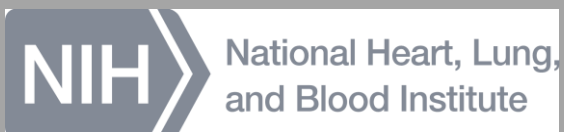


National Heart, Lung, and Blood Institute

CONGRESSIONAL JUSTIFICATION
FY 2027

Department of Health and Human Services
National Institutes of Health



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DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

National Heart, Lung, and Blood Institute (NHLBI)

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General Notes

1. FY 2026 Enacted levels cited in this document include the effects of the FY 2026 HIV/AIDS transfer.
2. Estimates assume reauthorization of the SBIR/STTR program in FY 2026 and FY 2027.
3. Detail in this document may not sum to the subtotals and totals due to rounding.

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National Heart, Lung, and Blood Institute Overview

Among the leading causes of death in America is a set of chronic diseases and conditions such as heart disease, high blood pressure, high cholesterol, asthma, and other lower respiratory diseases. NHLBI supports research efforts addressing the most common, costly, and preventable of all health conditions in the United States. Other underlying risk factors like obesity and sleep disturbances also are represented within NHLBI's research portfolio. As part of its mission, NHLBI supports a holistic approach to research with the goal of improving the health and wellness for all Americans.

NHLBI addresses chronic disease by leveraging opportunities through innovative technology, data science, precision medicine and mobile health to find new treatments and disease pathways. Cohort studies like the Framingham Heart Study, Coronary Artery Risk Development in Young Adults, and the new Risk Underlying Rural Areas Longitudinal program gather health-related data that yield valuable insights on disease. By tracking disease onset and progression across the lifespan, NHLBI can understand how chronic conditions become acute and how early exposures and interventions impact health, enabling the right treatment for the right person at the right time.

With increased knowledge in human systems biology, NHLBI is creating new and improved clinical approaches to address disease. NHLBI has supported advances in pioneering gene therapies, which are the culmination of years of integral research on the underlying biological causes of the condition. NHLBI continues to develop transformative new therapeutics and treatments while catalyzing progress for clinical research and implementation science.

NHLBI is harnessing data science and new technology to drive scientific discovery and precision health by leveraging vast and varied epidemiological data sets. Through programs like Trans-Omics for Precision Medicine and BioData Catalyst,^{1,2} NHLBI is utilizing the data within its own cohorts while simultaneously making it available to the scientific community. This approach amplifies the usefulness of the data and resources to support both reproducibility and scalability. Additionally, the newly created NHLBI-AI Initiative will stimulate the development of artificial intelligence (AI) methods and models for discovery research that impact the understanding, diagnosis, and treatment of chronic conditions.³ Data science and AI will help identify the most promising approaches to accelerate efforts to prevent and treat chronic conditions.

The persistence of these health issues is as complex as their causes and NHLBI is invested in community-engaged research and implementation science to ensure the successful integration of evidence-based interventions within clinical and public health settings. NHLBI will continue to deepen and expand its focus on the disproportionate impact of heart, lung, blood and sleep conditions in regional and rural locations of the country, using a community-based approach to engage Americans possessing substantial needs, with the aim to improve health and build healthier, more resilient communities.

¹ nhlbi.nih.gov/science/trans-omics-precision-medicine-topmed-program

² biodatacatalyst.nhlbi.nih.gov/

³ nhlbi-ai.org/

Major Changes in the Budget Request

Major changes by budget mechanism and/or budget activity detail are briefly described below. Note that there may be overlap between budget mechanisms and activity detail; and these highlights may not sum exactly to the total change for the FY 2027 budget request for the National Heart, Lung, and Blood Institute (NHLBI), which is \$3,700.0 million, a \$297.0 million decrease compared to the FY 2026 Enacted level of \$3,996.9 million. The FY 2027 President's Budget reflects the policy to limit indirect costs for all research grants to a maximum of 15 percent of the modified total direct cost. NHLBI is committed to the continuous support for key strategic priorities along with other scientific areas of the Institute's research portfolio. Within the framework of the Administration's fiscal policy goals for the Federal Government, NHLBI will continue to pursue its highest research priorities through strategic investments and careful stewardship of the appropriated funds.

Research Project Grants (RPGs) (-\$99.3 million; total \$2,685.9 million):

The FY 2027 request supports 373 competing RPGs, 2,493 noncompeting RPG awards, and 135 awards to small businesses to stimulate research technology in key strategic areas. The request is a 17.9 percent decrease to funding for noncompeting RPGs for \$1,599.6 million, in comparison to \$1,948.3 million in the FY 2026 Enacted. RPG funding reflects implementation of a limit on indirect costs to no more than 15 percent of direct costs. The FY 2027 request reflects the NIH policy of fully funding outyear commitments as part of the initial grant award for competing RPGs. Funding for competing RPGs, a 40.3 percent increase from FY 2026 Enacted, with a decrease in awards, for 373 new awards. Awards for small business are funded at a 8.8 percent decrease in comparison to FY 2026 Enacted. The total funding will provide continuous support to prior fiscal year research investments, as well as some support for new research in response to the NIH Notice of Funding Announcements focused on investigator research.

Research Centers (-\$5.6 million; total \$10.3 million):

NHLBI will decrease funding for Research Centers by 35.1 percent, which is a \$5.6 million decrease compared to the FY 2026 Enacted level of \$15.9 million. This funding level reflects the effects of the 15 percent limit on indirect costs for Research Center awards and the proposed overall NHLBI decrease. The funds requested will support several specialized centers that conduct large-scale analysis that leads to prevention, diagnosis, and treatment of heart, lung, blood, and sleep diseases and disorders.

Other Research (-\$84.9 million; total \$196.7 million):

NHLBI will decrease funding for Other Research by 30.1 percent, which is a \$84.9 million decrease compared to the FY 2026 Enacted level of \$281.6 million. This funding level reflects the effects of the 15 percent limit on indirect costs for Other Research awards and the proposed overall NHLBI decrease. The funds requested will support many important NHLBI initiatives that have high impact cutting-edge research fostering scientific creativity that leads to prevention, diagnosis, and treatment of heart, lung, blood, and sleep diseases and disorders.

