Infant Feeding Survey 2005

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A survey conducted on behalf of The Information Centre for health and social care and the UK Health Departments by BMRB Social Research
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Notes to Tables

1. Base numbers are shown in italics and are weighted bases. Weighting factors have been scaled so that the weighted sample size in each country for all mothers is equal to the number of mothers responding at that Stage.

2. Very small bases have been avoided where possible. Where the base size is less than 50, both the bases and the percentage estimates are shown in brackets [ ].

3. Percentages may not always add up to 100% due to rounding.

4. Unless otherwise stated, changes and differences mentioned in the text are statistically significant at the 95% confidence level.

5. The following conventions have been used in all tables:

- No cases

* Percentage less than 0.5%

n/a Data not available

[ ] Percentage based on less than 50 cases
Summary of main findings

The Infant Feeding Survey has been conducted every five years since 1975. The 2005 Infant Feeding Survey was the seventh national survey of infant feeding practices to be conducted. The main aim of the survey was to provide estimates on the incidence, prevalence, and duration of breastfeeding and other feeding practices adopted by mothers in the first eight to ten months after their baby was born. The 2005 survey is the first to provide separate estimates for all four countries in the United Kingdom, as well as for the UK as a whole.

The survey is based on an initial representative sample of mothers who were selected from all births registered during August and September 2005 in the United Kingdom. Three stages of data collection were conducted with Stage 1 being carried out when babies were around four to ten weeks old, Stage 2 when they were around four to six months old, and Stage 3 when they were around eight to ten months old. A total of 9,416 mothers completed and returned all three questionnaires.

Incidence, prevalence, and duration of breastfeeding (Chapter 2)

Initial breastfeeding rates in 2005 were 78% in England, 70% in Scotland, 67% in Wales, and 63% in Northern Ireland. In England and Wales, Scotland and Northern Ireland the incidence of breastfeeding increased between 2000 and 2005. The 2005 survey was the first time separate estimates were available for England and Wales.

The highest incidences of breastfeeding were found among mothers from managerial and professional occupations, those with the highest educational levels, those aged 30 or over and first time mothers. These variations were evident in all countries and were consistent with the patterns found in previous surveys.

In 2005, 48% of all mothers in the United Kingdom were breastfeeding at six weeks, while 25% were still breastfeeding at six months. Between 2000 and 2005 there was an increase in the prevalence of breastfeeding at all ages up to nine months in both England and Wales and Northern Ireland. In Scotland an increase in prevalence was seen only at ages up to six weeks.

The 2005 survey was the first time that levels of exclusive breastfeeding at specific ages were measured. An infant is exclusively breastfed if they receive only breast milk, but no other liquids or solids except for medicine, vitamins or mineral supplements. In 2005, 45% of all mothers in the United Kingdom were breastfeeding exclusively at one week, while 21% were feeding exclusively at six weeks. At six months the proportion of mothers who were breastfeeding exclusively was negligible (<1%).

Choice of feeding method (Chapter 3)
When asked to think back to before they had their baby, seven in ten mothers (70%) in the United Kingdom said they intended to breastfeed their baby, with most intending only to breastfeed rather than to mix breast and formula feeding.

Mothers in England, first-time mothers, second-time mothers who had breastfed their previous child for six weeks or more, mothers who had been breastfed themselves as infants, and mothers who had friends who breastfed were the most likely to intend to breastfeed. There was a high correlation between intentions and actual initial feeding behaviour.

Over eight in ten mothers (84%) said they were aware of the health benefits of breastfeeding, and most were able to spontaneously give at least one benefit. Mothers in Scotland and Northern Ireland, older mothers, and mothers from managerial and professional occupations were the most likely to be aware of the benefits of breastfeeding.

About eight in ten mothers (79%) had received some advice during their pregnancy about the health benefits of breastfeeding, with midwives being the most common source of such advice. Mothers who had received advice were more likely than mothers who had not received advice to intend to breastfeed, and were more likely to actually initiate breastfeeding.

About two-thirds of all mothers (68%) had discussed feeding intentions at their antenatal check-ups, while just less than three in ten of all mothers (28%) had discussed feeding at antenatal classes. Mothers who had attended antenatal classes where feeding was discussed or where they were taught how to position the baby were more likely to intend to breastfeed than mothers who did not attend antenatal classes.

**Birth, post-natal care, and the early weeks (Chapter 4)**

Seven in ten mothers reported skin-to-skin contact with babies within an hour of the birth. Initiation of breastfeeding was higher for mothers who had early skin-to-skin contact than those who had no such contact after the birth.

A third of breastfed babies had received additional feeds in the form of formula, water or glucose while in hospital – this practice was particularly associated with low birth weight babies and those starting life in special care. In about a third of cases, additional feeds had been given because the mother wanted this rather than because this had been advised.

Seven in ten mothers breastfeeding in hospital had been shown how to put their baby to the breast in the first few days (89% of first-time mothers and 53% of mothers of later babies). Mothers who had received help or advice found this most useful if the person giving guidance stayed with them until the baby had started to feed.

A third of breastfeeding mothers had experienced some kind of feeding problem either in hospital or in the early weeks after leaving. The highest levels of problems were experienced by mothers who used a combination of breast and formula (around half of all mixed feeding mothers experienced problems). Over eight in ten mothers who experienced problems were offered help or advice. Those who did not receive help or advice for these problems were
more likely to have stopped breastfeeding within two weeks than those who did receive such help or advice.

