

# Should Pregnant Smokers Use Cessation Medications?

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A significant number of women who smoked prior to becoming pregnant quit when they learn they are pregnant or soon after. However, a notable proportion (reportedly 10%), continue to smoke during pregnancy. Numerous studies have suggested that this estimate is vastly underestimating the true smoking rates as this behavior carries high social stigma. In addition, 70% of those women who quit during pregnancy will be smoking again at 6 months post-partum. Smoking cessation during pregnancy not only benefits the mother's health, but obviously the health of the unborn child. Tobacco has numerous detrimental effects on fetal health including low birth weight, premature labor, placental abnormalities, and congenital defects, on infant health including SIDS, and is also associated with childhood illnesses, such as ear infections, asthma, and developmental problems into adolescence. The annual smoking-attributable costs for complicated births in the United States were \$1.4 billion, estimated in 1995 dollars. Clearly, assisting pregnant women to stop smoking is a high priority for public health.

The benefit of smoking cessation is highest earlier in pregnancy, with babies born to women who quit early reaching normal birth-weight. However, there is continued benefit to stopping smoking at any point during pregnancy. For those that continue to smoke, the first-line tobacco dependence treatments in pregnancy are behavioral, motivational, and social interventions. However, these interventions demonstrate modest success, and effectiveness diminishes as cigarette consumption increases. A woman who is still smoking at the time of her first prenatal visit is likely to have high dependence on tobacco, and may benefit from more intensive interventions. Current clinical practice guidelines recommend considering nicotine replacement therapy (NRT), if "a pregnant woman is otherwise unable to quit, and when the likelihood of quitting, with its potential benefits, outweighs the risks of the pharmacotherapy and potential continued smoking."

Nicotine itself has potential harms for the developing fetus. It is a neurotoxin that can affect neurological development. For this reason, nicotine is not routinely recommended by the FDA for use in pregnancy. However, one must consider the risk/benefit ratio of using NRT versus smoking in pregnancy.

Numerous trials have demonstrated the safety and efficacy of NRT in helping *non-pregnant* adults quit smoking, roughly doubling the likelihood of abstinence. NRT delivers lower doses of nicotine than smokers receive from their tobacco, while eliminating 4000 toxins and carcinogens found in tobacco smoke, thus making an argument for relative safety compared with smoking in pregnancy. Also, NRT delivers nicotine to the brain at a slower rate, making them less addictive than cigarettes. Therefore, in non-pregnant adults, NRT is clearly safer than smoking and is moderately effective in helping smokers quit.

Despite the well-documented risks of smoking during pregnancy, clinicians have been reluctant to use NRT in this population. There are many barriers to providers' using effective treatment, such as NRT, during pregnancy, including fear of malpractice, lack



of training, and concern over the addictive nature of NRT. However, the most commonly reported barrier was the lack of evidence demonstrating safety and efficacy of these products in pregnancy. This is a key obstacle to effectively implementing the Public Health Service (PHS) and American College of Obstetrics and Gynecology (ACOG) Guidelines. A few small studies have demonstrated the short-term safety of nicotine patches and gum in pregnant women, as well as less adverse circulatory responses in the mother and fetus among gum users versus continued smokers. However, they have failed to produce conclusive results regarding abstinence, although one patch trial showed that despite similar abstinence rates, mean birth-weight was significant-

ly improved in the patch group. This is good evidence for the safety of NRT as it shows that the even in women with relatively low quitting success, nicotine/toxin exposure was sufficiently reduced to improve birth weight, which is often used as a marker for other harms in pregnancy.

Bupropion (Zyban) is another FDA approved cessation medication. This medication is actually a Class B medication (no fetal harm in animal models, but no human data) for use in pregnancy. The issue with bupropion is that there is a 1/1000 risk of seizures, which could be catastrophic in a pregnant woman. For this reason, many providers favor the known potential risks of NRT to those of bupropion in considering cessation medications.

Obstetricians commonly prescribe medications to treat serious medical conditions during pregnancy that carry with them risks to the fetus. This is seen in the treatment of asthma, psychiatric diseases, and seizure disorders in pregnancy. The general public health opinion is that use of NRT during pregnancy is safer than smoking. It generally delivers lower doses of nicotine while eliminating 4,000 other toxins. However, fear of malpractice and lack of experience with these medications is a deterrent to prescribers. Many feel that inaction (not prescribing NRT) that results in a woman continuing to smoke (by her own "choice" – even though we know this is an *addiction*) is "safer" from a liability standpoint than delivering cessation treatment and risking an adverse event. This is unfortunate as the risk of an adverse event is certainly higher if the woman continues to smoke than if she uses NRT. What is needed is a shift in societal perspective and a handle on litigation.

The rationale for using medications considers that:

- Many women who smoke prior to pregnancy quit when they become pregnant
- Those continuing to smoke are likely most dependent
- Majority of women who are still smoking into their 2<sup>nd</sup> trimester will not spontaneously quit
- Limited success rates with non-pharmacological interventions
  - Can try for limited time, but if not working, need to increase intensity of treatment
- Medications have proven efficacy
- Need to compare potential risk of medications to known risk of smoking