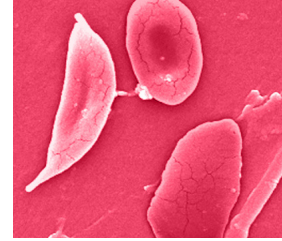
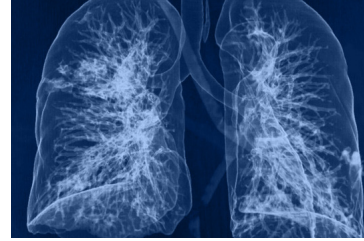
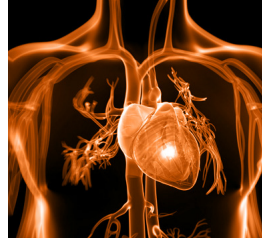




National Heart, Lung, and Blood Institute



February 2023

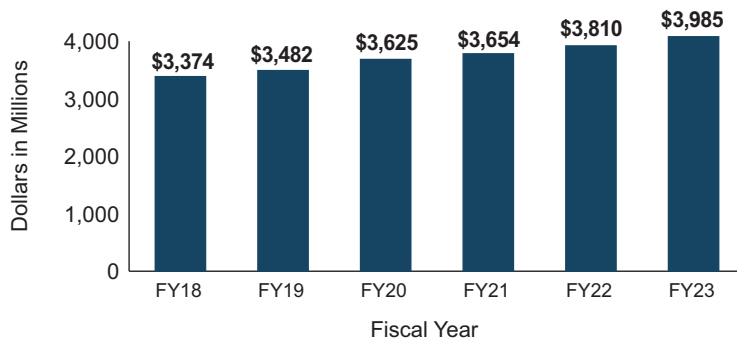
# ABOUT NHLBI

- NHLBI is the nation’s leader in supporting research on the prevention and treatment of heart, lung, blood, and sleep disorders.
- We were established in 1948 to address rising rates of cardiovascular disease, the nation’s leading cause of death.
- Our mission has expanded to lead NIH research efforts in lung diseases, including asthma and chronic obstructive pulmonary disease (COPD).
- We lead research on blood transfusion and blood diseases, such as sickle cell disease.
- In 1993, we became the home for the National Center on Sleep Disorders Research (NCSDR), which coordinates NIH programs related to sleep biology.
- NHLBI’s research advances scientific knowledge, improves public health, and saves lives.



**Director Profile:** Gary H. Gibbons, M.D., is Director of the National Heart, Lung, and Blood Institute (NHLBI). He received his M.D. from Harvard Medical School and has served on the faculty at Harvard, Stanford University, and Morehouse School of Medicine in Atlanta.

## FUNDING HISTORY



In FY20, NHLBI received \$103 million in supplemental appropriations through the CARES Act (not shown). The FY24 President’s budget request is \$3,985 million.

## Facts and Figures

<b>Full-Time Staff**</b>	<b>899</b>
<b>Awards</b>	<b>1,118</b>
<b>Principal Investigators</b>	<b>1,247</b>
<b>ESI Success Rates***</b>	<b>39.4%</b>
<b>K Award Success Rates***</b>	<b>41.3%</b>

## Current Major Initiatives

- NHLBI and the Foundation for the National Institutes of Health launched the **Accelerating Medicines Partnership® Heart Failure Program**, a public–private partnership between NIH, the U.S. Food and Drug Administration, and biopharmaceutical and life science companies. The program will integrate their distinct resources and expertise about drug discovery and development into established NHLBI programs and initiatives to turn discovery of novel therapeutic targets into safe and effective treatments.
- NHLBI is leveraging its community-engaged research model and funding NIH’s **Alliance for Community Engagement–Climate and Health (ACE-CH)** initiative to strengthen community-level engagement with underserved populations. This will provide a firm foundation for raising awareness about climate stressors on health, reducing health threats from climate change across the lifespan, and building resilience in high-risk communities.
- The 2021 **NIH Sleep Research Plan** incorporates cross-cutting NIH

priorities that address topics such as minority health and health disparities, sex/gender, sleep across the lifespan, the impact of opioid addiction, and how poor sleep may exacerbate the risk and outcome of infectious diseases. Additionally, NHLBI will investigate how climate change affects sleep. The plan is based on a set of research needs and opportunities identified with input from researchers, public representatives, NIH workshop participants, and NHLBI programmatic staff.

\*\* Full-time staff, awards, and extramural principal investigators are FY22 data.

\*\*\* These success rates were averaged over 3 years (FY20, 21, and 22) and calculated as (# awards/# of percentiled applications x 100).

For more about percentiles, see <https://grants.nih.gov/grants/peer-review.htm#Summary>.



National Heart, Lung,  
and Blood Institute



## Accomplishments in...

### Heart Health

- NHLBI is examining causes of hypertension, including the gut–brain axis. New research demonstrated a link between the gut microbiome and blood pressure.
- Researchers defined the entire network of protein interactions between two factors critical for normal heart development, identifying genes that interact within this array of proteins.
- Embryonic stem (ES) cells can initially become any type of cell in the body. Researchers found that mouse ES cells coaxed to become heart cells could completely transform into brain cells. This finding could have important implications for heart disease pathology.

### Lung Health

- Researchers used data from **Trans-Omics for Precision Medicine (TOPMed)** to determine that a novel framework called a “polygenic transcriptome risk score” improved the accuracy of predictions regarding risk of COPD.
- Researchers discovered that a drug initially developed to treat cancer shows promise as a therapeutic for idiopathic pulmonary fibrosis.

- The **Molecular Atlas of Lung Development Program (LungMAP)** Consortium synthesized current data into a comprehensive and practical cellular census of the lung.

### Sleep Health

- A study showed that time spent awake while in bed and wakefulness after sleep onset were associated with poorer cognitive function.
- Exposure to even a small amount of light while sleeping was linked with obesity, diabetes, and high blood pressure in older adults.

### Blood Health

- The **Cure Sickle Cell Initiative** is funding two clinical trials in conjunction with the California Institute for Regenerative Medicine.
- Researchers found that adult blood cells originate from two sources, not one as previously believed. These findings could spark new strategies for developing treatments for blood disorders and cancers, as well as improve outcomes of bone marrow transplants.

## NHLBI'S COVID-19 Response

- The **NIH Community Engagement Alliance (CEAL) Against COVID-19 Disparities** is an NIH-wide initiative, led by NHLBI, that leverages existing community-engaged research capacities to address misinformation, foster trust in science, and ensure inclusive participation of ethnic and racial minority communities disproportionately affected by the COVID-19 pandemic.
- NHLBI is addressing post-acute sequelae of COVID-19 (PASC), also known as long COVID, by recruiting participants into the **NIH Researching COVID to Enhance Recovery (RECOVER) Initiative**'s clinical trials to develop successful therapeutics for lingering symptoms.
- One research group discovered that certain antibodies found in some COVID-19 patients cause a condition that may lead to blood clots. The authors suggest that patients with severe COVID-19 be screened to evaluate their risk for the condition. Patients at high risk may benefit from treatments used in traditional cases of severe antiphospholipid syndrome, a disorder of the immune system that causes an increased risk of blood clots.