Around half (49%) of all mothers allowed their baby to sleep in the parental bed at least occasionally, with 11% adopting this practice on a regular basis. Co-sleeping was particularly associated with breastfeeding mothers - 61% of breastfeeding mothers allowed their baby to sleep with them at least occasionally compared with 38% of mothers giving only formula milk.

The use of milk other than breast milk (Chapter 5)

Three-quarters of all mothers had given their baby milk other than breast milk by the age of six weeks, this proportion rising to 92% by six months. Mothers from managerial and professional occupations and older mothers were the most likely to introduce milk other than breast milk at a later age, which reflects the higher levels of breastfeeding amongst these mothers.

At Stage 2 of the survey (four to six months), most mothers who had given their baby milk other than breast milk in the last seven days were mainly giving infant formula milk. Use of follow-on milk or liquid cow's milk was low at this Stage. By Stage 3 of the survey mothers were more likely to be using follow-on milk as their baby's main source of milk other than breast milk, rather than infant formula.

At Stage 3 of the survey about half of all mothers had given their baby follow-on milk. Most mothers followed the recommendation of not giving their baby follow-on milk before the age of six months, although mothers from routine and manual occupations, mothers who had never worked, and mothers with the lowest education level were the most likely to say they had given their baby follow-on at an earlier age.

Just under half of all mothers who had prepared powdered infant formula in the last seven days had not followed the key recommendations for preparing formula: either by not always using boiled water that had cooled for less than 30 minutes or not always adding the water to the bottle before the powder. About a third of mothers did not follow the recommendations for preparing formula when away from the home, either by not keeping pre-prepared formula chilled or by using cold or cooled water when making up feeds.

Feeding and health after the early weeks (Chapter 6)

About one in eight mothers had experienced feeding problems between Stages 1 and 2, and one in ten between Stages 2 and 3. Mothers who breastfed between Stages 1 and 2 were more likely to have had feeding problems compared with mothers who formula fed throughout. However, the highest rate of problems was found among mothers who continued to breastfeed, but who introduced supplementary formula. Inability to satisfy baby, a need to top up with formula, and blocked milk ducts were all problems mentioned by this group.

Insufficient milk was the most important factor behind mothers giving up breastfeeding between one week and four months, while giving up in the early weeks (weeks one and two)
was also associated with rejection of the breast and pain or discomfort. In later months, return to work began to feature as a reason for stopping; although this was a less significant factor in 2005 compared with 2000.

Nine in ten mothers who gave up breastfeeding within six months would have preferred to breastfeed for longer, this level declining as breastfeeding duration increased. Although even among those who breastfed for at least six months, 40% would have liked to continue longer.

Babies breastfed for a minimum of six months were significantly less likely than other babies to experience colic, constipation, sickness/vomiting, diarrhoea, chest infections and thrush. Differences were most apparent for gastro-intestinal conditions.

Propensity to develop symptoms for the above conditions decreased with breastfeeding duration, with babies breastfed for less than two weeks having a higher than average likelihood of suffering these problems. Babies formula-fed from birth had the highest rate of chest infections and thrush.

Introduction of solid foods (Chapter 7)

There has been a marked trend towards mothers introducing solid foods later in 2005 compared with 2000. For example, in 2000 85% of mothers had introduced solid foods by four months, but by 2005 this figure had fallen to 51%. This shift is evident in all countries and continues a longer-term trend in this direction.

Solid foods tended to be introduced at a younger age among mothers in Wales and Scotland, those in lower social classes, and those with lower educational levels. The shift over the previous five years towards later weaning was particularly pronounced among mothers within the highest occupation and education groups.

When babies were four to six months, mothers giving solids were much more likely to provide commercially-prepared foods than home-prepared foods in their babies’ daily diets. By eight to ten months, however, mothers relied less on commercial brands with a correspondingly increased use of home-prepared foods.

The large majority of mothers avoided the use of salt completely in the diets of their eight to ten month old babies, although propensity to use salt rose among those classified to the lower occupation groups, as well as among mothers from ethnic minority backgrounds.

Compared with 2000, higher proportions of mothers in 2005 said they avoided the use of salt, nuts and honey in their babies’ diets. A greater awareness of food allergies in 2005 was one of the key reasons behind these shifts.

Additional drinks and supplementary vitamins (Chapter 8)

A third of all mothers were giving drinks in addition to breast or formula milk by four weeks. This had risen to two thirds by four months. Mothers who breastfed initially were less likely than mothers who had not to be giving additional drinks at all ages up to six months.
Mothers from managerial and professional occupations and older mothers tended to introduce drinks at a later age.

Just three per cent of babies aged four to ten weeks were being given vitamin supplements, rising gradually to seven per cent by the age of eight to ten months. Babies were more likely to be receiving vitamin supplements if their birth weight was low, or if they had been in special care after the birth.

A third (33%) of all breastfeeding mothers were taking vitamin or iron supplements at four to ten weeks. This proportion fell to 28% by four to six months and 23% by eight to ten months. As in 2000, mothers in Northern Ireland were more likely than mothers in the other countries to be taking supplements.

Feeding outside the home (Chapter 9)

By Stage 3, 45% of all mothers had returned to work. Eight in ten mothers returning to work did so after their baby was five months old, with 57% returning after their baby was six months old. Most mothers worked part-time: 14% working less than 15 hours per week and a further 56% working between 15 and 30 hours.

