

Nicotine exposure during pregnancy nearly twice as high as reported

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More women may be smoking and exposed to nicotine during pregnancy than previously thought, according to a new study by researchers from Cincinnati Children's Hospital Medical Center in collaboration with Cradle Cincinnati.

The study reveals a significant gap between the number of local, pregnant mothers who report [smoking](#) during pregnancy and the number who test positive for [nicotine exposure](#).

"This is extremely important new information for us as we work to better understand risk factors for [preterm birth](#)," said Jim Greenberg, MD, director of the Perinatal Institute at Cincinnati Children's and senior author of the study. "We have long suspected that smoking status during pregnancy is under-reported, but now we know just how many [women](#) struggle to quit smoking when they are pregnant."

The study, published online in the *Journal of Perinatology*, detected high-level nicotine [exposure](#) for 16.5 percent of women in the study and low-level exposure for an additional 7.5 percent. Only 8.6 percent, however, admitted to using cigarettes. The study suggests that tools researchers use to estimate nicotine use do not accurately capture all means of nicotine exposure, including e-cigarettes.

"Studies show that smoking increases the risk of preterm birth by over 25 percent," said Todd Portune, Hamilton County Commissioner and chair of Cradle Cincinnati. "It is also a proven risk factor for SIDS and

for birth defects. All three of the leading causes of infant death are negatively affected by tobacco use. To learn the true size of the battle we are fighting is an important first step."

The researchers studied 708 women who gave birth at a single maternity hospital in southwest Ohio between March 2014 and August 2015. Birth records in Ohio include a self-reported measure of last trimester cigarette smoking. Also in southwest Ohio, all maternity centers now collect maternal urine samples for drug testing to address rapid increases in prenatal exposure to opioids. Researchers were able to detect actual exposure to [nicotine](#) by measuring cotinine levels in urine. Cotinine is a metabolized byproduct of tobacco exposure that can be measured in urine and in blood.

The study reveals the importance of public health efforts to decrease tobacco and e-cigarette use among pregnant minority women. African American women reported tobacco use rates of 7.9 percent, but that number rose to 21.1 percent using specific measurement of cotinine.

"The [public health](#) community has long assumed that targeted campaigns toward minority women are not needed because we've relied on self-reported data," said Dr. Greenberg. "This new information suggests that that approach is profoundly incorrect and that new support needs to be offered to a population that's too often been ignored when it comes to anti-smoking efforts."

The study also revealed that an additional 7.5 percent of women tested positive for secondhand smoke during pregnancy, bringing total smoke exposure up to nearly one in four women.

Anyone trying to quit smoking during pregnancy can call 1-800-QUIT-NOW to receive personalized support to help them quit.

Provided by Cincinnati Children's Hospital Medical Center

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