

Animal vaccines should guide malaria research

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Research into vaccines for malaria in humans should be guided by the success shown in producing effective vaccines for malaria-like diseases in animals, according to a University of Adelaide study.

In an article in the journal *Parasitology*, veterinarian and disease researcher Associate Professor Milton McAllister says there are many effective vaccines for diseases in [animals](#) caused by close relatives of the parasites that cause malaria (called protozoans).

"In contrast, there are no vaccines available for malaria or any other protozoal disease of humans - despite great need and considerable effort," he says. Associate Professor McAllister is with the University's School of Animal and Veterinary Sciences.

"There is one vaccine in development for malaria - but that requires three inoculations and only about half the people vaccinated are protected, and that protection only lasts for about six months. Vaccines for similar diseases in cattle and sheep, on the other hand, require only one inoculation and provide solid immunity that endures for more than a year and often covers the life of the animal."

The World Health Organization reports that malaria kills more than 600,000 people a year out of about 200 million infections.

"For human malaria, great emphasis has been placed on creating new types of futuristic vaccines using small pieces of DNA and protein from the disease-causing parasite," says Associate Professor McAllister. "There is a great desire to make malaria vaccines very safe - as they should be - but that approach has just not been effective."

In contrast, vaccines for animals contain entire organisms in a live but weakened form. "Using live vaccines has produced considerable success in a

range of malaria-like diseases in animals," he says.

A few of the many successful examples in animals include several vaccines for blood parasites of livestock such as babesiosis, which has seen greater than 90% reduction of the disease in Australia and other countries, tropical theileriosis in Southern Europe and Asia, and East Coast Fever in Africa.

"Using live organisms and classical vaccine technology has worked very well in veterinary medicine, providing enduring immunity against a range of serious diseases," Associate Professor McAllister says. "Human medicine is missing significant benefits by not paying greater attention to veterinary knowledge.

"Funding for human [malaria](#) research should place greater emphasis on creating vaccines that contain live but weakened parasites. This classical [vaccine](#) approach should be highly effective. Cutting-edge techniques are available to ensure that these vaccines will be safe."

More information: The paper is available online: journals.cambridge.org/download/.../312e7005a5003ed21b36

Provided by University of Adelaide

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