



Smoking

Smoking and Pregnancy

A Survey of Knowledge Attitudes and Behaviour 1992-1999



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Foreword

Smoking during pregnancy is associated with many fetal and neo-natal problems such as low birthweight, pre-term delivery, placenta damage, miscarriage and sudden-infant-death syndrome. It can also be the cause of respiratory problems such as chest infections and can aggravate asthma in young children.

The importance of encouraging pregnant women to give up smoking has been widely recognised. In 1988, the Independent Scientific Committee on Smoking and Health recommended that increased publicity be given to the hazards of both active and passive smoking during pregnancy, while in 1990 a report from the US Surgeon General considered that there would be a substantial reduction in the above problems if smoking levels among pregnant women were reduced.

In December 1998, the Government's first-ever White Paper on Tobacco, *Smoking Kills*, set a target to reduce the percentage of women who smoke during pregnancy from 23% to 15% by the year 2010, with a fall to 18% by the year 2005. This will mean approximately 55,000 fewer women in England who smoke during pregnancy.¹

In 1991, the Health Education Authority (HEA) launched its Smoking and Pregnancy Campaign. The main objective of the campaign was to encourage pregnant smokers to stop smoking. It sought to achieve this by:

- providing pregnant women with information about the health consequences of active and passive smoking during pregnancy to the mother, fetus and newly born baby;
- developing training and resources for health professionals who work with pregnant smokers.

The campaign adopted a multifaceted strategy including publicity, advertising, and direct work with health professionals and purchasers of health promotion, both inside and outside primary health-care settings.

Integral to the Smoking and Pregnancy Campaign is the research programme which was set up to provide strategic guidance as well as to evaluate the impact of the campaign's initiatives on the smoking behaviour, knowledge and attitudes of pregnant women. An overview of the strategic research that has underpinned the campaign to date is provided in the publication *Smoking and pregnancy: Developing a communications strategy for cessation*. (Owen, L., Bolling, K., HEA 1996. ISBN 0 7521 0608 20).

This report presents the main results from the latest survey commissioned by the HEA and also, where appropriate, makes reference to developing trends. The fieldwork for all the surveys has been carried out by NOP Social & Political.

¹ This target is measured against a baseline of 23% of women in England who smoked during pregnancy in 1995. Infant Feeding Survey, Office for National Statistics.

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In 1992, the HEA commissioned a survey of pregnant women to monitor the effectiveness of its Smoking and Pregnancy Campaign which had been launched the previous year. Before the start of any campaign activity an initial survey had been carried out in January 1992 to provide a set of baseline figures.

By 1999, nine waves of research had taken place. The latest survey was carried out in March 1999, eight years after the Smoking and Pregnancy Campaign was launched on No Smoking Day in 1991.

The primary objectives of conducting these annual surveys are to monitor:

- prevalence and consumption levels among pregnant women;
- changes in smoking behaviour before and during pregnancy;
- pregnant women's knowledge about the risks of smoking during pregnancy and the risks associated with passive smoking;
- the nature of interventions by health professionals;
- the prevalence levels and changing behaviour among the partners of pregnant women;
- awareness of and attitudes towards the mass-media elements of the campaign.

Table 1: Dates and sample sizes of HEA smoking and pregnancy surveys

Survey	Fieldwork date	Achieved sample size
Track 1 (Baseline)	January 1992	625
Track 2	March 1992	606
Track 3	March 1993	526
Track 4	March 1994	1039
Track 5	March 1995	1002
Track 6	March 1996	1004
Track 7	March 1997	1018
Track 8	March 1998	1019
Track 9	March 1999	999

Although not as rigorous as random-probability sampling, quota sampling was chosen for all the surveys as the most cost-effective means of obtaining a representative sample of pregnant women. In-home interviewing was adopted in preference to contact through, for example, antenatal clinics to prevent bias in the resulting sample. Quota controls were set for age and social class.

Interviewers found respondents by doorstep screening and, if necessary, by asking people if any of their neighbours were pregnant. Interviewers were not allowed to approach women in the street since this could lead to a bias towards women in the third (i.e. most visible) trimester of pregnancy. Inevitably, however, the sample will be biased towards women in the later stages of pregnancy since, on average, pregnancies are not confirmed until about seven weeks.

Table one gives details of the dates and sample sizes of the nine waves of research. Due to an increase in the funds available for survey work, the size of the sample was increased substantially in 1994. As a result, the last six surveys involved interviews with approximately 1000 pregnant women across England.

Smoking in pregnancy harms not only the mother but also the unborn child. The White Paper on Tobacco, *Smoking Kills*, includes a specific target for reducing the number of women who smoke during pregnancy. This was set as follows:

To reduce the percentage of women who smoke during pregnancy from 23% to 15% by the year 2010, with a fall to 18% by the year 2005. This will mean approximately 55,000 fewer women in England who smoke during pregnancy.

Information on progress towards this target is provided by the Infant Feeding Survey (IFS) which is carried out every five years. The latest published results for Great Britain from 1995 show that 35% of mothers smoked before, and 23% continued to smoke during, their pregnancy.

The HEA's tracking survey also collects information on smoking prevalence and consumption levels among pregnant women both before and during pregnancy. It should be noted, however, that the prevalence levels from the HEA's surveys are not directly comparable with those from the IFS because of differences in method, such as timing. The IFS is carried out *after* birth and is therefore a retrospective account of pregnant women's smoking behaviour; the HEA's Smoking and Pregnancy Survey is carried out *during* pregnancy and is therefore a snapshot of current smoking behaviour among women at different stages of pregnancy. Differences in question wording also limit comparability.

The HEA's surveys have found consistently that a proportion of women do give up smoking either before pregnancy or at some stage during pregnancy. In 1999, 45% of pregnant women reported smoking in the 12 months before they became pregnant, while only 30% reported that they were smoking currently (see Figure 1).

Although the proportion of pregnant women who have never smoked has remained fairly constant over the series of surveys (42% in 1999) the proportion who report that they are smoking currently has fluctuated over the eight years of the survey. In 1999, three in ten (30%) pregnant women reported that they were smoking currently compared with just over one in four (27%) in 1992 (Baseline Survey).

Smoking prevalence among pregnant women in social groups C2DE has been consistently about three times that of pregnant women in social groups ABC1 (43% and 15% respectively in 1999). Social groups ABC1 includes professional, managerial, clerical and administrative grades; C2DE includes skilled manual, unskilled manual and those on State benefits. Among young pregnant women (16-24 year olds) from social groups C2DE, smoking prevalence has remained especially high with 51% reporting in 1999 that they were smoking currently (see Figure 2). The increase in the number of pregnant women, particularly young women, who report currently smoking may be symptomatic of the rise in smoking prevalence among teenage girls and younger women as reported in other surveys.

