based interventions to manage their symptoms. Following menopause, diagnoses of chronic conditions begin to accumulate, making the menopausal transition and midlife a critical window for understanding and intervening in the development of chronic conditions and disease. Led by the Office of Disease Prevention (ODP), ORWH and four NIH

[92] grants.nih.gov/grants/guide/notice-files/not-od-15-102.html
[93] grants.nih.gov/grants/guide/notice-files/NOT-GM-23-012.html
[94] NCI, National Heart, Lung, and Blood Institute (NHLBI), NIA, NIAID, NIAMS, and NICHD

Institutes[95] are creating a comprehensive research agenda on menopause including a P2P workshop[96] in the spring of FY 2026 to bring together federal agencies, researchers, and community members to understand the current state of the science and identify research gaps.

[95] NCI, NIA, NICHD, and NHLBI
[96] prevention.nih.gov/research-priorities/research-needs-and-gaps/pathways-prevention

Osteopathic Medical Schools

Senate Language

Colleges of Osteopathic Medicine educate 25 percent of all the Nation's medical students and prioritize research and training in primary care and rural and underserved healthcare. The Committee understands osteopathic medical schools and their principal investigators are welcome to review and apply for any NIH funding opportunities in the same way other organizations seeking NIH support do and that the same is true for Doctors of Osteopathy [D.O.s] on NIH National Advisory Councils and study sections. Further, the Committee recognizes the historic relationship between osteopathic medicine and the research priorities of NCCIH but that D.O.s have been designated on applications submitted to and awarded from other NIH Institutes and Centers. The Committee encourages NIH to continue engaging with researchers from Colleges of Osteopathic Medicine, encouraging them to apply for available funding opportunities across NIH Institutes and Centers, and requests an update in the fiscal year 2027 CJ of how Institutes and Centers are expanding research and representation opportunities for Colleges of Osteopathic Medicine. (Page 164, Senate Report 119-55)

House Language

Osteopathic medicine represents a vibrant portion of the medical student education and health systems ecosystem. However, the Committee remains concerned with the historic disparity in NIH funding and representation for Colleges of Osteopathic Medicine (COMs), as well as NIH's past failure to respond to requests to create an action plan to address the agency's chronic underfunding of osteopathic research and underrepresentation of osteopathic scientists on NIH National Advisory Councils and study sections. Additionally, the Committee is concerned that NIH continues to associate osteopathic medicine most strongly with the National Center for Complementary and Integrative Health (NCCIH). The Committee encourages the NIH to expand funding opportunities and representation across NIH Institutes and Centers, outside of NCCIH. Further, the Committee requests NIH include in the fiscal year 2027 congressional justifications information on the representation of COMs in NIH applications and awards. Additionally, the Committee encourages engagement by the NIH with osteopathic education leaders. (Page 134, House Report 119-271)

Action taken or to be taken

Physicians with a DO degree represent an important component of the medical system and often play a critical role in chronic disease prevention and management, especially in rural communities. NIH recognizes that strengthening the future workforce includes fostering opportunities for physician-scientists with osteopathic medical degrees and funds both competing and non-competing awards to osteopathic medical schools (see Table 1). NIH leadership has had recent engagement with the American Association of Colleges of Osteopathic Medicine (AACOM) focused how NIH is implementing the HHS Make America Health Again agenda, including discussions on NIH funding to Colleges of Osteopathic Medicine and research infrastructure building programs.

In November 2025, NIH began implementing a unified strategy that will help guide clearer and consistent funding decisions across all Institutes, Centers, and Offices (ICOs).[97] This framework[98] will help ensure NIH continues to support the most scientifically meritorious research ideas possible, address health priorities, and support a robust biomedical workforce. Moreover, these efforts aim to ensure that talented investigators, regardless of institutional location, have opportunities to contribute to NIH's mission. A core tenet of particular interest to osteopathic medical schools and their researchers is promoting the broad distribution and geographic balance of funding, while considering the total amount and type of NIH funding already available to each investigator.

Osteopathic medical schools (and their principal investigators) are welcome to apply for any NIH funding opportunities in the same way as that of other organizations seeking NIH support. Osteopathic medical schools could also consider referencing their medical principles in their grant applications in response to current funding opportunities to highlight how these principles help strengthen the scientific and technical merit of the proposed research. NIH would also recommend interested osteopathic medical schools and doctors of osteopathic medicine follow the NIH Guide for Grants and Contracts to learn about new biomedical and behavioral research grant policies, guidelines, and funding opportunities. They should also contact appropriate program staff at NIH to discuss potential funding opportunities, as well as participate in planned webinars and other outreach activities available to all organizations to learn more about NIH programs and policies.

Table 1. Number of NIH Research Project Grant Awards and Funding to Osteopathic Medical Schools FY 2021-2025

Fiscal Year	Awards	Total Funding
2021	50	$31,470,796
2022	66	$41,444,385
2023	68	$37,834,947
2024	55	$24,793,459
2025	61	$40,718,289

The success rate is an application-based metric that is calculated by dividing the number of awards made in a FY by the number of applications. NIH receives very few applications from osteopathic medical schools, but their success rates are generally in line with overall NIH success rates (Table 2).

Table 2. Success Rate for Competing Research Project Grant (RPG) Applications from Osteopathic Medical Schools FY 2021-2025

[97] grants.nih.gov/news-events/nih-extramural-nexus-news/2025/11/implementing-a-unified-nih-funding-strategy-to-guide-consistent-and-clearer-award-decisions
[98] grants.nih.gov/sites/default/files/Leveraging-Funding-Policies-Framework.pdf

Fiscal Year	Applications	Awards	Success Rate	Overall RPG Success Rate
2021	68	17	25.0%	19.1%
2022	144	25	17.4%	20.7%
2023	119	21	17.6%	21.3%
2024	100	18	18.0%	18.5%
2025	75	17	22.7%	13.0%

Through the Unified Funding Strategy and related efforts to broaden participation and enhance geographic diversity, NIH continues working to ensure that investigators across institution types and regions, including osteopathic medical schools, are positioned to compete successfully and contribute meaningfully to biomedical research and public health advancement.

Pancreatic Cancer

Pancreatic cancer will be second only to lung cancer as the leading cause of cancer-related deaths in the United States before 2030. Despite decades of effort, survival remains the lowest of all the major cancers and is particularly dismal for Black Americans. It is critical that NCI continue its efforts to support early detection and clinical research that focuses on pancreatic cancer. The Committee remains concerned about the lack of early detection approaches for pancreatic cancer, and the need to ensure diverse enrollment in cancer clinical trials, including pancreatic cancer trials. The Committee urges the NCI to convene stakeholders— including scientists, clinicians, and diverse patient representatives—to strategically reconsider current approaches and redesign both an effective early detection platform and a diversity plan for clinical trials that will benefit all pancreatic cancer patients and provide a global model for effective change in the trajectory of a deadly cancer. The Committee requests an update in the fiscal year 2027 CJ regarding progress in early detection research and ongoing efforts to leverage NCI's clinical trials networks to advance progress for all people experiencing a pancreatic cancer diagnosis. (Page 110, Senate Report 119-55)

Action taken or to be taken

Making progress against pancreatic cancer, including early detection, remains a National Cancer Institute (NCI) priority. NCI's Pancreatic Cancer Detection Consortium (PCDC) is a research network that develops and tests new molecular and imaging biomarkers to detect early-stage pancreatic ductal adenocarcinoma (PDAC) and its precursor lesions[99] that can then be used to identify individuals who are at high risk of developing PDAC and are candidates for early intervention. PCDC-funded scientists have developed a blood test, for which early results require further validation, that when combined with a tumor biomarker can accurately identify 97 percent of people with early-stage pancreatic cancer. A PCDC-funded study, called the Cancer of the Pancreas Screening (CAPS) study, is evaluating the use of different diagnostic blood tests for cancer surveillance in patients at high risk of developing pancreatic cancer. This work has led to a patent and a phase 3 clinical study anticipated to be completed in 2029. The PCDC also supports a project that includes the Pancreatic Cancer Early Detection (PRECEDE) Consortium – an international, multi-institutional group, including several NCI-designated Cancer Centers, collaborating to improve early detection, screening, risk modeling, and prevention for those with an inherited risk of developing pancreatic cancer.

NCI also supports pancreatic cancer detection research through the Early Detection Research Network (EDRN). The EDRN is a longstanding NCI-funded consortium of more than 300 investigators at academic institutions and in the private sector working together to bring biomarkers and imaging methods to clinical use. EDRN-funded work has led to a U.S. Food and Drug Administration (FDA)-approved test that detects genetic mutations associated with multiple cancers, including pancreatic cancer, and three pancreatic cancer biomarker tests used by certain clinical laboratories. Working with PCDC, the two pancreatic cancer EDRN Clinical Validation Sites are conducting validation trials on biomarkers and continuing to develop and improve early detection methods.

[99] prevention.cancer.gov/research-areas/networks-consortia-programs/pcdc

Under the guidance of the EDRN, the Alliance of Pancreatic Cancer Consortia (APaCC) was formed as a virtual consortia of NCI-supported researchers to collaborate across government, academia, and the private sector on research for early detection of pancreatic cancer. The APaCC established one of the largest repositories of pancreatic cancer pre-diagnostic images, with the goal to accelerate the use of algorithms and machine learning for image analysis and create a unique resource for the computational community.

NCI-funded basic research studies have revealed changing biology that drives healthy pancreatic cells to develop into precancerous lesions and, ultimately, pancreatic cancer. One study, using 3-D genomic maps of pancreatic tissues, found that precancerous pancreatic lesions are more abundant and genetically diverse than previously thought, laying a foundation for future investigations to understand why some precancerous lesions progress to cancer while most remain benign.[100] This and other studies provide roadmaps for pancreatic cancer progression that can help researchers develop strategies to detect and intercept pancreatic cancers before they reach an advanced stage. A separate study identified differences in disease biology in PDAC patients with lung versus liver metastasis that provide some insight into why PDAC patients often survive longer with lung and not liver metastasis.[101]

Alongside early detection, NCI also prioritizes better treatments to improve outcomes for pancreatic cancer patients. NCI currently funds over 130 clinical trials for pancreatic cancer and supports an even greater number by sustaining the infrastructure required to conduct clinical studies at NCI-Designated Cancer Centers across the country. In fact, a phase 3 clinical study conducted at multiple cancer centers led to the FDA approval of a chemotherapy for first-line treatment of metastatic pancreatic cancer. This chemotherapy is delivered in protective shells that help the drug reach pancreatic tumors that are often difficult to penetrate.

In addition, the NCI Experimental Therapeutics Clinical Trials Network (ETCTN) conducts early-stage trials of cancer therapies and currently supports two clinical studies focused on pancreatic cancer, including one that is evaluating a combination therapy approach involving an immunotherapy, a targeted therapy, and radiation therapy to treat locally advanced pancreatic cancer that cannot be removed by surgery.

NCI promotes translational research and early-phase clinical trials through its Specialized Programs of Research Excellence (SPOREs) conducting an array of projects focused on developing new immunotherapies and treatment combinations for pancreatic cancer.[102] One SPORE is working to develop a personalized vaccine to treat pancreatic cancer patients. Another is leading a phase 2 trial to evaluate a combination treatment in patients with metastatic pancreatic cancer and will also identify tumor features associated with treatment response versus resistance to guide future treatment strategies for advanced pancreatic cancer.

NCI is committed to increasing the participation of all underrepresented populations in clinical trials to improve health outcomes for all. For example, participation of racial and ethnic minority patients has increased from 14 percent at the beginning of this century to 25 percent in 2019 and

[100] pubmed.ncbi.nlm.nih.gov/38693266/
[101] pmc.ncbi.nlm.nih.gov/articles/PMC11779630/
[102] dctd.cancer.gov/research/spores/focus-area/pancreatic

is approaching 30 percent for NCI's National Clinical Trials Network and NCI Community Oncology Research Program clinical trials. In FY 2021, NCI launched a new program, Connecting Underrepresented Populations to Clinical Trials (CUSP2CT), to increase the participation of historically underrepresented populations in NCI-supported clinical trials through implementation and evaluation of culturally tailored outreach and education. Several clinical trials are currently underway as part of this initiative. This is just one example of NCI's long-term efforts to meaningfully increase the participation of all populations in cancer clinical trials.

