

## Smoking and women's health: opportunities to reduce the burden of smoking during pregnancy

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Smoking cessation is one of the most important actions a woman can take to improve the outcome of her pregnancy, and most women who stop smoking during pregnancy do so on their own. Because women know about the adverse effects of smoking on their health and that of their fetuses, pregnancy may be a time when smoking cessation efforts and interventions are potentially effective.<sup>1,2</sup> Nevertheless, most smokers do not stop smoking during their pregnancy. Tobacco addiction is progressive and chronic and, in consequence, smoking cessation interventions focusing on the prenatal period have failed to achieve long-term abstinence among the majority of pregnant smokers. Two-thirds of women who smoke during their first pregnancy also smoke during their second, exposing their first infant to tobacco smoke both in utero and after delivery.<sup>3</sup>

Population-based cross-sectional surveys have been widely used to monitor prenatal smoking rates.<sup>4-6</sup> However, such data do not provide information on changes in smoking habits during pregnancy. This is in contrast to data collected during prenatal care in which smoking habits are recorded on more than one occasion, as described by Susan Kirkland and colleagues<sup>7</sup> in this issue (page 281). Such longitudinal data can usefully supplement survey data to monitor progress in prenatal tobacco control.

Although the mean number of cigarettes smoked daily before pregnancy and during pregnancy in this study of women in Nova Scotia in 1997 is similar to that reported for the United States, the prevalence of smoking in this population of pregnant women (25.5% at delivery) is about twice the US rates.<sup>4</sup> Given the social desirability of non-smoking status, which is greater during pregnancy, the actual prevalence of smoking may be even higher. Information on the rate of postpartum return to smoking is not reported by Kirkland and coworkers, but there is no reason to assume that it will be lower than the rates in other populations. In their study population some women who were nonsmokers before their pregnancy apparently began smoking during pregnancy; this result may be explained by earlier nondisclosure of their smoking habits rather than initiation of smoking during pregnancy. In the United Kingdom 16% of respondents to a survey reported that they did not admit to their doctors that they smoked.<sup>8</sup> A study in the United States found nondisclosure rates of

28% at enrolment into prenatal care and 35% at follow-up.<sup>9</sup> Therefore, biochemical verification of smoking status is needed to evaluate cessation interventions. The need to assess the smoking habits of each woman during each contact with a clinician is clear, as is the case for assessing other vital signs.

Clinicians who provide health care to women have an important role to play in reducing the burden of smoking among women. Clinically proven smoking cessation programs that can be delivered in primary care settings are now available. Experts attending the 1998 Consensus Workshop on Smoking Cessation in Pregnancy reviewed the evidence related to cessation counselling during pregnancy, including the *AHCPR Clinical Practice Guideline*.<sup>1,2</sup> This group concluded that brief cessation counselling (5–15 minutes) when delivered by a trained provider with pregnancy-specific self-help materials significantly increases rates of cessation among pregnant smokers. Five specific steps toward cessation — Ask, Advise, Assess, Assist and Arrange — and recommended procedures are outlined in the 1-page form, *Brief Smoking Cessation Counseling for Pregnant Patients* ([www.smokefreefamilies.uab.edu/bpi\\_form.htm](http://www.smokefreefamilies.uab.edu/bpi_form.htm)). Intense efforts may be needed for groups of women who are less likely to stop smoking and more likely to relapse.<sup>5</sup> Smoking cessation interventions should be continued post partum to prevent relapse, and partners who smoke should be included in such interventions. Given that more than 50% of women do not recognize that they are pregnant until after the fourth week of gestation, the potential for unknowingly exposing a fetus to tobacco is high. Therefore, efforts to prevent tobacco exposure should begin before conception.

Unfortunately those pregnant women who smoke most heavily do not appear to respond to the type of behavioural intervention indicated here. The Agency for Health Care Research and Quality (AHRQ), formerly known as the Agency for Health Care Policy and Research (AHCPR), has suggested, as have others, that we should explore the use of pharmacologic approaches to achieve cessation in women who are unable to stop smoking.<sup>2,10</sup> These approaches include nicotine replacement therapy (e.g., gum, patch, inhaler, spray), non-nicotine products such as bupropion hydrochloride, and second-line pharmacotherapies such as clonidine and nortriptyline. However, the efficacy

and safety of these approaches during pregnancy is not well documented. Pharmacologic interventions should be considered on an individual basis as an adjunct to behavioural interventions, and they should be considered for pregnant women only if the increased likelihood of smoking cessation outweighs the harmful effects of nicotine replacement therapy and potential continued smoking on the fetus. The results of studies on the protective role of multivitamin and mineral supplements in reducing smoking-related adverse outcomes of pregnancy have been inconclusive.

To minimize the effects of smoking among all women and to foster effective perinatal tobacco control, we should expand our focus and efforts beyond prenatal care to include both the whole family and the entire reproductive lifespan of women. The complexities associated with smoking cessation among established smokers are underscored by reports of persistent high smoking rates among pregnant women in Canada, the United States and the United Kingdom.<sup>4-6</sup> Long-term reduction in tobacco exposure during pregnancy can be achieved only by encouraging teenage girls and young women not to start smoking.

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