

# High levels of DDT in breast milk in South Africa

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The highest levels ever of DDT in breast milk have been measured in mothers living in malaria-stricken villages in South Africa. The values lie well over the limits set by the World Health Organization. DDT has been used for many years in South Africa, sprayed indoors to fight malaria.

"To our ears, spraying DDT inside people's homes sounds absurd. But it is one of the most effective agents against [malaria](#). And by only spraying adult mosquitoes in the vicinity of people, the risk of developing resistance in [mosquitoes](#) decreases, " says Henrik Kylin, environmental chemist and professor at Water and Environmental Studies, Linköping. Together with South African researchers and doctors, he is collaborating on a project to map the effects of DDT on the population.

"We know a lot about how DDT affects nature and animals, but the effects on people's health are not as well studied, especially concerning long-term exposure."

In a newly published article, the researchers report on a study of DDT levels in breast milk from nursing mothers in four villages, of which three are afflicted by malaria. DDT has been used continuously in these three villages for more than 60 years. The spray treatment takes place a couple of times a year and is carried out by specially trained and equipped staff.

The levels proved to be unacceptably high in the villages sprayed. They

were well over (100 times greater) the highest daily dosage recommended by WHO. In once case they measured the highest known level of DDT in [breast milk](#) ever, more than 300 times higher than the level allowed in cow's milk.

DDT has been associated with diagnoses such as [breast cancer](#), diabetes, impaired sperm quality, spontaneous abortions, and neurological disorders in children. In the region where the measurements were carried out, malformed genitalia among boys was significantly more common in areas treated with DDT compared with untreated areas.

Unexpectedly, large differences occurred between the treated villages. Despite apparently similar conditions, the measured DDT levels were twice as high in one treated village compared with one of the others. A whole range of factors may come into play here, such as procedures in connection with treatment, the condition of the walls, ventilation, people's behaviour and cleaning habits. Identifying these factors, the researchers write, could contribute to decreasing exposure, thereby also the risk for both mothers and children.

"Unfortunately the smallest children are exposed to the highest DDT levels; they are also extra sensitive to chemical influence," Kylin says.

**More information:** Hindrik Bouwmana, Henrik Kylinb, Barbara Seredad, Riana Bornmane: "High levels of DDT in breast milk. Intake, risk, lactation duration, and involvement of gender", *Environmental Pollution*, Volume 170, November 2012, Pages 63–70, [www.sciencedirect.com/science/.../ii/S0269749112002849](http://www.sciencedirect.com/science/.../ii/S0269749112002849)

Provided by Linköping University

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