PANS/PANDAS

Senate Language

The Committee is concerned that although NIH supports research on Pediatric Acute-Onset Neuropsychiatric Syndrome [PANS] and Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcus [PANDAS], significantly more needs to be done. Understanding the causes, diagnosis, and treatment of these life-threatening diseases is essential to expedite early identification and intervention, thereby reducing the risk of chronic illness and associated costs to families, school systems, healthcare systems, and insurers. PANS/PANDAS research also would further the understanding of the critical link between neuropsychiatric illness and COVID–19 and other infections. The Committee encourages NIH to continue to prioritize research on PANS/PANDAS and related to autoimmune encephalitic conditions, and requests an update in the fiscal year 2027 CJ. (Page 152, Senate Report 119-55)

House Language

The Committee supports efforts to advance scientific research related to the devastating diseases of Pediatric Acute-Onset Neuropsychiatric Syndrome (PANS) & Pediatric Autoimmune Neuropsychiatric Disorder Associated with Streptococcus (PANDAS). Although the NIH has undertaken research in this area, significantly more needs to be done. Understanding the causes, diagnosis, and treatment of these life-threatening diseases is essential to expedite early identification and intervention, thereby reducing the risk of chronic illness and associated costs to families, school systems, health care systems, and insurers. PANS/PANDAS research also would further the understanding of the critical link between neuropsychiatric illness and infections. The Committee urges NIH to continue to prioritize research on PANS/PANDAS and related to autoimmune encephalitic conditions and requests an update on such research in the fiscal year 2027 congressional justification. (Page 126, House Report 119-271)

Action taken or to be taken

Autoimmune encephalitic conditions are illnesses in which an inflammatory immune response triggers pathology in the brain, resulting in a sudden onset of obsessive-compulsive disorder (OCD) symptoms, other tic disorder symptoms, and/or other neuropsychiatric symptoms such as severe eating restrictions. For over two decades, the National Institute of Mental Health (NIMH) has supported a robust research portfolio on the full range of mental and neurodevelopmental disorders that emerge during childhood and adolescence, including autoimmune encephalitic conditions, Pediatric Acute-onset Neuropsychiatric Syndrome (PANS), and its subset Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS).[103] Collectively, this research portfolio aims to identify the mechanisms leading to mental illnesses and to identify potential targets for the development of new and improved interventions. In addition, NIMH engages in educational outreach with the medical community and other external interested parties to share information about NIMH programs and NIMH-funded advances.

[103] nimh.nih.gov/health/publications/pandas

Findings from NIMH-supported research have led to the development of new treatments to improve outcomes for individuals with autoimmune encephalitic conditions and psychiatric conditions that may be immune-mediated. For example, the NIMH Intramural Research Program was instrumental in identifying immune mechanisms that lead to brain dysfunction in PANS and PANDAS. In the case of PANDAS, this immune response is associated specifically with Group A streptococcal (strep) infections, such as strep throat and scarlet fever. Researchers found that strep-related PANDAS episodes can be managed by prescribing antibiotics to eliminate the strep infection and ameliorate symptoms. Children with PANS- or PANDAS-related OCD symptoms may also benefit from standard OCD treatment, which includes medication and behavioral therapy. Another NIMH-funded project is exploring research efforts to determine the incidence, clinical manifestation, and course of PANS and PANDAS in diverse populations of children.

NIMH continues to support multidisciplinary approaches in which teams of researchers from multiple fields, including neurobiology, molecular biology, psychiatry, pediatrics, and clinical research, are exploring the biological pathways underlying autoimmune encephalitic conditions, which may lead to new therapies. For example, NIMH-funded researchers are studying antibodies collected from the cerebrospinal fluid of a large and diverse cohort of patients with idiopathic encephalitis. The researchers reported that these antibodies may be associated with the neurological and psychiatric symptoms found in individuals with brain inflammation, including those infected with SARS-CoV-2, the virus that causes COVID-19 disease. This research contributes to the ongoing effort to better understand how neuropsychiatric symptoms may arise following infection.

Another NIMH-funded research team found that children with PANDAS produce antibodies that attach to a specific type of brain cell and change how it functions. This finding offers a possible mechanistic explanation for symptoms seen in individuals with PANDAS. Building on the findings from this initial small study, the research team is now investigating whether antibody binding to a particular group of brain cells, called cholinergic interneurons, contributes to the development of PANDAS. In another NIMH-funded project, scientists investigated how T helper cells – critical components of a typical immune response – contribute to both inflammation and dysfunction of the brain following strep infection. Additionally, NIMH intramural researchers are applying a novel bioinformatics technique to identify the autoantibodies (antibodies that react against an individual's own cells) that cause PANDAS symptoms. Through this technique,[104] researchers analyze blood samples to assemble a complete profile of an individual's autoantibodies.

NIMH intramural researchers are also collecting medical, behavioral, and biological data to evaluate research participant characteristics that are associated with symptom profiles and responses to standard interventions for PANS/PANDAS and a variety of related childhood behavioral, psychiatric, and developmental disorders. These multidisciplinary approaches aim to provide a more precise understanding of the link between autoimmune encephalitic processes and PANS/PANDAS and may clarify diagnoses and identify new targets for treatment to ultimately improve outcomes for individuals with these conditions.

[104] pubmed.ncbi.nlm.nih.gov/38641750/

Patient Access to Clinical Trials

The Committee recognizes that local healthcare provider and patient access to clinical trials is critical for improving equitable access to research and novel therapies; diversifying the population participating in research; ensuring the safety and efficacy of new drugs; and accelerating the dissemination and implementation of findings and the adoption of newly approved therapies. However, access to trials remains out of reach for many patients and local oncology providers, particularly those in rural areas and/or at practice sites and hospitals without dedicated research resources and infrastructure. Leveraging technology can improve efficiencies of trial start-up, administration, and communications. A virtual research team who provides centralized research expertise and resources can ultimately support local provider participation in clinical trials by alleviating the need for specialized personnel onsite. The NCI's recently launched Virtual Clinical Trials Office pilot study provides virtual research personnel to NCI-funded trials conducted at participating NCI-designated cancer centers and NCI Community Oncology Research Program sites. The Committee encourages the use of telehealth and expansion of the clinical trial-related remote services provided by this office. The Committee requests an update on the Virtual Clinical Trials Office in the fiscal year 2027 CJ, including demonstrating if there were increases in local provider and/or patient participation in clinical trials, especially from rural areas, and challenges and successes in prescreening/screening of potential trial candidates, obtaining informed consents, data abstraction, building protocol-specific treatment plans, and maintaining a repository for quick adoption into the local sites. (Page 110, Senate Report 119-55)

Action taken or to be taken

The National Cancer Institute (NCI) launched the Virtual Clinical Trials Office (VCTO) in 2023 to address the decline in participation in cancer clinical trials caused in part by staffing shortages, which were exacerbated by the COVID-19 pandemic. The lack of trained clinical research professionals compounded the already complex nature of clinical trial operations and has hampered clinical trial activities, particularly in rural and/or medically underserved communities. A VCTO pilot project was established to improve enrollment and retention in NCI-supported clinical trials by providing centralized, remote clinical research support to participating sites.

The VCTO pilot team—comprised of clinical research nurses and clinical research professionals—work remotely to support NCI-Designated Cancer Centers and NCI Community Oncology Research Program (NCORP) sites. The virtual team provides centralized clinical research expertise aimed at reducing the burden of clinical trial operations for the onsite personnel and supporting increased local healthcare provider participation in clinical trials. VCTO services include patient prescreening and eligibility review, patient education and informed consent, remote conduct of protocol-required visits and assessments, data management, and facilitation of trial enrollment. This initiative will support clinical trials conducted within several NCI clinical trials networks, including the National Clinical Trials Network (NCTN), the NCI Experimental Therapeutics Clinical Trials Network (ETCTN), and the NCI Community Oncology Research Program (NCORP).[105,106]

[105] cancer.gov/news-events/press-releases/2024/virtual-clinical-trials-office-launches
[106] dctd.cancer.gov/research/research-areas/clinical-trials/modernization/vcto-pilot-program

As of January 2026, the VCTO pilot supports 35 sites nationwide, including 11 rural and NCORP sites in medically underserved communities. The VCTO has conducted more than 10,000 screening visits, identified over 1,500 potentially eligible patients, and facilitated the enrollment of 245 patients into NCI-supported clinical trials since December 1, 2023. Notably, 139 (57 percent) of the enrollments occurred at NCORP sites in medically underserved communities and rural sites, demonstrating progress toward expanding access to clinical trials in communities that historically lack clinical research infrastructure.

The VCTO has improved efficiencies in prescreening and screening, while addressing operational challenges. The VCTO team has worked collaboratively with sites to establish secure file-sharing platforms to enable rapid setup and improve communication between virtual staff and local teams. The VCTO also developed standardized pre-screening tools that facilitate efficient patient screening across high-volume clinic schedules and electronic health record (EHR) reports.

Key challenges to accomplishing the goals of the VCTO pilot program remain, including variable EHR access based on site policies and licensing, site barriers to adoption of Artificial Intelligence (AI)-enabled tools or tools embedded in the EHR due to cost, learning curves, IT security concerns, and inconsistent clinic note content and terminology. Under the pilot program, VCTO continues to address these challenges through on-site staff education, promotion of standardized documentation practices, and consistent inclusion of protocol-required eligibility information in clinic notes—such as tumor staging, menopausal status, and performance status—to improve screening accuracy and efficiency. The program also supports adoption of electronic consenting platforms and best practices for remote consenting processes.

The VCTO has strengthened data management capabilities by developing protocol-aligned tracking tools that proactively identify inconsistencies across systems, clarify data entry expectations, and reduce errors and delays in data submission. The VCTO also assists sites in transitioning paper-based clinical research processes, including adverse event and concomitant medication logs, to electronic formats where feasible, improving timeliness and data quality.

To support rapid adoption and scalability, all participating sites have access to a centralized repository of VCTO templates and tools housed on a secure platform. This repository reduces duplication of effort to develop clinical trial tools and enables sites to implement standardized workflows more quickly. Experience gained through the pilot has reduced pilot site onboarding time by approximately 25 percent, although gaining EHR access remains the most time-intensive step due to legal requirements, institutional policies, and licensing constraints.

Overall, the VCTO's pilot program demonstrates that leveraging technology and centralized, virtual clinical research teams can reduce operational barriers, improve efficiencies in clinical trial operations, and expand patient and provider access to NCI-supported clinical trials—particularly in rural and medically underserved communities—while maintaining consistency and data quality across participating sites.

