

# Vaccine Activities Update

National Institute of Allergy and Infectious Diseases,  
National Institutes of Health

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National Institute of  
Allergy and  
Infectious Diseases



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Allergy and  
Infectious Diseases

# Developing a Vaccine for Respiratory Syncytial Virus (RSV)

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- RSV: A leading cause of pneumonia among infants and young children
- Currently no approved vaccine to prevent RSV infection
- Live intranasal vaccine candidate
  - Developed by NIAID, Johns Hopkins Bloomberg School of Public Health and MedImmune, LLC
- Phase 1 clinical trial:
  - Experimental vaccine appears to elicit stronger protective immune response than the previous lead vaccine candidate



RA Karron *et al.* A gene deletion that up-regulates viral gene expression yields an attenuated RSV vaccine with improved antibody responses in children. *Sci Transl Med* (2015).

# Chickenpox Vaccine and Children with HIV

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- What is the most effective way to protect children with HIV from the chickenpox virus?
- Children infected with HIV since birth benefit from two doses of the chickenpox vaccine
  - Confers long-term protection in children on anti-HIV therapy
- Study suggests that best approach is to give first dose at least 3 months after starting anti-HIV treatment

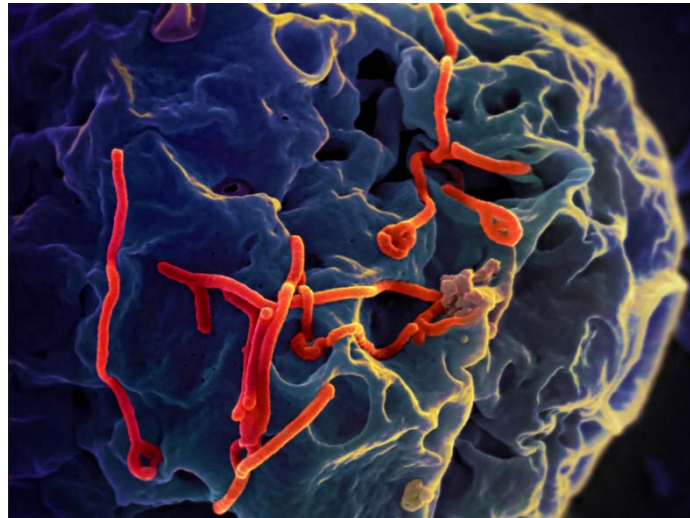
MU Purswani *et al.* Prevalence and persistence of varicella antibodies in previously immunized children and youth with perinatal HIV-1 infection. *Clinical Infectious Diseases* (2015).



