



MotherToBaby

Medications & More During Pregnancy & Breastfeeding
Ask The Experts

Fact Sheet

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

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E-cigarettes (Vaping)

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 e-cigarettes 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 health care professional.

What are e-cigarettes?

Electronic cigarettes, or e-cigarettes are battery operated devices that heat a liquid solution into an aerosol (a fine spray) that you inhale (breath in), like you would inhale tobacco smoke from a traditional cigarette. E-cigarettes are known by many different names. They are sometimes called “e-cigs,” “e-hookahs,” “mods,” “vape pens,” “vapes,” “tank systems,” and “electronic nicotine delivery systems (ENDS).” Using e-cigarettes is sometimes referred to as “vaping.”

The solutions in e-cigarettes may include chemicals such as nicotine, propylene glycol, ethylene glycol, polyethylene glycol, diacetyl, and/or glycerol; and heavy metals such as nickel, tin, and/or lead. Artificial flavorings may be added.

How does the nicotine level in e-cigarettes compare to traditional cigarettes?

It is not clear. E-cigarettes are largely unregulated, so the nicotine dose varies widely and may not match what the label says. Nicotine has been found in e-cigarettes labeled as not having nicotine, and some e-cigarettes reported to have nicotine do not. It is possible that someone could receive a higher nicotine dose with e-cigarettes compared to traditional cigarettes.

While e-cigarettes may have less cancer causing contaminants than traditional cigarettes, they may still include a number of contaminants that could pose a risk to both the health of the person using the e-cigarette and a pregnancy.

E-cigarettes are promoted as a quit smoking-aid but studies have not shown them to be effective. For this reason, plus uncertainty about the ingredients, the use of e-cigarettes is not recommended during pregnancy. Our fact sheet on tobacco cigarettes can be found at <https://mothertobaby.org/fact-sheets/cigarette-smoking-pregnancy/pdf/>.

Can use of e-cigarettes during pregnancy cause a miscarriage?

We do not know because there are no published studies. Studies on traditional cigarettes that include nicotine have found an increase in the chance of miscarriage.

Can use of e-cigarettes during pregnancy cause birth defects?

We do not know because there are no published studies. Traditional cigarettes that include nicotine may pose a small increase in the chance for oral clefts (a split in the lip or roof of the mouth that usually requires surgery).

Can the use of e-cigarettes cause other problems during pregnancy?

We do not know because there are no published studies. However, both animal studies with nicotine and studies with traditional cigarettes with nicotine find poor growth of the developing baby. This is thought to be due to lower amounts of blood and oxygen crossing the placenta.

Can use of e-cigarettes during pregnancy cause later learning problems for the baby?

We do not know because it has not been studied. Some studies have linked traditional cigarettes with nicotine to higher chances for attention deficit disorder and learning disabilities.

Are there any resources or medical treatments available to help me to quit e-cigarettes and tobacco cigarettes during my pregnancy?

Yes. Talk with your healthcare provider about your thoughts on quitting. There is also free advice, support and referrals, with the Smoker's Quitline at 1- 800-QUIT-NOW (1-800-784-8669) from anywhere in the U.S. While these resources focus on tobacco cigarettes, nicotine is the addictive chemical in both e-cigarettes and tobacco cigarettes, so they can still provide help regarding e-cigarettes.

Can I use e-cigarettes when I am breastfeeding?

E-cigarette use during breastfeeding has not been studied. The best and safest approach is to not use e-cigarettes while breastfeeding. Nicotine does pass into breast milk. Studies have shown that infant heart rate and blood pressure changes have been associated with increased nicotine concentrations in milk. Be sure to talk to your healthcare provider about your breastfeeding questions.

Is there a concern if my partner is using e-cigarettes?

There is no information to answer this question. Men who smoke traditional cigarettes with nicotine can have lower sperm counts, as well as abnormal shape and movement of sperm, which may make becoming pregnant more difficult. It is not yet known if second hand exposure to e-cigarettes poses a risk to your pregnancy or the baby after birth. Studies are unclear about the level of exposure using e-cigarettes provides to a nearby person. 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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