Pediatric Lyme Disease

As part of the fiscal year 2027 congressional justification, the Committee requests an update on the agency's plans to advance research on pediatric Lyme disease. The Committee encourages NIH, including NIAID, NINDS and NIMH, to increase study of neurologic symptoms of Lyme disease, including in children, and to investigate novel treatments of neurologic symptoms. (Page 134, House Report 119-271)

Action taken or to be taken

Lyme disease is the most common vector-borne disease in the United States, with most cases caused by the bacterium *Borrelia burgdorferi* transmitted through the bites of infected blacklegged or deer ticks. Children between 5 and 9 years account for a large proportion of the Lyme disease cases diagnosed and treated annually in the United States. Antibiotic treatment results in full recovery in most Lyme cases. For some, however, symptoms of pain, fatigue, or difficulty thinking persist or return after antibiotic treatment. Symptoms that substantially reduce levels of activity and impact quality of life for more than six months after treatment are classified as Post-Treatment Lyme Disease Syndrome (PTLDS). PTLDS remains poorly understood in children and adults, and more research is needed to better understand these prolonged symptoms and identify treatment targets. Research supported by NIH includes basic studies on pathogen biology and how those pathogens cause disease, as well as new ways to diagnose, prevent or treat disease. all guided by the NIH Strategic Plan for Tickborne Disease Research.[107]

NIH is working to address gaps in pediatric Lyme disease and other tick-borne disease research through multiple research efforts. NIAID is funding a multi-site clinical study in pediatric Lyme research. This study specifically will determine if pediatric Lyme meningitis can be treated as successfully with an oral antibiotic (doxycycline) as with the standard treatment of an antibiotic given intravenously (ceftriaxone). If the answer is yes, there would be less clinical risk and improved quality of life for patients and their families.[108] NIAID is also funding research to determine whether immune responses differ in children with Lyme disease compared to adults. Researchers are looking for which proteins from bacteria that a child's immune system recognizes. They are also looking at whether the antibodies that attach to those bacterial proteins can also mistakenly attach to the child's own proteins triggering the immune system to attack. Recently, NIAID-supported investigators found that a component of the Lyme disease bacteria's cell wall, called peptidoglycan, may trigger a person's immune cells to produce antibodies that target their own tissue, contributing to the signs and symptoms of PTLDS.

NIAID is currently funding a prospective study on persistent symptoms attributed to Lyme disease in adults.[109] Understanding persistent symptoms attributed to Lyme disease is also important in pediatrics. The adult study will inform a future pediatric study by helping investigators identify the most important parameters to evaluate. The current study is also testing a method to collect a sample from a distinct skin rash called erythema migrans (EM rash) that does not require skin biopsy, which could also be a valuable method for a future pediatric study.

[107] pubweb-prod.niaid.nih.gov/sites/default/files/nih-strategic-plan-for-tickborne-disease-research-2025-update.pdf
[108] reporter.nih.gov/search/SwKhy2nN1EWG67FrEYFOlg/project-details/11163246#description
[109] reporter.nih.gov/search/oll_8CkDVk22S2YpjFg1mA/project-details/10862287

The NIAID Division of Intramural Research is looking to launch a prospective clinical study of pediatric Lyme disease in conjunction with a committed partner site. This new clinical study will improve our understanding of pediatric Lyme disease's clinical manifestations, long term outcomes, immune responses, and the prevalence of PTLDS.

Pelvic Organ Prolapse

Pelvic organ prolapse (POP) occurs when the pelvic floor muscles and connective tissue supporting the pelvic organs fail, and one or more of the pelvic organs fall downward, protruding from the body. It is common, with one out of eight women undergoing surgery for prolapse at some point in their life. Symptomatic POP is associated with urinary incontinence, depression, anxiety, sleep disturbance, deteriorating physical function, and diminished socialization. The Committee encourages the NICHD to convene a workshop to design prospective studies related to POP including research studies being conducted in underserved areas, to assess preventative strategies for POP, including ways to decrease pelvic floor trauma or denervation during delivery, with the goal of reducing the risk of subsequent POP and its complications. The Committee also encourages continued support of POP research. The Committee requests an update in the fiscal year 2027 congressional justification on research to advance POP prevention and treatment. (Page 112, House Report 119-271)

Action taken or to be taken

Pelvic organ prolapse, a type of pelvic floor disorder, happens in women when the pelvic muscles and tissue can no longer support one or more pelvic organs, causing them to drop or press into the vagina. It is a common problem in women that the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD) is working to address. The majority of NICHD-supported research on pelvic floor disorders, including pelvic organ prolapse, is conducted through the Pelvic Floor Disorders Network (PFDN), a multi-center research network of experts around the United States. The PFDN has established the scientific evidence base to identify effective interventions, involving both surgical and non-surgical care, for this large and growing clinical problem. Vaginal prolapse treatments include pelvic floor exercises, pessary use (a removeable device that is inserted by the individual or a healthcare provider into the vagina to support the pelvic organs), or surgery. An NICHD-funded study compared outcomes from two surgical options: uterosacral ligament (USL) suspension, which attaches the vagina to USLs in the pelvis, and mesh hysteropexy (MH), which adds surgical mesh support to the vagina/pelvic organs. Groups had similar successful outcomes at three years post-op. Up to five years post-op, both groups had improved PFD symptoms and sexual function, but only the MH group had lower rates of prolapse recurrence. PFDN research aims to inform healthcare providers about diagnosis, care, and treatment of women with pelvic floor disorders, while improving the quality of life for women with pelvic floor disorders and their families.

Although the PFDN is a flagship program for the NIH in this research area, NICHD also funds a portfolio of research studies related to pelvic organ prolapse outside of the PFDN. Scientists are focusing on both treating existing cases and preventing pelvic organ prolapse from occurring at all. For example, researchers found that stem cell-derived therapy might be a possible treatment for vaginal prolapse recurrence after surgical intervention. Another team of researchers studying the effectiveness and safety of a novel pessary found that it was equally effective in providing prolapse support and most participants found it less painful to insert and remove compared with a currently marketed device. Finally, in a randomized clinical trial focused on prevention, a team of clinician-scientists found that the timing of pushing during labor did not reduce the risk of pelvic organ prolapse or pelvic floor disorders more generally.

NICHD, in collaboration with the research community, will continue its efforts on understanding the etiology of pelvic organ prolapse, and in the development of improved prevention and treatment options.

Population Research

The Committee has commended NICHD for supporting prospective, population representative longitudinal studies, including the Panel Study of Income Dynamics Child Development Supplement, Future of Families and Child Wellbeing Study, and National Longitudinal Survey of Youth. Data from these studies are used widely to inform research and training activities conducted by thousands of scientists at universities nationwide, including underserved institutions, and are heavily used by new and early-stage investigators. These studies are the only nationally representative data scientists may use to analyze, for example, how parental and grandparental characteristics affect children's outcomes and the impact of adverse childhood experiences over the course of life. The Committee is concerned to learn that NICHD is proposing funding reductions to these surveys, which could result in the permanent loss of invaluable data that could be used to assess and track long-term health and wellbeing outcomes in infants, children, and adolescents. NICHD is encouraged to prioritize supporting these surveys. The Committee requests an update on this topic in the fiscal year 2027 congressional justification. (Page 112, House Report 119-271)

Action taken or to be taken

The mission of the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD) is to lead research and training to understand human development, improve reproductive health, enhance the lives of children and adolescents, and optimize abilities for all. NICHD-funded population research focuses on how demographic, institutional, geographic, and other factors influence human health, productivity, behavior, and development, with an emphasis on research using population-representative data and natural and policy experiments. Research based on population-level surveys, real-world population-level data, and longitudinal studies continues to be a priority for NICHD because it supports high-quality science to assess the health and well-being of the populations embodied in NICHD's mission.

NICHD-funded researchers analyzed data from California and Michigan to assess specific maternal morbidity measures available on birth certificates and then compared this information to hospitalization data. Their analysis found that maternal morbidity measures using birth certificate data alone were substantially underreported and had poor validity, and that differences between Black and White women were smaller in the birth certificate data compared with the hospitalization data.

Using vital statistics data, NICHD-supported scientists found that rural areas experience higher burdens of pregnancy-associated death than urban areas. This was exacerbated during the pandemic, when rural areas had the highest pregnancy-associated death ratios due to obstetric causes, drug-related causes, suicide, and other causes (the majority of which are motor vehicle accidents). Other researchers analyzed obstetric services at nearly 5,000 short-term acute care hospitals using data from the American Hospital Association and federal Centers for Medicare & Medicaid Services. The data showed that at least a quarter of hospitals in seven states closed their obstetric services between 2010 and 2022. Moreover, in 6 states, more than 60 percent of hospitals lacked obstetric services by 2022. States with large rural areas saw the most profound losses, underscoring the need for evidence-based care for these populations.

A study using the Future of Families data found that rates of depression among mothers with intellectual disability or borderline intellectual functioning were consistently elevated across their children's ages. However, the highest risk was observed when the child was 3 years old, even when adjusting for multiple contextual variables. These findings can inform efforts to target support services for higher-risk families.

NICHD remains committed to supporting population health research to assess and improve health outcomes for the people NICHD supports.

Pregnant and Lactating Women

The Committee remains concerned about the lack of pregnant and lactating women in clinical research. Women with chronic health conditions lack access to appropriate treatments during pregnancy, putting them and their infants at risk. Despite 90 percent of pregnant women taking prescription medication, only 5 percent of medications have data on the impact of the medications during pregnancy. The Committee urges NICHD to conduct priority research projects on existing medications and therapeutics prescribed to pregnant and lactating women, and to prioritize research applications in the following areas: an unmet medical need or gap in treatment, and severity and prevalence of a specific disease or condition. The Committee requests an update in the fiscal year 2027 congressional justification on this effort. (Page 113, House Report 119-271)

Action taken or to be taken

The inclusion of pregnant women and lactating women in clinical research is a priority of the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD). The NICHD-led Task Force on Research Specific to Pregnant Women and Lactating Women (PRGLAC) developed recommendations for advancing research on safe and effective therapeutics for pregnant women and lactating women. In 2023-2024, a PRGLAC Implementation Working Group of the NICHD Advisory Council monitored the implementation of PRGLAC recommendations and reported on implementation progress. The PRGLAC Implementation Working Group published its report on the progress of implementing recommendations for improving knowledge and research on safe and effective therapeutics for pregnant women and lactating women.[110]

NICHD supports a broad range of clinical research focused on pregnant women and lactating women. One example is the Commonly Used Drugs During Lactation and infant Exposure (CUDDLE) study conducted by NICHD's Pediatric Trials Network.[111] The CUDDLE study tracks how different drugs are passed through breast milk to determine dosing levels that are safe for both mother and infant. There are 10 drugs included in the study and assessments of 3 of those drugs have been completed, analyzed, and submitted to the Food and Drug Administration (FDA) for review and approval of language that can be included in the medication drug label. One of those drugs, oxycodone, has undergone its final review at the FDA and the data from the CUDDLE study has been included in the oxycodone section of the drug label as an update to the drug label. This research has direct benefits for mothers and babies.

Furthermore, to expand pharmacology research and support the implementation of PRGLAC, NICHD's Maternal and Pediatric Precision in Therapeutics (MPRINT) program serves as a national resource to aggregate, present, and expand the available knowledge, tools, and expertise in maternal and pediatric therapeutics to the broader research, regulatory science, and drug development communities. It also conducts therapeutics-focused research in obstetrics, lactation, and pediatrics to understand maternal-fetal drug exposure and placental response relationships, while enhancing inclusion of people with disabilities. MPRINT has developed a knowledge base of data and resources relating to maternal and pediatric therapeutics. These data will inform

[110] nichd.nih.gov/sites/default/files/inline-files/PRGLAC_Progress_Report.pdf.
[111] nichd.nih.gov/research/supported/ptn

efforts to implement research recommendations from PRGLAC. For example, the MPRINT Real-world Evidence Core uses mother–baby linkages to improve the characterization of maternal and pediatric drugs by combining Electronic Health Record (EHR) data with biospecimens and other types of data. The MPRINT Hub also offers funding opportunities, including training and career development awards for clinical and postdoctoral fellows and junior faculty focused on pediatric, pregnancy, and lactation research.

NICHD recently funded the Dosing and Safety of Understudied Drugs Administered to Pregnant Individuals per Standard of Care (PregDose) Study, which leverages NICHD's Maternal-Fetal Medicine Units (MFMU) Network and the MPRINT Hub. The goal of the PregDose study is to create the research infrastructure to address dosing knowledge gaps for therapeutics in pregnant women and determine optimal dosing for commonly used drugs in pregnancy.