Figure 1: Smoking prevalence among pregnant women 1992-1999

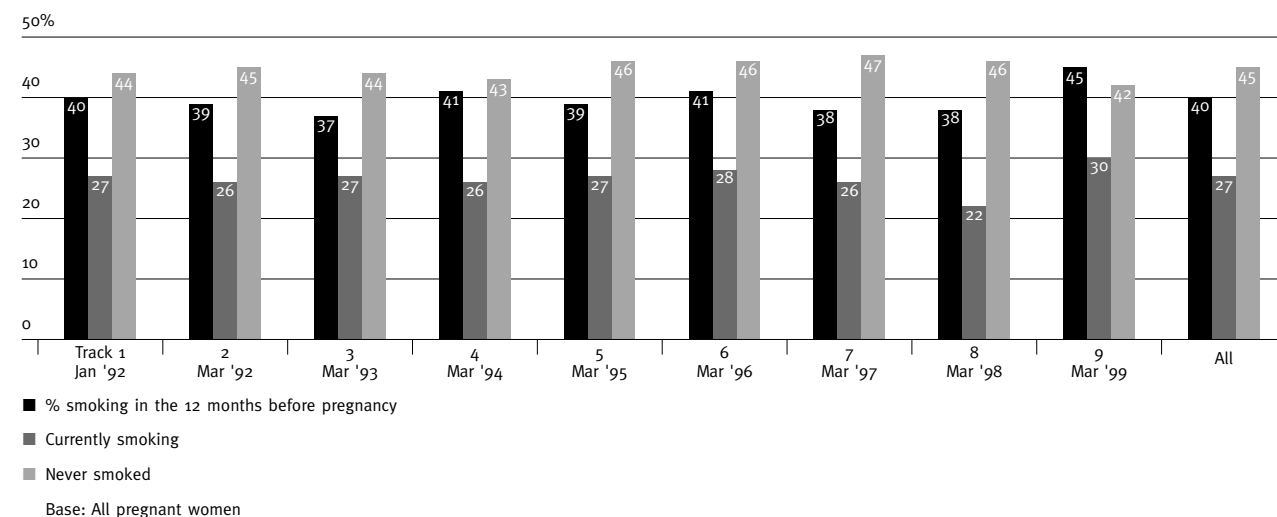


Figure 2: Smoking prevalence among pregnant women by social class 1992-1999

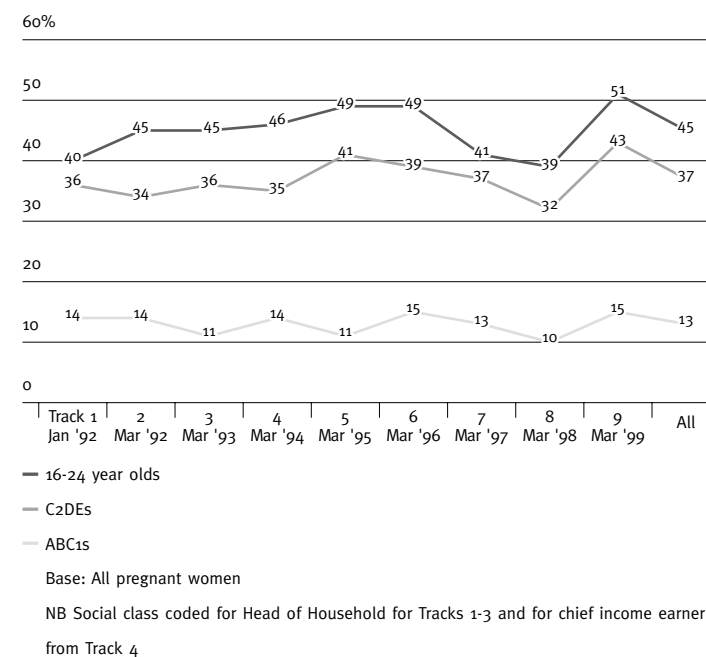


Figure 3: Smoking prevalence among pregnant women by trimester of pregnancy 1992-1999

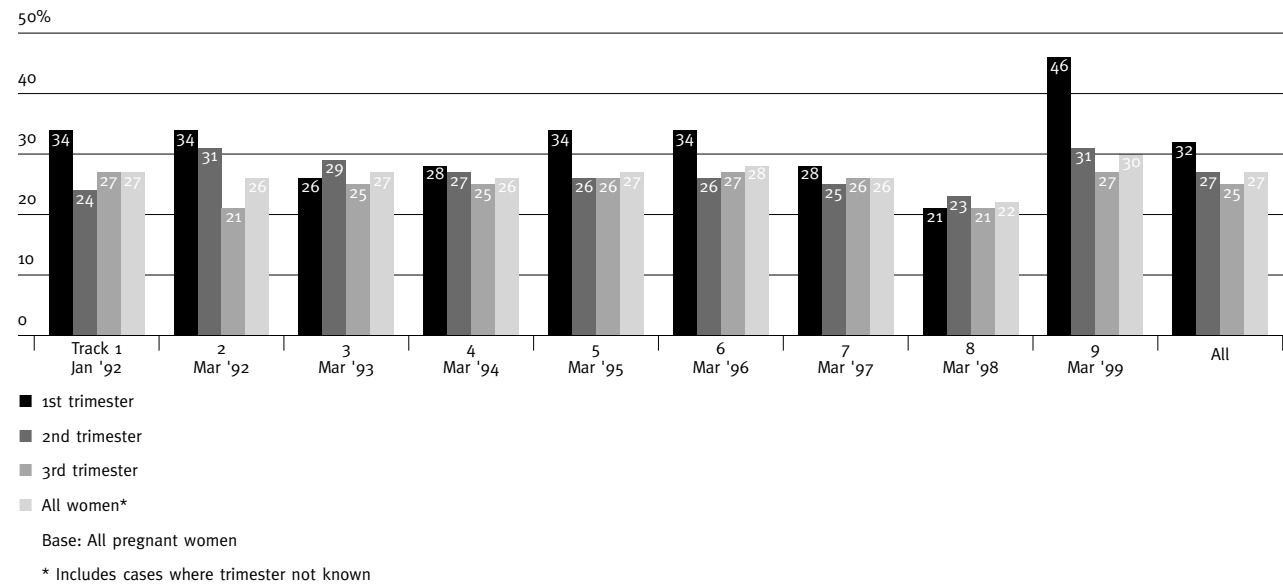


Figure 4: Cigarette consumption among pregnant women smokers 1992-1999

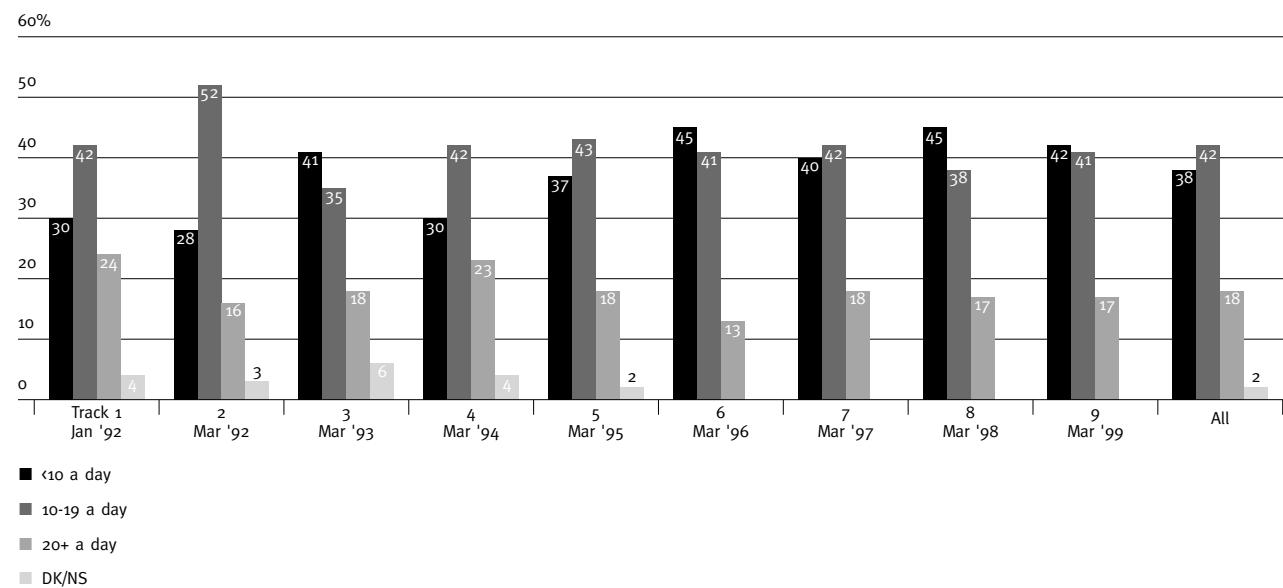
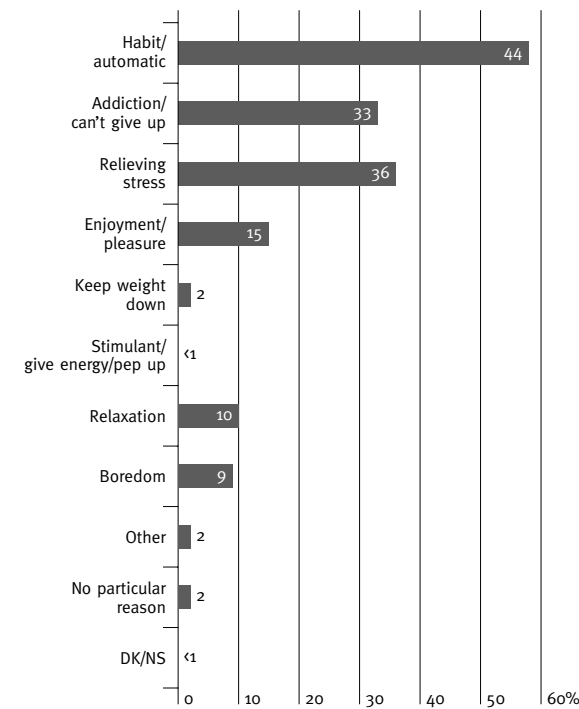


