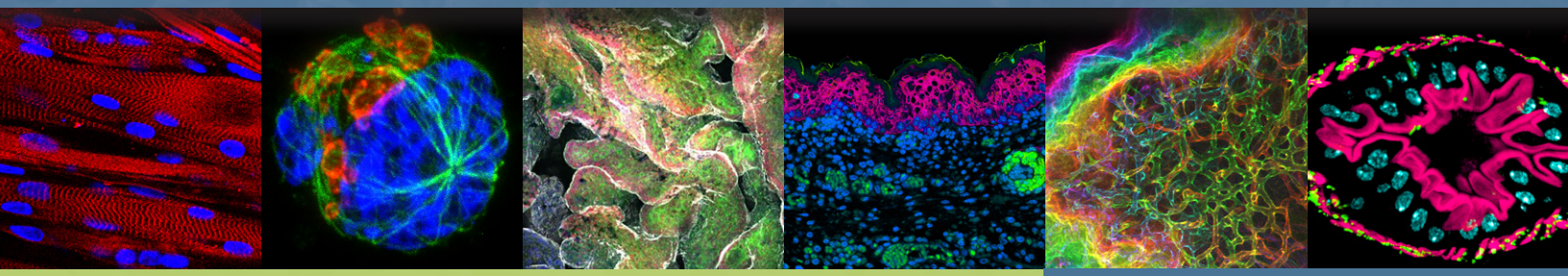
National Institute of Arthritis and Musculoskeletal and Skin Diseases

What Is NIAMS?



The National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) is one of 27 Institutes and Centers at the National Institutes of Health (NIH), the nation's premier biomedical research agency. Established in 1986, NIAMS focuses on diseases of the bones, joints, muscles, and skin. The institute uses its annual budget of about $600 million to support research, train researchers, and communicate scientific advances.

Diseases of the bones, joints, muscles, and skin are major chronic health problems that impact nearly every household in America. They cause pain, disability, and in some cases, premature death. They affect people of all ages, races, ethnicities, and economic levels. Many of the conditions have a disproportionately high impact on women and racial minorities. NIAMS is committed to understanding and addressing these disparities.

NIAMS aims to understand and find new treatments for conditions such as:

- **Autoinflammatory diseases**
- **Back pain**
- **Connective tissue diseases, such as Marfan syndrome**
- **Fibromyalgia**
- **Hair loss disorders, such as alopecia areata**
- **Lupus**
- **Muscular dystrophy**
- **Orthopaedic injuries and implants**
- **Osteoarthritis**
- **Osteoporosis**
- **Rheumatoid arthritis**
- **Scleroderma**
- **Skin diseases, such as psoriasis, eczema, and acne**

NIAMS Extramural Research Program

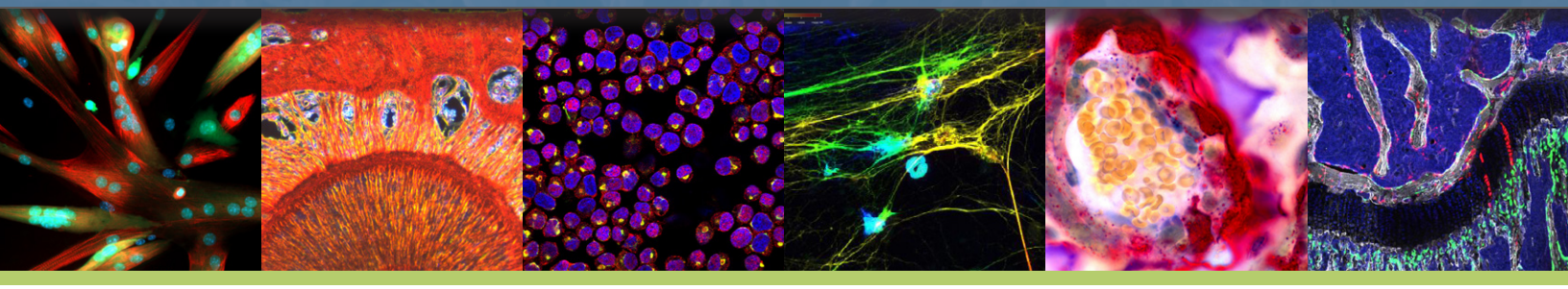
NIAMS funds basic and clinical research nationwide through its Extramural Research Program. Through a highly competitive peer-review process, the institute awards grants and contracts to universities, hospitals, and other research organizations.

Through extramural support, NIAMS advances research in rheumatology, muscle biology, orthopaedics, bone and mineral metabolism, and dermatology. For example:

- NIAMS is leading the NIH Back Pain Consortium Research Program (NIH BACPAC). Lower back pain, one of the most common forms of chronic pain in the United States, often leads to opioid use. The BACPAC program, a part of the NIH Helping to End Addiction Long-term Initiative, brings together patients, doctors, and researchers to understand and develop personalized treatments for lower back pain.

- Past NIAMS funding led to the discovery of the genetic basis of a rare, inherited form of rickets called X-linked hypophosphatemia. This research paved the way for the recent development of Crysvita (burosumab-twza), the first drug to treat the disease.

- NIAMS participates in a public-private partnership called AMP AIM: The Accelerating Medicines Partnership® Autoimmune and Immune-Mediated Diseases (AMP® AIM) program. Managed by the Foundation for the National Institutes of Health, the project aims to deepen our understanding of the cellular and molecular interactions that lead to inflammation and autoimmune diseases.



- Psoriasis, which causes scaly inflamed skin, can increase the risk for cardiovascular disease, diabetes, and psoriatic arthritis. NIAMS supports research to predict and manage these associated health problems in psoriasis patients.
- NIAMS-supported researchers found that magnetic resonance imaging (MRI) can quickly detect even tiny improvements in boys with Duchenne muscular dystrophy (DMD). Now, pharmaceutical companies and universities are using MRI in clinical studies of DMD.

NIAMS Intramural Research Program

Scientists and scientists-in-training in the NIAMS Intramural Research Program conduct high-risk, high-reward basic, translational, and clinical research on the NIH campus in Bethesda, Maryland. They can pivot quickly to address emerging scientific opportunities and needs, such as the COVID-19 pandemic. Examples of intramural work are below.

- Several intramural researchers are examining how the bacteria, viruses, and other microorganisms on our skin (the skin microbiome) interact with our immune systems to promote health and, when things go awry, drive disease.
- Injuries in our mouths heal quicker than wounds on our skin. NIAMS intramural scientists recently discovered one reason why: In the mouth, genes needed for wound healing are always "on." In the skin, they're not. This knowledge may lead to new ways to treat problematic skin wounds, such as non-healing foot sores associated with diabetes.

Many other examples of NIAMS-supported research can be found on the NIAMS website at niams.nih.gov.

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