NICHD has supported researchers assessing a placental barrier model for predicting fetal exposure and toxicity,[112] studying preeclampsia pathogenesis to assess therapeutics for preeclampsia,[113] testing the efficacy of an anti-inflammatory drug delivered to reduce pre-term birth,[114] and developing pharmacological strategies to target FKBP51, a stress response protein, in pre-term birth prevention.[115]

Furthermore, NICHD has taken steps to address recommendations from the PRGLAC Task Force to identify gaps in knowledge and needs and to prioritize research on therapeutics for pregnant, postpartum, and lactating women. In 2023, NICHD invited public nominations for potential priorities on research needs for specific therapeutics used by pregnant women, lactating women, and postpartum women and received 136 nominations across 24 therapeutic areas. Based on these nominations, NICHD convened stakeholders in July 2024 to discuss prioritization of preventive and therapeutic products research needs for use in women who are pregnant, postpartum, and lactating. Meeting participants plan to release a priority list of research gaps and needs for preventive and therapeutic products for pregnant, postpartum, and lactating women in 2026. This list will be used to guide research and funding priorities.

NICHD is also partnering with FDA colleagues to organize a public "Optimizing Pregnancy Registries" Workshop in May 2026 to discuss challenges in designing and implementing pregnancy registries and to consider innovative approaches to improve the design and conduct of pregnancy registries to inform the safety of drug and biological products during pregnancy.

[112] reporter.nih.gov/search/nijCQJo_JE-eX4TmPupVQw/project-details/10847420
[113] reporter.nih.gov/search/bO2R-mc7Ok6TqFSNJyWZjQ/project-details/10464766
[114] reporter.nih.gov/project-details/10766801
[115] reporter.nih.gov/search/AvEt4xWOy0exVtovTuy2iQ/project-details/10464766

Pregnant and Lactating Women's Advisory Committee

The Committee continues funding for the advisory committee to continue activities within the 2020 Task Force on Research Specific to Pregnant and Lactating Women (PRGLAC) Implementation Plan. The Committee requests an update in the fiscal year 2027 congressional justification on progress and Federal activities undertaken to implement the PRGLAC recommendations and suggestions for further implementation of PRGLAC recommendations. (Page 214, House Report 119-271)

Action taken or to be taken

About 9 in 10 women take at least one medication during pregnancy. However, fewer than 10 percent of medications have enough information to determine if they are safe for a pregnant woman or fetus. The inclusion of pregnant women and lactating women in clinical research is a priority of the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD). The NICHD-led Task Force on Research Specific to Pregnant Women and Lactating Women (PRGLAC) developed recommendations for advancing research on safe and effective therapeutics for pregnant women and lactating women and submitted a report to the HHS secretary in September 2018. In 2023-2024, a PRGLAC Implementation Working Group, a part of the NICHD Advisory Council, was convened to monitor the implementation of PRGLAC recommendations and report on implementation progress. In July 2024, the Working Group published its report on the progress of implementing recommendations for improving knowledge and research on safe and effective therapeutics for pregnant women and lactating women.[116]

Since then, NICHD has taken further steps to address recommendations from the PRGLAC Task Force to identify gaps in knowledge and needs and to prioritize research on therapeutics for pregnant, postpartum, and lactating women. In 2023, as part of implementation efforts, NICHD solicited and received 136 public nominations across 24 therapeutic areas on research needs for specific therapeutics used by pregnant women, lactating women, and postpartum women. In July 2024, NICHD convened a meeting to discuss prioritization of these nominations. Meeting participants plan to release a priority list of research gaps and needs for preventive and therapeutic products for pregnant, postpartum, and lactating women in 2026. This list will be used to guide research and funding priorities.

Furthermore, to expand pharmacology research and support the implementation of PRGLAC recommendations, NICHD's Maternal and Pediatric Precision in Therapeutics (MPRINT) program serves as a national resource to aggregate, present, and expand the available knowledge, tools, and expertise in maternal and pediatric therapeutics to the broader research, regulatory science, and drug development communities. It also conducts therapeutics-focused research in obstetrics, lactation, and pediatrics to understand maternal-fetal drug exposure and placental response relationships, while enhancing inclusion of people with disabilities. MPRINT has developed a repository of data and resources relating to maternal and pediatric therapeutics, including pharmacoepidemiology, pharmacokinetics, pharmacodynamics, pharmacogenetics, pediatric ontogeny, and physiological changes that occur with and around pregnancy and lactation. These data will inform efforts to implement research recommendations from PRGLAC. For example, the MPRINT Real-world Evidence Core uses mother–baby linkages to

[116] nichd.nih.gov/sites/default/files/inline-files/PRGLAC_Progress_Report.pdf

improve the characterization of maternal and pediatric drugs by connecting electronic health record data with biospecimens and other types of data. The MPRINT Hub also works to implement PRGLAC recommendations by offering funding opportunities, including training and career development awards, for clinical and postdoctoral fellows and junior faculty focused on pediatric, pregnancy, and lactation research. Finally, the MPRINT Hub supports curation of LactMed®,[117] a database previously managed by the National Library of Medicine that includes information on drugs and other chemicals to which breastfeeding mothers may be exposed.

Lastly, NICHD recently funded the Dosing and Safety of Understudied Drugs Administered to Pregnant Individuals per Standard of Care (PregDose) Study, which leverages NICHD's Maternal-Fetal Medicine Units (MFMU) Network and the MPRINT Hub. The goal of the PregDose study is to create the research infrastructure to address dosing knowledge gaps for therapeutics in pregnant women and determine optimal dosing for commonly used drugs in pregnancy. NICHD program staff and PregDose study teams are using PRGLAC prioritization recommendations in selecting the final 10 drugs for study. In line with PRGLAC recommendations, these awards allow for longer study duration, ensuring long term effects may be assessed over seven years.

[117] ncbi.nlm.nih.gov/books/NBK501922/toc/?report=reader

Pulmonary Fibrosis

The Committee applauds NHLBI for its growing commitment to groundbreaking research into PF, a family of chronic diseases affecting more than 250,000 Americans and taking the lives of roughly 40,000 annually. Yet there remains no cure and life expectancy is only 3–4 years for many patients. The Committee encourages NHLBI to sharpen its focus on identifying new paths to improved treatments and creating innovative ways to support early career investigators so that the pipeline for PF research will continue to strengthen, thereby providing renewed hope to patients and families facing these serious diseases. The Committee requests an update on these activities in the fiscal year 2027 CJ. (Page 114, Senate Report 119-55)

Action taken or to be taken

The National Heart, Lung, and Blood Institute (NHLBI) supports a robust portfolio of basic, translational, and clinical research focused on understanding the causes of pulmonary fibrosis (PF) and interstitial lung disease more broadly. The Institute is also focused on improving early detection, diagnosis, and treatment of these conditions for all patients, and supporting early career researchers to build the next generation of pulmonary researchers.

NHLBI is funding several clinical trials on PF. Idiopathic Pulmonary Fibrosis (IPF) is the most common, lethal type of PF and the cause is unknown. Studies have shown that IPF is biologically varied and discovered that rare genetic variants can identify distinct patient subgroups highlighting that IPF is not a single genetically uniform disease. NHLBI is advancing precision medicine in IPF through the Prospective Treatment Efficacy in IPF Using Genotype for N-acetylcysteine Selection (PRECISIONS) study. This first-of-its-kind clinical trial will help determine the relationship between genetics and disease progression, and will allow researchers to link detailed clinical data with biospecimen collection to connect molecular profiles with disease course and treatment response. Complementing this work, NHLBI-supported studies of people at high risk of PF have shown that preclinical PF is common, progressive, and associated with reduced survival, establishing a biologically meaningful window for early detection. Together, these efforts link preclinical and clinical disease across the PF spectrum and enable validation of candidate biomarkers and translation of molecular signatures into practical tools to improve risk prediction, diagnosis, and treatment selection for patients with PF.

Through a targeted initiative to advance novel research models for IPF, NHLBI launched the Models of Idiopathic Pulmonary Fibrosis Consortium[118] to address a major preclinical research gap: existing laboratory models did not adequately reflect the progressive and irreversible nature of the disease. This consortium has delivered complementary cellular, organoid, and animal models that more closely mirror human IPF and are now available to the research community. A key study from this consortium showed that disruption of normal energy regulation in lung cells can directly drive fibrotic scarring, and that restoring normal energy regulation reduced fibrosis in preclinical studies.[119] These advances have strengthened the rigor of preclinical testing and accelerated translational research toward effective treatments for PF.

[118] ipfmodelsconsortium.org/
[119] pubmed.ncbi.nlm.nih.gov/40591409/

PF remains a burdensome and fatal disease due to late diagnosis and no cure. Building on prior NHLBI investments in data science and large-scale genomic resources, including the Trans-Omics for Precision Medicine program (TOPMed),[120] NHLBI is launching the Pioneering Research for Early Evaluation and Mechanistic PreempTion of Pulmonary Fibrosis (PREEMPT-PF) program. PREEMPT-PF will integrate longitudinal clinical data, imaging, and molecular profiling from existing PF cohorts, including resources developed through TOPMed, to identify early risk factors, diagnostic and predictive biomarkers, and biologically grounded targets for intervention before permanent lung damage develops. The program is supported within NHLBI's Artificial Intelligence Initiative (NHLBI-AI),[121] which uses AI to analyze large, complex datasets and uncover patterns that cannot be identified through traditional methods. By linking prior genomic discoveries with deep phenotyping and AI-enabled analyses, PREEMPT-PF aims to shift PF research from late-stage diagnosis to early detection and prevention, laying a foundation for preemptive strategies that could change clinical outcomes for patients at risk of this devastating disease.

[120] topmed.nhlbi.nih.gov/
[121] nhlbi-ai.org/

Reporting on Monetary Donations

The Committee is concerned by findings in the HHS OIG report, ''Most Institutions That Received NIH Funding Did Not Fully Understand When They Must Report Monetary Donations,'' published in March 2025. NIH-funded institutions must report all ''other support'' that their NIH-funded investigators receive related to their research, including resources from foreign and domestic entities, such as financial support, high-value materials, and in-kind contributions such as laboratory space or employees. Before making awards, NIH uses this to determine if the other support and an NIH award would result in a scientific, budgetary, or commitment overlap. NIH disburses more than 80 percent of its approximately $48 billion budget to universities, medical schools, and other research institutions. It is therefore concerning that only one in five institutions that responded to OIG's survey could accurately identify instances in which they must report monetary donations to NIH. One quarter of the institutions did not correctly identify any of the instances that require monetary reporting. Insufficient reporting by institutions undermines NIH's oversight of awards, and it increases the risk that taxpayer dollars are spent on duplicative support to researchers. The Committee requests an update in the fiscal year 2027 congressional justification on NIH's efforts to implement the OIG's recommendation that NIH provide clarity to institutions on their monetary reporting requirements. (Page 120, House Report 119-271)

Action taken or to be taken

NIH is committed to exemplifying the highest level of scientific integrity, public accountability, and responsibility in the conduct of science, including a commitment to safe and unbiased research. Accordingly, NIH concurred with the HHS Office of Inspector General's recommendation and added monetary donations as a line within the NIH Disclosure Requirements Table.[122] In addition, NIH posted examples of monetary donations that must be reported as Current and Pending (Other) Support. In response to feedback from the extramural community, NIH is updating its guidance on disclosing monetary donations. NIH recognizes that the format and data elements in the Common Form for Current and Pending (Other) Support[123] do not readily allow for appropriate disclosure of monetary donations and is developing updated instructions for submission. NIH will continue to work closely with applicant and recipient institutions, researchers, and other federal agencies to protect the integrity and credibility of the NIH biomedical research enterprise.

[122] grants.nih.gov/grants/forms/NIH-Disclosures-Table.pdf
[123] grants.nih.gov/grants-process/write-application/forms-directory/other-support

Retinitis Pigmentosa

The Committee continues to encourage NEI to expand research into Retinitis Pigmentosa and requests an update in the fiscal year 2027 congressional justification on collaborative efforts among stakeholders and other Institutes and Centers on work toward curative treatments and therapeutics for retinitis pigmentosa. (Page 113, House Report 119-271)

Action taken or to be taken

Vision research has identified over 200 human genetic mutations that lead to retinitis pigmentosa and related retinal degenerative diseases. The National Eye Institute (NEI) supports a robust pipeline of preclinical and clinical gene therapy trials for genetic eye mutations.