Figure 5: Single reason for smoking during pregnancy 1999



Base: All current smokers

Current smoking prevalence by trimester of pregnancy shows clearly that the proportion of women who stop smoking during pregnancy is quite small, and those who do stop, tend to do so in the first trimester. On average across the nine surveys, 32% of pregnant women were currently smoking in their first trimester, compared with 27% in the second trimester and 25% in their third trimester. In 1999 the decline in smoking after the first trimester is unusually large, with more women smoking during the first trimester (46%), dropping to 31% of women in their second trimester and 27% of women in their third trimester (see Figure 3).

The HEA's surveys also tracked the cigarette consumption rates among current smokers. Over the eight years of the survey the proportion of pregnant women smoking less than ten cigarettes a day and the proportion smoking more than twenty cigarettes a day have fluctuated, but show a trend towards lower consumption rates in more recent years. In 1999, 42% pregnant smokers smoked less than ten cigarettes a day compared with 30% in 1992 (Baseline survey); and 17% smoked twenty or more cigarettes a day compared with 24% in 1992 (see Figure 4).

From 1997 onwards current smokers were asked how soon after waking they normally smoked their first cigarette. Like consumption, this provides a measure of the smoker's level of addiction. In 1999, 18% reported smoking their first cigarette within five minutes of waking, with a further 11% smoking their first cigarette within 15 minutes. Less than one quarter (22%) reported smoking their first cigarette more than two hours after waking.

Pregnant smokers were asked to state their single main reason for smoking during pregnancy. In 1999 just over one third (35%) cited habit and a further 31% cited addiction; 19% of respondents smoked to relieve stress and 5% smoked for enjoyment. A further 2% smoked to keep their weight down, 3% smoked for relaxation and 2% smoked through boredom (see Figure 5).

Changing smoking habits before or during pregnancy

The HEA's surveys show that women are more likely to change their smoking behaviour during pregnancy rather than immediately beforehand. In 1999, only 14% of those smoking changed their smoking habits immediately before pregnancy, while 64% changed during pregnancy (see Figure 6). Of those who did make a change during pregnancy, seven out of ten (70%) did so within the first ten weeks.

Although the majority of pregnant smokers change their smoking habits either before or during pregnancy, this does not mean that they give up altogether. In fact, the HEA's surveys have shown repeatedly that pregnant smokers are more likely to cut down rather than give up. The proportions of pregnant smokers who give up and who cut down have remained reasonably consistent over the period

of the surveys. In 1999, over four out of ten (43%) pregnant women who smoked in the 12 months before their pregnancy reported that they had cut down while under three in ten (28%) reported that they had given up altogether; a further 20% reported making no change to their smoking behaviour (see Table 2).

A significant proportion of women who give up at the start of their pregnancy start smoking again before their baby is born. In 1999, 6% of respondents reported that they had given up but had started again before the birth of their baby. This figure has fluctuated over the nine surveys, reaching a maximum of 12% in 1995 and a minimum of 2% in 1998 (see Table 2).

Figure 6: Proportion of pregnant smokers who changed their smoking behaviour before or during pregnancy 1992-1999

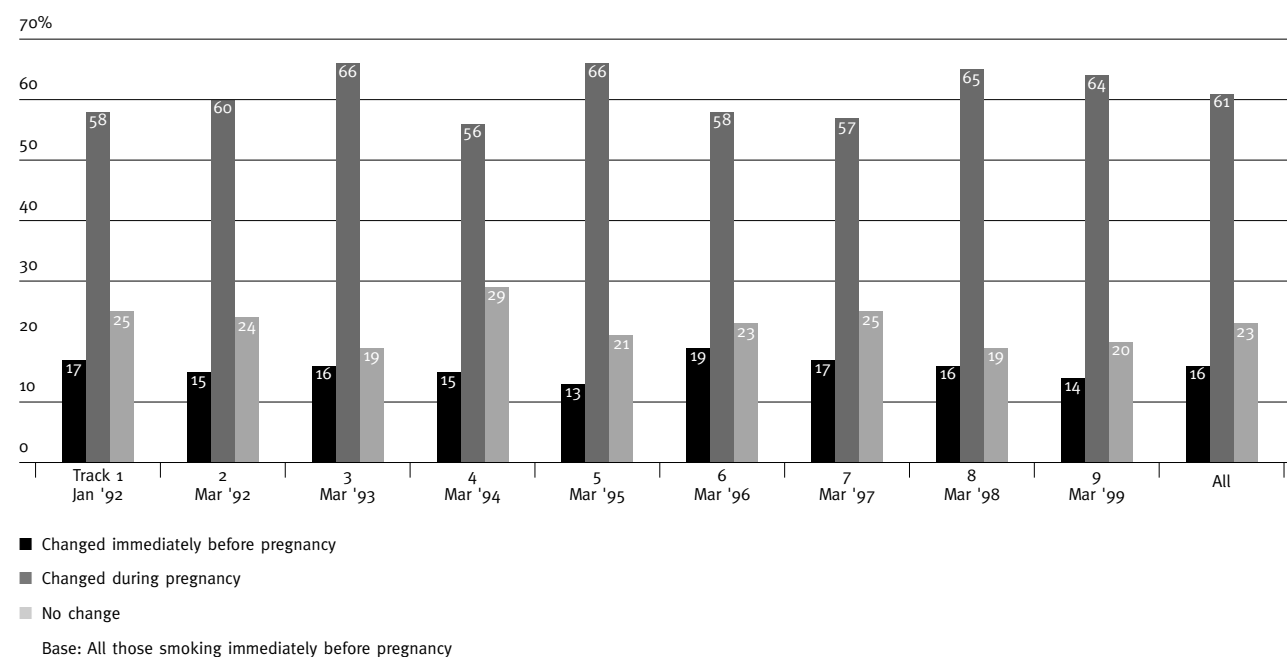
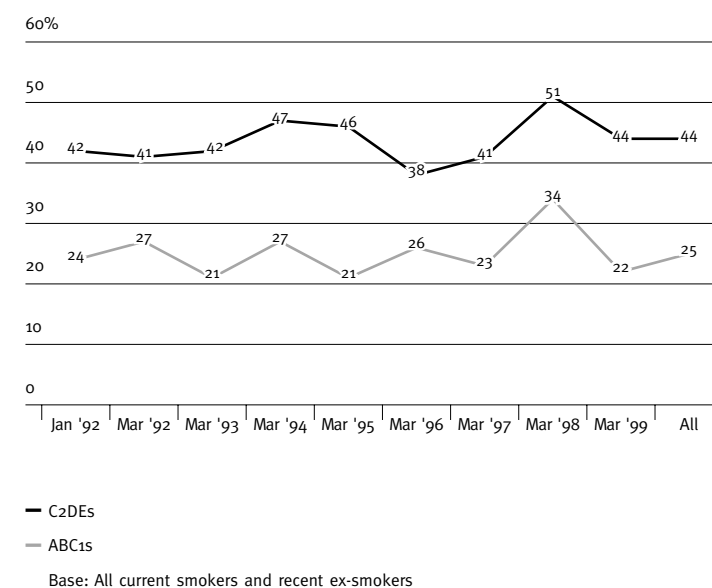