Research Training (-\$23.4 million; total \$92.2 million):

NHLBI will decrease funding for Research Training by 20.2 percent, which is a \$23.4 million decrease compared to the FY 2026 Enacted level of \$115.7 million. The requested funding level will support general annual adjustments for trainees and continue stimulating research training focused on strategic priorities and programmatic goals.

Research and Development (R&D) Contracts (-\$82.0 million; total \$276.5 million):

Support for Research and Development Contracts will decrease by 22.9 percent from the FY 2026 Enacted level of \$358.4 million as part of the reduction in the overall NHLBI budget request. These funds will provide continuous support to research cohorts, and research resources and data repositories which facilitate access to and sharing of biomedical data and biospecimens, thereby advancing scientific discovery and improving public health outcomes through collaborative research efforts.

Intramural Research (IR) (\$0.2 million; total \$279.2 million):

NHLBI will increase funding for Intramural Research by 0.1 percent, which is a \$0.2 million increase compared to the FY 2026 Enacted level of \$278.9 million. These increases accommodate the proposed increase for mission critical IR staff, changes in NIH-wide assessments on the IR program, and other inflationary costs. This budget request aligns with the budget proposal to cap Title 42 salaries.

Research Management and Support (RMS) (-\$2.0 million; total \$159.2 million):

NHLBI will decrease funding for Research Management Support by 1.3 percent, which is a \$2.0 million decrease compared to the FY 2026 Enacted level of \$161.2 million. The request accommodates centralization of certain RMS functions to NIH's Office of the Director, changes in NIH-wide assessments for the RMS program, and other inflationary costs, as appropriate. This budget request aligns with the budget proposal to cap Title 42 salaries and supports the management of NIH and NHLBI infrastructure.

BUDGET MECHANISM TABLE

**NATIONAL INSTITUTES OF HEALTH
National Heart, Lung, and Blood Institute**

Budget Mechanism *
(Dollars in Thousands)

Mechanism	FY 2025 Final		FY 2026 Enacted		FY 2027 President's Budget		FY 2027 +/- FY 2026	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount
Research Projects:								
Noncompeting	2,934	\$1,994,877	2,788	\$1,948,283	2,493	\$1,599,569	-295	-\$348,715
Administrative Supplements	<i>(165)</i>	\$24,181	<i>(164)</i>	\$24,166	<i>(82)</i>	\$8,754	<i>-(82)</i>	<i>-\$15,412</i>
Competing:								
Renewal	105	\$91,990	112	\$100,155	93	\$239,045	-19	\$138,890
New	784	\$547,471	823	\$584,587	280	\$721,776	-543	\$137,189
Supplements	0	\$0	0	\$0	0	\$0	0	\$0
Subtotal, Competing	889	\$639,461	935	\$684,742	373	\$960,821	-562	\$276,079
Subtotal, RPGs	3,823	\$2,658,520	3,723	\$2,657,192	2,866	\$2,569,144	-857	-\$88,047
SBIR/STTR	146	\$127,161	146	\$128,000	135	\$116,787	-11	-\$11,213
Research Project Grants	3,969	\$2,785,680	3,869	\$2,785,192	3,001	\$2,685,931	-868	-\$99,260
Research Centers								
Specialized/Comprehensive	8	\$16,036	8	\$15,594	6	\$10,017	-2	-\$5,577
Clinical Research	0	\$0	0	\$0	0	\$0	0	\$0
Biotechnology	0	\$0	0	\$0	0	\$0	0	\$0
Comparative Medicine	0	\$450	0	\$300	0	\$300	0	\$0
Research Centers in Minority Institutions	0	\$0	0	\$0	0	\$0	0	\$0
Research Centers	8	\$16,486	8	\$15,894	6	\$10,317	-2	-\$5,577
Other Research:								
Research Careers	751	\$122,732	763	\$124,748	737	\$111,527	-26	-\$13,220
Cancer Education	0	\$0	0	\$0	0	\$0	0	\$0
Cooperative Clinical Research	19	\$4,393	19	\$4,363	19	\$4,353	0	-\$10
Biomedical Research Support	0	\$872	0	\$0	0	\$0	0	\$0
Other Biomedical Research Support	0	\$0	0	\$0	0	\$0	0	\$0
Other	148	\$147,122	143	\$152,456	110	\$80,805	-33	-\$71,651
Other Research	918	\$275,119	925	\$281,567	866	\$196,686	-59	-\$84,881
Total Research Grants	4,895	\$3,077,286	4,802	\$3,082,653	3,873	\$2,892,934	-929	-\$189,719
Ruth L Kirschstein Training Awards:	FTEPs		FTEPs		FTEPs		FTEPs	
Individual Awards	480	\$24,797	483	\$25,552	376	\$19,939	-107	-\$5,612
Institutional Awards	1,287	\$87,777	1,290	\$90,112	906	\$72,305	-384	-\$17,807
Total Research Training	1,767	\$112,575	1,773	\$115,664	1,282	\$92,244	-491	-\$23,420
Research & Develop. Contracts	824	\$347,988	825	\$358,428	636	\$276,453	-189	-\$81,975
<i>SBIR/STTR (non-add)</i>	<i>(3)</i>	<i>(\$4,455)</i>	<i>(3)</i>	<i>(\$4,000)</i>	<i>(1)</i>	<i>(\$1,000)</i>	<i>-(2)</i>	<i>-(3,000)</i>
Intramural Research	468	\$277,642	441	\$278,948	453	\$279,187	12	\$238
Res. Management & Support	482	\$169,667	372	\$161,183	409	\$159,158	37	-\$2,025
<i>SBIR Admin. (non-add)</i>		<i>(\$1,065)</i>		<i>(\$1,065)</i>		<i>(\$1,065)</i>		<i>(\$0)</i>
Construction		\$0		\$0		\$0		\$0
Buildings and Facilities		\$0		\$0		\$0		\$0
Total, NHLBI	950	\$3,985,158	813	\$3,996,876	862	\$3,699,975	49	-\$296,901

* All items in italics and brackets are non-add entries.

