

## **Naturally acquired antibodies to sporozoites do not prevent malaria: vaccine development implications.**

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### **Abstract**

The first human vaccines against the malaria parasite have been designed to elicit antibodies to the circumsporozoite protein of *Plasmodium falciparum*. However, it is not known whether any level of naturally acquired antibodies to the circumsporozoite protein can predict resistance to *Plasmodium falciparum* malaria. In this study, 83 adults in a malaria-endemic region of Kenya were tested for circumsporozoite antibodies and then treated for malaria. They were monitored for the development of new malaria infections for 98 days. Antibody levels, as determined by four assays in vitro, were indistinguishable between the 60 individuals who did and the 23 who did not develop parasitemia during follow-up, and there was no apparent relation between day of onset of parasitemia and level of antibodies to circumsporozoite protein. Unless immunization with sporozoite vaccines induces antibodies that are quantitatively or qualitatively superior to the circumsporozoite antibodies in these adults, it is unlikely that such antibodies will prevent infection in areas with as intense malaria transmission as western Kenya.