

# New Vaccine Offers Hope Against Growing Tropical Disease in U.S.

*Ohio State researchers develop a first-ever vaccine against leishmaniasis, which could infect more than 10% of the world*



COLUMBUS, OH, UNITED STATES, June 24, 2026 /EINPresswire.com/ -- Key takeaways:

- \* Researchers at The Ohio State University are leading work on a first-ever vaccine for leishmaniasis.
- \* The vaccine is moving toward human testing. After strong results in animal studies, clinical trials are expected to begin later this year.
- \* As leishmaniasis becomes more of a concern in the U.S., Ohio State physicians and researchers are raising awareness about symptoms, testing and treatment.

[Abhay Satoskar, MD, PhD](#) couldn't get the image out of his head. A young boy had just died after falling on the playground. He had no visible injuries, but a parasite caused by a tropical disease had silently damaged his spleen, causing it to rupture. Satoskar was a surgical intern at a hospital in his native India and felt the calling to do something.

That day more than 30 years ago led to a lifetime of studying the disease, leishmaniasis, a world away at [The Ohio State University](#). This year, clinical trials are expected to start on a vaccine he helped create.

"An effective vaccine is indispensable for the elimination of leishmaniasis. More than 10% of the world is at risk of contracting the disease. Leishmaniasis is a completely new disease for the U.S. When I started my career, it was only a problem of Third World countries," said Satoskar, a professor of pathology at [The Ohio State University College of Medicine](#).

Satoskar has spent his career looking for a way to develop a safe vaccine against leishmaniasis, a disfiguring skin disease. Earlier attempts used parasites that could spread in the body and included antibiotic-resistant genes, making them unsafe for human use. A game changer was the development of CRISPR gene-editing technology. Satoskar and his team realized they could use CRISPR to remove the gene from the skin-only species of the parasite and create a safer

vaccine that can train the immune system without causing disease. In animal studies, the vaccine was 100% effective.

“It worked beautifully. It worked beyond my imagination to be honest,” Satoskar said. Last year the U.S. Food and Drug Administration approved the vaccine as an investigational new drug.

What is leishmaniasis and where is it found?

Leishmaniasis is a disease caused by tiny parasites that are spread through the bite of an infected female sand fly, which is much smaller than a mosquito. For decades, it was predominantly found in tropical regions like Africa, the Middle East and South America. It is now endemic – or regularly occurring – in other regions such as Europe and the U.S. because of deforestation and climate change, Satoskar said.

“Sand flies don't know borders, and more and more infected sand flies are being found in U.S. states that border Mexico,” said Bradford McGwire, MD, PhD, (<https://wexnermedical.osu.edu/find-a-doctor/bradford-mcgwire-100000223>) an infectious diseases physician and professor at The Ohio State University Wexner Medical Center (<https://wexnermedical.osu.edu/>) who has treated patients that acquired leishmaniasis while traveling, living or stationed in endemic countries while in the military.

How many people are affected by leishmaniasis?

The World Health Organization lists leishmaniasis as one of the top neglected tropical diseases in the world. At any given time, about 6 million people are infected with up to 1 million new cases annually. More than 1 billion people in 99 territories and countries where leishmaniasis is endemic are at risk of getting the disease. Satoskar, a world-renowned expert on leishmaniasis, was asked to write an explainer article for the New England Journal of Medicine to help raise awareness about the growing threat of the disease now that it's endemic in the U.S.

“In the last two years, we've seen on average two to four cases per year at Ohio State. In the past we used to see maybe one case per year. It's definitely been ticking up over time in the U.S.,” said McGwire, who for the past 35 years has studied leishmaniasis as well as the tropical parasitic disease Chagas, which is caused by contact with kissing bugs. Chagas disease is also on the rise in the U.S.

What are the symptoms and treatment of leishmaniasis?

Many patients are asymptomatic (don't show signs of the disease), or it could take months or over a year for symptoms to start showing up. While there are several forms of the disease, the three main forms are:

\* Cutaneous leishmaniasis

This is the most common form of leishmaniasis and affects the skin. Symptoms may include one or more skin sores or ulcers that can take months to heal, bumps that may slowly grow larger or scars that remain after healing. Some cases heal on their own over time without medication while others require medications or creams, especially if sores are large or infected or likely to leave scars.

\* Mucosal leishmaniasis

In this form, parasites infect cells lining mucosal areas, causing disfiguring lesions of the mouth, nose, sinuses, palate and vocal cords. This form is particularly difficult to treat because it is often slow to respond to medications and can often reoccur.

\* Visceral leishmaniasis

This is the most serious form of leishmaniasis and affects internal organs, especially the spleen, liver and bone marrow. Symptoms may include fever, weight loss, weakness, enlarged liver and spleen or anemia (not enough healthy red blood cells). Doctors typically use anti-parasite medications via pill or IV to treat patients. Visceral leishmaniasis can be life-threatening without treatment.

## An Ohio State researcher's vaccine could be a medical breakthrough

This summer, Satoskar has been traveling the world meeting with the vaccine manufacturer, investors and leishmaniasis experts as his team prepares to start the first human trials in Brazil and Kenya. Plans are to add a U.S. site. Satoskar is passionate about raising awareness about the vaccine as well as a skin test that he helped developed that is similar to a tuberculosis test. The skin test would help detect the disease and track its spread.

"Because this is a new disease in the U.S., many physicians don't know that a mysterious skin disease they're seeing may be leishmaniasis. We're hoping to get the word out to educate more people," he said.

Funding for the vaccine trial comes from Japan-based Global Health Innovative Technology Fund and the Wellcome Trust in the United Kingdom.

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