One in seven working mothers (15%) said that they were provided with facilities to either express milk or to breastfeed at work. Such facilities were particularly associated with mothers using a workplace crèche (29%).

Some working patterns were associated with a higher than average propensity for mothers to combine work and breastfeeding at five or six months: mothers working less than 15 hours a week, mothers in managerial or professional occupations, and mothers given access to facilities breastfeed or express milk at work.

Half (51%) of mothers breastfeeding initially had breastfed in public, this proportion increasing from four per cent of mothers breastfeeding for less than two weeks to nearly all (86%) breastfeeding for at least six months.

Only three per cent of mothers said that they had been stopped or asked not to breastfeed in public, although 13% said that they had been made to feel uncomfortable. Only eight per cent of breastfeeding mothers said that they wanted to breastfeed in public but had been deterred from doing so.

Compared with other countries, mothers in Scotland tended to have more positive experiences when breastfeeding in public. For example, 55% of Scottish breastfeeding mothers had breastfed in public compared with between 40% and 52% in other countries. Scottish mothers were also more comfortable about feeding in public without going to a special mother and baby room, were less likely to report problems finding a suitable venue, and were less likely to report being stopped or made to feel uncomfortable.
Dietary supplements, smoking and drinking (Chapter 10)

Over eight in ten mothers (83%) reported that they took some action to increase their intake of folic acid during pregnancy, with three-quarters (75%) taking supplements and 28% changing their diet.

Over half (54%) of all mothers took extra vitamin or iron supplements (apart from folic acid) during pregnancy, with 46% taking iron either as a single supplement or in combination with vitamins.

A third of mothers (33%) in the United Kingdom smoked in the 12 months before or during their pregnancy. Of mothers who smoked before or during their pregnancy, about half (48%) gave up at some point before the birth. One in six of all mothers (17%) continued to smoke throughout their pregnancy. The proportion of all mothers in England who smoked throughout pregnancy fell from 19% in 2000 to 17% in 2005. A similar fall was also seen in Northern Ireland over the same period.

Smoking rates among mothers before or during pregnancy fell between 2000 and 2005 in England and Northern Ireland but remained at a similar level in Scotland.

Almost nine in ten mothers (87%) who smoked before or during pregnancy received some type of advice or information on smoking. Midwives, books, leaflets and magazines and doctors were the most common sources of advice.

Over half (54%) of mothers drank alcohol during pregnancy. Older mothers, mothers from managerial and professional occupation groups, and mothers in England and Wales were the most likely to drink during pregnancy. The proportion of mothers drinking alcohol during pregnancy fell between 2000 and 2005.

Among mothers who drank during pregnancy consumption levels were low. Only eight per cent of all mothers drank more than two units of alcohol per week on average.
1 Introduction
The Infant Feeding Survey has been carried out every five years since 1975 and the 2005 survey was the seventh time the survey has been conducted. The survey was carried out by BMRB Social Research on behalf of the four United Kingdom Health Departments. The 2005 survey is the first one to provide separate estimates for all four countries of the United Kingdom.

1.1 Background to infant feeding policy

A large body of published research has shown that breastfeeding has clear health benefits for both mothers and infants. Breastfed babies are less likely to suffer from conditions such as gastroenteritis, chest, urinary tract, or ear infections, diabetes in childhood, and childhood obesity. For some of these conditions the longer a baby is breastfed the greater the protection gained or the more positive the impact on longer-term health. Mothers who breastfeed have a reduced risk in later life of some cancers (ovarian and breast) and of osteoporosis.

Due to this body of evidence on the health benefits of breastfeeding, government policy in the United Kingdom has consistently supported breastfeeding as the best way of ensuring a healthy start for infants. In 1974 a COMA Working Party was set up to review infant feeding practices in the United Kingdom. The recommendations of this Working Party were that all mothers should be encouraged to breastfeed and that mothers should be discouraged from introducing solid foods before four months old. Subsequent reports throughout the 1980s and 1990s continued to endorse these broad recommendations.

During this time the infant feeding recommendations in the United Kingdom were broadly in line with the guidance from the World Health Organisation (WHO), which in the 1990 Innocenti Declaration recommended that all infants should be fed exclusively on breast milk from birth up to 4-6 months of age. Early in 2000, the WHO commissioned a systematic review of the published scientific literature on the optimal duration of exclusive breastfeeding. As a result of this review, the WHO revised its guidance to recommend exclusive breastfeeding for the first six months of an infant’s life. This revised guidance was adopted by the United Kingdom Health Departments from 2003 onwards.


2 Updated reports on current infant feeding guidance were produced by COMA in 1980, 1988, and 1994.


The current recommendations on feeding infants are as follows:

- Breast milk is the best form of nutrition for infants
- Exclusive breastfeeding is recommended for the first six months (26 weeks) of an infant’s life
- Six months is the recommended age for the introduction of solid foods for infants
- Breastfeeding (and/or breast milk substitutes) should continue beyond the first six months, along with appropriate types and amounts of solid foods.

In order to support and promote these recommendations on infant feeding a range of measures and initiatives has been undertaken across the United Kingdom. While some activities, such as National Breastfeeding Awareness Week, have been United Kingdom wide, each country has developed its own specific strategy and activities for promoting breastfeeding.

