

240 million people suffer annually from malaria. Could deploying CRISPR to gene edit mosquitoes' pesticide resistance contain the scourge?

Insecticides kill off most of the mosquitoes in an area. But a small number may survive because something about their genetic makeup makes them unaffected by the pesticide. Mosquitoes within that small population mate with each other and pass on their genes to their offspring, breeding more resistant mosquitoes. In some cases, resistance has built up just a few years after the introduction of an insecticide.

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Researchers at UC San Diego and the Tata Institute for Genetics and Society in India have developed a potential way to fight back: Using Crispr gene editing, they replaced an insecticide-resistant gene in fruit flies with the normal form of the gene and propagated the change through insects in the lab.

The approach, known as a gene drive, is described in a [January 12 paper in *Nature Communications*](#), and the team believes it can be translated into mosquitoes.

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Lab tests of gene drives have shown that it's possible to spread a desired genetic trait through several generations. But studies have also found that resistance to gene drives can emerge because some mosquitoes don't inherit the desired trait. In the wild, resistance is almost certain to occur, meaning that gene drives would probably still leave behind some mosquitoes that could bite humans and transmit disease.

[**This is an excerpt. Read the original post here.**](#)