



The NIAMS IRP also provides **training for investigators** interested in careers in these areas. The ultimate goals are to:

- ▶ Provide new insights through research into the normal function of bones, joints, muscles, and skin, and the diseases that affect them.
- ▶ Train investigators to continue toward a complete understanding of these structures and the diseases that affect them.

Examples of NIAMS IRP Research

- ▶ NIAMS IRP investigators, along with industry and investigators from the National Heart, Lung, and Blood Institute (NHLBI), were instrumental in the development of the **rheumatoid arthritis drug tofacitinib**, which is part of a new class of drugs. The drug suppresses the immune system by blocking a specific protein. It may also protect against the inflammation associated with other autoimmune diseases.
- ▶ IRP investigators have advanced our understanding of rare, often deadly **autoinflammatory diseases** that are associated with **defects in the innate immune system** and occur at birth. Their research has also led to better treatments for these devastating diseases.

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

CONNECT WITH NIAMS

- ▶ **NIAMS Information Clearinghouse**
Phone: 301-495-4484
Toll free: 877-22-NIAMS (226-4267)
TTY: 301-565-2966
Email: NIAMInfo@mail.nih.gov
Website: www.niams.nih.gov
En español: www.niams.nih.gov/espanol
- ▶ **NIH Osteoporosis and Related Bone Diseases National Resource Center**
Phone: 202-223-0344
Toll free: 800-624-BONE (2663)
TTY: 202-466-4315
Email: NIAMSBoneInfo@mail.nih.gov
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National Institute of Arthritis and Musculoskeletal and Skin Diseases

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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, the NIAMS supports research into the causes, treatment, and prevention of arthritis and musculoskeletal and skin diseases; the training of basic and clinical scientists to carry out this research; and the dissemination of information on research progress in these diseases.

Almost every household in America is affected by diseases of the bones, joints, muscles, and skin. **These common and rare diseases affect people of all ages, racial and ethnic populations, and economic status.** Many of these conditions **affect women and minorities disproportionately.** The NIAMS is committed to uncovering the reasons for these disparities and creating effective strategies to treat and even prevent them.

The NIAMS works to **understand and treat diseases and 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
- ▶ Osteoarthritis
- ▶ Osteoporosis
- ▶ Rheumatoid arthritis
- ▶ Scleroderma
- ▶ Skin diseases, such as psoriasis, eczema, and acne

NIAMS SUPPORTS THE BEST RESEARCH

Diseases of the bones, joints, muscles, and skin are the **most frequent chronic health problems** in the United States, causing pain, disability, and in some cases, premature death.

With the support of the American people, the NIAMS annually invests **more than \$500 million into medical research** for these conditions.



The NIAMS combats these diseases through **research, training, and information dissemination.** It supports and conducts—throughout the country and on the NIH campus in Bethesda, Maryland—a multidisciplinary approach that includes:

- ▶ Basic, translational, and clinical research
- ▶ Research centers
- ▶ Research training for scientists

NIAMS EXTRAMURAL RESEARCH PROGRAM

The NIAMS Extramural Research Program **supports scientific studies** around the country through **grants and contracts** to universities, hospitals, medical schools, and other organizations. Investigators across the United States submit grant applications to the NIH to seek funding for their projects. If a panel of experts finds that the application has scientific merit, it may be funded. This competitive process identifies the most promising and highest quality research.

Investigators supported by the NIAMS are in the fields of **rheumatology, muscle biology, orthopaedics, bone and mineral metabolism, and dermatology.** With ongoing research, we may be able to end some of the most common and disabling chronic diseases of the bones, joints, muscles, and skin.

Examples of NIAMS Extramural Research

- ▶ The **Bracing in Adolescent Idiopathic Scoliosis Trial (BrAIST)** provided clear evidence for the benefits of bracing to avoid the need for surgery among teens with scoliosis, putting to rest any lingering questions about the treatment's effectiveness.

- ▶ The long-term **Spine Patient Outcomes Research Trial (SPORT)** provides data about how to best **treat chronic low-back pain** and continues to define which characteristics influence how a person may benefit from any given treatment.
- ▶ The large-scale **Predictors of Pregnancy Outcome: bioMarkers In antiphospholipid antibody Syndrome and Systemic lupus Erythematosus (PROMISSE)** study showed that most women who have lupus can expect a good pregnancy outcome if their disease is inactive. Certain molecules in the women's blood may indicate a riskier pregnancy, which can help providers personalize treatment plans for women with lupus.
- ▶ NIAMS-funded researchers are developing promising stem cell therapies to treat **epidermolysis bullosa (EB)**, a rare, inherited skin-blistering disease. Scientists hope that these approaches will lead to more effective and personalized treatments for EB and other genetic skin diseases.

NIAMS INTRAMURAL RESEARCH PROGRAM

The NIAMS Intramural Research Program (IRP)—located on the NIH campus in Bethesda, Maryland—conducts high-risk, high-reward **basic, translational, and clinical research** relevant to the health concerns of the Institute.