Table 2: How pregnant smokers changed their smoking behaviour as a result of pregnancy 1992-1996

Track:	Jan '92	Mar '92	Mar '93	Mar '94	Mar '95	Mar '96	Mar '97	Mar '98	Mar '99	All
Give up altogether	28	30	25	33	27	29	27	38	28	30
Cut down	33	38	43	27	38	39	36	38	43	37
Give up but start again	8	5	9	10	12	5	5	2	6	7
Increased	2	4	1	1	1	1	1	1	1	1
Switch to low tar/nic	-	-	-	1	1	2	5	2	2	2
No change	25	25	19	29	21	23	25	19	20	23
[Base]	[222]	[210]	[173]	[395]	[367]	[388]	[376]	[363]	[420]	[2914]

Base = All current smokers and recent ex-smokers

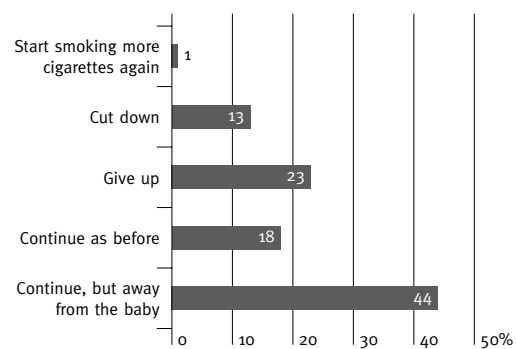
Figure 7: Percentage of smokers and recent ex-smokers who gave up altogether by social class 1992-1999



Making a change in smoking habits as a result of pregnancy has been shown to be related to social class; women from social groups ABC1 are more likely to make a positive change. The 1999 survey found that women who smoked immediately before pregnancy from social groups ABC1 were twice as likely to have given up compared with women from social groups C2DE (44% and 22% respectively).

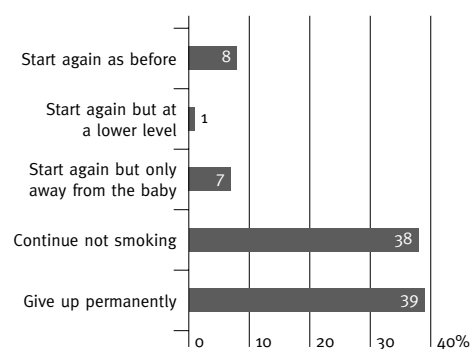
All those who had changed their smoking behaviour were asked to give their reasons for this change. In 1999, pregnancy was the most frequently cited reason (59%) followed by health (34%); and 11% said that smoking made them feel sick. Less than one in 20 cited each of the following: advertising or publicity (4%), GP or doctor (4%), Midwife (3%), partner or husband (3%) and friends (1%). 3% cited financial reasons, 1% found smoking anti-social and 4% said that they simply stopped liking it.

Figure 8: What current smokers realistically thought they would do after birth 1999



Base: All those currently smoking

Figure 9: What those who had recently given up smoking realistically thought they would do after giving birth 1999



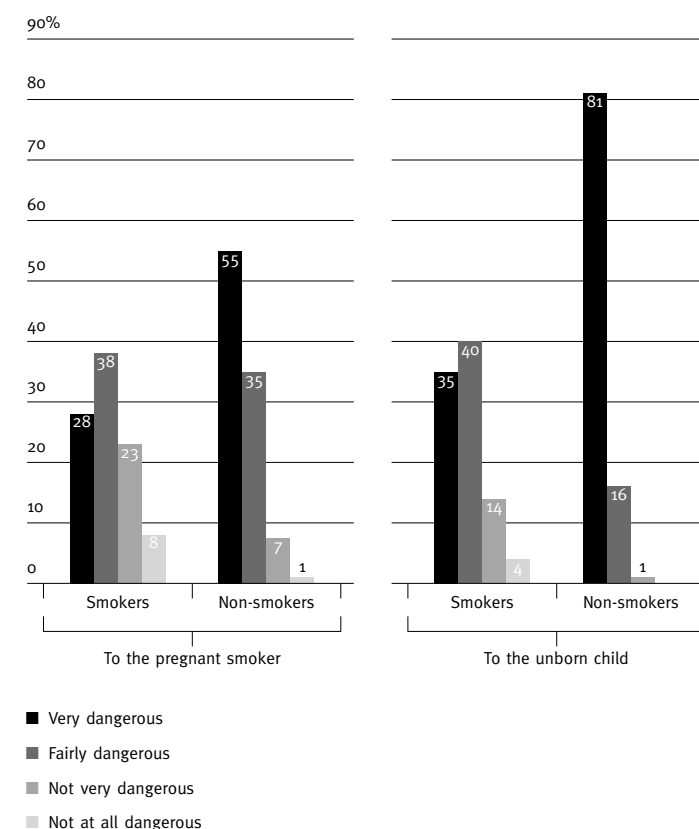
Base: All recent ex-smokers

Current smokers or those who had given up smoking in the past 12 months were asked what they wanted to do in terms of their smoking behaviour after their baby was born. In 1999 almost seven out of ten (69%) of those who smoked currently said they wanted to give up, while a similar proportion (71%) of those who had given up recently said they wanted to continue not smoking.

Respondents were then asked what they thought they would do realistically after their baby was born. In 1999 less than one quarter (23%) of those smoking currently realistically felt they would give up after the birth. The majority felt they would continue to smoke, although 44% reported that they would only smoke away from the baby (see Figure 8).

Pregnant women who had recently given up showed greater similarity between what they wanted to do and what they realistically felt they would do. Almost four in ten (39%) reported that they would give up smoking permanently, and a further 38% said they would continue not smoking at least in the foreseeable future. Less than one in ten (8%) of those who had stopped realistically felt they would start smoking again as before after their baby was born (see Figure 9).

Figure 10: Beliefs about the dangers of smoking during pregnancy 1999



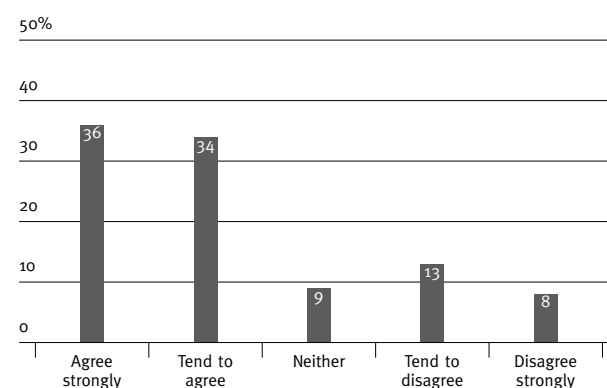
From 1996 pregnant women were asked to rate the importance of six lifestyle changes during pregnancy. Stopping or cutting down on smoking was consistently seen as the most important lifestyle change. In 1999 over eight out of ten (82%) pregnant women said this was very important. In comparison, three quarters (75%) of pregnant women thought that stopping or cutting down on drinking alcohol was very important, seven out of ten (70%) thought that taking folic acid tablets was very important and six out of ten (60%) thought that eating a healthier diet was very important. Less than half (45%) of pregnant women thought that it was very important to avoid stress and less than one third (30%) thought that it was important to take more gentle exercise.