In 1988 the Department of Health set up the Joint Breastfeeding Initiative in England and Wales to encourage a closer working relationship between health professionals and voluntary organisations to promote breastfeeding. A similar initiative known as the Scottish Joint Breastfeeding Initiative was set up in Scotland in 1990. National Breastfeeding Awareness Week was launched in 1993 as an annual campaign held in all countries of the United Kingdom to highlight the benefits of breastfeeding. In 1995 the National Breastfeeding Working Group was set up and published good practice guidance for the NHS. In the same year the National Network of Breastfeeding Co-ordinators (NNBC) was also established as a multi-disciplinary group to promote breastfeeding by stimulating and sustaining action at a local level, while sharing ideas nationally. Breastfeeding Co-ordinators or Advisers were also appointed in Wales (2003), Scotland (1996) and Northern Ireland (2002).

More recently in England the Infant Feeding Initiative was launched in 1999, as part of the government’s commitment to improving health inequalities. Between 1999 and 2002 nearly £3m was spent on funding 79 different projects. The focus of all these projects was the development of innovative practices that aimed to increase the incidence and duration of breastfeeding, especially amongst those groups who were least likely to do so. An evaluation of these initiatives was published in 2003 which highlighted the benefits of the schemes and made recommendations about key considerations for continuing good practice throughout the NHS.

Most recently the importance of breastfeeding was highlighted by the inclusion of a specific target in the Department of Health’s Priorities and Planning Framework for 2003-2006. This identified national priorities and targets, which organisations in England needed to build into their local delivery plans. Included in these was a target to increase breastfeeding initiation.

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rates by 2 percentage points per year, with a focus on mothers from disadvantaged groups. While the Infant Feeding Survey will provide national and regional data, there is also a monitoring framework at the local level so that all NHS Trusts delivering maternity services collect data on initiation of breastfeeding.

In Wales a strategy for promoting breastfeeding was published in 2001. A National Breastfeeding Co-ordinator was appointed in 2003 and a Breastfeeding Strategy Implementation Group was also set up to identify and progress priority areas for implementation, and to engender best practice in the promotion, support and protection of breastfeeding. Task and Finish Groups have been established to focus on specific areas of activity. Bilingual leaflets and regular newsletters are produced for use by health professionals and parents.

In Scotland the Scottish Breastfeeding Group (SBG) was set up in 1995 as a multi-disciplinary group to help contribute to policy development and to act as a conduit for the dissemination of good practice and information on breastfeeding. A National Breastfeeding Adviser was in post from 1995 to 2005 and informed and influenced policy development, contributed to the development of resources, supported and monitored NHS Board activities, and encouraged best practice. Stemming from the work of the SBG a dedicated website (Breastfeeding in Scotland) was set up in 1999 to provide information on breastfeeding for a wide range of audiences including clinicians, mothers, and researchers, and in 2005 the Breastfeeding (Scotland) Act was enacted which made it an offence to prevent or stop a person from breastfeeding a child under the age of 2 years in any public place. Most recently a draft Infant Feeding Strategy for Scotland was consulted upon and this will form an integral part of the Scottish Executive’s Food and Health delivery Plan which will be published in 2007.

In Northern Ireland the Department for Health and Social Services (DHSS) published a Northern Ireland Breastfeeding Strategy in 1999. A Breastfeeding Strategy Implementation Group was set up to provide ongoing support and direction for the implementation of the strategy, while a Regional Breastfeeding Co-ordinator was appointed in 2002 to help promote and implement the strategy. Much of the activity for promoting and supporting breastfeeding activity has been undertaken by the Health Promotion Agency for Northern Ireland and has included the development of resources for both parents and health professionals, including the development of a website for parents aimed at promoting breastfeeding.

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* Department of Health and Social Services (1999) Northern Ireland breastfeeding Strategy (Belfast: DHSS)
1.2 Smoking and drinking in pregnancy

Although the primary purpose of the survey has always been to monitor infant feeding practices, the survey has also been used to measure the proportion of mothers who smoke and drink during pregnancy and to look at how mothers’ smoking and drinking behaviour changes as a result of their pregnancy.

The 1998 Tobacco White Paper Smoking Kills outlined the government’s anti-smoking strategy and highlighted smoking among pregnant women as a key area. A specific target was adopted for England to reduce the percentage of women who smoke during pregnancy from 23% (in 1995) to 15% by the year 2010; with a fall to 18% by the year 2005. The Infant Feeding Survey was chosen as the vehicle for measuring progress towards this target.

1.3 Aims of the survey

The first COMA Working Party set up in the 1970s recommended that a national survey be carried out to establish basic information about infant feeding practices in England and Wales. The first survey took place in 1975 and surveys have been conducted every five years since then. From 1980 the survey covered Scotland, while from 1990 Northern Ireland was also included. The 2005 survey is the first time that England and Wales have been sampled separately, meaning that it is the first time separate estimates are available for all four countries in the United Kingdom.

Over the course of all the surveys, while the importance of maintaining consistency across time has been recognised, the content of the survey has evolved to reflect the changing policy agenda. Thus, while the 2005 survey continued to measure longer-term trends in relation to the incidence, prevalence and duration of breastfeeding, the content of the survey was adapted in line with the revised feeding guidance in order to be able to measure the prevalence and duration of exclusive breastfeeding.