A few decades ago, there were no treatments for any form of retinitis pigmentosa, but in 2017, the Food and Drug Administration (FDA) approved the first targeted gene therapy in any field of medicine, Luxturna, to treat *RPE65*-associated retinal dystrophies, a type of retinitis pigmentosa. Now, another gene therapy developed at NEI to treat a different form of retinitis pigmentosa is being evaluated in a Phase 3 clinical trial.[124] These gene replacement therapies deliver a healthy copy of a gene to cells that only have a mutant copy. Researchers at NEI also developed eye drops that slow vision loss in animals and show potential to slow the progression of human degenerative eye diseases, including retinitis pigmentosa.[125] To take the next step toward moving the finding into patients, the NEI Intramural Research Program is working to demonstrate the safety of these eye drops through Investigational New Drug-enabling studies and receive FDA authorization to begin clinical trials.

NEI is driving innovative, collaborative vision research through its participation in the NIH Accelerating Medicines Partnership® (AMP®) Program Bespoke Gene Therapy Consortium (AMP BGTC). The consortium brings together partners from the public, private, and non-profit sectors to streamline the gene therapy development process, reduce costs, and encourage companies to pursue gene therapies for rare genetic diseases. Three of the eight clinical projects funded by the AMP BGTC[126] involve the eye, including a therapy for a specific type of retinitis pigmentosa caused by a mutation in the retinitis pigmentosa 45 gene. These and other efforts are improving the tools to deliver gene therapies to people, creating opportunities to target more, and rarer, genetic mutations for retinitis pigmentosa and beyond. Additionally, NEI supported the groundbreaking BRILLIANCE trial,[127] which tested an experimental treatment to improve in the sight of people with another form of inherited retinal diseases that can lead to the gradual loss of vision. It marked the first time a patient received a medication that can edit genes directly inside the body using the technology called CRISPR. The trial showed the therapy was safe and improved vision in 11 of 14 participants. Yet another emerging therapy for retinitis pigmentosa in clinical trials uses optogenetics.[128] This technology uses a combination of light and genetic engineering to insert a light-detecting molecule that is delivered to retinal cells that do not normally respond to light, making them light-sensitive. One promise of optogenetics is that it

[124] clinicaltrials.gov/study/NCT06388200
[125] nei.nih.gov/research-and-training/research-news/nih-researchers-develop-eye-drops-slow-vision-loss-animals
[126] fnih.org/our-programs/accelerating-medicines-partnership-amp/bespoke-gene-therapy-consortium-bgtc/
[127] nei.nih.gov/about/news-and-events/news/participants-pioneering-crispr-gene-editing-trial-see-vision-improve
[128] reviewofophthalmology.com/article/treating-the-untreatable-how-optogenetics-works

may be able to treat different forms of retinitis pigmentosa and other blinding diseases regardless of the specific genetic mutation. In 2025, NEI-funded researchers released positive results from their clinical trial and filed for FDA approval of an optogenetics therapy.

Neural prostheses (assistive devices that restore or improve nervous system functions damaged by a neurological disorder or injury) are another treatment for retinitis pigmentosa. Currently, these often involve a camera mounted on a pair of spectacles, and a prosthesis implanted in the patient's retina or brain that can electrically stimulate neural cells responsible for vision. NEI is now supporting a new technology – injectable prostheses – that can be surgically implanted in the retina to provide artificial vision for people with advanced retinal degenerations. Though this technology has shown exciting potential, current options are limited. NEI is funding multiple research projects that are working toward making these devices less invasive for people who have vision loss while also providing clearer resolution.

Rural NCI Designation

The Committee encourages NCI to review its criteria for awarding Cancer Center Support Grants [CCSGs] to include considerations for Cancer Centers that are primarily providing care to rural patients, conducting cancer research with rural populations, or otherwise are focused on cancer in rural America. While recognizing the role that Cancer Centers play in providing patient care, the Committee also commends the vital work underway at community cancer clinics across the country and NCI's efforts to support them, including through the NCI Community Oncology Research Program [NCORP] and the recently created Working Group in Support of Efforts to Enhance Community Cancer Research and Quality Care. The Committee requests an update in the fiscal year 2027 CJ on NCI's efforts related to promoting cancer research among rural populations. (Page 111, Senate Report 119-55)

Action taken or to be taken

The National Cancer Institute (NCI) is committed to sustained cancer research along the entire cancer continuum to improve prevention and outcomes for rural populations. While not every state is home to an NCI-Designated Cancer Center, NCI supports a system of complementary trial networks, allowing individuals in all 50 states, the District of Columbia, Puerto Rico, and Guam the opportunity to participate in cutting-edge research.

Many criteria go into awarding Cancer Center Support Grants; applicants are asked specifically to describe research they conduct that addresses problems relevant to their geographical location and populations that are historically underrepresented/medically underserved in their area, including rural residents.[129] In 2018 and 2019, NCI awarded supplemental funding to over 20 NCI-designated Cancer Centers to strengthen research capacity in rural areas and foster partnerships between Cancer Centers and rural health facilities.[130] In 2020, also through supplemental funding, NCI encouraged researchers to include geographically underserved and remote areas in their investigator-initiated research. Moving forward, NCI will continue to engage national, state, and local research and practice communities for input and guidance on how best to move the field of rural cancer control forward.

NCI has supported clinical cancer research within community settings for over four decades. Research in community settings reflects the complexity of cancer care delivery and engages community oncologists in research to develop care delivery approaches that can be implemented within the usual clinical workflow. Launched in 2014 as a merging of two community programs, the NCI Community Oncology Research Program (NCORP) is a national network that brings cancer clinical trials and care delivery studies to people in their own communities at over 1,000 affiliate sites across the country.[131] NCORP has 46 Community Sites, 14 of which are designated as Minority/Underserved Community Sites that have a patient population comprised of at least 30 percent racial/ethnic minorities or rural residents. NCORP engages large and different patient populations receiving care in a variety of community settings in multi-site cancer clinical studies focused on cancer control, prevention, and care delivery, and plays an important role in the National Clinical Trials Network (NCTN), a large NCI-supported cancer clinical trials

[129] grants.gov/search-results-detail/360918
[130] cancercontrol.cancer.gov/hd/research-emphasis/rural-cancer-control
[131] ncorp.cancer.gov/about/

infrastructure network. Approximately 30-35 percent of the patients enrolled in NCTN clinical trials, including precision medicine studies, are from NCORP sites.

Since its initiation, NCORP has been a community-academic partnership that increases the heterogeneity of patient enrollment and generalizability of results, allows for better adoption for improved clinical practice and patient care in the community, and is focused on the importance of quality of life and incorporating patient experience into developing interventions to improve the lives of those diagnosed with cancer. From 2018 to 2023, NCORP has enrolled over 26,000 patients on clinical studies.

Additionally, in 2024, NCI announced a new career development award named after the former NCORP Director: the Worta McCaskill-Stevens Career Development Award for Community Oncology and Prevention Research.[132] This award supports the training of clinical scientists in community cancer prevention, screening, intervention, control, and treatment research, and especially those scientists whose career goal is to improve the care and outcomes of populations that are underrepresented in clinical research, which includes rural populations.[133] The first award was made in 2025.

[132] cancer.gov/grants-training/training/funding/k12-mccaskill-stevens
[133] grants.nih.gov/grants/guide/pa-files/PAR-24-153.html

Severe Maternal Morbidity

The Committee is concerned that despite the high rate of severe maternal morbidity in the United States, there is not a uniform definition of severe maternal morbidity. Having a uniform definition would help Federal, State and local agencies and research institutions establish standardized and interoperable processes for billing surveillance, data collection and research. The collected data could then inform the development and deployment of targeted, evidence-based prevention and treatment programs to reduce the incidence of severe maternal morbidity. The Committee encourages NICHD to hold a formal convening of subject matter experts and organizational representatives, including representatives from the CDC, HRSA, NICHD, the Office of the National Coordinator for Health Information Technology, FDA, and public stakeholders, to determine a uniform definition of severe maternal morbidity. The Committee directs NICHD to provide a report in the fiscal year 2027 CJ on the proceedings of convening including formal definitions for severe maternal morbidity. (Page 132, Senate Report 119-55)

Action taken or to be taken

Reducing maternal morbidity, including severe maternal morbidity, is a priority for the National Institutes of Health (NIH) and the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD). NICHD research on maternal morbidity and mortality includes basic research on specific complications associated with pregnancy, studies evaluating the safety and effectiveness of interventions and treatments for pregnancy-related conditions, and research on risk factors and risk-reduction methods. For example, a recent NICHD-funded study used data from California and Michigan to assess specific maternal morbidity measures available on birth certificates and compared them to hospitalization data. Their analysis found that maternal morbidity measures using birth certificate data alone were substantially underreported and had poor validity, and that differences between Black and White women were smaller in the birth certificate data compared with the hospitalization data.

The NIH-wide Implementing a Maternal health and PRegnancy Outcomes Vision for Everyone (IMPROVE) Initiative supports research to reduce preventable maternal deaths and improve maternal health before, during, and after pregnancy. The NICHD-lead initiative establishes integrated components to build evidence-based approaches to reduce maternal morbidity and mortality through complementary research efforts that incorporate community-engaged partnerships.

NICHD is committed to reducing the burden of severe maternal morbidity and will work to establish a convening with other subject matter experts and organizational representatives to determine a formal definition for severe maternal morbidity.

Site-Specific Survivorship Issues and Interventions

The Committee commends Office of Cancer Survivorship's (OCS) commitment to improve the quality and length of life for individuals diagnosed with cancer. The Committee recognizes that advances in treatments and care have resulted in long-term survivorship for some individuals, and some survivors who received multi-modality cancer treatment experience late and long-term effects. The Committee encourages OCS to include in its research efforts a focus on site-specific, or cancer-specific, late and long-term effects, which may yield evidence to support improvements in survivorship care. The Committee requests an update in the fiscal year 2027 congressional justification on such efforts. (Page 97, House Report 119-271)

Action taken or to be taken

It is estimated that there are 18.6 million cancer survivors in the United States. This represents approximately 5.4 percent of the population. This number is projected to exceed 22 million by 2035.[134] Almost 50 percent of survivors have lived 10 or more years since their diagnosis, highlighting the importance of supporting the long-term needs of cancer survivors.

The National Cancer Institute (NCI) portfolio of research seeks to address all aspects of survivorship, including the physical, psychological, effects of cancer and its treatment; and cancer care delivery. NCI continues to fund new and ongoing cancer survivor cohort studies designed to provide important information about short- and long-term effects and to identify key factors that may inform interventions, clinical guidelines, and patient management to mitigate adverse health outcomes. The Childhood Cancer Survivor Study (CCSS) was started in 1994 to identify and mitigate long-term (persistent) and late-occurring (delayed) effects of cancer treatment, increase survival, and minimize harmful health effects. Key focus areas include managing physical, cognitive, and emotional impairments—such as fatigue, neuropathy, and infertility—as well as the risk of second cancers and cardiovascular issues. Researchers who have studied CCSS data so far have identified a number of potential late effects, including premature menopause, stroke, and subsequent cancers.

One CCSS study of childhood cancer survivors evaluated relationships between the incidence of second primary cancers of the colon and prior abdominal/pelvic radiation therapy (RT) dose, expanding upon previously studied associations with chemotherapy exposure.[135] The researchers found a dose-response relationship between secondary colorectal cancer rates and the average dose of abdominal/pelvic RT, in addition to an association with chemotherapy. These results can help inform future RT dosing plans for pediatric patients as well as surveillance guidelines for high-risk survivors. Another study using data from the CCSS cohort found that childhood cancer survivors have a more than two-fold increased risk of developing melanoma compared with the general population due to risk factors including high-dose radiation and specific chemotherapy treatments.[136] This information can be considered for future guidance and screening for this group of cancer survivors.

