

Giving up smoking averts the adverse birth outcomes associated with tobacco

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Scientists have shown for the first time in a large population study that mothers' stopping smoking around the time of getting pregnant can prevent the harmful effects of tobacco on their babies' growth.

Results from a study of over 50 000 pregnancies revealed that women who gave up smoking when their pregnancy was confirmed gave birth to babies with a similar birthweight to those born to mothers who had never smoked, Professor Nick Macklon, from the Department of [Obstetrics and Gynaecology](#), University of Southampton, UK, told the annual conference of the European Society of [Human Reproduction and Embryology](#) today (Wednesday).

Low birthweight is the most common negative outcome of smoking during pregnancy, but foetuses exposed to maternal smoking are also at risk of premature birth and the associated problem of [brain damage](#), as well as congenital abnormalities such as [cleft lip](#). Mothers who smoke are encouraged to stop smoking when they become pregnant, but to date there was little evidence that giving up at this late stage could have a positive effect on birthweight.

Professor Macklon and colleagues decided to investigate this question by studying clinical, lifestyle, and socioeconomic data collected from pregnancies registered at the Southampton University Medical Centre between 2002 and 2010. They identified seven groups of women - non-smokers, those who had stopped more than a year prior to conceiving, those who had stopped less than a year prior to conceiving, smokers who stopped once the pregnancy was confirmed, and those who continued to smoke up to 10 a day, between 10 and 20 a day, and more than 20 a day. They proceeded to compare smoking behaviour in the mothers with perinatal outcomes in the children.

After correcting for gestational age, maternal age, BMI and socioeconomic class, all of which are known to affect birth outcomes, the researchers found that those babies whose mothers had stopped smoking in the periconceptional period - around the time of getting pregnant or as soon as the pregnancy was confirmed - had a significantly higher birthweight.

"Not only was birthweight much better in this group than it was in the groups where the mothers had continued to smoke, but we also found that the babies reached the same gestational age and head circumference as those born to women who had never smoked," said Professor Macklon. "While a recent study has shown that the rate of pre-term and small-for-gestational-age births can be reduced by stopping smoking before the 15th week of pregnancy, our research goes much further. We can now give couples hard evidence that making the effort to stop smoking in the periconceptional period will be beneficial for their baby."

Although there is now overwhelming evidence that maternal smoking during pregnancy is damaging to the foetus, some mothers continue to smoke because they like the idea of giving birth to a smaller baby. "It is important that people who believe that a smaller baby means an easier birth take into account the increased risks of complicated deliveries in smokers," said Professor Macklon, "as well as the risk of disease later in life which goes with [low birthweight](#). Smoking during pregnancy is not just bad for the mother and baby, but for the adult it will grow into."

In addition to this, smoking can also make it more difficult for a woman to get pregnant and carry a baby to term. Because of their faster ovarian ageing, women smokers have higher rates of infertility than non-smokers and will undergo an earlier than normal menopause. They are also more likely to have miscarriages.

"In future we would like to look at the impact of stopping [smoking](#) prior to fertility treatments, as we believe that this could bring about improvements to fertility outcomes," said Professor Macklon. "But for now we hope that our research will provide additional encouragement to mothers-to-be to give up cigarettes."

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