SUMMARY OF CHANGES

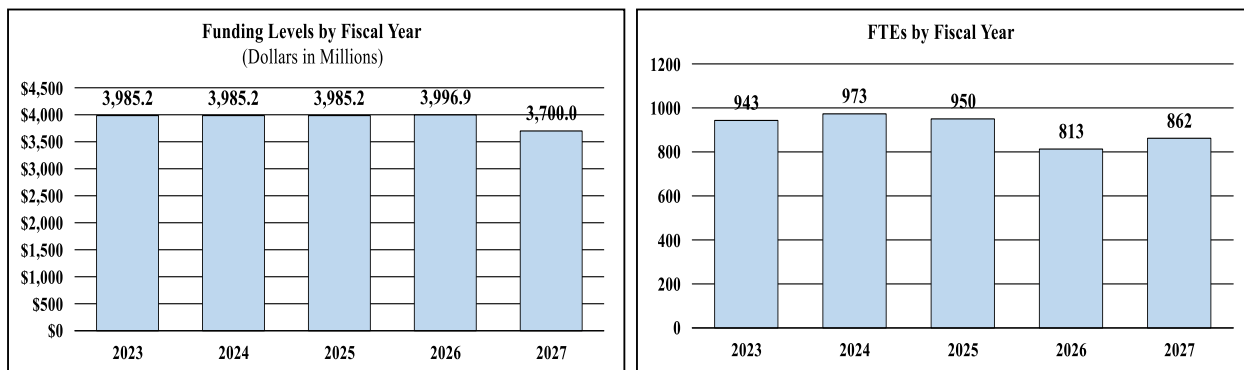
NATIONAL INSTITUTES OF HEALTH
National Heart, Lung, and Blood Institute

Summary of Changes
(Dollars in Thousands)

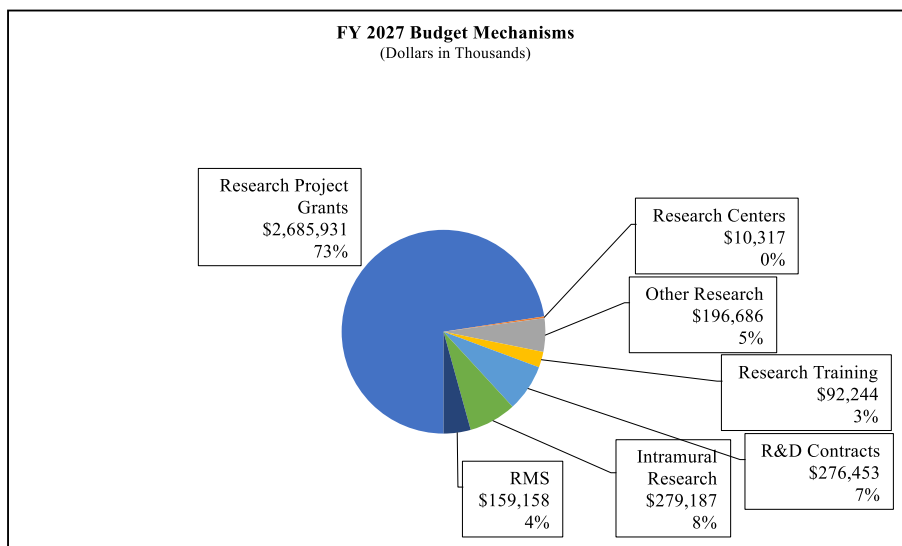
FY 2026 Enacted	\$3,996,876
FY 2027 President's Budget	\$3,699,975
Net change	-\$296,901

CHANGES	FY 2026 Enacted		FY 2027 President's Budget		Built-In Change from FY 2026 Enacted	
	FTEs	Budget Authority	FTEs	Budget Authority	FTEs	Budget Authority
A. Built-in:						
1. <u>Intramural Research:</u>						
a. Annualization of FY 2026 pay and benefits increase		\$119,063		\$125,179		\$457
b. FY 2027 pay and benefits increase		\$119,063		\$125,179		\$62
c. Paid days adjustment		\$119,063		\$125,179		\$0
d. Differences attributable to change in FTE		\$119,063		\$125,179		\$3,338
e. Payment for centrally furnished services		\$44,537		\$40,083		-\$4,454
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		\$115,348		\$113,924		-\$1,424
Subtotal						-\$2,020
2. <u>Research Management and Support:</u>						
a. Annualization of FY 2026 pay and benefits increase		\$85,382		\$86,387		\$314
b. FY 2027 pay and benefits increase		\$85,382		\$86,387		-\$4
c. Paid days adjustment		\$85,382		\$86,387		\$0
d. Differences attributable to change in FTE		\$85,382		\$86,387		\$8,492
e. Payment for centrally furnished services		\$2,699		\$2,429		-\$270
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		\$73,103		\$70,342		-\$2,761
Subtotal						\$5,772
Subtotal, Built-in						\$3,751
CHANGES	FY 2026 Enacted		FY 2027 President's Budget		Program Change from FY 2026 Enacted	
	No.	Amount	No.	Amount	No.	Amount
B. Program:						
1. <u>Research Project Grants:</u>						
a. Noncompeting	2,788	\$1,972,450	2,493	\$1,608,323	-295	-\$364,127
b. Competing	935	\$684,742	373	\$960,821	-562	\$276,079
c. SBIR/STTR	146	\$128,000	135	\$116,787	-11	-\$11,213
Subtotal, RPGs	3,869	\$2,785,192	3,001	\$2,685,931	-868	-\$99,260
2. Research Centers	8	\$15,894	6	\$10,317	-2	-\$5,577
3. Other Research	925	\$281,567	866	\$196,686	-59	-\$84,881
4. Research Training	1,773	\$115,664	1,282	\$92,244	-491	-\$23,420
5. Research and development contracts	825	\$358,428	636	\$276,453	-189	-\$81,975
Subtotal, Extramural		\$3,556,744		\$3,261,630		-\$295,114
6. Intramural Research	441	\$278,948	453	\$279,187	12	\$2,259
7. Research Management and Support	372	\$161,183	409	\$159,158	37	-\$7,797
8. Construction		\$0		\$0		\$0
9. Buildings and Facilities		\$0		\$0		\$0
Subtotal, program changes						-\$300,652
Total built-in and program changes	813	\$3,996,876	862	\$3,699,975	49	-\$296,901