[134] pubmed.ncbi.nlm.nih.gov/40445120/
[135] pubmed.ncbi.nlm.nih.gov/41032739/
[136] pubmed.ncbi.nlm.nih.gov/39778123/

In addition, NCI is currently supporting research on cancer type-specific survivorship care. One project includes a study on improving adherence to posttreatment follow-up care for rural lung cancer survivors through a community-clinical survivorship care team model. The survivorship care team will provide resource referrals and connections, and symptom management between follow-up care visits, with a goal of improving rural survivorship outcomes. Another project is evaluating a Survivorship Needs Assessment Planning (SNAP) tool for head and neck cancer survivors and their caregivers, which is designed to support survivorship-caregiver needs at the end of treatment. The active clinical trial supported by this award is examining the effects of SNAP on patient symptom severity and burden on caregivers. As the number of cancer survivors increases, there will be an increased need for caregivers, so it is important to also include them in studies where appropriate.

Another study is looking at the factors that contribute to cognitive outcomes in pediatric, adolescent, and young adult survivors of medulloblastoma, a type of brain cancer. Pediatric brain cancer survivors are at an increased risk of cognitive impairment and are more likely to have poor health relative to the general population and other cancer survivors who did not undergo chemotherapy treatments. The researchers aim to develop a risk algorithm that can inform personalized treatments for patients and inform interventions to prevent, mitigate, and manage cognitive impairment to optimize outcomes and improve overall quality of life for this survivor group.

Sjögren's Disease

Recognizing that research into Sjögren's disease can lead to improved care for those living with this disease, the Committee requests an update in the fiscal year 2027 congressional justification on NIH research and other activities related to the diagnosis and treatment of Sjögren's disease. (Page 136, House Report 119-271)

Action taken or to be taken

Multiple National Institutes of Health (NIH) institutes, centers, and offices contribute to Sjögren's disease research. The Office of Autoimmune Disease Research in the Office of Research on Women's Health (OADR-ORWH) collaborated across NIH to co-fund nine different awards related to Sjögren's Disease between FY 2023 and FY 2025, and it continues to support the Accelerating Medicines Partnership® Autoimmune and Immune Mediated Diseases (AMP® AIM) program, a public-private partnership, which includes a Sjögren's disease team.[137] In FY 2025, OADR-ORWH collaborated with the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) to support a clinical trial focused on eliminating congenital heart block associated with pregnancy in women with Sjögren's syndrome-related antigen A (SSA) antibodies. In this study, researchers are using immunotherapy to prevent harmful antibodies being passed from mother to fetus. This has the potential to eliminate damage to the developing fetal heart, a major scientific breakthrough for women with SSA antibodies.[138]

Research projects related to Sjögren's disease span the spectrum of research from bench to bedside. For example, a National Institute of Dental and Craniofacial Research (NIDCR) supported clinical trial is investigating the safety of tofacitinib in primary Sjögren's Disease. tofacitinib is a Food and Drug Administration-approved drug used to treat overactive immune response in certain autoimmune diseases like rheumatoid arthritis. Researchers are investigating whether the drug can also be used to disrupt a signaling pathway that is highly active in patients with Sjögren's disease. Additionally, OADR-ORWH, in collaboration with NIDCR, has supported two projects focused on developing new approach methodologies (NAMs) for the study of Sjögren's disease, including an award focused on developing a microphysiologic system, a complex, multi-cellular *in vitro* system, which will accelerate screening of novel therapeutic agents for Sjögren's Disease.

[137] niams.nih.gov/grants-funding/niams-supported-research-programs/accelerating-medicines-partnership-amp
[138] nyulangone.org/news/drug-prevents-congenital-heart-block-recurrence-high-risk-pregnancy

Skin Cancer Screening Evidence Gaps

The Committee urges NIH to continue to support research in the areas outlined in the Research Needs and Gaps Section from the U.S. Preventive Services Task Force [USPSTF] 2023 Skin Cancer Screening Recommendation Statement. This will ensure that the Task Force has the necessary evidence to create the strongest evidence-based recommendations and further reduce skin cancer morbidity and mortality, especially among those with the greatest burden of disease. The Committee encourages that these efforts should continue to prioritize the inclusion of all racial and ethnic groups to investigate whether the effectiveness of screening, diagnosis, and treatment vary by group. The Committee requests an update on this effort in the fiscal year 2027 CJ. The Task Force's 2023 Skin Cancer Recommendation Statement identifies several critical research gaps that restrict the Task Force from making evidence-based recommendations that address multiple important areas. For example, the Task Force notes that research is needed to better understand: the effects of screening on morbidity and mortality or early detection of skin cancer, particularly melanoma; skin cancer presentations in a variety of skin tones; morbidity and mortality outcomes reflective of the U.S. population; the effectiveness of screening in a range of primary care settings that reflect the variation in access to care in the United States; the effectiveness of screening for reducing morbidity and mortality of acral lentiginous melanoma; and effective risk assessment tools to identify high risk individuals who would benefit from skin cancer screening. Melanoma is a unique and major threat to our military community as it was one of the most frequent diagnoses among male service members and the second most frequent cancer diagnosis among female service members in a 10-year surveillance period. The overall incidence rate of melanoma in active-duty military personnel between 2000 and 2007 was 62 percent greater than among the general populace during the same period. Disparities are also prevalent among rural populations who lack access to healthcare providers, which often results in delayed and late-stage diagnoses compared to patients residing in urban settings. (Page 111, Senate Report 119-55)

Action taken or to be taken

The National Cancer Institute's (NCI) skin cancer research spans the cancer continuum, from prevention and screening to treatment and beyond. Identification of groups at high risk of developing skin cancer, including melanoma, is needed to ensure those most at risk are aware of and able to access screening. For example, there are currently no screening guidelines for childhood cancer survivors specific to melanoma, but this is a potentially high-risk group who would benefit from skin cancer screening. Additionally, NCI intramural scientists reported that individuals who experience multiple blistering sunburns before age 15 may be a high-risk group, regardless of other risk factors for melanoma, and could benefit from enhanced surveillance for skin cancer.[139] Another intramural NCI group is examining UV sun-related radiation exposure and occupational exposure to ionizing radiation in U.S. radiologic technologists to assess risks for skin cancer in this group. An NCI-supported clinical trial is working to better understand genetic susceptibility to developing melanoma and how environmental factors, like UV, play a role. Stratifying risk ensures those most likely to develop skin cancer can get the recommended screening and can potentially lead to improved patient outcomes.

[139] pubmed.ncbi.nlm.nih.gov/40288537/

Research supported by NCI is also studying ways to improve and speed up skin cancer diagnosis in high-risk groups. For example, an NCI-funded study is testing different approaches for better and faster diagnosis of skin cancers in patients who have received hematopoietic cell transplantation (HCT) to treat their blood cancer. These patients are at a higher risk for developing skin cancers at a younger age, having advanced disease, and experiencing multiple recurrences, yet many are not screened for skin cancer as their follow-up care has shifted from oncologists to primary care physicians. Results of this study could improve skin cancer detection in this high-risk group and could be applied to other high-risk populations.

While more research is needed to examine whether increased skin cancer screening leads to improved patient outcomes,[140] NCI-funded studies are exploring ways to improve uptake of behaviors that can prevent skin cancer in different populations. One clinical trial is examining how different messaging about skin cancer risk can impact the uptake of skin cancer prevention activities at Federal Qualified Health Centers, which are clinics that serve medically underserved areas and populations. Another trial is studying the individual and combined effects of different prevention interventions on reducing activities that could cause skin cancer in undergraduate students. A third study aims to improve sun protective behaviors in youths living in rural communities who are at high risk for skin cancer due to extended outdoor playtime and more intense exposure to UV radiation. In addition, a National Institute of Environmental Health Sciences (NIEHS)-supported study is examining whether a DNA repair mechanism modulated by a sex hormone could explain why women at reproductive age are more susceptible to melanoma compared to men of the same age. This study has the potential to significantly impact melanoma prevention by adding a sex hormone test as part of risk assessment.

The rare, but deadly, acral lentiginous melanoma subtype is disproportionately found in people with darker skin, including Black, Hispanic, and Asian populations. NCI-funded researchers are working to identify the key factors contributing to later diagnosis of Hispanic patients with the goal of developing and delivering a clinic-based educational intervention that can reduce the melanoma burden in this population. Another project that is exploring new treatment targets for melanomas resistant to many current therapies is using acral melanoma patient-derived models to help determine the best candidates for potential translation to future trials. Additionally, the MelaNostrum Consortium, convened through the NCI intramural research program, studies genetic, environmental, and clinical determinants of melanoma risk and progression in Mediterranean populations.[141] Data and biospecimens are collected from individuals of Mediterranean descent, creating a growing database and sample repository for melanoma research. This population is often underrepresented in melanoma research studies as they are thought to have lower risk of developing skin cancer due to their darker pigmentation, and therefore there is a lack of knowledge of skin cancer risk factors and disease progression in these populations. One of the research projects in the MelaNostrum Consortiumfocuses on understanding the development of acral lentiginous melanoma to potentially inform its prevention and treatment.

NCI also contributes to multiple reports and tools that track skin cancer rates in different demographic groups. For example, the Cancer Trends Progress Report (CTPR) which recently

[140] pubmed.ncbi.nlm.nih.gov/35385051/
[141] dceg.cancer.gov/research/cancer-types/melanoma/melanostrum

began reporting information by race and skin type for skin cancer prevention behaviors and sunburn. Another example is the Annual Report to the Nation on the Status of Cancer that contains information on melanoma rates, including information relevant to race and ethnicity. The NCI SEER (Surveillance, Epidemiology, and End Results program) Explorer tool contains information on skin cancer incidence and mortality rates for a variety of demographic characteristics.

NCI-funded researchers are also working to advance our understanding of how to treat melanoma and other skin cancers. Although many people still do not benefit from the newest drugs, and others may relapse after initially successful treatment, targeted therapies and immunotherapies have led to dramatic improvements in survival for patients with melanoma over the last decade. Researchers are continuing to explore ways to make these treatments more effective for more patients.

Spina Bifida Research

The Committee encourages NIH to study the causes and care of the neurogenic bladder to improve the quality of life of children and adults with spina bifida, and to support research related to the treatment and management of spina bifida and associated conditions, such as hydrocephalus, wounds and related amputations, and sudden death in the adult spina bifida population. The Committee requests an update in the fiscal year 2027 congressional justification on research findings on spina bifida and related issues. The Committee supports NICHD's research to understand early human development, set the foundation for a healthy pregnancy, and promote lifelong wellness of women and children with spina bifida. NIH is encouraged to support research to identify time sensitive periods to optimize health interventions, therapeutics, and devices to improve health during transition from adolescence to adulthood. (Page 136, House Report 119-271)

Action taken or to be taken

The National Institutes of Health (NIH) is invested in spina bifida research with the hopes of improving the quality of life of children and adults affected by it. NIH supports studies to address issues related to the treatment and management of spina bifida and associated secondary conditions. For example, researchers funded by the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD) are studying a new approach to repair spina bifida *in utero*, which may lead to more beneficial outcomes compared to traditional methods of repair. Moreover, researchers funded by the National Institute of Neurological Disorders and Stroke (NINDS) are also developing novel therapies for repairing myelomeningocele (a severe form of spina bifida) before birth, including an easily deployed biodegradable polymer patch to close the spinal defect, which minimizes surgical follow-up and improves outcomes. Researchers recently modeled the patch's roughness across time in different physiological environments to optimize its use; the rougher the patch, the better its ability to absorb nutrients and facilitate healing of the defect gap.