Focusing on the data for 1999, current smoking status is significantly associated with five out of the six lifestyle change measures ($p < 0.05$) and shows a strong non-significant association with the remaining item. Not surprisingly, the strongest association is with 'stop/cut down on smoking', with current smokers substantially less likely than both ex-smokers and never-smokers to consider this very important (53% compared with 93% and 96% respectively). This pattern is reproduced on a less dramatic scale for the four other significant associations. This suggests that current smokers are less 'health conscious' than both ex-smokers and never-smokers in general rather than simply 'out of step' on smoking alone. The responses to 'avoid stress' show a different picture, with current smokers more likely to think that this is very important than both ex-smokers and never-smokers (51% compared with 43% for both ex-smokers and never-smokers).

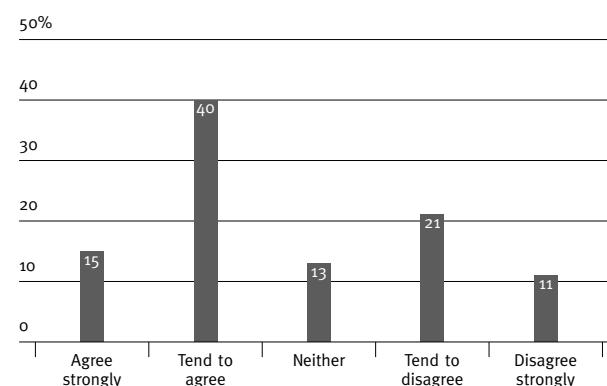
Awareness of the dangers of smoking during pregnancy has remained consistently high for the eight years of the surveys. In 1999, 83% of pregnant women thought smoking during pregnancy was dangerous to the pregnant smoker, while 91% thought it was dangerous to the unborn child.

Figure 11: Beliefs about the effects of smoking on the baby 1999

Question 1 'If you smoke you are more likely to have a small baby'



Question 2 'It doesn't matter how small the baby is when it is born - it will still grow'



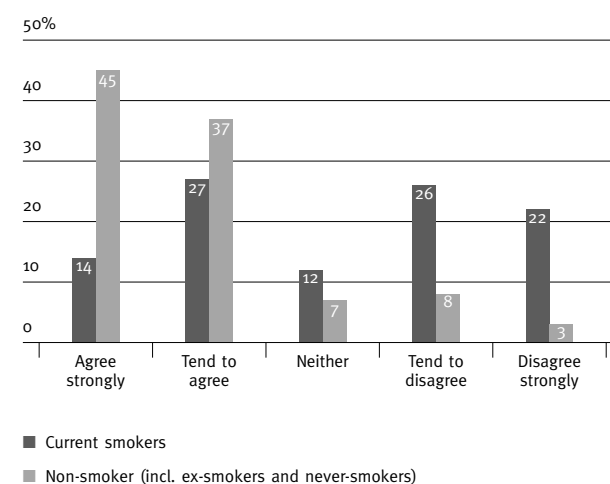
Not surprisingly, the biggest difference in attitude was between current smokers and non-smokers. Of non-smokers, 81% felt that smoking during pregnancy was very dangerous to the unborn child compared with only 35% of current smokers (see Figure 10).

In 1999, respondents were asked to agree or disagree with a number of statements relating to smoking during pregnancy. Seven out of ten (70%) respondents thought that they were more likely to have a small baby if they smoked during pregnancy. Non-smokers were more than twice as likely as smokers to agree with this (82% and 40% respectively). However, both smokers and non-smokers were less clear about the consequences of having a small baby. Two-thirds (67%) of current smokers and over half (51%) of non-smokers thought it did not matter how small the baby was when it was born as it would still grow (see Figure 11).

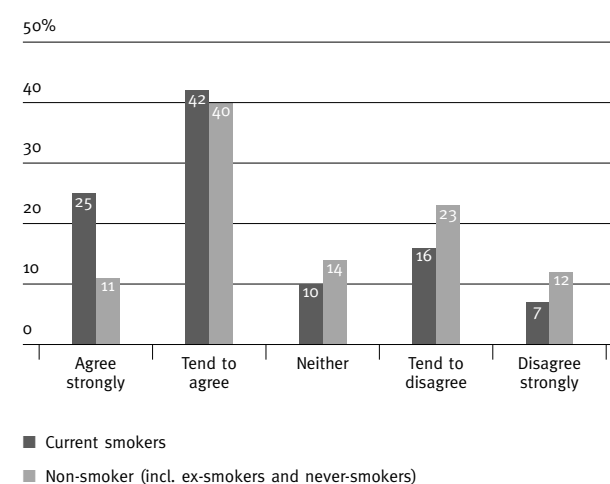
In the 1996 survey, respondents were asked three questions relating to the physical and biological effects that smoking might have on their unborn baby. Just over half (52%) of current smokers agreed that smoking during pregnancy resulted in poisonous chemicals being transferred to the baby's bloodstream, while only about one in four thought that smoking during pregnancy made the baby's heart beat faster (26%) or made the baby breathe slower (24%). Notably, among non-smokers it was those who had given up recently who were most likely to agree with the statements. Of recent ex-smokers, 48% agreed that smoking made the unborn baby breathe slower and 46% agreed that it made the unborn baby's heart beat faster. Among women who had never smoked, 38% and 35%, respectively, agreed with the statements.

Responses to 'Question 1' broken down by smoking status

Question 1 'If you smoke you are more likely to have a small baby'



Question 2 'It doesn't matter how small the baby is when it is born - it will still grow'

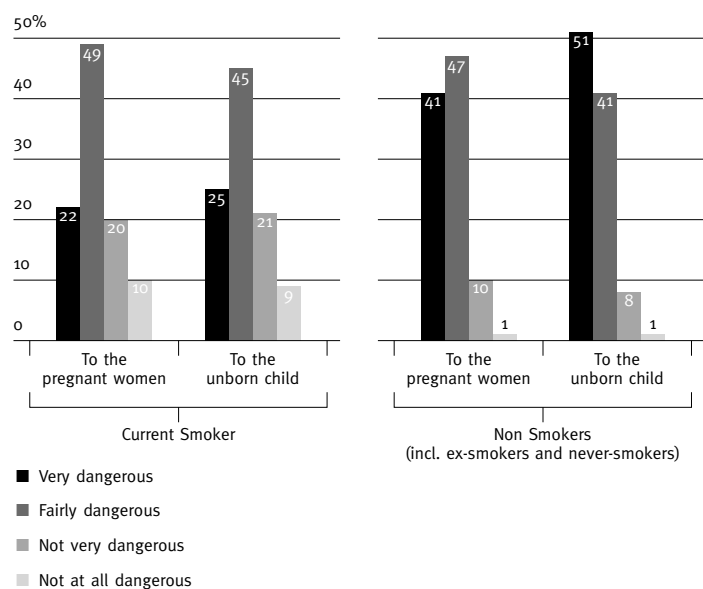


From 1997 all respondents were asked five new questions about smoking during pregnancy. In 1999, nearly two-thirds (66%) of all pregnant women agreed with the statement that smoking at the beginning of pregnancy causes most harm to the unborn baby. Current smokers were less likely to agree than non-smokers (42% and 76% respectively). Nearly nine out of ten (89%) pregnant women agreed that during pregnancy it's never too late to stop smoking, with current smokers again less likely to agree than non-smokers (81% and 92% respectively). Current smokers were also less likely than non-smokers to agree with the statement that it's just as important for the father to quit as the mother (80% and 92% respectively).

Over two-thirds (68%) of current smokers agreed with the statement that these days pregnant women are under too much pressure to give up, compared with only 27% of non-smokers; and four out of five current smokers agreed with the statement that there are things which are far worse for an unborn baby than smoking, compared with only half (51%) of non-smokers.