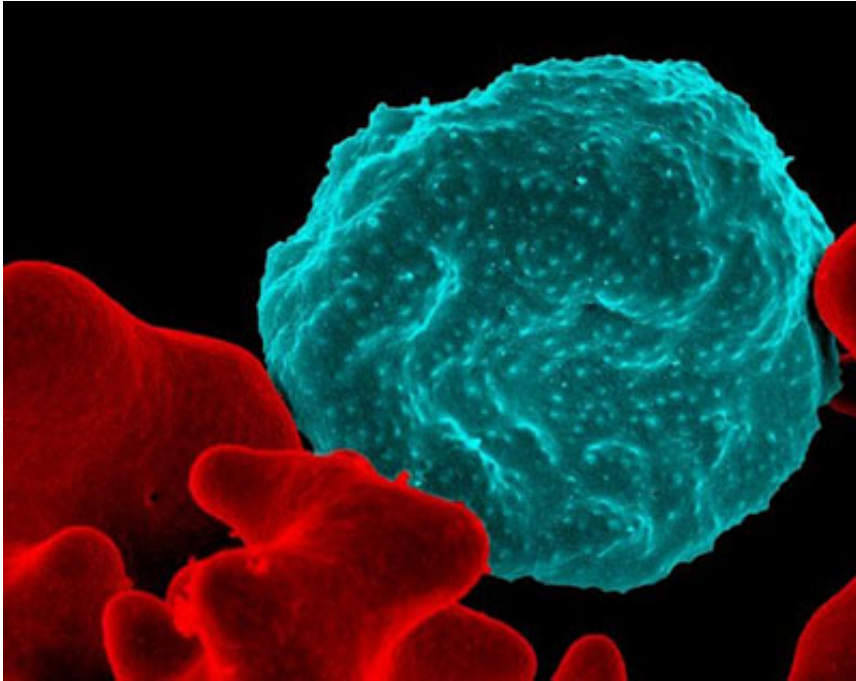
# Ebola Vaccine Research

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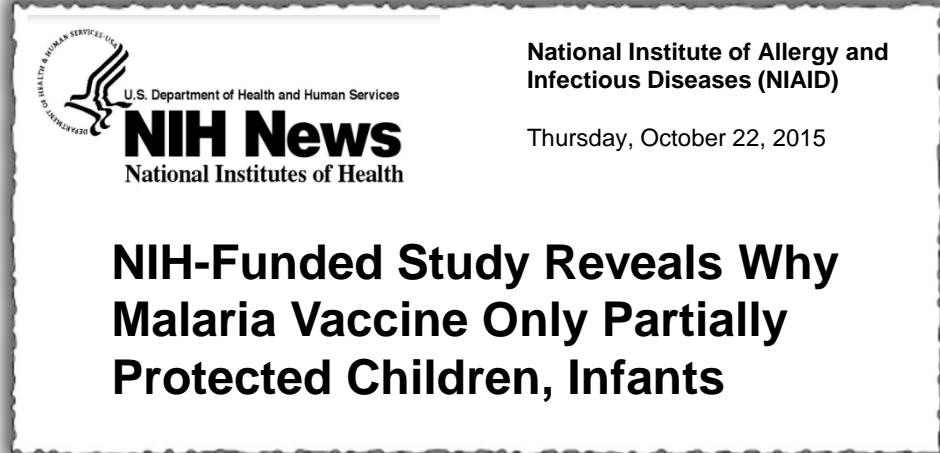
- NIAID supports development, preclinical and clinical testing of investigational Ebola vaccine regimens
- Johnson & Johnson (Crucell/Janssen) + Bavarian Nordic
  - Combined adenovirus/MVA platform
  - Designed to protect against strain responsible for 2014 outbreak



# Malaria Vaccine Research



Credit: NIAID



**Shape of Key Malaria Protein Could Help Improve Vaccine Efficacy**  
<http://www.niaid.nih.gov/topics/Malaria/>

DE Neafsey *et al.* Genetic diversity and protective efficacy of the RTS,S/AS01 malaria vaccine. *New England Journal of Medicine* (2015).

R Herrera *et al.* Reversible conformational change in the *Plasmodium falciparum* circumsporozoite protein masks its adhesion domains. *Infection and Immunity* (2015).



U.S. Department of Health and Human Services

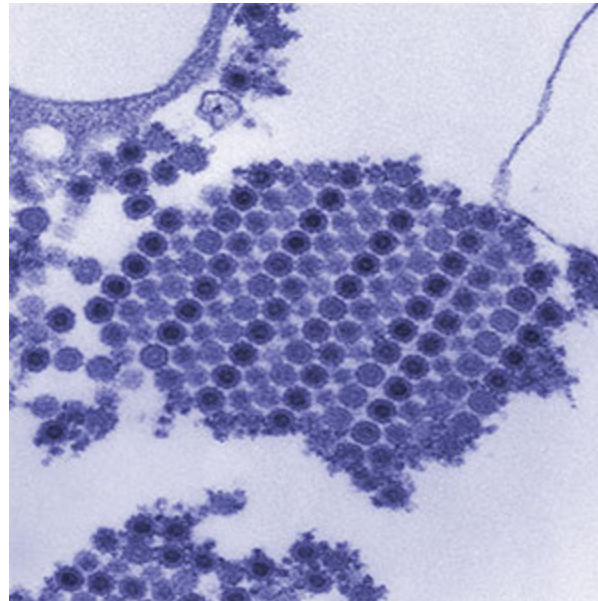
**NIH News**  
National Institutes of Health

National Institute of Allergy and  
Infectious Diseases (NIAID)

<http://www.niaid.nih.gov>

Tuesday, November 24, 2015

# NIH-Sponsored Clinical Trial of Chikungunya Vaccine Opens



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This digitally-colored transmission electron micrograph depicts numerous chikungunya virus particles.  
Credit: CDC



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