

New malaria vaccine shows promise in field trial

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A vaccine against malaria, developed at Oxford University's Jenner Institute, has shown promising results in its first field trial. The results are published today in journal *Science Translational Medicine*.

Following a trial in Kenya, the [vaccine](#) was found to be 67% effective against infection with *Plasmodium falciparum*, one of the parasites known to cause [malaria](#). A safe and effective malaria vaccine would reduce the huge social and economic burden that malaria imposes every

year.

The researchers used what is known as a T cell-inducing vaccination strategy among adults living in a malaria-endemic area in Kenya. It uses the recombinant chimpanzee adenovirus 63 (ChAd63) and the modified vaccinia Ankara (MVA), both encoding the malaria antigen ME-TRAP (multiple epitope string and thrombospondin-related adhesion protein) to stimulate the body's immune system to produce particular disease-fighting cells (known as T cells) to protect the body from malaria.

The phase II clinical trial was conducted at the Kenya Medical Research Institute (KEMRI) field site located in Junju, Kilifi County, Kenya. Healthy adult male volunteers were randomly allocated to vaccination with either the T cell-inducing [vaccine candidates](#) or a control vaccine. Antimalarials were given to clear parasites from the blood and frequent blood tests were done to identify new infections with the malaria parasite *Plasmodium falciparum*. The authors found that the volunteers receiving the T cell-inducing vaccine had a 67% reduction in the risk of malaria infection during 8 weeks of follow-up.

Professor Adrian Hill, Director of the Jenner Institute at the University of Oxford said: "This is an exciting and very positive result with this new type of malaria vaccine that targets the parasite in the liver by inducing protective T cell responses. Such high efficacy in this first [field trial](#) is encouraging for further testing in children and infants who most need a malaria vaccine."

Professor Philip Bejon, Executive Director of the KEMRI - Wellcome Trust Research Programme, Kilifi, Kenya said: "This promising result will lead to larger scale trials by the Consortium in several populations. This demonstrates clearly the potential of these new viral vectored vaccines and identifies a rapid new means of demonstrating vaccine efficacy against infection in field trials."

This clinical trial was funded by the malaria Vectored Vaccines Consortium (MVVC), a five year project set up with the aim of integrating capacity-building and networking in the design and conduct of phase I and II [clinical trials](#) of viral vectored malaria vaccine candidates in East and West African adults, children, and infants. The overall objective of the project is to develop a safe, effective and affordable [malaria vaccine](#) for use by the malaria endemic populations of the world.

This clinical trial follows a series of studies conducted by MVVC partners in sub-Saharan Africa to assess safety, immunogenicity and efficacy of the viral vectored vaccine candidates. Dr Odile Leroy, Executive Director of the European Vaccine Initiative, Germany and coordinator of the MVVC project, said: "This is a great achievement for the MVVC consortium and opens new avenues for innovative and promising vaccine combination strategies."

More information: "Prime-boost vaccination with chimpanzee adenovirus and modified vaccinia Ankara encoding TRAP provides partial protection against Plasmodium falciparum infection in Kenyan adults." *Sci Transl Med* 6 May 2015: Vol. 7, Issue 286, p. 286re5 *Sci. Transl. Med.* [DOI: 10.1126/scitranslmed.aaa2373](https://doi.org/10.1126/scitranslmed.aaa2373)

Provided by Oxford University

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