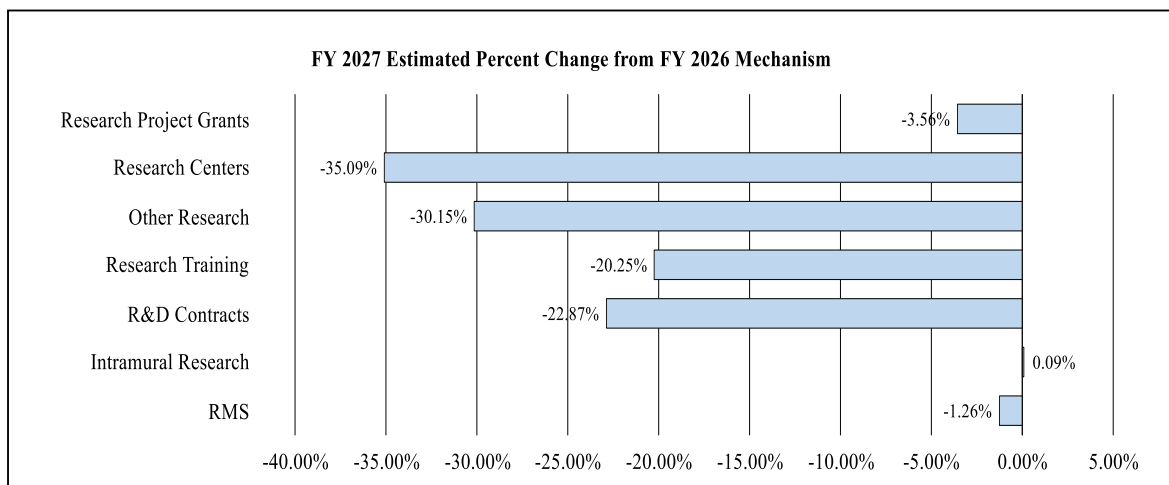
History of Budget Authority and FTEs:



Distribution by Mechanism:



Change by Selected Mechanisms:



BUDGET AUTHORITY BY ACTIVITY TABLE

**NATIONAL INSTITUTES OF HEALTH
National Heart, Lung, and Blood Institute**

Budget Authority by Activity *
(Dollars in Thousands)

	FY 2025 Final		FY 2026 Enacted		FY 2027 President's Budget		FY 2027 +/- FY 2026 Enacted	
	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>
<u>Extramural Research</u>								
<u>Detail</u>								
Translation Research and Implementation Science		\$106,690		**		\$98,360		**
Heart and Vascular Diseases		\$2,088,957		**		\$1,925,861		**
Lung and Sleep Health		\$907,735		**		\$836,864		**
Blood Diseases and Resources		\$434,467		**		\$400,546		**
Subtotal, Extramural		\$3,537,849		\$3,556,744		\$3,261,630		-\$295,114
Intramural Research	468	\$277,642	441	\$278,948	453	\$279,187	12	\$238
Research Management & Support	482	\$169,667	372	\$161,183	409	\$159,158	37	-\$2,025
TOTAL	950	\$3,985,158	813	\$3,996,876	862	\$3,699,975	49	-\$296,901

* Includes FTEs whose payroll obligations are supported by the NIH Common Fund.

** For FY 2026 Enacted, funding levels are displayed for statutory and report-directed PPAs. Amounts with an asterisk represent other PPAs as levels have not yet been determined.

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National Heart, Lung, and Blood Institute

Budget Authority (BA):

	<u>FY 2025 Final</u>	<u>FY 2026 Enacted</u>	<u>FY 2027 President's Budget</u>	<u>FY 2027 +/- FY 2026</u>
BA	\$3,985,158,000	\$3,996,876,000	\$3,699,975,000	-\$296,901,000
FTE	950	813	862	49

Program funds are allocated as follows: Competitive Grants/Cooperative Agreements; Contracts; Direct Federal/Intramural and Other.

Overall Budget Policy: The FY 2027 President’s Budget request for the National Heart, Lung, and Blood Institute (NHLBI) is \$3,700.0 million, a decrease of \$296.9 million or 7.4 percent compared with the FY 2026 Enacted level. Included in this amount is \$30 million to support the NIH Community Engagement Alliance (CEAL) Initiative and sustain its ongoing evolution as an NIH-wide Community Engagement Research Platform that positions research efforts within communities where the burden of chronic health conditions is disproportionately affected by high rates of chronic disease. CEAL’s goal is to leverage the power of community and community-engaged research to improve health outcomes through strategies best suited and tailored for each community and tested through implementation research approaches.

Data science and Artificial Intelligence (AI) and Machine Learning (ML) will help NHLBI identify the most promising approaches to accelerate efforts to prevent and treat chronic diseases. The request will support the new NHLBI-AI Initiative, which will speed the development of AI methods and models for discovery research by utilizing the unique multi-omics resources generated by NHLBI’s Trans-Omics for Precision Medicine (TOPMed) and BioData Catalyst (BDC) programs.