Knowledge of the health risks of passive smoking

Figure 12: Beliefs about the dangers of passive smoking 1999

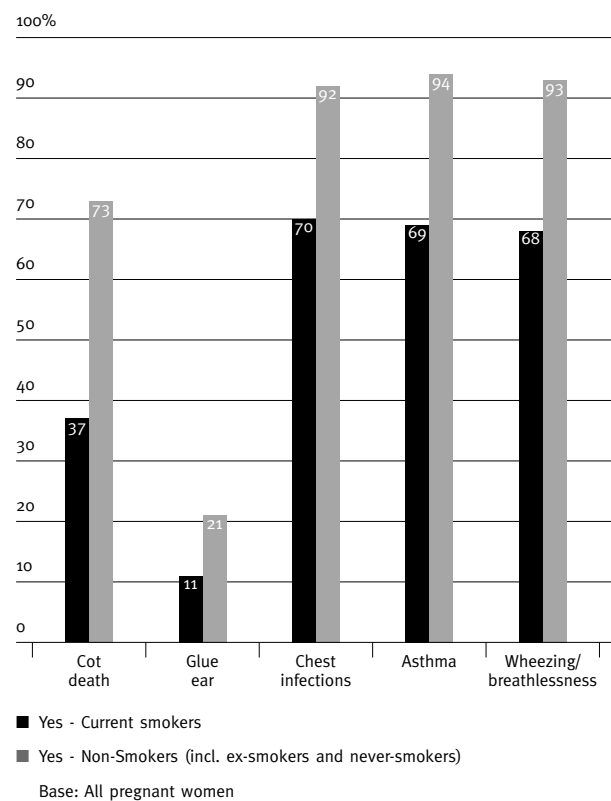


Respondents were asked about passive smoking and the potential health risks of second-hand smoke to both the unborn child and a newly born baby.

In 1999 over eight out of ten (83%) respondents thought that someone smoking near a pregnant woman was likely to be dangerous for the pregnant woman herself, while 85% thought it was likely to be dangerous for the unborn child.

Again the main differences in attitude were between smokers and non-smokers. Nine out of ten (91%) non-smokers believed that someone smoking near a pregnant woman was dangerous to the unborn child, with over half (51%) believing it to be very dangerous. Among current smokers about seven out of ten (70%) felt passive smoking was dangerous to the unborn child, and about one quarter (25%) thought it to be very dangerous (see Figure 12).

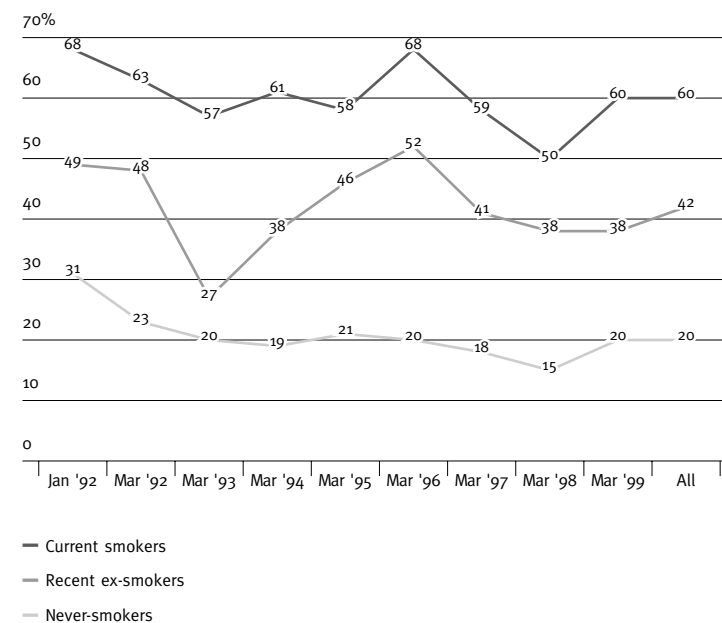
Figure 13: Beliefs about the health risks to a baby of parental smoking 1999



When asked whether they thought parents who smoked increased a baby's or young child's risk of health conditions, 85% of pregnant women thought that parental smoking did increase a baby's risk of getting chest infections and asthma (86%) and 62% felt that parental smoking increased the risk of cot death. Women who were current smokers thought there was less risk of parental smoking causing such conditions compared with non-smokers (see Figure 13).

A lack of knowledge was apparent for some health risks. Among pregnant smokers, for example, 29% claimed they did not know that parental smoking increased the risk of cot death and 53% said they did not know it was linked to glue ear.

Figure 14: Exposure of pregnant women to passive smoke at home or at work 1992-1999



Exposure to passive smoke

Exposure to passive smoke was measured by asking pregnant women if their partners currently smoked, if anyone else they lived with smoked, or if anyone smoked near them at work.

In 1999, 35% of pregnant women reported being exposed to passive smoke. Almost three in ten (29%) were exposed to passive smoke in the home. Among those working 23% reported being exposed to passive smoke at work although this figure has fallen significantly over the last eight years.

Perhaps not surprisingly, pregnant women who smoked were more likely than non-smokers to be exposed to passive smoke. In 1999, six out of ten (60%) current smokers reported being exposed to passive smoke compared with 38% of recent ex-smokers and 20% of those who have never smoked. Notably, it is among pregnant women who have never smoked where there has been a steady decline in exposure to passive smoke over the last eight years (see Figure 14).

The smoking prevalence of pregnant women's partners

Figure 15: Smoking prevalence among partners of pregnant women by social class 1999

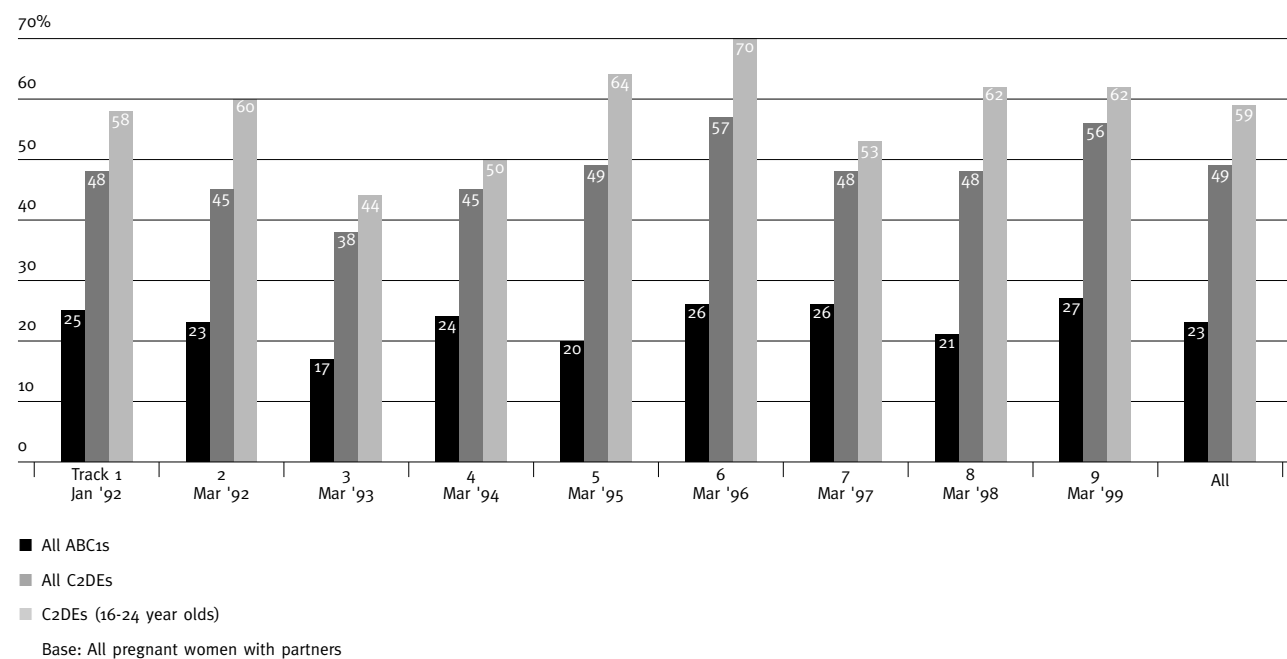
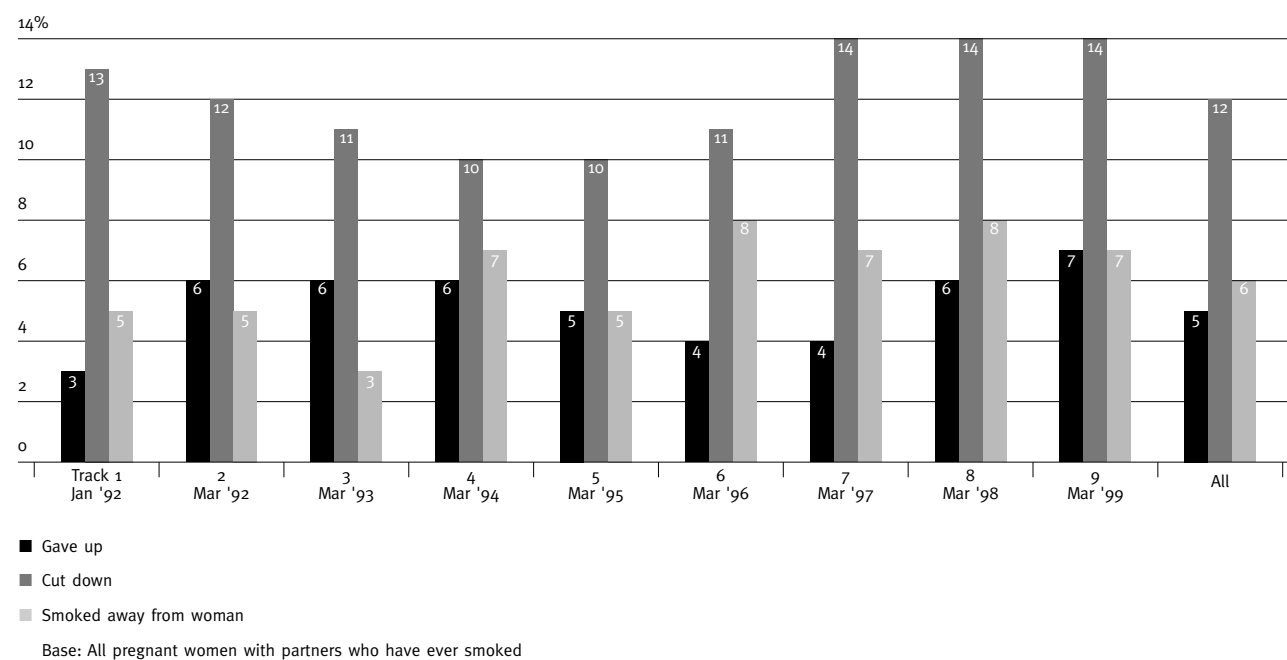