The main aims of the 2005 survey were broadly similar to previous Infant Feeding Surveys, and were as follows:

- To establish how infants born in 2005 were being fed and to provide national figures on the incidence, prevalence and duration of breastfeeding. These estimates are to be provided separately for England, Wales, Scotland and Northern Ireland, as well as for the United Kingdom as a whole;

- To examine trends in infant feeding practices over recent years, in particular to compare changes between 2000 and 2005;

- To measure prevalence and duration of exclusive breastfeeding for the first time;

- To investigate variations in feeding practices among different socio-demographic groups and the factors associated with mothers’ feeding intentions and with the feeding practices adopted in the early weeks;

- To establish the age at which solid foods are introduced and to examine weaning practices up to 9 months; and
To measure the proportion of mothers who smoke and drink during pregnancy, and to look at the patterns of smoking and drinking behaviour before, during and after the birth.

1.4 Survey methodology

The sample design and fieldwork procedures were broadly similar to those used in previous surveys, although a number of changes were made to the design of the 2005 survey compared with how it was conducted in the past. These changes included moving from a two-stage clustered sample design to a completely unclustered sample design in England; drawing completely separate samples for England and Wales; and not over sampling of mothers from lower social class groups.

A completely unclustered sample of 19,848 births was selected from all births registered in the period August to October 2005. The aim of the sampling process was to achieve a sufficiently robust sample size in each country to produce separate estimates for England, Wales, Scotland and Northern Ireland. For this reason the sampling fraction and the precise length of the sampling period varied from country to country. In both Wales and Northern Ireland all births in the specified period were selected, while in Scotland approximately one in two births were sampled and in England approximately one in seven births were sampled.

In England and Scotland births where no partner was recorded at registration were over sampled. However, there was no over sampling of mothers from lower Social Class groups, as had been the case on previous surveys. This was done because the Social Class system used on previous surveys had been replaced by the new National Statistics Socio-Economic Classification (NS-SEC) and it was felt that the association between infant feeding practices and NS-SEC was not as well understood as the association between infant feeding practices and Social Class.

At Stage 1 of the survey, postal questionnaires were despatched to mothers during October – December 2005, with the aim of contacting mothers when their babies were around four to ten weeks old. Up to four reminders were sent to mothers who had not returned a questionnaire. A total of 12,290 mothers returned the Stage 1 questionnaire, representing a response rate of 62%.

At Stage 2 of the survey, postal questionnaires were despatched to mothers during January to April 2006, when their babies were around four to six months old. Up to three reminders were sent to mothers who had not returned a questionnaire. Mothers who did not respond to the postal survey were subsequently followed up by a face-to-face interviewer or, in a small number of cases, by telephone. A total of 10,814 mothers returned the Stage 2 questionnaire, representing a response rate of 88%.

At Stage 3 of the survey, postal questionnaires were despatched to mothers during June to August 2006, when their babies were around eight to ten months old. The follow-up procedures for mothers who did not return the questionnaire were exactly the same as for Stage 2. A total of 9,416 mothers returned the Stage 3 questionnaire, representing a response rate of 87%.
Since mothers were only contacted in later Stages of the survey if they had responded to the previous one, the effect of non-response at each Stage is cumulative. Thus, the response rate at Stage 3 of the survey based on the initial sample of mothers was 47%.

All questionnaires were returned to a central location. Fully and partially open-ended questions were coded by a team of coders working to agreed code frames, before the questionnaires were scanned. Following data entry a detailed editing process was carried out to ensure consistency and integrity of the data.

All the data were then weighted to correct both for differential sampling and for differential response rates among different groups. Further weights were applied to the Stage 2 and Stage 3 data to correct for further non-response bias introduced through attrition over the course of the survey.

Further details about the survey methodology, including details for each individual country, are contained in Appendix 1.

1.5 Making comparisons with results from previous survey

One of the main aims of the 2005 survey is to provide trend data in infant feeding practices, especially highlighting changes since the last survey in 2000. Although many of the key questions and definitions have been kept consistent across all surveys, there are a number of other factors that need to be considered when looking at comparisons over time.

1.5.1 Sampling error

All surveys are subject to sampling error due to the chance variations between a particular sample and the whole population from which it has been drawn. When comparing results from two separate samples, each will be subject to sampling error meaning that any observed changes over time may actually be attributable to sampling variation, rather than being real. Sampling errors are influenced by the size of the sample on which estimates are being based, the variability of the particular measure within the sample, and the complexity of the sample design. Further details about sampling errors and examples of standard errors for some of the key survey estimates can be found in Appendix 2.

As a general rule only differences that are statistically significant at the 95% confidence level are commented on in the text.

1.5.2 Non response

Most surveys are subject to possible bias due to non-response. Analysis of the 2005 survey showed a consistently lower response rate in all countries among younger mothers and in areas of higher deprivation at all Stages of the survey. The achieved samples at each Stage of the survey were weighted to correct for this differential non-response. The achieved samples after weighting can be validated by comparing them with the registration data from all births in the relevant year. This comparison shows that the 2005 weighted sample was similar in terms of mothers’ age and deprivation profile compared with all births in the United Kingdom, and in each individual country.
1.5.3 Changes in the socio-demographic characteristics of mothers

Any significant changes in the characteristics of the universe of mothers in different years will affect the interpretation of trend data, and this will be particularly important if these characteristics are themselves associated with key survey estimates, such as the incidence of breastfeeding. Analysis of previous surveys has shown a significant change in the characteristics of mothers over the longer-term, with the sample universe becoming older, better educated, and of higher socio-economic characteristics over time. These changes have reflected changes in the population.

