

NIEHS needs military volunteers to study muscle disease

By Robin Arnette

Researchers suspect that genetics combines with environmental exposures to promote the development of an autoimmune disease called myositis, a rare disorder that causes muscle weakness (see sidebar). NIEHS scientists have initiated a [clinical study](http://clinicaltrials.gov/show/NCT01734369)

(<http://clinicaltrials.gov/show/NCT01734369>)

that is examining the environmental risk factors for myositis in the military, due to a high incidence rate.

Preliminary studies suggest that over the past decade, military personnel developed myositis at a rate that was double that of nonmilitary personnel. Physicians have also documented large fluctuations from year to year in the number of service members being diagnosed with myositis.

“Although a few environmental exposures have been associated with myositis in civilians, to my knowledge, this study is the first to assess myositis development in active duty military personnel,” said Frederick Miller, M.D., Ph.D., deputy chief of the NIEHS Clinical Research Program and head of the Environmental Autoimmunity Group. “We need many more service people to join the study, so I urge military members, both with and without myositis, to sign up.”

Men and women may enroll at the National Institutes of Health [Clinical Center](http://www.cc.nih.gov/)

(<http://www.cc.nih.gov/>)

in Bethesda, Maryland, the NIEHS [Clinical Research Unit](#) in Research Triangle Park, North Carolina, or through their physician’s office. The study has the following eligibility requirements:

- Healthy individuals or those diagnosed with myositis during military service
- Active, reserve, and inactive duty personnel
- Able to give consent, complete questionnaires, and donate blood

Individuals that meet the criteria should contact Komal Patel at (301) 443-6053 or komal.patel@nih.gov. Please refer to the study using the ClinicalTrials.gov identifying number: NCT01734369.

Study uses several approaches

[Miller](#) and his research team use three different approaches to discern the origins of myositis in military members. In one, they search military databases for information on medications, vaccines, infections, deployment locations, and other environmental exposure clues. In another, they compare the results of clinical visits of those who have myositis with healthy personnel, matched for age, gender, and ethnicity. The third method examines DNA methylation profiles in the blood and muscle of myositis and non-myositis participants.

Lisa Rider, M.D., deputy chief of the NIEHS Environmental Autoimmunity Group, has been involved in the military myositis study since it began in 2012. She said that there is a good chance the team will find at least one of the factors that lead to the increased risk of myositis in service members.

Myositis symptoms

Myositis patients experience weakness, difficulty breathing and swallowing, and skin rashes. All of these manifestations are the result of the body’s immune cells attacking the patient’s tissue.

Myositis, also known as idiopathic inflammatory myopathy, exists in three different forms: polymyositis, dermatomyositis, which includes a skin rash, and inclusion body myositis, which occurs in older individuals and involves distal muscles, or muscles furthest from the trunk.



Rider, like Miller, is a commissioned officer in the United States Public Health Service. (Photo courtesy of National Institutes of Health)

“In 2013, we published [work](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3727975/)
(<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3727975/>)
that uncovered a link between short-term exposure to ultraviolet light and the development of
myositis in children,” Rider said. “I suspect our military study will yield additional
environmental factors to watch out for.”



*Based in Bethesda, Maryland,
Miller's research group studies
the mechanisms for the
development of autoimmune
diseases. (Photo courtesy of
Steve McCaw)*

The Environmental Factor is produced monthly by the [National Institute of Environmental Health Sciences \(NIEHS\)](http://www.niehs.nih.gov/)
(<http://www.niehs.nih.gov/>)

, Office of Communications and Public Liaison. The content is not copyrighted, and it can be reprinted without permission. If you use parts of
Environmental Factor in your publication, we ask that you provide us with a copy for our records. We welcome your [comments and suggestions](#).
(bruskec@niehs.nih.gov)

This page URL: NIEHS website: <http://www.niehs.nih.gov/>
Email the Web Manager at webmanager@niehs.nih.gov