

# Vaping during Pregnancy: Not Just a Bunch of Smoke

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If you have listened to the news lately, you have probably heard of the outbreak of lung injuries and related deaths associated with e-cigarettes and vaping products. Breaking news by health experts have reported that tetrahydrocannabinol (THC) was present in most of the samples of the products and lung tissue collected from the injured individuals, but Vitamin E acetate was present in all of the samples that have been tested to date. While this is a major breakthrough, the experts are not ready to draw any conclusion as of yet, for it is possible that there are other ingredients involved. Here at MotherToBaby we strive to prepare for the questions that may arise from hot topics such as this for the women and providers we serve. Therefore, this seems as good a time as any to ask, “What do we know about vaping and pregnancy?” For the purpose of this blog, I’m going to focus on nicotine vaping.

## **What are ENDS?**

Electronic nicotine delivery systems (ENDS) describe a variety of products that includes vaporizers, vape pens, hookah pens, tank systems, mods and electronic cigarettes (e-cigarettes). Although ENDS were originally developed as an alternative way to inhale tobacco products (like nicotine), the devices are now also used to vape other substances, like cannabis. Each of these devices work by heating a liquid to produce an aerosol that a person inhales into their lungs producing a mist (vape). The liquid in ENDS can contain: nicotine, tetrahydrocannabinol (THC), cannabidiol (CBD) oils, propylene glycol and glycerol.

## **Are ENDS a safer alternative than cigarette smoking in pregnancy?**

ENDS products came on the market in the U.S. in 2007, and their popularity quickly grew. One of the reasons they grew in popularity was due to the belief that they were a safer alternative to cigarettes, and could help smokers quit or reduce the amount of cigarettes they smoke. Cigarettes contain nicotine and many other agents as well as carbon monoxide. Cigarette smoking during pregnancy has been associated with an increased chance of miscarriage, cleft lip or palate, premature birth (before 37 weeks) and SIDS (sudden infant death syndrome). Smoking has also been associated with an increase chance of infertility, ectopic pregnancy (a pregnancy that occurs outside of the uterus) and complications with the placenta (i.e., placental abruption and placenta previa). The issues with cigarette smoking are not only limited to pregnancy but continue after the birth of the child as well. Smoking has been associated with a higher chance for asthma, childhood obesity and behavioral problems.

While pregnancy is a big motivation for women to quit smoking, many struggle and look for a solution during pregnancy. Complicating the issue is the fact that many nicotine replacement therapies have not been well studied, and their effectiveness in helping smokers to quit has been questioned. Therefore, there is a hesitancy to use them. Also, medications to help stop smoking, like bupropion (Wellbutrin) and varenicline (Chantix), while not considered to pose a significant chance of birth defects, have limited data regarding their use in pregnancy. Recently the Food and Drug Administration (FDA) added warnings to the label regarding an increased chance of psychiatric effects including suicidal thoughts. This does not mean these medications should not be used by pregnant women who medically need them, but it shows how complex the issue of choosing an appropriate medication can be when you need to weigh the risks versus benefits. This leads pregnant women to find an alternative that might solve their problem and for some, ENDS seemed like the solution when they came on the market.

The effects of inhaling the substances contained in ENDS are not known, especially when it comes to pregnancy. One study has shown that users of e-cigarettes can obtain a substantial amount of nicotine from e-cigarettes that is comparable to regular cigarettes, and we do know that nicotine can cross the placenta. Animal data shows that exposure to the chemicals found in e-cigarettes can cause various effects on offspring that include impact to the immune system, lung and heart function, and neuro-development (related to the function of brains and nerves); unfortunately, so far there is no data to suggest what the impact in human pregnancy might be. In addition, while ENDS products may reduce exposure to many of the toxins in cigarettes, there is still exposure to nicotine and other toxic chemicals, which can pose an increased chance of harm to pregnancies. Also, some ENDS products that have stated they were free of nicotine have been tested and were actually found to contain nicotine.

## **There is no evidence to support ENDS as an effective way to stop smoking.**

A recent review of the use of ENDS products among non-pregnant patients found no strong evidence that they help in the effort to quit smoking. Regardless of the lung injuries that are currently in the news, health experts recommend that pregnant women avoid all ENDS use. Instead, any pregnant woman who is struggling to quit smoking should talk with their health care provider to discuss a plan that is suitable to them and contact resources such as the National Quitline Network (1-800-QUIT NOW). Quitting is best for you and your child so go ahead and clear the air. Trust me; your baby will thank you.

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