Also included in this request is \$23.0 million for the Cardiovascular Advances in Research and Opportunities Legacy (CAROL) Act, sustaining the FY 2026 Enacted amount, in support of valvular heart disease research to improve information on, and understanding of, causation and risk factors related to this disease. This funding will continue to advance technological imaging and other relevant methods to generate data, assessing potential risk factors for sudden cardiac arrest or sudden cardiac death from valvular heart diseases.

Program Descriptions

Heart and Vascular Diseases

Heart and vascular, or cardiovascular, diseases include conditions such as arrhythmias, coronary heart disease, heart attack, high blood pressure, congenital heart defects, vascular dementia, and stroke. NHLBI supports research on the causes, diagnosis, treatment, and prevention of heart and vascular diseases, and the interplay of these diseases with other conditions such as diabetes, HIV/AIDS, obesity, or sleep disorders. Research highlights include:

Improving women’s health across the lifespan: NHLBI is advancing women’s health across the lifespan, including pivotal periods such as pregnancy and the menopause transition. NHLBI supports landmark initiatives like the Women’s Health Initiative⁴ and the multi-NIH institute NuMoM2b study.⁵ These programs have underscored the significance of reproductive health as a window into long-term cardiovascular disease (CVD) risk. Findings from NuMoM2b demonstrate that women experiencing adverse pregnancy outcomes (APOs) in their first birth exhibit higher predicted 30-year CVD risk within 2–7 years postpartum, with risk increasing proportionally to the number of APOs encountered.⁶ Importantly, APOs likely serve as markers of pre-pregnancy CVD risk rather than as primary drivers of postpartum risk. Additional research has revealed that women with any of 5 major APOs face an elevated risk of developing heart failure for up to 46 years following pregnancy, highlighting the necessity for early preventive strategies and sustained clinical management.⁷

Accelerating progress in valvular heart disease: In 2022, Congress enacted the Cardiovascular Advances in Research and Opportunities Legacy (CAROL) Act,⁸ which authorized \$100 million over five years to NIH to expand research into the causation of, risk factors for, and treatment of valvular heart disease (VHD). Through the CAROL Act, NHLBI is supporting expanded VHD research in a range of areas, from determining risk factors for sudden cardiac arrest or death from VHD to developing advanced imaging techniques. The CAROL Act also supports a supplemental trial within the Percutaneous or Surgical Repair In Mitral Prolapse And Regurgitation for ≥60-Year-olds (PRIMARY) clinical trial. This trial is comparing the long-term effectiveness and safety of two intervention strategies to repair faulty mitral valves. Broadly, the PRIMARY trial aims to determine the processes by which VHDs put patients at risk for irregular heartbeats and sudden death, and which treatments best target these abnormalities.

Identifying risk factors for heart disease in American Indians: Heart disease is twice as high in American Indian adults compared to the general U.S. public.⁹ However, the prevalence of elevated cholesterol in the blood, a condition called dyslipidemia, in American Indian adolescents and young adults has been difficult to determine. A recent study found that more than 70 percent of American Indian young adults (20 to 39 years old) and 50 percent of American Indian teens (15 to 19 years old) have dyslipidemia, a risk factor for heart disease.¹⁰

⁴ nhlbi.nih.gov/science/womens-health-initiative-whi

⁵ numom2b.org/studies/ongoing

⁶ pubmed.ncbi.nlm.nih.gov/38574364/

⁷ pubmed.ncbi.nlm.nih.gov/39846910/

⁸ congress.gov/bill/117th-congress/house-bill/1193/text

⁹ ahajournals.org/doi/full/10.1161/01.CIR.99.18.2389

¹⁰ ahajournals.org/doi/10.1161/JAHA.123.031741

The findings came from a 19-year review of data from the Strong Heart Study,¹¹ which is the largest study of cardiovascular health outcomes and risk factors among American Indian adults. These findings highlight the importance of cholesterol screenings, education, and interventions, especially for teens and young adults who may be more likely to have underlying cardiovascular risks.

Exploring new treatments for cancer-like atherosclerosis: Atherosclerosis is a chronic condition in which lesions and plaque accumulate along artery walls. NHLBI-funded research found substantial similarities between cancer cells and the cells on atherosclerotic plaques.¹² Researchers treated atherosclerotic mice with the FDA-approved anti-cancer drug niraparib and found that it showed potential for preventing and treating the disease. These findings could pave the way for using a certain class of anti-cancer drugs to counteract the tumor-like mechanisms that drive the buildup of plaque in arteries, the major cause of cardiovascular disease, as well as opening new dimension of strategies for the prevention and treatment of atherosclerosis.

Using AI to Improve Heart Failure Risk Modeling: The Accelerating Medicines Partnership® Heart Failure (AMP® HF) Project¹³ is a public-private partnership using deep phenotyping to advance precision therapies for patients with heart failure with preserved ejection fraction (HFpEF), a form of HF with very limited treatment options. Utilizing pooled NHLBI and other cohort study data, researchers investigated the correlation between HF and heart echocardiograms over time and successfully built an AI-based predictive model. Their research suggests a scalable approach to identify individuals at risk for HF and suggest personalized preventive interventions.

Budget Policy: The FY 2027 President’s Budget request for NHLBI heart and vascular disease research is \$1,925.9 million.

Lung Diseases and Sleep Disorders

NHLBI-funded research improves the understanding of lung biology and how lung diseases start and progress, as well as studies and clinical trials that lead to new and improved ways to diagnose, treat, and prevent lung diseases. This includes infectious diseases such as pneumonia, restrictive vascular diseases such as pulmonary fibrosis and pulmonary hypertension, and obstructive lung diseases such as chronic obstructive pulmonary disease (COPD). NHLBI also funds research on sleep disorders, such as sleep apnea and insomnia, and the fundamental functions of sleep and circadian rhythms. Research highlights in these areas include:

Improving asthma diagnosis in children: Asthma is one of the most prevalent pediatric chronic conditions. Asthma is highly variable with different subtypes that can be difficult to detect accurately. Precise identification of different asthma subtypes would allow clinicians to prescribe medications with greater specificity and improved therapeutic outcomes. NHLBI-supported researchers recently developed a nasal swab test for children that diagnoses specific

¹¹ nhlbi.nih.gov/science/strong-heart-study-shs

¹² ahajournals.org/doi/10.1161/CIRCULATIONAHA.123.067587

¹³ amphf.org/

asthma subtypes.¹⁴ This non-invasive approach will enable more personalized treatments for asthma and foster research toward better treatments for lesser-studied asthma types.

