FOR HEALTH PROFESSIONALS

Pregnancy, quitting smoking and nicotine replacement products

Introduction

Stopping smoking before or during pregnancy is an important and worthwhile goal. It benefits both the baby and the mother.[1]

Smoking during pregnancy increases the risk of Sudden Infant Death Syndrome (SIDS), reduced lung function, restricted growth and low birthweight in infants, and preterm delivery (the baby is carried for less than 37 weeks).[2] Low birthweight is associated with heart disease, type 2 diabetes and being overweight in adulthood.[1] Pregnant mothers who smoke increase their risk of complications during pregnancy; this can involve pain and/or bleeding during pregnancy and increased need for caesarean section delivery.[2, 3] They also have a greater risk of miscarriage and ectopic (outside of the womb) pregnancy, and the baby is more likely to be stillborn or die at or shortly after birth.[2] After birth, infants may have a weaker immune system and are more likely to the development of asthma and chest infections compared to infants of non-smoking mothers.[2-4]

Helping pregnant women to quit

While quitting smoking early in pregnancy has greater benefits, quitting at any time during pregnancy reduces the risk to the baby. All women who continue to smoke should be offered help to quit throughout the course of their pregnancy.[5]

One-to-one counselling and behavioural support can help pregnant women quit smoking. Research shows that quit smoking programs reduce the number of babies with low birthweight and preterm births, and increase the mean birthweight. A number of trials show that women who participate in quit smoking programs are more likely to feel less stressed and depressed and have improved self-esteem, compared to women who were simply given information about the risks of smoking during pregnancy and advised to quit.[1]

Quitline provides an extended callback service specifically for pregnant callers. A Quitline advisor calls at agreed times and provides information, offers help to deal with problems, and gives encouragement and practical support with quitting. The advisor schedules calls during pregnancy and after the birth. Quitline callers may receive between four and 10 calls as part of the extended callback service.

Quit Victoria also provides online training to midwives to help pregnant mothers to quit smoking.

Quitting medications

The prescription medicines bupropion (brand names Zyban SR and Prexaton) and varenciline (brand name Champix) are not approved for use during pregnancy.[6, 7]

Nicotine replacement products

If a women is pregnant or breastfeeding, it is recommended that she first try to quit without the use of nicotine replacement products (nicotine gum, inhalator, lozenges, mouth spray and patch). However, if she is unable to quit without medication, she may use a nicotine replacement product to help her quit, after discussing it with the doctor overseeing her pregnancy.[8-10]

Are nicotine replacement products safe to use during pregnancy?

There is no proven reason not to use nicotine replacement products during pregnancy, however they are also not free from risk.[5, 8] In theory, they are considered safer than smoking, because the pregnant mother avoids many other toxins in cigarette smoke that harm the foetus. However, there is little research on the safety of using nicotine replacement products during pregnancy, so its real-life effects have not yet been established.[1, 4]

Nicotine (from cigarettes or by itself) changes hormone patterns, including those of the infant, which may affect their development. Through its effects on the oviduct (fallopian tube), nicotine may reduce fertility and complicate the pregnancy. It also interferes with the passing of essential nutrients across the placenta. Nicotine can alter embryonic movements that are important in the early development of the organs.[11] It can interfere with foetal brain and lung development, although the long-term effects are not clear.[1, 5, 11-14]

Although nicotine is a toxin, pregnant women already expose their unborn child to nicotine if they continue to smoke.[4] There is no evidence that using the nicotine gum, lozenge, inhalator or mouth spray in pregnancy results in higher blood levels of nicotine than smoking.[15] Some researchers argue that despite potential risks, if using a nicotine replacement product increases the chances of pregnant women quitting smoking, then withholding it from them would be harmful.[16]

Overall, nicotine replacement products are considered to be safer than continuing to smoke as cigarette smoke contains other chemicals known to be toxic to the foetus as well as nicotine.[17]

How well do nicotine replacement products work among pregnant women?

The current evidence suggests that nicotine replacement products do not work as well with pregnant women as they do with the general population, and that using them has no significant advantage over counselling and behavioural support.[1, 18, 19] However, in the few studies conducted, many women were reluctant to use a nicotine replacement product, and either used a low dose (of the nicotine gum) or only used it for a short time. This could have affected the results. In the largest trial, women using a nicotine patch had a higher quit rate after four weeks, but had a similar quit rate to those who had used a placebo (a patch without nicotine) by the end of their pregnancy. More research is needed.[18, 19] Compared with using a placebo, using a nicotine replacement product by smokers trying to quit improves the birthweight of the babies and may improve birth outcomes (i.e. decrease the risk of low birthweight and preterm delivery).[20] The safety of nicotine replacement products in terms of foetal development and birth outcomes (compared to successfully quitting without using them) remains unclear.[1]