Figure 16: How partners changed their smoking behaviour as a result on the pregnancy 1992-1999



Among respondents, 86% reported being married or living with a partner in 1999. There was, however, a significant difference by age and socio-economic group. Younger women, particularly those from social groups C2DE, were less likely to have a partner, with only 66% of all women aged 16-24 reporting being married or living with a partner (63% for C2DE 16-24 year olds).

One of the aims of the Smoking and Pregnancy Campaign is to contribute to a reduction in the prevalence of smoking among partners of pregnant women. In reality, however, the smoking prevalence of partners has not decreased over the last eight years mirroring the lack of decline in prevalence among pregnant women themselves. In 1999, 41% of pregnant women with a husband or partner reported that their partner smoked. Women in social groups C2DE were more likely to have a partner who smoked (56%) compared with those from social groups ABC1 (27%). Among younger pregnant women from social groups C2DE, 62% reported having a partner who smoked (see Figure 15).

The HEA's surveys have shown consistently that pregnant women who smoke are much more likely to have a partner who smokes than pregnant women who do not smoke; in 1999, three quarters

(75%) of current smokers reported that their partners smoked. Among non-smoking pregnant women, those who had given up recently were nearly twice as likely to have a partner who smoked (46%) compared with women who had never smoked (24%).

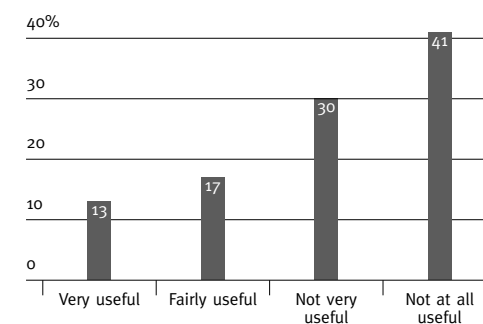
Changing smoking habits of partners

In 1999, one in four (25%) respondents whose partners had ever smoked said their partner had changed smoking habits when they became pregnant. However, just under half (48%) said their partner had made no change, and the remainder said their partner had changed smoking habits before the current pregnancy. Partners who did change their smoking habits seemed to cut down rather than give up altogether. In 1999, 14% of partners cut down on their smoking, 7% continued smoking but only away from the pregnant woman, and only 7% of partners actually gave up smoking altogether (see Figure 16). The proportion of partners who give up or cut down has remained consistently low over the period of the surveys.

The role of partners in encouraging pregnant smokers to change their behaviour

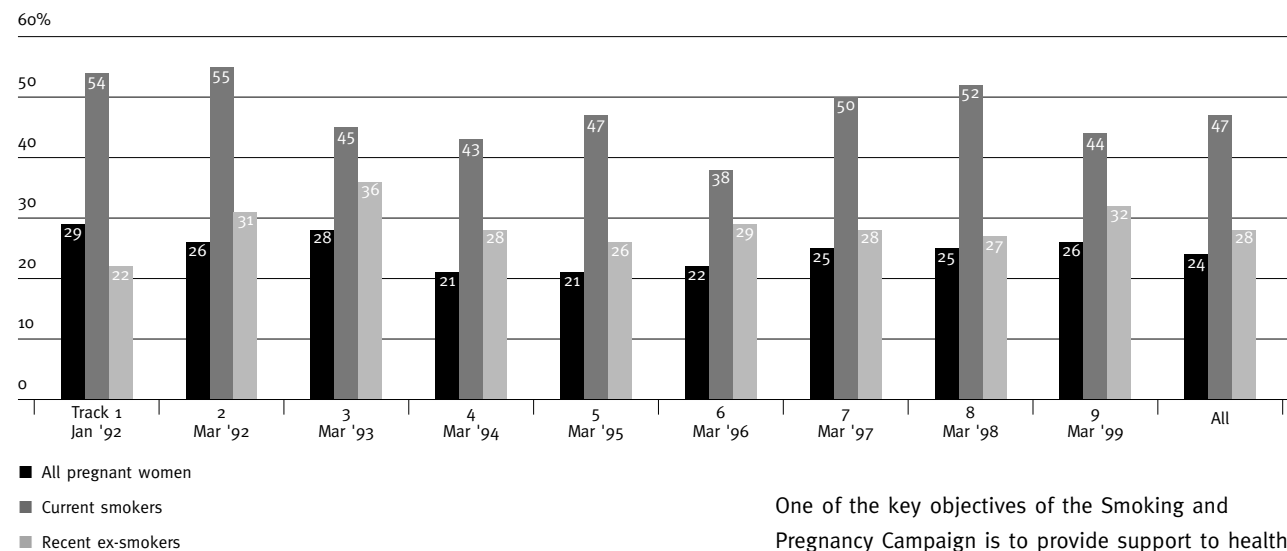
In 1999, 40% of pregnant women who had ever smoked reported that their partner had suggested that they give up smoking during pregnancy. Perhaps surprisingly, men who were smokers themselves were more likely than men who were non-smokers to suggest that their pregnant partners give up (44% and 35% respectively). There was no evidence to suggest that advice or suggestions from a partner were regarded as helpful by pregnant smokers. Only three in ten (30%) women said they found their partner's suggestions useful, while the majority (70%) did not (see Figure 17). There was also no evidence that advice from a partner had any effect in terms of encouraging pregnant smokers to give up. In 1999, 61% of pregnant women who were smoking currently had been given advice by their partners compared with only 31% of those who had recently given up.

