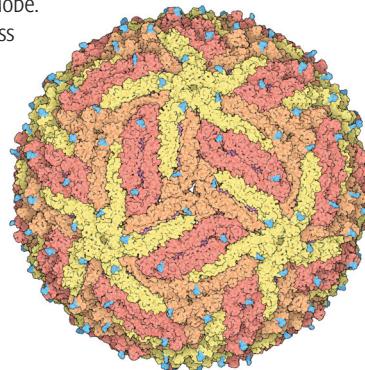


# Build a Paper Model of Zika Virus

Zika virus infects people around the globe. For most, the virus causes a mild illness that is quickly fought off by the immune system.

But a connection between Zika infection in pregnant women and birth defects has underscored the need to find ways to fight the disease. Zika is spread by mosquitoes, so our primary defense is to remove breeding sites and to take measures to avoid being bitten.

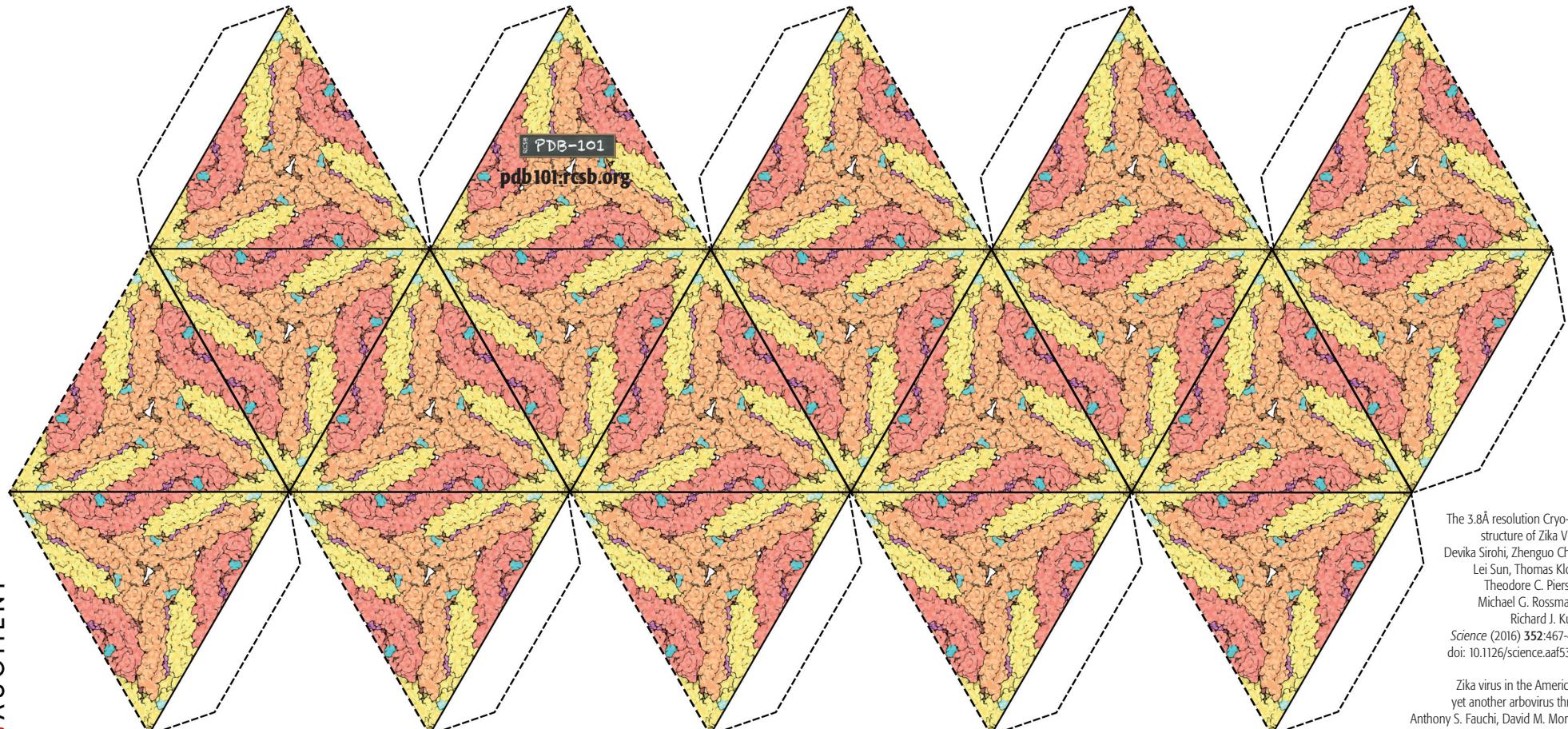


This paper model was created using the 3D structure from PDB entry **5ire**, determined by cryo-electron microscopy. It shows that Zika virus is very similar to other flaviviruses such as dengue virus and West Nile virus. The structure includes the Zika virus envelope glycoproteins (with sites of glycosylation in turquoise), which are found on the surface of the virus and are involved in attaching to cells. Inside, the virus also has a layer of membrane and the viral RNA genome associated with capsid proteins.

This atomic-level structure will help researchers better understand how the virus enters human cells after mosquito-borne or sexual transmission. The structure also sets the stage for studying where neutralizing antibodies bind on the viral surface, which will in turn guide vaccine discovery and development.

To build the model, **cut out** the structure below along the **dashed lines**, and **fold** along the **solid lines**. Then **tape or glue** the flaps into place to form an icosahedron.

To learn more about viruses, go to [pdb101.rcsb.org/browse](http://pdb101.rcsb.org/browse) and choose **Viruses** from the **Health and Disease** category.



Explore Zika using Augment: go to Explore and write "Zika", you will see the exact same net & picture mapped over a 3D (icosahedral) shape!

The 3.8 $\text{\AA}$  resolution Cryo-EM structure of Zika Virus  
Devika Sirohi, Zhenguo Chen,  
Lei Sun, Thomas Klose,  
Theodore C. Pierson,  
Michael G. Rossmann,  
Richard J. Kuhn  
*Science* (2016) 352:467-470  
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Zika virus in the Americas—yet another arbovirus threat  
Anthony S. Fauci, David M. Morens  
*N. Engl. J. Med.* (2016) 374: 601-604