Understanding lung development: NHLBI's Molecular Atlas of Lung Development (LungMAP) Consortium is using cutting-edge technology and precision medicine to map, model and mend the lung.¹⁵ This comprehensive resource helps researchers understand the complex landscape of the human lung. LungMAP recently released the first molecular map of human newborn lungs and identified which specific genes are turned on in individual cells.¹⁶ Findings from these resources provide valuable insights into normal human lung development and provide a foundation for the discovery of therapeutic targets for lung diseases.

Addressing sleep disorders in children: Between 6-17 percent of children in the United States have sleep-disordered breathing (SDB), putting them at risk for academic and behavioral difficulties and chronic health diseases like obesity and cardiovascular disease.¹⁷ NHLBI-supported researchers recently found that surgical removal of the tonsils and adenoids, known as adenotonsillectomy, in children with snoring and mild breathing problems during sleep appears to improve their sleep, quality of life, and blood pressure a year after surgery.¹⁸ The Pediatric Adenotonsillectomy Trial for Snoring (PATS) trial, a phase III randomized control trial, also found that adenotonsillectomy in children with mild SDB reduces the frequency of medical office visits by 32 percent and prescription medicine use in this group by 48 percent.¹⁹

Budget Policy: The FY 2027 President's Budget request for NHLBI lung disease research is \$836.9 million.

Blood Diseases

Blood diseases affect millions of people each year. These inherited and acquired diseases, including anemias, venous thromboembolism, hemophilia, and sickle cell disease, can affect red and white blood cells, platelets, bone marrow, vascular endothelium, or plasma proteins. NHLBI works to understand the causes, prevention, and treatment of many blood diseases in addition to its responsibility of ensuring the adequacy and safety of the nation's blood supply. Research highlights include:

Advancing gene therapies: In 2023, the U.S. Food and Drug Administration approved two transformative gene therapies for the treatment of sickle cell disease (SCD) in patients ages 12 years and older. Decades of NIH-funded research helped lay the groundwork for these novel genetic approaches. NHLBI continues to work closely with researchers to enhance safety monitoring of trial participants. Studying gene therapies over time is key to understanding their usefulness and sustainability in both SCD and other diseases. NHLBI supports efforts to improve the effectiveness of gene therapy treatments and understand long-term effects and potential

¹⁴ jamanetwork.com/journals/jama/fullarticle/2828721

¹⁵ nhlbi.nih.gov/news/2019/lungmap-nhlbi-project-breathes-life-first-depth-atlas-human-lung

¹⁶ mdpi.com/2073-4425/15/3/298

¹⁷ nhlbi.nih.gov/health/sleep-deprivation/health-effects

¹⁸ jamanetwork.com/journals/jama/fullarticle/2812479

¹⁹ jamanetwork.com/journals/jamapediatrics/fullarticle/2831334

toxicities. In a recent study, NHLBI funded researchers found that a gene transfer treatment approach for the bleeding disorder Hemophilia B had sustained clinical benefit after 13 years.²⁰

Improving bone marrow transplants: Bone marrow transplants are effective treatments but require stem cells that closely match the patient to reduce the risk of transplant rejection. An NHLBI-funded study tested a new method of bone marrow transplant, using half-matched family donors from a wider donor pool (e.g. siblings, aunts and uncles, nieces and nephews and cousins) and found the treatment to be a safe and effective.²¹ Of the 42 adults who received a partial match bone marrow transplant, 88 percent experienced no new disease-related events 2 years after treatment. These positive results point to a potentially more available, and possibly transformative, approach for individuals with SCD.

Developing human-based research models to understand disease and regeneration: NHLBI-funded teams are making strides understanding and growing organoids, which are three-dimensional clusters of cells that mimic a specific organ. Organoid growth and size are limited due to a lack of vascularization, or integrated blood vessels, that are needed to carry oxygen and nutrients to cells growing in the center. A recent study found a method to grow both heart and liver organoids with integrated blood vessels, allowing these models to both grow larger and reach a more mature state.²² These efforts add to a growing field of useful human-based models that help scientists better understand organ development and how to better create personalized regenerative therapies.

Budget Policy: The FY 2027 President's Budget request for this research program is \$400.5 million.

Center Translation Research and Implementation Science (CTRIS)

NHLBI supports research to identify approaches that accelerate access to and integration of evidence-based practices for heart, lung, blood, and sleep health, striving for improved health and healthcare services for all. Research highlights include:

Addressing chronic disease in rural America: Rural areas of the United States face the nation's highest chronic disease burden, prompting NHLBI to support strategies that deliver care where people live. The Risk Underlying Rural Areas Longitudinal (RURAL) cohort study is focused on chronic heart and lung disease in ten rural counties in Alabama, Kentucky, Louisiana, and Mississippi. By using community-engaged partners and high-tech mobile research units, RURAL collects data including medical histories, as well as familial, lifestyle, and behavioral factors. The study is following more than 4,600 participants over the course of 6 years, ending in early 2026. NHLBI plans for continued investments in this cohort through ancillary studies that will begin in 2027.