Furthermore, NIH is investing in research that identifies the variety of factors that cause spina bifida, along with improvements in diagnosis. For example, NICHD-funded researchers are using advanced DNA sequencing and computation methods to analyze genetic mutations with the greatest influence on the disorder to understand how these genes interact to cause spina bifida. Another NICHD-funded team is developing an *in vitro* spinal neural tube model to study the genetic and environmental causes of spina bifida. Initial results from this team have identified novel genetic factors, providing new insight into the complex and multifactorial genetic landscape of spina bifida and highlighting the importance of unbiased approaches in constructing genetic models of neural tube defects more generally. NINDS also funds research aimed at early diagnosis of neural tube defects (including spina bifida) and the development of minimally invasive approaches to improve *in utero* defect repair. NINDS-supported investigators recently identified two proteins that are components of the extracellular matrix of the developing central nervous system that are elevated in the amniotic fluid of fetuses of a rat model of myelomeningocele compared to healthy controls. These proteins could serve as potential biomarkers for early prenatal diagnosis of open neural tube defects. NINDS continues to support and encourage research on the disease mechanisms involved in prenatal and pediatric

hydrocephalus, which often affects people with spina bifida, and to develop new research tools to enhance its study.

NIH-supported researchers recently surveyed adults with spina bifida, and the results highlighted the importance of self-management and how managing co-morbid conditions is critical to improving quality of life. Moreover, NIH is currently funding studies to understand and treat neurogenic bladder – nervous system-driven malfunctioning of the bladder and urinary tract – to improve the quality of life of children and adults with spina bifida. For example, NINDS is supporting research relevant to paralysis and neurogenic bladder in spina bifida within a broader portfolio on spinal cord injury and repair. Current NINDS-funded studies are pursuing various strategies to restore bladder function, including electrical stimulation of spinal cord pathways involved in bladder control and a novel drug to induce on-demand voiding to restore voluntary bladder and bowel function.

In addition, the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) supports investigators working to better understand the urologic and kidney complications of spina bifida. For example, NIDDK funds research focused on the development of methods to assess and address the impact of urinary incontinence and on quality of life of youth and adults with spina bifida. Additionally, NIDDK supports research on strategies to develop new tools and strategies for accurate kidney health assessment in youth with spina bifida. Finally, the National Institute on Aging (NIA) has supported research on systems to improve pressure-reducing in-seat body movement in adults with spinal cord injury and related disorders, which can improve the management of skin health of adults who use or sit in wheelchairs for long periods of time. A 2024 NIA-funded publication resulting from this project suggested that approaches to modify behaviors related to in-seat functional movements may reduce pressure ulcers in wheelchair users with spinal cord injuries and related disorders.

Suicide Prevention

The Committee recognizes that suicide a complex, and serious public health problem with multiple contributing factors, including biological, psychological, social, and environmental. The Committee encourages NIMH to direct additional attention to suicide prevention research across all of these areas, as well as the application of novel measurement techniques, statistical analysis, digital initiatives and information systems. The Committee also encourages NIMH to promote greater collaboration with other NIH Institutes and Centers with expertise in research areas that can contribute to suicide prevention, especially NIA, NICHD, NHGRI, NIAAA and NIDA. The Committee requests an update on these activities in the fiscal year 2027 CJ. (Page 141, Senate Report 119-55)

Action taken or to be taken

Suicide is a major public health concern which is complicated and tragic, but it is often preventable. NIH-funded research has produced suicide risk screening tools to improve the identification of individuals at risk for suicide. Further, NIH supports studies in which researchers are examining ways to effectively implement these evidence-based practices into health care systems and communities to prevent morbidity (ideation and nonfatal attempts) and mortality. Although provisional data indicate the national suicide rate declined in 2024, suicide remains the second leading cause of death for people ages 10-34.[142]

The risks and impacts of suicide are far reaching. The National Institute of Mental Health (NIMH) works across the agency to raise awareness and collaborate on suicide prevention research. NIMH is working with investigators, clinicians, and various communities to identify and measure suicide risk and protective factors among youth, including preteens, and funds studies focused on improving suicide risk detection and intervention among youth and young adults from underserved populations. In one NIMH-supported study, researchers are testing the uptake of a suicide prevention intervention – which was developed with input from rural Alaska Native communities – to see how community-wide engagement in suicide prevention behaviors can promote mental health and reduce suicide risk, particularly among youth, for whom suicide is the second leading cause of death.

Community support and social engagement are important protective factors for suicide risk across the lifespan. Social disconnection – which can result from changes in work status (i.e., retirement or layoffs); bereavement; or impaired mobility, vision, or hearing – is a primary driver of self-harm in older adults. NIMH is supporting research to identify neurobiological, behavioral, psychosocial, and environmental mechanisms underlying social disconnection, including novel targets for future prevention and intervention efforts. Related efforts to understand biological markers of suicide risk are underway in the NIMH Intramural Research Program, where investigators have demonstrated that recording neural activity from people with suicidal thoughts or people who recently experienced a suicide crisis may inform tailored treatments.

NIMH also supports research on strategies to increase the reach, efficiency, and quality of digital mental health interventions that may impact mental health outcomes, including suicidal thoughts and behaviors. Through NIMH's Practice-Based Suicide Prevention Research Centers

[142] cdc.gov/nchs/nvss/vsrr/mortality-dashboard.htm

program,[143] investigators are studying evidence-based suicide care technologies, such as computerized risk assessment tools and smartphone applications, to identify key strategies for maximizing their translation to clinical care so they can be put in the hands of clinicians, patients, and families sooner. NIMH is also funding research that aims to improve providers' capacity to deliver care to veterans, who have elevated risk for suicide compared to civilians. In one such study, investigators are developing an online tool that can train providers within the Department of Veterans Affairs to administer the Safety Planning Intervention, a suicide prevention intervention that has been shown to be acceptable, feasible, and effective for veterans. NIMH is also providing support for a study in which researchers are analyzing electronic health records from civilian, non-Veteran Health Administration (VHA) health care systems to identify predictors of firearm suicide risk among veterans, as research has shown that many veterans do not seek care in VHA health care systems.

NIMH works with other NIH institutes, centers, and offices (ICOs) – including but not limited to the National Institute on Aging (NIA), National Institute on Minority Health and Health Disparities (NIMHD), the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD), the National Human Genome Research Institute (NHGRI), the National Institute on Alcohol Abuse and Alcoholism (NIAAA), the National Institute on Drug Abuse (NIDA), the National Institute of Neurological Disorders and Stroke (NINDS), and the NIH Office of Behavioral and Social Sciences Research (OBSSR) – to develop coordinated approaches to advance health research and support corresponding research initiatives. For example, the NIMH Strategic Framework for Addressing Youth Mental Health Disparities was developed in collaboration with NIMHD, NICHD, and multiple other partners across NIH, the Department of Health and Human Services (HHS), and the federal government, as well as being informed by researchers and care providers across the country. This Strategic Framework helps guide NIH efforts to address suicide outcomes among youth. NIH also contributed to the development of the National Strategy for Suicide Prevention,[144] a 10-year comprehensive approach to suicide prevention that provides recommendations for addressing gaps in the field; as well as an accompanying Federal Action Plan. Additionally, NIMH, NIDA, and NIAAA are working collaboratively to address the need for better treatment and services for people with substance use disorders who are at risk for suicide.

[143] nimh.nih.gov/research/research-funded-by-nimh/research-initiatives/practice-based-suicide-prevention-research-centers-0

[144] hhs.gov/programs/prevention-and-wellness/mental-health-substance-use-disorder/national-strategy-suicide-prevention/index.html

Usher Syndrome

Senate Language

The Committee encourages NIH to enhance and prioritize Usher syndrome research at NEI. The Committee requests an update in the fiscal year 2027 CJ. The update should include efforts to stimulate the field and to accelerate viable human treatment options for those with Usher syndrome. (Page 132, Senate Report 119-55)

House Language

The Committee strongly encourages NIH to enhance and prioritize Usher syndrome research at NEI. Usher syndrome is a rare genetic disease that causes deafness and blindness, and there is no viable treatment or cure. The Committee requests an update in the fiscal year 2027 congressional justification, and such update should include efforts to stimulate the field and to accelerate viable human treatment options for those with Usher syndrome. (Page 113, House Report 119-271)

Action taken or to be taken

There are three types of Usher syndrome, the inherited disorder that affects hearing, vision, and sometimes balance: USH1, USH2, USH3. Each type is based on symptoms, severity, and age of onset and then further categorized according to its specific genetic mutations. However, all types of Usher syndrome lead to the development of a disease called retinitis pigmentosa that makes cells in the retina break down slowly over time, causing gradual vision loss. The National Institutes of Health (NIH) is committed to funding all investigator-initiated Usher syndrome research that scores well in peer review and meets the priorities of the funding Institute or Center. The National Eye Institute (NEI) and the National Institute on Deafness and Other Communication Disorders (NIDCD) lead NIH in supporting Usher syndrome research.

While the deafness that occurs in people with Usher syndrome can be treated with cochlear implants, vision researchers are exploring gene therapy approaches to treat the vision loss that is caused by the disorder. NEI-funded researchers have developed specialized animal models to study the specific genetic mutations in each type of Usher syndrome and how they work. These models are also used to develop and test treatments to prevent blindness, such as gene therapy, small molecule therapy, cell-based therapy, and RNA therapy.

NEI-funded scientists are using a gene editing technology called clustered regularly interspaced palindromic repeats (CRISPR). CRISPR makes it possible to edit single mutations in a cell and create new models that specifically replicate the most common mutations in the *USH2A* gene, with the ultimate goal of developing gene therapies. An NEI-funded project is also exploring the ability to restore visual function in an animal model by stimulating retinal cells using ultrasound.

Complementing animal models, NEI scientists have created mini human retinas in a dish—retinal organoids—using cells taken from people with USH1 mutations. Retinal organoids provide a new platform to identify how Usher syndrome develops in the retina, and they are now being used in studies to develop and test gene therapy tools. In addition, NEI scientists have identified two Food and Drug Administration (FDA)-approved drugs that have been shown in

the lab to reverse or partially reverse disease-related abnormalities in retinal organoids and return them to a normal state.

NEI-funded work is also accelerating the development of viable human treatment options for people with Usher syndrome. NEI is investing in "gene agnostic" technology that could restore vision regardless of an individual's specific Usher syndrome mutation. One example uses optogenetics, a technique that inserts a genetically encoded light-detecting molecule into retinal cells that do not normally respond to light, making them light-sensitive. Following a successful Phase 2b/3 clinical trial in which an optogenetics therapy led to clinically meaningful improvement in people with blindness caused by retinitis pigmentosa, NEI-funded researchers filed for FDA approval of the therapy in 2025. NEI also supported the foundational work of researchers who are now leading a Phase 2b clinical trial testing an mRNA therapy that aims to help people with specific mutations in the *USH2A* gene maintain their vision.[145] This is the most advanced potential treatment for USH2A to date.

