

## Smoking in late pregnancy reduces birth weight

**Research question** How do smoking patterns during pregnancy influence birth weight?

**Answer** A strong linear relationship exists between maternal smoking in the third trimester and lower birth weight.

**Why did the authors do the study?** We already know that women who smoke have smaller babies than other women. The authors wanted to find out more about the relative effect on birth weight of smoking at different stages of pregnancy, independent of other factors that influence birth weight such as preterm birth.

**What did they do?** They recruited 160 pregnant women from antenatal clinics in Vermont, United States, for a cohort study. All participants reported smoking during the current pregnancy. They were enrolled at a mean of 12 weeks' gestation and answered questions about their current smoking habits and their smoking habits before the pregnancy. They were questioned again in the third trimester (mean gestational age 28.4 weeks). Estimates of cigarette consumption at enrollment and in late pregnancy were backed up by measurements of urinary cotinine concentration. Cotinine is the main metabolite of nicotine. All the women had a dating scan before 20 weeks' gestation.

The women in this cohort were enrolled in trials of interventions to help them quit or stop them relapsing. The results of these trials were reported independently. Using multiple regression analysis, the authors looked for independent associations between birth weight and maternal smoking. Specifically, they looked at the effect on birth weight of the number of cigarettes smoked each day before pregnancy, at enrollment, and in the third trimester and changes in smoking habit during pregnancy.

**What did they find?** Of all the smoking variables examined, maternal cigarette consumption during the third trimester was the strongest predictor of birth weight. Maternal smoking in late pregnancy reduced birth weight independently of other factors, including gestational age. The association was linear, such that for every extra cigarette smoked in the third trimester, birth weight went down by an estimated 27 g. Smoking before pregnancy was not correlated with birth weight in this study, and the effect of smoking in early pregnancy could not be separated from the effect of smoking later on because the two were closely related. Four factors accounted for 61% of the variation in birth weight: smoking in the third trimester, the mother's body mass index before pregnancy, gestational age, and parity.

**What does it mean?** This study suggests that even when other influences are controlled for, smoking cigarettes in late pregnancy reduces a baby's birth weight. This finding is not entirely new, but 27 g per cigarette is substantially more than previous estimates. The authors think their figure may be the most accurate so far, partly because urinary cotinine concentration correlated well with women's self reported smoking.

Since smoking in late pregnancy is so dangerous to fetal growth, doctors, midwives, and others caring for pregnant women should carry on encouraging women to quit throughout pregnancy. These data suggest it is never too late.

*Obstetrics and Gynecology* 2005;106:986-91

This summarises a paper that has been selected by bmjupdates. To register for bmjupdates (free email alerts about high quality new papers in your favourite subjects) go to <http://bmjupdates.com/>

## Editor's choice

### Do not resuscitate, or fly

Unless you're an economist, health economics is likely to leave you cold. But as Stuart Peacock and colleagues remind us this week (p 482), needs will always outstrip resources. So however hard it is to prioritise, that's what we have to do. Their essay offers help to doctors and managers wanting to make practical and ethical decisions about priorities. Their recipe for more holistic resource management includes clear objectives, ownership of decisions, and transparency.

These building blocks take time for careful thought, something that is often in short supply when dealing with acutely ill patients. All the more reason to have clear policies in place so that health professionals don't have to make hard decisions in the heat of the moment. Without these, there is a tendency to intervene even where this may be hopeless. Simon Conroy and colleagues (p 479) argue that resuscitating frail elderly people is rarely successful, especially in residential care homes, and it diverts resources from other aspects of care. It can also cause indignity at death for the patient and distress to staff. They say that current UK guidelines, which presume that patients should be resuscitated unless they have clearly requested otherwise, are inappropriate where success is so unlikely.

Asking what patients want should be easy, but doing this when it is most relevant—during acute admission to hospital—turns out to be hard. Helen Fidler and colleagues asked themselves why so few patients admitted through their emergency department were asked their views within the first 24 hours (p 461). Was this due to medical paternalism? Their study concludes not. They list a range of practical difficulties that need to be overcome to improve the chances that patients are asked their views. But they conclude that, until patients are well enough, health professionals must act in their best interests. Conroy et al agree and provide a "best interests checklist" (p 480).

Charges of paternalism will remain unless there is transparency. Patients must, as far as possible, understand the limitations of what is available to them. If a residential care home decides not to fund resuscitation, this policy needs to be explicit so that patients and their families can choose alternatives where these exist (p 479). Where new approaches to antenatal chromosomal testing would save money but would miss a small proportion of normal fetuses (p 452), parents need to know so they can pay for comprehensive testing if they wish (p 433).

Finally, things may be available but that doesn't mean we should use them, metformin and cheap air flights being two examples. Metformin increases fertility in obese women with polycystic ovary syndrome. But Adam Balen and colleagues are concerned about the risks of pregnancy associated with obesity (p 434). They advise waiting until the woman has lost weight before treating her infertility. As for the cheap air flights, you'll understand when you've learnt how to speak carbon (p 497).

Fiona Godlee *editor* ([fgodlee@bmj.com](mailto:fgodlee@bmj.com))