Figure 17: How useful pregnant smokers found the suggestions of their partners 1999



Base: All pregnant smokers or ex-smokers whose partners have ever suggested they give up smoking

Figure 18: Proportion of pregnant smokers who received advice from a health professional by smoking status 1992-1999

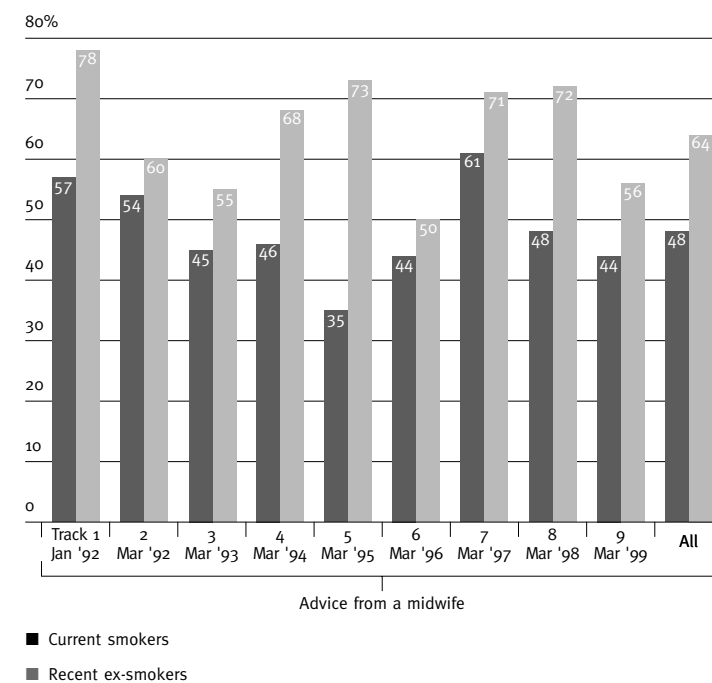
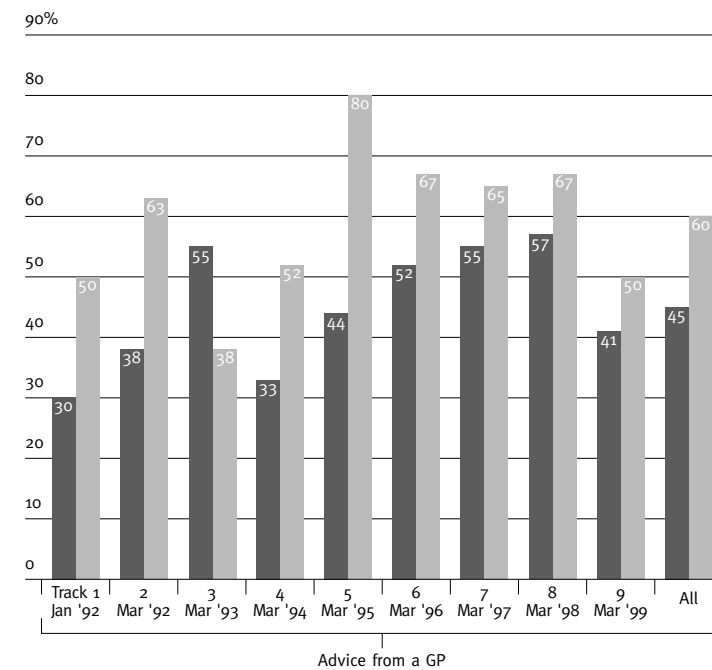


One of the key objectives of the Smoking and Pregnancy Campaign is to provide support to health professionals who are trying to help pregnant smokers give up.

In 1999, about one in four (26%) pregnant women said they had received some advice on smoking from a health professional during any pregnancy. Not surprisingly, those who were current smokers were the most likely to have received advice. The number of pregnant smokers receiving advice has fluctuated over the period of the surveys, with a smaller proportion receiving advice in 1999 (44%) than in the baseline survey (54%) in 1992 (see Figure 18).

There is little evidence from these surveys that advice from a health professional has any effect on the smoking behaviour of pregnant women. However, smokers who receive advice from a health professional seem to be more likely, compared with those who receive no advice, to cut down on the amount they smoke rather than give up altogether. In 1999, among current smokers and recent ex-smokers who had received advice on smoking from a health professional, 15% had given up and 44% had cut down during pregnancy. Among those who had not received any advice on smoking from a health professional 24% had given up and 34% had cut down during pregnancy.

Figure 19: Proportion of pregnant smokers who thought the advice they received from a health professional was helpful 1992-1999



The main sources of professional advice have consistently been GPs and midwives. In 1999, of those who had received any sort of smoking advice half (50%) had done so from a GP and 58% from a midwife.

Respondents were asked what kind of advice they had received from health professionals. In 1999 the most frequently given advice was to give up altogether (58% GPs and 39% midwives), followed by advice to cut down (22% GPs and 30% midwives) and advice to not start smoking (10% GPs and 13% midwives). Smaller numbers of respondents recalled advice to smoke less-harmful cigarettes (2% GPs and 4% midwives), to leave a longer stub (2% GPs and 2% midwives) or to give up for the time being (4% GPs and 8% midwives).

Respondents were also asked how useful they had found the health professionals' advice. The surveys have shown opinion to be split fairly evenly - in 1999, 46% of those who had ever smoked and who had received advice on smoking from a GP had found it helpful while 46% had not. A similar picture was found with midwives - 51% found it helpful compared with 46% who had not (see Figure 19). Not surprisingly, those who were smoking currently tended to regard the advice as less helpful compared with those who had given up smoking.

The nine surveys commissioned by the HEA since January 1992 show that little progress has been made over the past few years in terms of reducing smoking prevalence among pregnant women. There is some indication that overall consumption levels have declined over the same period.

Prevalence has remained high in particular population groups, especially among younger pregnant women from social groups C2DE and among pregnant women with partners who smoke. The surveys have shown consistently that pregnant smokers are more likely to cut down on their smoking rather than give up altogether, while few partners of pregnant women are likely to change their smoking behaviour in any way.

However, the surveys do suggest that pregnant smokers are aware of the dangers of smoking both to themselves and to the unborn baby, although some health information seems to have more impact than others. Health professionals remain an important source of information but there is little evidence that they are effective in encouraging pregnant women to give up altogether.

These results suggest that continued effort is required to get the messages about smoking and pregnancy across to pregnant women. Communications should be better targeted to those groups where prevalence remains highest, and messages selected and framed in ways which are both relevant and appropriate, particularly when targeting young pregnant women. The partners of pregnant women should also be encouraged to change their own smoking behaviour.

For a programme of direct communications to be effective, there is a need for health professionals to be equipped with the appropriate training and resources to deliver smoking and pregnancy advice which is pertinent. If health professionals only have time to establish smoking status and advise those who smoke to stop, the option of referring to specialist smoking cessation services will be a crucial component of any strategy designed to reduce smoking prevalence.

Notes on calculations and weights

All calculations were carried out using SPSS on data supplied by NOP for waves one to nine of the Smoking and Pregnancy survey.

A small number of cases were excluded from the present analyses because they lack valid data for either one of the key smoking status variables (current smoker? ever smoked?) or for age. Percentages are rounded to the nearest whole number. A decimal of exactly 0.5 is rounded up. Values under 0.5 are shown as <1. Figures quoted in square brackets are unweighted bases.

Each wave of data is weighted by the age distribution of live births in England for the appropriate year, with the exception of wave nine (1999) which is weighted according to the 1998 population statistics as those for 1999 were not available at the time of writing. Weights are applied in four age categories: 16-24, 25-29, 30-34 and 35 and older.



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