

Can mosquitoes spread coronavirus?

31 March 2020, by Cameron Webb



You can't catch the coronavirus, HIV or Ebola from mosquitoes, but they can transmit a number of other viruses. Credit: Holly Mandarich/Unsplash

The pathogens mosquitoes spread by sucking our blood cause over [half a million deaths each year](#) and [hundreds of millions of cases of severe illness](#).

But there is no [scientific evidence](#) to suggest [mosquitoes](#) are transmitting SARS-CoV-2, the [virus](#) that causes COVID-19.

There is [much more to learn about the coronavirus](#) but based on current understandings, it's highly unlikely a mosquito will pick up the virus by biting an infected person, let alone be able to pass it on.

Yes, mosquitoes can transmit other viruses

Female mosquitoes need the nutrition contained in [blood](#) to help develop their eggs. Viruses take advantage of this biological requirement of mosquitoes to move from host to host.

But for a mosquito to become infected, it first needs to bite an infected animal, such as a bird or kangaroo, or a person.

Mosquitoes can transmit a number of viruses, including dengue, yellow fever, chikungunya, Zika and Ross River virus. They can also transmit malaria, which is caused by a parasite.

But they can't transmit many other viruses, including HIV and Ebola.

For [HIV](#), mosquitoes themselves don't become infected. It's actually unlikely a mosquito will pick up the virus when it bites an infected person due to the low concentrations of the HIV circulating in their blood.

For Ebola, [even when scientists inject the virus into mosquitoes](#), they don't become infected. One study collected tens of thousands of insects during an Ebola outbreak but [found no virus](#).

No, not coronavirus

The new coronavirus is [mostly spread via droplets produced when we sneeze or cough](#), and by touching contaminated surfaces.

Although [coronavirus](#) has been [found in blood samples from infected people](#), there's no evidence it can spread via mosquitoes.

Even if a mosquito did pick up a high enough dose of the virus in a [blood meal](#), there is no evidence the virus would be able to infect the mosquito itself.

And if the mosquito isn't infected, it won't be able to transmit it to the next person she bites.

Why some viruses and not others?

It's easy to think of mosquitoes as tiny flying dirty syringes transferring droplets of infected blood from person to person. The reality is far more complex.

When a [mosquito bites](#) and sucks up some blood that contains a virus, the virus quickly ends up in the gut of the insect.

From there, the virus needs to infect the cells lining the gut and "escape" to infect the rest of the body of the mosquito, spreading to the legs, wings, and head.

The virus then has to infect the salivary glands before being passed on by the mosquito when it next bites.

This process can take a few days to over a week.

But time isn't the only barrier. The virus also has to negotiate getting out of the gut, getting through the body, and then into the saliva. Each step in the process can be an impenetrable barrier for the virus.

This may be straightforward for viruses that have adapted to this process but for others, the virus will perish in the gut or be excreted.

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