NEI scientists are diligently exploring alternative treatments to improve the lives of people with Usher syndrome. NEI is prioritizing vision rehabilitation research to study and enhance peripheral vision so people with Usher syndrome can maximize the use of their remaining vision to improve their locomotor abilities (the physical capability to move parts of the body from one place to another) and other routine daily activities. In 2022, NEI scientists demonstrated that a repurposed FDA-approved drug with an established safety record improved vision in an animal model of retinal degeneration, providing the opportunity to expedite a possible new treatment in humans.[146] This research laid the groundwork for a Phase 1 clinical trial launched in May 2025 that is evaluating the impact of the drug on the vision of people with retinal degeneration.[147]

[145] clinicaltrials.gov/study/NCT06627179
[146] nei.nih.gov/research-and-training/research-news/antabuse-may-help-revive-vision-people-progressive-blinding-disorders
[147] clinicaltrials.gov/study/NCT06319872

Uterine Leiomyosarcoma Research

The Committee is aware that increased research into uterine leiomyosarcoma, a rare and aggressive soft tissue sarcoma with limited treatment options and high mortality rates, could lead to improved outcomes for patients. The Committee encourages the NIH to prioritize and expand research on the biology, early detection, and development of novel therapeutic approaches for uterine leiomyosarcoma. Such investments could be for basic science, translational, or clinical research. The Committee requests that NIH include an update in the fiscal year 2027 congressional justification on such research efforts, including any milestones and recommendations for future activities. (Page 97, House Report 119-271)

Action taken or to be taken

The National Cancer Institute (NCI) supports research across the cancer continuum to understand, prevent, and treat uterine cancers, which includes uterine leiomyosarcoma (LMS), a rare cancer of the uterine smooth muscles that often grows quickly. Several studies are focused on developing pre-clinical models for researchers to better understand the disease and how to treat it. For example, one NCI-funded project aims to develop patient-derived xenograft, where tumor tissue is taken from a patient and implanted in mice to recapitulate the tumor characteristics, and organoid (3-D lab-grown cultures that are highly similar to a patient's tumor) models for gynecological malignancies lacking treatments, including uterine LMS. Having pre-clinical models available allows the research community to expedite drug discovery and development for these rare subtypes. Another project is developing a mouse model for metastatic uterine LMS to better understand disease development and evaluate subsequent treatment options.

NCI is also supporting clinical trials to find more effective treatments for uterine LMS. An NCI-led phase 2 clinical trial tested a combination of two drugs, one of which impairs DNA repair and the other triggers cell death, in patients with metastatic uterine LMS who had already undergone surgery to see if the combination was more effective than either drug alone. Researchers found that the combination provided meaningful clinical benefit for patients.[148] A related phase 2/3 clinical trial sponsored by NCI is comparing the effectiveness of the same drug combination to the two most common chemotherapies used to treat uterine LMS in patients with metastatic disease after initial chemotherapy has stopped working. Researchers are studying whether the drug combination is more effective than the usual treatment at shrinking or stabilizing advanced disease in this patient population. Another clinical trial taking place at NCI Designated Cancer Centers is testing if a drug primarily used to treat hormone-receptor-positive breast cancer that reduces estrogen levels will extend progression-free survival in patients with newly diagnosed uterine LMS.

NCI's Specialized Programs of Research Excellence (SPOREs) enable the rapid and efficient movement of basic scientific findings into clinical settings and determine the biological basis for observations made in individuals with cancer or in populations at risk for cancer. One of the sarcoma SPOREs is focused on LMS and currently has three clinical trials recruiting patients; because LMS is so rare, these trials do not focus on one type of LMS. One of the clinical trials aims to identify biomarkers for tumor response and patient survival for LMS patients with

[148] pubmed.ncbi.nlm.nih.gov/37467452/

localized disease that has not spread yet to inform treatment planning for earlier disease stages. A second related trial is focused on LMS patients with metastatic disease. Almost 50 percent of LMS patients develop metastasis. Some of these LMS patients benefit from chemotherapy treatment, but biomarkers for treatment response and patient survival are lacking. This clinical trial is also looking for potential biomarkers to indicate patient response early in the course of chemotherapy to inform treatment planning to improve patient outcomes. The third clinical trial is exploring the beliefs about the heritability of LMS and attitudes towards genetic testing in LMS patients. Some leiomyosarcomas can be attributed to underlying heritable genetic mutations, and results from this study could help inform the optimal approach for incorporating genetic testing into patient care plans.

Through NCI's My Pediatric and Adult Rare Tumor network (MyPART), patients with LMS can enroll in the Natural History Study of Rare Solid Tumors taking place at the NIH Clinical Center. Opened to enrollment in 2019, the purpose of the trial is to collect information and samples from people with rare tumors and their relatives and track their health history over a long period of time to learn more about how rare tumors develop and progress and new ways to control them.

Women's Reproductive Health

The Committee encourages NICHD to continue to fund WRHR and RSDP scholars, with the goal of increasing the diversity of the scholars, sites, and research supported by the programs. The Committee recognizes the effectiveness of these programs, which provides an opportunity for obstetrician/gynecologists who recently completed postgraduate clinical training to further their training in basic, translational and clinical research. The Committee directs NIH to provide an update on these programs in the fiscal year 2027 CJ. (Page 132, Senate Report 119-55)

Action taken or to be taken

Supporting the training of researchers and clinicians to lead research and training to understand human development, improve reproductive health, enhance the lives of children and adolescents, and optimize abilities for all is a core element of the mission of the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD). While NICHD's training portfolio is wide ranging and includes a variety of funding mechanisms, the Women's Reproductive Health Research (WRHR) Program and Reproductive Scientist Development Program (RSDP) are specifically tailored to workforce development in women's reproductive health.

The WRHR program provides academic-setting opportunities for obstetrician-gynecologists (OB-GYNs) who have recently completed postgraduate clinical instruction to obtain state-of-the-art training and experience in basic, translational, and clinical women's reproductive health research. The program, launched in 1998, also increases the research capacity of clinically trained OB-GYNs and provides obstetrics and gynecology departments a pool of junior investigators who have expertise in women's reproductive health research. The WRHR program is co-sponsored by the NIH Office of Research on Women's Health (ORWH) and supports 28 scholars at sites nationwide. Scholars' projects fall along a wide spectrum of obstetrics and gynecology research, including gynecologic oncology, benign gyn (endometriosis, fibroids, polycystic ovary syndrome (PCOS), etc.), adolescent gynecology, fertility preservation, and pregnancy and postpartum health. Current projects include developing and deploying artificial intelligence (AI) models to improve pregnancy and maternal care, optimizing surgical care for gynecologic cancers, and investigating gene therapy for fertility care.

A 2023 analysis found that participation in the program increased future research activity and leadership. Among WRHR scholars who completed training from 2000 to 2015, 25 percent were subsequent R01 recipients and 40 percent achieved additional independent NIH funding as principal investigators (PIs). A subset analysis of WRHR alumni showed that 81 percent were academic faculty and 75 percent held leadership roles in their departments or institutions.[149] In FY 2026, WRHR has integrated a "WRHR Wednesdays" monthly seminar to provide a space for collaboration of scholars across the country.

The RSDP is a national career development program launched in 1988 with the goal of developing a cadre of reproductive physician-scientists based in academic departments who could employ cutting-edge cell and molecular technologies to address important problems in the field of obstetrics and gynecology. RSDP's mentored research experiences assist junior faculty

[149] pmc.ncbi.nlm.nih.gov/articles/PMC10584274/

in their transition to productive, independent physician-scientists who are highly competitive for research funding. Over its more than 30 years, RSDP has trained 123 physician-scientists, with strong academic retention and leadership outcomes. Seventy-one percent of alumni hold faculty positions, many in senior institutional roles. Published evaluations show that RSDP scholars achieve high post-award NIH funding rates and secure substantial foundation and other non-federal support.[150]

In the most recent three grant years, RSDP scholars were based at institutions in multiple states, including California, Iowa, Illinois, Massachusetts, Maryland, Ohio, Oregon, Texas, and Washington, reflecting broad national reach. Their research spans maternal-fetal health, reproductive endocrinology, gynecologic oncology, placental biology, and immunology across basic, translational, and population science. Scholars engage in structured national activities, including the annual RSDP Retreat and Scholar Dinner, which foster mentorship, collaboration, and career development, directly advancing federal priorities in women's health and the physician-scientist workforce.

[150] nationalacademies.org/read/28586/chapter/10#354

Young Adult Cancer Survivorship Research

NCI has supported the Childhood Cancer Survivor Study since 1994. This study, a long-term, retrospective cohort study, has dramatically enhanced our understanding of the side effects of cancer treatment in children and adolescents, supported research to find interventions for childhood cancer survivors, and improved survival from treatment side effects. The Committee encourages the NCI to conduct a landscape analysis of young adult cancer survivorship research and provide the Committee with an update on this effort in the fiscal year 2027 congressional justification. (Page 97, House Report 119-271)

Action taken or to be taken

As of 2020, there were over 2.1 million adolescents and young adults (AYA, ages 15 to 39) cancer survivors, with most being more than 10 years from diagnosis.[151] Major advances in diagnosis, treatment, and supportive care in recent decades have contributed to a growing population of childhood and AYA cancer survivors, among whom over 60 percent will suffer adverse physical, psychosocial, or behavioral outcomes months or even years after completion of treatment. The National Institutes of Health, predominantly through the National Cancer Institute (NCI), is committed to advancing research focused on this growing population of pediatric and AYA cancer survivors. This work is expected to improve our understanding of the unique experiences and unmet needs of the population, as well as identify and evaluate strategies to improve care delivery and outcomes.

NCI conducted a landscape analysis of research on AYA survivorship that included research project grants funded by NIH during FY 2017 through FY 2025. During this time, 84 grants focused on survivors diagnosed in the AYA and younger adult periods (about 15-49 years of age) were identified. The R01/R37 grant was the most common mechanism (45 grants; 54 percent), and most studies were funded by NCI (81; 96 percent). In terms of study design, 36 were observational (43 percent) and 48 (57 percent) were intervention studies. The most common cancer types studied in these grants were "any cancer type" (45 grants; 54 percent) or "multiple cancer types" (7; 8 percent), leukemia or lymphoma (6; 7 percent), breast cancer (5; 6 percent), colorectal cancer (2; 2 percent), advanced or metastatic solid tumor (2; 2 percent), and pediatric cancer (14; 17 percent). Survivorship research focus areas included late- and long-term effects (31 grants; 37 percent), care delivery research (23; 27 percent), health promotion (9; 11 percent), methods research (6; 7 percent), financial impact (6; 7 percent), acute toxicities (6; 7 percent), and infrastructure (3; 4 percent). Concerning trends have emerged regarding an increase in the incidence of several types of cancers commonly diagnosed in older adults now being diagnosed among adults under age 50. NCI is focused on tackling this emergence of early-onset cancers in younger adults, and four grants were identified at the intersection of early-onset cancer and pediatric or AYA survivorship research.

Additionally, within the childhood cancer survivorship portfolio are the Childhood Cancer Survivor Study (CCSS) and the St. Jude Lifetime Cohort Study (SJLIFE). NCI has provided longstanding support for the CCSS, which is a multi-institutional, multi-disciplinary collaborative research resource comprised of a retrospective hospital-based cohort of survivors

[151] pubmed.ncbi.nlm.nih.gov/39383200/

of childhood cancer and a comparison sibling cohort.[152] Eligible survivors from 31 participating institutions were diagnosed between 1970 and 1999, before age 21, with selected common pediatric cancers: leukemia, central nervous system tumors, Hodgkin lymphoma, non-Hodgkin lymphoma, kidney tumors, neuroblastoma, soft tissue sarcoma, and bone tumors. The data from the CCSS cohort is open to investigators throughout the world who are interested in conducting survivorship research. Projects involving the CCSS cohort will include survivors of AYA cancers (diagnosed before age 21). Since the start of CCSS, the CCSS resource has been utilized by 78 investigator-initiated grants with 50 supported by NCI/NIH funding. Over 1,400 investigators have used the CCSS resource for research and 14 randomized clinical trials have been conducted that included CCSS patients. There have been over 500 published or in press manuscripts utilizing the CCSS cohort, which have been cited over 50,000 times.[153]

SJLIFE, which was initiated in 2007, has been supported by NCI since 2015.[154] This cohort study was designed to study adult survivors of childhood cancer (age 18 or older at enrollment) who had survived 5 or more years since their cancer diagnosis, with a community comparison group component. The primary aim centers on understanding long-term adverse outcomes associated with cancer and cancer-related therapy. Since 2015, SJLIFE has been utilized through 34 investigator-initiated grants supported by NCI/NIH funding. During this period, there have been 298 publications utilizing SJLIFE.

NCI will continue to build on its landscape analysis and expects to gather additional information through a future investigator meeting.

[152] cancer.gov/types/childhood-cancers/ccss
[153] ccss.stjude.org/published-research/publications.html
[154] sjlife.stjude.org/investigators.html