Tables 1.1-1.4 show the profile of the 2000 and 2005 surveys by several key socio-demographic measures to examine whether these longer term trends have continued in the last five years.

Mothers in the 2005 survey were more likely compared with mothers in 2000 to be having a first baby (51% and 47% respectively). This was true in all countries, although the change was particularly noticeable in Northern Ireland where the proportion of mothers having a first-time baby went up from 41% in 2000 to 49% in 2005. The 2005 survey represents the first survey where first-time mothers made up more than half of the whole sample.

Table 1.1

Mothers in the 2005 survey were slightly older compared with those in the 2000 survey, although the difference was a lot less than has been seen between earlier surveys. In fact, the proportion of mothers aged 30 or over was exactly the same in 2000 and 2005 (47%), and it was only the proportion of mothers aged 35 or over where there was an increase (16% in 2000 and 19% in 2005). In 2005 mothers in Wales were younger compared with mothers in other countries, with only 42% being aged 30 or over.

Table 1.2

Mothers in the 2005 survey were more educated compared with those in the 2000 survey in terms of the age at which they left full-time education. In 2005, 38% of mothers left full-time education at age 19 or over compared with 28% in 2000. This difference was greatest in Northern Ireland, where 48% of mothers left full-time education aged 19 or over compared with 34% in 2000. These changes between 2000 and 2005 continue a longer-term trend towards the sample of mothers becoming more educated.

Table 1.3

Mothers in the 2005 survey were more likely to come from higher socio-economic groups compared with those in the 2000 survey. Thus, 36% of mothers in 2005 were from managerial and professional occupations compared with 29% in 2000. This change was apparent in all countries. However, the proportion of mothers in routine and manual occupations also increased in all countries between 2000 and 2005 (33% in 2005 compared with 28% in 2000). There was also a decrease in the proportion of mothers who had never worked (7% in 2005 compared with 13% in 2000).

Table 1.4

Changes in the composition of the sample between 2000 and 2005 are not taken account of in any of the analysis. However, when looking at the longer-term trends in the incidence of
breastfeeding the results have been standardised to take account of changes in the composition of the population over time.

1.5.4 Age of babies at each Stage of the survey

At each Stage of the survey babies will be a range of ages at the point the mother completes the questionnaire. Although the design and implementation of the sampling and fieldwork procedures are intended to try and make this age range as narrow as possible it is difficult to completely control this since it depends upon how quickly the mother completed the survey when they received it, and whether they responded to the first, second, third reminder, or had to be followed-up by an interviewer.

Some of the key variables are not affected by this age range because they are based on the specific age of the baby. For example, incidence and duration of breastfeeding, and age at which solids were first introduced are both based on the actual age of the baby. However, other measures relate to what the mother was doing at the time they completed the questionnaire. For example, whether mothers were giving their baby vitamins or whether they were breastfeeding in public or not relate to what mothers were doing at the time of the survey. This means that if the average age of the babies is different from survey to survey it may affect comparisons of any questions which are based on the mother’s behaviour or attitude at the time she completed the questionnaire.

Table 1.5 shows that at Stage 1 of the survey babies were on average about a week older in 2005 compared with 2000 (54 days in 2005 compared with 48 days in 2000). However, this was due to the average age of babies in England and Wales being older in 2005 compared with 2000. In both Scotland and Northern Ireland babies were actually about a week younger on average compared with 2000.

At Stage 1, 64% of babies were in the age range four to six weeks, while 85% were in the age range four to ten weeks. Because of this the age of babies at Stage 1 is referred to as “four to ten weeks” when used in the rest of the report, the same time period used for the 2000 survey.

The average age of babies at Stage 2 of the survey was 21 weeks. This was consistent across all countries and similar to the age profile of the 2000 survey. At this Stage, 67% of babies fell into the age range four to five months, while 82% were in the age range four to six months. Because of this the age of babies at Stage 2 is referred to as “four to six months” when used in the rest of the report, rather than “four to five months” as in previous surveys.

The average age of babies at Stage 3 of the survey was 41 weeks. Again this was consistent between countries and was similar to the age profile of the 2000 survey. At this Stage, only 26% of babies fell into the age range eight to nine months, while 80% were in the range eight to ten months. Because of this the age of babies at Stage 3 is referred to as “eight to ten
months” when used in the rest of the report, rather than “eight to nine months” as in previous surveys\(^\text{11}\).

Overall, the figures suggest that the age profile of babies in 2005 was broadly similar to the profile of the 2000 survey, with only a slight difference in average age at Stage 1. Therefore, it seems unlikely that different age profiles should be much of a factor when comparing time trends.

### 1.6 Comparison of survey universes

Between 1980 and 1990 the Infant Feeding Survey was only conducted in England and Wales and Scotland. This means that historically data on the total sample have been presented for Great Britain. In the 2000 survey it was decided to reflect the fact that the survey had also been conducted in Northern Ireland since 1990, and present the total sample results at the level of the United Kingdom. This has been repeated for the 2005 survey, except for any analysis by ethnicity. The ethnicity question was not asked in Northern Ireland, and therefore total sample estimates by ethnicity are presented for Great Britain.

The 2005 survey was the first survey designed to present separate estimates for Wales. Prior to this the sample in England and Wales had been drawn as a single sample, with the Welsh part of the sample being too small to present separate results. In order to allow time trends to be maintained, throughout the report where results are being compared for 2000 and 2005 the tables show figures for both England and Wales combined (which can then be compared with 2000), and also for England and Wales separately (for 2005 only).

