Emergencies

Dispelling rumours around Zika and microcephaly

Updated

11 March 2016

There is no specific repellent that works better against the Aedes mosquito

There are many repellents that are effective against all mosquitoes including Aedes mosquitos. Effective repellents contain DEET (diethyltoluamide) or IR 3535 or Icaridin which are the most common biologically active ingredients in insect repellents. Active ingredients are listed on the product label. The following active ingredients repel or kill the mosquito when it rests or approaches the body: DEET (N, N-diethyl-3-methylbenzamide), IR3535 (3- [N-butyl-N-acetyl], aminopropionic acid ethyl-ester) or Icaridin (piperidinecarboxílico acid-1, 2- (2-hydroxyethyl) -1-metilpropilester).

There is no minimum or maximum percentage of active ingredient required. Insect repellents may be applied to exposed skin to protect against the bites of mosquitoes or on the clothes. WHO recommends covering the skin with clothing as much as possible and using insect repellents as effective measures to protect against bites from mosquitoes that transmit viruses such as chikungunya, dengue, yellow fever and Zika.

Repellents must be used in strict accordance with the label instructions. There is no evidence of any restriction of the use of these repellents by pregnant women if they are used in accordance with the instructions on the product label.

No evidence that vaccines cause microcephaly in babies

There is no evidence linking any vaccine to the increases in microcephaly cases that were observed first in French Polynesia during the 2013-2014 outbreak and more recently in northeastern Brazil.

An extensive review of the literature published in 2014 found no evidence that any vaccine administered during pregnancy resulted in birth defects. The Global Advisory Committee on Vaccine Safety, which provides independent scientific advice to the World Health Organization (WHO) on vaccine safety issues, reached a similar conclusion in 2014.

The Global Advisory Committee on Vaccine Safety

In addition, national regulatory agencies are responsible for ensuring that products released for public distribution, such as vaccines, are evaluated properly and meet international standards of quality and safety. WHO assists countries in strengthening their national regulatory systems:

Strengthening national regulatory authorities

No evidence that pyriproxyfen insecticide causes microcephaly

A team of WHO scientists recently reviewed data on the toxicology of pyriproxyfen, one of 12 larvicides that WHO recommends to reduce mosquito populations. It found no evidence that the larvicide affects the course of pregnancy or the development of a fetus. The US Environmental Protection Agency and EU investigators reached a similar conclusion when they carried out a separate review of the product.

Larvicides are an important weapon in the public health practitioner's arsenal. Especially in cities and towns with no piped water, people tend to store drinking water in outdoor containers. These sources of water, as well as standing water that may collect in garbage, flower pots and tyres, serve as ideal breeding grounds for mosquitoes.

Larvicides such as pyriproxyfen are often used in containers where people store water to kill the mosquito in its larval stage. When people drink water from containers that have been treated with pyriproxyfen, they are exposed to the larvicide – but in tiny amounts that do not harm their health. Moreover, 90% - 95% of any larvicide ingested is excreted into the urine within 48 hours. This product has been used since the late-1990s without being linked to microcephaly.

More on chemicals and water quality
pdf, 116kb

No evidence that the Zika outbreak and unusual increase in microcephaly cases in Brazil is linked to recent releases of genetically modified mosquitoes in Brazil

There is no evidence that Zika virus disease or microcephaly in Brazil is caused by genetically modified mosquitoes. In genetically modified mosquitoes, the genes of male mosquitoes are modified. Because of the modification, when they mate with female mosquitoes, their larval offspring cannot survive. This practice is designed to control mosquito populations.

WHO encourages affected countries and their partners to boost the use of current mosquito control interventions as the most immediate line of defence, and to judiciously test the new approaches that could be applied in future.

Mosquito control: can it stop Zika at source?

No evidence that sterilized male mosquitoes contribute to the spread of Zika

A technique being developed to stop Zika is the controlled mass release of male mosquitoes that have been sterilized by low doses of radiation. When a sterile male mates, the female's eggs do not survive. When the sterile males outnumber the fertile males in a natural environment, the mosquito population dies out. The technique has been used in the past against insects and fruit flies, for example.

There is no evidence that the technique has been associated with

increases in microcephaly cases or other human anomalies or defects. However, the evidence for the public health value of this technique needs to be established. WHO encourages affected countries and their partners to scale up the use of current mosquito control interventions as the most immediate line of defence, and to judiciously test new control tools that could potentially be applied in the future.

Mosquito control: can it stop Zika at source?

Bacteria used to control the male mosquito population are not spreading Zika further

Bacteria such as Wolbachia bacteria are used to control mosquito populations; they do not infect humans or other mammals. Wolbachia bacteria are found in 60% of common insects, including butterflies and fruit flies. Mosquitoes carrying Wolbachia bacteria have been released in several places, including Australia, Brazil, Indonesia and Viet Nam, to help control dengue (which is transmitted by the same mosquito that transmits Zika). When females mate with males carrying the bacteria, the eggs do not hatch, thus supressing mosquito populations.

More on chemicals and water quality
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Fish can help stop Zika.

Some countries affected by Zika and dengue are using biological methods as part of an integrated approach to mosquito control. El Salvador, for example, with strong support from fishing communities, is introducing larvae-devouring fish into water storage containers.

Use of fish for mosquito control

Microcephaly/Zika virus »

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