Using nicotine replacement products in pregnancy

Nicotine replacement products works best for addicted smokers who want to quit. Signs of nicotine addiction include:

- smoking the first cigarette within 30 minutes of waking up[21]
- smoking at least 10 cigarettes per day[5, 22] (Women who cut down the number of cigarettes they smoke after finding out they are pregnant may be smoking their cigarettes harder – see '*Cutting down*')
- suffering from withdrawal symptoms within 24 hours of stopping smoking, such as cravings, irritability, anxiety, depression, restlessness, hunger, poor concentration or sleep disturbances.[21, 23]

A pregnant woman considering using a nicotine replacement product to help her quit should first discuss the risks and benefits with her doctor or pharmacist, and also with the doctor supervising her pregnancy.

Nicotine replacement products should be used as early on in the pregnancy as possible (after quitting without it proves unsuccessful), with the aim of quitting and discontinuing use as soon as possible.[8, 9]

Intermittent nicotine replacement products – the gum, lozenge, mouth spray or inhalator – are recommended, as these products usually provide a lower overall daily dose than the patch. However, if the woman cannot tolerate any of these products, for example, she suffers from nausea, the day only (15 hour) patch may be used. The patch must be removed before going to bed, as the effect of continual exposure to nicotine on the baby is unknown.[8, 9]

Nicotine replacement products work better when triggers for cravings are reduced. Cravings (the urge or desire to smoke) are often triggered by situations in which the smoker is used to smoking.[24] Women with cravings associated with people, places, routines, or emotions may benefit from counselling and behavioural support. Having a partner who is a non-smoker or quits smoking is an advantage. Women who can make their home smokefree and get rid of all cigarettes in their home and car may have a better chance of success.[25, 26]

Use of nicotine replacement products while breastfeeding

Breastfeeding is recommended even if a mother smokes or uses a nicotine replacement product. Babies of smokers are more prone to chest illnesses, but breastfeeding helps prevent these infections. Breastfeeding also has several other advantages over bottle-feeding, reducing the risk of illness for the baby.[27]

Women who are breastfeeding may use the gum, lozenge, inhalator or mouth spray to help them quit. The patch is not recommended. Nicotine from cigarettes and nicotine replacement products is found in breast milk. However, the amount of nicotine from a nicotine replacement product is less than that from cigarettes, and less dangerous to her child than secondhand smoke. Women should breastfeed just before using their nicotine product. This ensures that the longest possible time between using the product and breastfeeding, so the child is exposed to less nicotine.[8, 9]

Cutting down

There is no solid evidence that cutting down the number or strength of cigarettes smoked significantly reduces the risks to the foetus.[12, 28, 29] Stopping smoking completely as early as possible ensures much better health outcomes for the baby and the mother.[12, 28-30]

It is common for smokers to try to reduce harm by cutting down the number of cigarettes they smoke per day. However, because smokers want the same level of nicotine they are used to, they tend to smoke the remaining cigarettes harder by taking more and larger puffs, and holding each puff longer. So even though they are smoking fewer cigarettes, they are inhaling more smoke from each cigarette. Thus they do not reduce their intake of toxins as much as the reduction in the number of cigarettes suggests.[31]

As well, some women hold misbeliefs that lead them to use methods that don't lower their smoke intake, or even increase their risk of harm.

These include:

- Switching to weaker tasting cigarettes (previously branded “low tar”). Smokers inhale just as much damaging chemicals from each cigarette as they do from their previous brand. Less harsh smoke is not less dangerous.[32]

- Switching to “chop chop” - loose untaxed tobacco also known as “natural tobacco”. Many of the damaging chemicals in cigarette smoke, including carbon monoxide, tar and nicotine, come from burning the tobacco plant itself.[33] It is not healthier to smoke this kind of tobacco, and there may be added risks from mould spores.[3]

- Switching to roll-your-own (RYO) cigarettes. Research suggests that RYO tobacco is at least as harmful, or possibly more harmful, than smoking factory-made cigarettes.[33, 34]

- Using waterpipes, particularly among women in the middle eastern community. Waterpipes are widely perceived as being less addictive, less harmful and “cleaner” than cigarette smoking.[35] However, waterpipe smoking is both addictive and harmful.[3] Babies born to pregnant women who use waterpipes have an increased risk of poorer physical health, troubled breathing and having a low birth weight, which makes them more vulnerable to illness and death.[36-38]

- Switching to or partly substituting tobacco with cannabis. Cannabis use increases the likelihood of having low-weight baby who is more vulnerable to illness, death and long-term problems in adulthood.[2, 39]

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