N,N-diethyl-meta-toluamide (DEET)

This sheet is about exposure to DEET in pregnancy and while breastfeeding. This information is based on published research studies. It should not take the place of medical care and advice from your healthcare providers.

What is N,N-diethyl-meta-toluamide (DEET)?

N,N-diethyl-meta-toluamide or m-DET (DEET) is the active ingredient in many insect repellents. It is the most effective and well-studied insect repellent ingredient on the market. DEET is particularly effective in preventing mosquito bites and tick attachments. MotherToBaby has a general fact sheet on insect repellents at https://mothertobaby.org/fact-sheets/insect-repellents/.

Most insect repellents contain 4-25% DEET, but some products contain up to 99% DEET. Products containing higher concentrations of DEET do not provide greater protection; they only last longer. For example, a product with 10% DEET gives approximately 2 hours of protection, while a product with 20% DEET lasts almost 4 hours. Concentrations of 50% or higher do not increase the length of protection.

It is thought that less than 10% of the DEET applied to the body would pass through the skin and enters the bloodstream.

What is the best way for me to use DEET?

Read and follow all directions and precautions on the product label. When applying DEET to the skin, you can lower the exposure by using the lowest concentration that protects you for the time you will be outdoors. Do not apply over cuts, wounds, or irritated skin. DEET can also be applied to clothing (long sleeves and pants) rather than the skin.

I just found out I am pregnant. Should I stop using DEET?

The benefits of using DEET during pregnancy may outweigh any possible risks. Using DEET correctly on skin or clothing protects against 90% of mosquito bites and tick attachments. DEET is the most effective protection against mosquitoes and ticks that can carry malaria, Lyme disease, dengue fever, yellow fever, Zika virus and West Nile virus. Any of these diseases during pregnancy can have harmful effects on a developing baby.

Does using DEET make it harder for me to get pregnant?

Studies have not been done to see if using DEET can make it harder to get pregnant.

Does using DEET increase the chance for miscarriage?

Studies have not been done to see if DEET can increase the chance of miscarriage.

Does using DEET increase the chance of birth defects?

Birth defects can happen in any pregnancy for different reasons. Out of all babies born each year, about 3 out of 100 (3%) will have a birth defect. We look at research studies to try to understand if an exposure, like DEET, might increase the chance of birth defects in a pregnancy. When used appropriately, exposure to DEET is not expected to increase the chance for birth defects.

Most animal studies have not found an increase in birth defects even with very high levels of DEET exposure.

One human study suggested that hypospadias (a birth defect where the opening of the penis is shifted toward the underside rather than the tip) was more common in males who were exposed to insect repellents during early pregnancy. However, the researchers asked study participants about their pregnancy exposures 2 to 6 years after the delivery of their children, making the reliability of this study low since it would be hard to remember specific exposures that long after pregnancy. There have also been case reports describing negative pregnancy outcomes following a person's use of DEET during pregnancy, but case reports are not the same as studies, and they do not prove that the DEET exposure caused the outcomes.

Does using DEET in pregnancy increase the chance of other pregnancy-related problems?

When used as recommended, DEET is not expected to cause other pregnancy-related problems, such as preterm delivery (birth before week 37) or low birth weight (weighing less than 5 pounds, 8 ounces [2500 grams] at birth). A few studies have looked at the possible effects of pesticides, including DEET, on birth weight in human pregnancy. These researchers tested pesticide levels in umbilical cord blood following the infants' birth. No association was found between DEET and lower birth weight.

Does using DEET in pregnancy affect future behavior or learning for the child?

A study among 449 people who used recommended doses of DEET daily during the second and third trimesters of pregnancy found no increase in problems with the babies' growth or development in the first year of life.

Breastfeeding and DEET:

The use of DEET during breastfeeding has not been studied. The benefits of using DEET may outweigh any possible risks. Illnesses spread by mosquitoes and ticks can have serious health effects on people who are nursing and their children. The same instructions for using DEET during pregnancy can be followed while breastfeeding. Avoid its use on large body surface areas and keep DEET away from the nipple area to help prevent the baby from getting DEET in the mouth while breastfeeding. Be sure to talk to your healthcare provider about all your breastfeeding questions.

If a man uses DEET, could it affect his fertility or increase the chance of birth defects?

There is no evidence to suggest that using DEET would cause problems with male fertility or increase the chance of birth defects. A study of 90 males found no association between the quality of the semen and the concentration of DEET metabolites in their urine. In general, exposures that fathers or sperm donors have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures at https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/.

Please click here for references.

Questions? Call 866.626.6847 | Text 855.999.3525 | Email or Chat at MotherToBaby.org.

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