### 1.7 Weighted bases

When results for each country are shown separately, they are weighted only to compensate for differential non-response and the over-sampling of mothers where no partner details were recorded at registration (England and Scotland only). Separate weights were created for England only, Wales only, as well as England and Wales combined. Where results are based on the United Kingdom as a whole, an additional weight is applied to compensate for the over-sampling in Scotland, Northern Ireland and Wales.

All weights have been scaled to the unweighted sample sizes for each country and for the United Kingdom as a whole, a practice similar to that adopted on the 2000 survey.

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\(^{11}\) In reality it would have been more accurate to use the periods “four to six months” and “eight to ten months” in the 2000 survey since the proportion of babies falling into this age range was similar in both 2000 and 2005.
1.8 Definitions and terminology used in the survey

The definitions of some key terms used throughout the report are given below. Some of these (†) have been used consistently since 1975.

Breastfed initially† refers to all babies whose mothers put them to the breast, even if this was on one occasion only

Incidence of breastfeeding† refers to the proportion of babies who were breastfed initially

Prevalence of breastfeeding† refers to the proportion of all babies who were wholly or partially breastfed at specific ages

Duration of breastfeeding† refers to the length of time that mothers who breastfed initially continued to breastfeed for, even if they were also giving their baby other milk and solid foods.

Prevalence of exclusive breastfeeding refers to the proportion of all babies who have only ever been given breast milk up to specific ages and who have never been fed formula milk, solid foods, or any other liquids.

Duration of exclusive breastfeeding refers to the length of time that mothers who initially breastfed exclusively continued to feed exclusively, that is not giving formula milk, solid foods, or any other liquids.

Smoking during pregnancy: Three categories of smoking behaviour are used in the report as follows:

- Smoking before or during pregnancy is the proportion of mothers who smoked at all in the two years before they completed Stage 1 of the survey. This roughly covers the period of their pregnancy plus the year before conception.

- Smoking throughout pregnancy is the proportion of all mothers who smoked in the two years before they completed Stage 1 of the survey, and who were smoking at the time of their baby’s birth. It includes mothers who may have given up smoking before or during their pregnancy, but who had restarted before the birth.

- Gave up smoking before or during pregnancy is the proportion of mothers who smoked in the two years before they completed Stage 1 of the survey and who gave up during this period and had not restarted before the birth of the baby.

It should be noted that the key interest of the survey is to measure smoking behaviour immediately before or during pregnancy and any changes that occur over this period. Therefore, the measures reported are not directly comparable with other surveys which tend to report current smoking status (i.e. whether the respondent is smoking at the time they complete the survey).

Drinking during pregnancy: Three categories of drinking behaviour are used in the report as follows:
• **Drinking before or during pregnancy** is the proportion of mothers who drank alcohol at all in the two years before they completed Stage 1 of the survey. This roughly covers the period of their pregnancy plus the year before conception.

• **Drinking during pregnancy** is the proportion of all mothers who drank alcohol in the two years before they completed Stage 1 of the survey, and who drank during pregnancy.

• **Gave up drinking before pregnancy** is the proportion of mothers who drank alcohol in the two years before they completed Stage 1 of the survey but who did not drink during pregnancy.

### 1.9 Standard analysis variables

Throughout the report a number of key analysis variables are used. These are defined below:

**Birth order:** All mothers were asked whether this was their first child and, if not, how many children they had. Many results are analysed by birth order, with comparisons being made between first-time mothers and mothers of second or later babies.

**Education level:** All mothers were asked at what age they left full-time education. Throughout the report this is used as a proxy for education level, with mothers who left full-time education at 16 or under being categorised as having the lowest education level and mothers who left full-time education at 19 or later being categorised as having the highest education level.

**Mother's age:** All mothers were asked their current age at Stage 1 of the survey and the results are banded into five bands: Under 20, 20-24, 25-29, 30-34, 35 or over.

**National Statistics socio-economic classification (NS-SEC):** From 2001 the National Statistics socio-economic classification (NS-SEC) was introduced for all official surveys and statistics. It replaced Social Class based on occupation and socio-economic group (SEG). This classification aims to differentiate occupations in terms of their employment relations, rather than skill level and so the distinction between manual and non-manual is no longer used. NS-SEC consists of eight, five and three class versions, and the version used here is the three class version. This consists of three groups as follows:

i. Managerial and professional occupations

ii. Intermediate occupations

iii. Routine and manual occupations

Additionally, there are two residual categories consisting of those who have never worked and those where NS-SEC could not be classified because of insufficient information.

The 2005 survey collected occupational information needed to code NS-SEC for mothers only. It did not collect occupational information for partners, as had been the case on all
previous surveys. This means that all analysis by socio-economic classification is based on
the mother, and not on her partner.

Details of how NS-SEC is derived and the different analysis categories can be found on the
National Statistics website

**Ethnic group:** The 2005 survey asked mothers in England, Wales and Scotland for their
ethnic group. The question used was the National Statistics ethnic group question first
introduced in 2001. It consists of the following categories:

- White – British, Irish, Any Other White background
- Mixed – White and Black Caribbean, White and Black African, White and Asian, Any
  Other Mixed background
- Asian or Asian British – Indian, Pakistani, Bangladeshi, Any Other Asian background
- Black or Black British – Caribbean, African, Any Other Black Background
- Chinese or Other Ethnic Group – Chinese, Any Other Ethnic background

In Northern Ireland, religious denomination was asked instead of ethnicity, although no results
are presented by religion.

