



MotherToBaby

Medications & More During Pregnancy & Breastfeeding
Ask The Experts

Fact Sheet

by the **Organization of Teratology Information Specialists (OTIS)**

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DEET (N,N-ethyl-m-toluamide)

In every pregnancy, a woman starts out with a 3-5% chance of having a baby with a birth defect. This is called her background risk. This sheet talks about whether exposure to DEET may increase the risk for birth defects over that background risk. This information should not take the place of medical care and advice from your healthcare provider.

What is DEET?

DEET (N,N-ethyl-m-toluamide or m-DET) is the active ingredient in many common brands of insect repellent. Most insect repellents contain 10-25% DEET in the form of a lotion, spray, or oil that is put onto skin or clothing. However, some products can contain up to 99% DEET.

DEET has been sold in the United States since 1956. It is the most effective and well-studied insect repellent on the market, and is particularly effective in preventing mosquito bites and tick attachment.

Is DEET safe to use?

It has been estimated by the EPA that one third of the US population uses DEET, this is 100 million people a year, with very few reports of harmful side effects. There have been reports of significant effects to the central nervous system in people who are sensitive to DEET (especially small children) or have been overexposed to DEET. When used according to the manufacturer's recommendations, most people will not have any problems when they use DEET.

Products containing higher concentrations of DEET do not provide greater protection; they only last longer. For example, a product with 6.65% DEET would give approximately 2 hours of protection, whereas a product with 20% DEET would last almost 4 hours. Concentrations of 50% or higher do not increase the length of protection. To minimize exposure, an individual should use the lowest concentration to provide protection for the time she will be outdoors.

Is DEET absorbed into my body if I'm using it on my skin?

DEET is partly absorbed by the skin, which means that some enters the bloodstream when put directly on the skin. However, less than 10% of DEET applied on the skin enters into the body.

Can using DEET during my pregnancy cause birth defects?

Unlikely. Most studies in pregnant animals have not found an increase in birth defects even with very high levels of DEET exposure. One study suggested that hypospadias (a birth defect where the opening of the penis is on the underside rather than the tip) was more common in boy babies born to women who used insect repellents early in pregnancy. However, the researchers learned of these exposures by questioning the mothers two to six years after the delivery of the child, making the reliability of this study low. There have been case reports describing adverse pregnancy outcomes following the mother's use of DEET during pregnancy. However, these reports do not prove that the DEET exposure caused the adverse outcome. Based on the available animal and human studies, it appears that exposure to DEET would not greatly increase the chance for birth defects.

Can using DEET later in my pregnancy cause any problems?

Unlikely. When used as recommended, DEET does not appear to cause harmful effects when used later in pregnancy. There has been a study of 449 women who used recommended doses of DEET daily during the second and third trimesters of pregnancy. There was no increase in birth defects or problems with their babies' growth or development in the first year of life. There have been a few studies looking at the effects of pesticides, including DEET, on birth weight in human pregnancy. Researchers tested pesticide levels in umbilical cord blood following the infants'

birth. They did not find an association between DEET and lower birth weight.

Should I stop using DEET during my pregnancy?

It is important to consider that the benefits of using DEET during pregnancy may outweigh any possible harm. Using a 20-30% DEET preparation on skin or clothing protects against 90% of all mosquito bites and tick attachments. DEET use is the most effective protection against malaria, Lyme disease, dengue fever, yellow fever, Zika virus and the West Nile virus. Illness caused by any of these diseases during pregnancy can be serious enough to have harmful effects on a developing baby.

If possible, avoid situations where you may be exposed to mosquitoes or ticks. When mosquitoes or ticks may be present, you can wear long sleeves and pants and apply DEET to the clothing (rather than skin) to help minimize your exposure.

Can I use DEET while breastfeeding?

Illness from mosquitoes and ticks can have serious health effects for the nursing mother and infant. While there have been no studies of DEET use during breastfeeding, it is important to consider the benefit of using DEET to prevent illness. When applying DEET during breastfeeding follow the same instructions as during pregnancy. Do not apply DEET to the nipple area so the baby cannot get any in his mouth while breastfeeding. Be sure to talk to your health care provider about all of your breastfeeding questions.

What if the father of the baby uses DEET?

The use of DEET by the father of a pregnancy at the time of conception or during a woman's pregnancy is not expected to affect the developing baby. In general, exposures that fathers have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures and Pregnancy at: <https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/pdf/>.

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February, 2018