Leveraging community engaged research: NHLBI is committed to ensuring that research findings are broadly disseminated for the greatest public health benefit. The NIH Community

²⁰ [nejm.org/doi/10.1056/NEJMoa1407309](https://doi.org/10.1056/NEJMoa1407309)

²¹ [evidence.nejm.org/doi/pdf/10.1056/EVIDoa2400192](https://doi.org/10.1056/EVIDoa2400192)

²² [science.org/doi/10.1126/science.adu9375](https://doi.org/10.1126/science.adu9375)

Engagement Alliance (CEAL)²³ is a federal platform that was established to position research efforts within communities where the health burden of chronic conditions is disproportionately affected by high rates of cardiovascular disease, diabetes, respiratory conditions, cancer, and more. CEAL leverages the power of community-engaged research methods. The goal is to improve health outcomes through strategies that are deemed best suited and tailored for each community and tested through implementation research approaches.

CEAL's platform includes 1,375 community partner organizations and is the home for multiple research initiatives, including research focused on maternal morbidity, rural, and tribal health. These Community Engagement Alliance Consultative Resource (CEACR) helps federally-funded researchers understand the opportunities they have to build trust in the communities where they work.^{24,25} CEACR has conducted more than 60 tailored consultations, and hosted webinars with more than 2,000 national views. Another key resource is CEAL CAREnet, a data ecosystem which advances clinical trials in primary care settings in underserved communities. CEAL CAREnet is an integrative set of research components that serve to tackle barriers between clinical care and community-based research, and foster seamless collaboration between community partners, academic institutions, and healthcare systems.

Budget Policy: The FY 2027 President's Budget request for CTRIS is \$98.4 million

Division of Intramural Research

The Intramural Research Program performs robust scientific and clinical research that leads to a better understanding of biology and clinical pathology. Research focuses on foundational basic science coupled closely with innovative technology development and clinical research in partnership with the NIH Clinical Center and local hospitals. Research highlights include:

Developing a new treatment for aplastic anemia: An NHLBI intramural research team pioneered the first stem cell transplant therapy to treat severe aplastic anemia,²⁶ a rare but life-threatening hematologic disorder where there is insufficient production of blood cells. Stem cell transplantation has been a promising therapy, but finding matched sibling donors is not always possible. By using a patient's own cells, this therapy is much more available, and researchers demonstrated a 92 percent disease free and overall survival rate. The new therapy is potentially curative and has received FDA approval.²⁷

Budget Policy: The FY 2027 President's Budget request for NHLBI intramural research is \$279.2 million, an increase of \$0.2 million or 0.1 percent compared with the FY 2026 Enacted level.

²³ ceal.nih.gov/

²⁴ ceal.nih.gov/impact/effective-community-engagement-methodology-from-start

²⁵ nihceal.org/programs/community-engagement-alliance-consultative-resource-ceacr

²⁶ nhlbi.nih.gov/health/anemia/aplastic-anemia

²⁷ nih.gov/news-events/news-releases/expanded-umbilical-cord-blood-transplant-achieves-94-survival-severe-aplastic-anemia-patients

Research Management and Support

Research Management and Support (RMS) activities include administrative and technical functions that support and enhance the effectiveness of the Institute's research investments. This includes providing administrative, budgetary, logistical, and scientific support in the review and monitoring of research grants and clinical trials, training awards, and research development contracts.

Budget Policy: The FY 2027 President's Budget request for RMS at NHLBI is \$159.2 million, a decrease of \$2.0 million or 1.3 percent compared with the FY 2026 Enacted level.

**NATIONAL INSTITUTES OF HEALTH
National Heart, Lung, and Blood Institute**

Appropriations History

Fiscal Year	Budget Estimate to Congress ¹	House Allowance ²	Senate Allowance	Appropriation
2018	\$2,534,803,000	\$3,256,521,000	\$3,322,774,000	\$3,383,201,000
Rescission				\$0
2019	\$3,112,032,000	\$3,423,604,000	\$3,490,171,000	\$3,488,335,000
Rescission				\$0
2020	\$3,002,696,000	\$3,658,822,000	\$3,694,771,000	\$3,624,258,000
Rescission				\$0
Supplemental				\$103,400,000
2021	\$3,298,004,000	\$3,655,428,000	\$3,728,307,000	\$3,664,811,000
Rescission				\$0
2022	\$3,845,681,000	\$3,866,828,000	\$3,841,998,000	\$3,808,494,000
Rescission				\$0
2023	\$3,822,961,000	\$3,943,702,000	\$3,946,557,000	\$3,982,345,000
Rescission				\$0
2024	\$3,985,158,000	\$3,982,345,000	\$3,982,345,000	\$3,982,345,000
Rescission				\$0
2025	\$3,997,086,000		\$3,982,345,000	\$3,982,345,000
Rescission				\$0
2026		\$3,990,345,000	\$3,982,345,000	\$3,990,345,000
Rescission				\$0
2027	\$3,699,975,000			

¹ The FY 2026 President's Budget proposed consolidating the 27 NIH Institutes and Centers into an 8-Institute structure, while maintaining the Office of the Director and the Building and Facilities account.

² The FY 2025 House bill proposed consolidating the 27 NIH Institutes and Centers into a 12-Institute structure, while maintaining the Office of the Director and the Building and Facilities account.

BUDGET AUTHORITY BY OBJECT CLASS

**NATIONAL INSTITUTES OF HEALTH
National Heart, Lung, and Blood Institute**

Budget Authority by Object Class ¹
(Dollars in Thousands)

