

# Putting Lupus in permanent remission

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Northwestern Medicine scientists have successfully tested a nontoxic therapy that suppresses Lupus in blood samples of people with the autoimmune disease.

This is a positive step toward one day developing a vaccine-like therapy that could keep Lupus in remission in the [human body](#) without the use of [toxic drugs](#).

The study was published online in *Clinical Immunology*, the journal of the Federation of Clinical Immunology Societies.

Lupus is a chronic, autoimmune disease that causes the body to create autoantibodies that attack and destroy healthy tissue and cause inflammation, pain and damage in various vital organs of the body. According to the Lupus Foundation of America, it is believed that 5 million people throughout the world have a form of [lupus](#).

In past studies, Northwestern scientists showed that a nontoxic therapy (which uses [synthetic peptides](#)—small bits of protein—to generate special regulatory T cells) blocks lupus in mice that are prone to the disease.

For this new study, 30 [lupus patients](#) (10 active and 20 in remission) and 15 healthy patients were enrolled and their [blood samples](#) were cultured with low doses of the special peptides.

"We found that the peptides could not only generate regulatory T cells,

but also that they block and reduce autoantibody production to almost baseline levels in the blood cultures from people with active Lupus," said Syamal Datta, M.D., senior author of the study. "This approach shows that the peptides have the potential to work like a vaccine in the human body, to boost the regulatory immune system of those with Lupus, fight autoimmune antibodies and keep the disease in remission."

Datta is a professor of medicine-rheumatology and microbiology-immunology at Northwestern University Feinberg School of Medicine.

Steroids and Cytoxan are the most common therapies used to help treat people with lupus and even at very low doses the side effects of the drugs are toxic. Much like chemotherapy, lupus drugs can compromise fertility and weaken the immune system, making it difficult for patients to have children and leaving their bodies susceptible to infections. Also, such toxic drugs cannot be given indefinitely.

"This nontoxic therapy works like a vaccine in that the peptides are recognized by the bodies of almost every individual we have seen," Datta said. "It can be given to both subjects with and without lupus and boost their regulatory response with no side effects. We don't have to design something specifically for an unusual person. It works in everybody."

This study relates to Datta's more than 27 years of research in the lupus field focused on the cloning of the T cells that drive lupus autoimmunity. Datta's team identified the peptides used in this study in 1996, and Northwestern University holds the intellectual rights to these patented discoveries but has published the sequences of the peptides for open access to everyone.

"It is our hope that the next step is a phase one clinical trial in humans to show the efficacy of the peptide therapy in patients with lupus," Datta said. "The key is to find an industry partner that has experience in these

kind of therapies so that we can move forward."

**More information:** [www.sciencedirect.com/science/ ...  
ii/S1521661613002210](http://www.sciencedirect.com/science/...ii/S1521661613002210)

Provided by Northwestern University

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