

# Measles vaccine in modified form also effective against Chikungunya virus

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A modified, conventional measles vaccine has the potential to act against the Chikungunya virus. This is the result of a study at the University Clinic for Clinical Pharmacology of the MedUni Wien (Medical University of Vienna), which has now been published in the top journal *The Lancet Infectious Diseases*. Up until now, there has been no effective vaccine against the Chikungunya virus and the associated feverish illness which can prove lethal, and is particularly prevalent in Latin America and the Caribbean.

Scientists at the MedUni Wien led by Bernd Jilma, and in cooperation

with the Institut Pasteur in Paris, the Walter Reed Army Institute of Research in the USA, and the Vienna biotechnology company Themis Bioscience GmbH, have succeeded in introducing tiny surface particles of the Chikungunya [virus](#) into the human body using the [measles vaccine](#) and proving its effectiveness.

Jilma: "The modified [measles virus](#) is planted into people in Trojan horse style, and there it produces the corresponding surface particle of the Chikungunya virus. This occurs to such a low concentration that no symptoms of the disease appear. However, the Chikungunya particles are still able to stimulate the lymphatic system and to trigger the antibody production against the virus. These antibodies are then available at any time should an infection with the Chikungunya virus really occur. As a result, the disease cannot break out." The technology itself was developed at the Institut Pasteur, implemented by Themis Bioscience GmbH and has now been successfully clinically tested at the MedUni Wien using 42 test persons.

A further positive effect: The modified virus also strengthens immunity against the classic measles infection. "If the [vaccine](#) is changed accordingly, it could also be effective against dengue fever or other viruses", according to Jilma. The findings must now be clinically evaluated in Phase II and Phase III studies; utilisation in practice could be feasible in three to five years, according to the scientists. An active immunisation is possible using a one or two-part vaccination.

There were 20 cases of Chikungunya fever in Austria in the past year. In the Caribbean, Central and South America and on the Pacific Islands, but also in the USA, the virus which is transmitted via mosquitoes has triggered an epidemic, probably since 2013. According to current information from the pan-American health organisation OPS, more than 1.2 million people have become ill with the virus since then, whereby the Caribbean region is particularly affected by it.

Amongst other things, the Chikungunya fever causes muscular and severe joint pain, which can remain for months, and high fever. Furthermore, those affected often suffer from nausea and vomiting. If the patients have a healthy immune system, the disease normally passes without any severe complications. For weak patients, it can however be lethal. Up until now, there is neither an effective medication nor a vaccine against this disease. People who travel to affected countries are urgently advised to protect themselves against mosquito bites.

**More information:** "Immunogenicity, safety, and tolerability of a recombinant measles-virus-based chikungunya vaccine: a randomised, double-blind, placebo-controlled, active-comparator, first-in-man trial." *Lancet Infect Dis* 2015. March, 2015  
[dx.doi.org/10.1016/S1473-3099\(15\)70043-5](https://doi.org/10.1016/S1473-3099(15)70043-5).

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