	FY 2026 Enacted	FY 2027 President's Budget	FY 2027 +/- FY 2026
Total compensable workyears:			
Full-time equivalent	813	862	49
Full-time equivalent of overtime and holiday hours	0	0	0
Average ES salary	\$226	\$226	\$0
Average GM/GS grade	13.3	13.2	0.0
Average GM/GS salary	\$116	\$116	\$0
Average salary, Commissioned Corps (42 U.S.C. 207)	\$130	\$135	\$5
Average salary of ungraded positions	\$175	\$175	\$0
OBJECT CLASSES	FY 2026 Enacted	FY 2027 President's Budget	FY 2027 +/- FY 2026
Personnel Compensation			
11.1 Full-Time Permanent	\$81,434	\$86,549	\$5,115
11.3 Other Than Full-Time Permanent	\$47,515	\$47,633	\$119
11.5 Other Personnel Compensation	\$7,261	\$7,279	\$18
11.7 Military Personnel	\$2,521	\$2,613	\$92
11.8 Special Personnel Services Payments	\$13,496	\$13,530	\$34
11.9 Subtotal Personnel Compensation	\$152,228	\$157,605	\$5,377
12.1 Civilian Personnel Benefits	\$50,217	\$51,942	\$1,725
12.2 Military Personnel Benefits	\$519	\$538	\$19
13.0 Benefits to Former Personnel	\$1,482	\$1,482	\$0
Subtotal Pay Costs	\$204,445	\$211,566	\$7,121
21.0 Travel & Transportation of Persons	\$2,709	\$2,766	\$57
22.0 Transportation of Things	\$404	\$412	\$8
23.1 Rental Payments to GSA	\$42	\$43	\$1
23.2 Rental Payments to Others	\$0	\$0	\$0
23.3 Communications, Utilities & Misc. Charges	\$141	\$144	\$3
24.0 Printing & Reproduction	\$0	\$0	\$0
25.1 Consulting Services	\$60,160	\$54,144	-\$6,016
25.2 Other Services	\$59,245	\$50,489	-\$8,756
25.3 Purchase of Goods and Services from Government Accounts	\$284,006	\$236,604	-\$47,402
25.4 Operation & Maintenance of Facilities	\$616	\$629	\$13
25.5 R&D Contracts	\$143,602	\$106,921	-\$36,681
25.6 Medical Care	\$3,157	\$3,280	\$123
25.7 Operation & Maintenance of Equipment	\$29,796	\$30,231	\$435
25.8 Subsistence & Support of Persons	\$0	\$0	\$0
25.0 Subtotal Other Contractual Services	\$580,583	\$482,299	-\$98,284
26.0 Supplies & Materials	\$20,763	\$21,199	\$436
31.0 Equipment	\$6,587	\$6,722	\$135
32.0 Land and Structures	\$3,440	\$3,512	\$72
33.0 Investments & Loans	\$0	\$0	\$0
41.0 Grants, Subsidies & Contributions	\$3,177,648	\$2,971,197	-\$206,450
42.0 Insurance Claims & Indemnities	\$0	\$0	\$0
43.0 Interest & Dividends	\$62	\$62	\$0
44.0 Refunds	\$52	\$52	\$0
94.0 Financial Transfers	\$0	\$0	\$0
Subtotal Non-Pay Costs	\$3,792,431	\$3,488,409	-\$304,022
Total Budget Authority by Object Class	\$3,996,876	\$3,699,975	-\$296,901

¹ Includes FTEs whose payroll obligations are supported by the NIH Common Fund.

DETAIL OF FULL-TIME EQUIVALENT EMPLOYMENT (FTE)

**NATIONAL INSTITUTES OF HEALTH
National Heart, Lung, and Blood Institute**

Detail of Full-Time Equivalent Employment (FTE)

Office	FY 2025 Final			FY 2026 Enacted			FY 2027 President's		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
Division of Intramural Research									
Direct:	440	13	453	415	13	428	427	13	440
Reimbursable:	15	-	15	13	-	13	13	-	13
Total:	455	13	468	428	13	441	440	13	453
Office of the Director									
Direct:	166	1	167	75	1	76	87	1	88
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	166	1	167	75	1	76	87	1	88
Division of Blood and Resources									
Direct:	29	-	29	27	-	27	31	-	31
Total:	29	-	29	27	-	27	31	-	31
Division of Lung Diseases									
Direct:	43	-	43	39	-	39	45	-	45
Total:	43	-	43	39	-	39	45	-	45
Center for Translation Research and Implementation Science									
Direct:	19	-	19	18	-	18	18	-	18
Total:	19	-	19	18	-	18	18	-	18
Division of Cardiovascular Sciences									
Direct:	125	-	125	123	-	123	130	-	130
Total:	125	-	125	123	-	123	130	-	130
Division of Extramural Research Activities									
Direct:	99	-	99	89	-	89	97	-	97
Total:	99	-	99	89	-	89	97	-	97
Total	936	14	950	799	14	813	848	14	862
Includes FTEs whose payroll obligations are supported by the NIH Common Fund.									
FTEs supported by funds from Cooperative Research and Development Agreements.	0	0	0	0	0	0	0	0	0

DETAIL OF POSITIONS

**NATIONAL INSTITUTES OF HEALTH
National Heart, Lung, and Blood Institute**

Detail of Positions ¹

GRADE	FY 2025 Final	FY 2026 Enacted	FY 2027 President's Budget
Total, ES Positions	1	1	1
Total, ES Salary	\$225,700	\$225,700	\$225,700
General Schedule			
GM/GS-15	86	88	92
GM/GS-14	178	165	167
GM/GS-13	202	188	191
GS-12	56	50	67
GS-11	28	19	20
GS-10	0	0	0
GS-9	19	25	25
GS-8	0	0	0
GS-7	4	3	3
GS-6	0	0	0
GS-5	1	0	0
GS-4	1	0	0
GS-3	0	0	0
GS-2	0	0	0
GS-1	0	0	0
Subtotal	575	538	565
Commissioned Corps (42 U.S.C. 207)			
Assistant Surgeon General	1	1	1
Director Grade	2	2	2
Senior Grade	6	6	6
Full Grade	3	3	3
Senior Assistant Grade	2	2	2
Assistant Grade	0	0	0
Junior Assistant	0	0	0
Subtotal	14	14	14
Ungraded	271	279	291
Total permanent positions	589	553	580
Total positions, end of year	861	832	871
Total full-time equivalent (FTE) employment, end of year	950	813	862
Average ES salary	\$225,700	\$225,700	\$225,700
Average GM/GS grade	13.2	13.3	13.2
Average GM/GS salary	\$114,258	\$116,018	\$115,636

¹ Includes FTEs whose payroll obligations are supported by the NIH Common Fund.