**Stages of the survey:** The approximate ages of babies at the different Stages of the survey
were as follows:

- Stage 1: babies aged four to ten weeks
- Stage 2: babies aged four to six months
- Stage 3: babies aged eight to ten months

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Chapter 1 Tables
### Table 1.1: Distribution of sample by birth order and country (2000 and 2005)

<table>
<thead>
<tr>
<th>Country</th>
<th>England &amp; Wales</th>
<th>Scotland</th>
<th>Northern Ireland</th>
<th>United Kingdom</th>
<th>England</th>
<th>Wales</th>
</tr>
</thead>
<tbody>
<tr>
<td>First baby</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Second or later baby</td>
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<td>49</td>
<td>49</td>
<td>51</td>
<td>49</td>
<td>51</td>
</tr>
<tr>
<td>Base: All Stage 1 mothers</td>
<td>5441</td>
<td>8210</td>
<td>2274</td>
<td>2194</td>
<td>1779</td>
<td>1886</td>
</tr>
</tbody>
</table>

### Table 1.2: Distribution of sample by mother’s age and country (2000 and 2005)

<table>
<thead>
<tr>
<th>Country</th>
<th>England &amp; Wales</th>
<th>Scotland</th>
<th>Northern Ireland</th>
<th>United Kingdom</th>
<th>England</th>
<th>Wales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 20</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>20-24</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>6</td>
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</tr>
<tr>
<td>25-29</td>
<td>18</td>
<td>20</td>
<td>16</td>
<td>18</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>30-34</td>
<td>28</td>
<td>26</td>
<td>29</td>
<td>26</td>
<td>30</td>
<td>26</td>
</tr>
<tr>
<td>35 or over</td>
<td>16</td>
<td>19</td>
<td>18</td>
<td>20</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>All aged 30 or over</td>
<td>46</td>
<td>47</td>
<td>49</td>
<td>48</td>
<td>49</td>
<td>50</td>
</tr>
<tr>
<td>Base: All Stage 1 mothers</td>
<td>5441</td>
<td>8210</td>
<td>2274</td>
<td>2194</td>
<td>1779</td>
<td>1886</td>
</tr>
</tbody>
</table>

### Table 1.3: Distribution of sample by age at which mother completed full-time education and country (2000 and 2005)

<table>
<thead>
<tr>
<th>Country</th>
<th>England &amp; Wales</th>
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<th>Northern Ireland</th>
<th>United Kingdom</th>
<th>England</th>
<th>Wales</th>
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<tbody>
<tr>
<td>16 or under</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>17 or 18</td>
<td>37</td>
<td>28</td>
<td>36</td>
<td>28</td>
<td>25</td>
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<tr>
<td>19 or over</td>
<td>34</td>
<td>34</td>
<td>33</td>
<td>34</td>
<td>40</td>
<td>34</td>
</tr>
<tr>
<td>Base: All Stage 1 mothers</td>
<td>5441</td>
<td>8210</td>
<td>2274</td>
<td>2194</td>
<td>1779</td>
<td>1886</td>
</tr>
</tbody>
</table>
### Table 1.4: Distribution of sample by mother’s socio-economic classification (NS-SEC) and country (2000 and 2005)

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Managerial &amp; professional occupations</td>
<td>29</td>
<td>36</td>
<td>31</td>
<td>37</td>
<td>27</td>
<td>38</td>
<td>29</td>
<td>36</td>
<td>n/a</td>
<td>36</td>
<td>n/a</td>
<td>31</td>
<td>Routine &amp; manual occupations</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>22</td>
<td>20</td>
<td>22</td>
<td>20</td>
<td>21</td>
<td>n/a</td>
</tr>
<tr>
<td>Base: All Stage 1 mothers</td>
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<td>8210</td>
<td>2274</td>
<td>2194</td>
<td>1779</td>
<td>1886</td>
<td>9492</td>
<td>12290</td>
<td>n/a</td>
<td>6075</td>
<td>n/a</td>
<td>2135</td>
<td></td>
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</tbody>
</table>
Table 1.5: Age of babies at each Stage of the survey by country (2000 and 2005)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Mean age of babies at: Stage 1 (days)</td>
<td>46</td>
<td>55</td>
<td>54</td>
<td>47</td>
<td>60</td>
<td>52</td>
<td>48</td>
<td>54</td>
<td>n/a</td>
<td>55</td>
<td>n/a</td>
<td>54</td>
</tr>
<tr>
<td>Proportion of babies:</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Aged 6-10 weeks</td>
<td>50</td>
<td>65</td>
<td>80</td>
<td>53</td>
<td>82</td>
<td>61</td>
<td>54</td>
<td>64</td>
<td>n/a</td>
<td>65</td>
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<tr>
<td>Aged 4-10 weeks</td>
<td>86</td>
<td>84</td>
<td>88</td>
<td>93</td>
<td>83</td>
<td>88</td>
<td>84</td>
<td>85</td>
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<td>84</td>
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<td>86</td>
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<tr>
<td>Mean age of babies at: Stage 2 (nearest week)</td>
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<td>21</td>
<td>21</td>
<td>20</td>
<td>20</td>
<td>21</td>
<td>20</td>
<td>21</td>
<td>n/a</td>
<td>21</td>
<td>n/a</td>
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<tr>
<td>Proportion of babies:</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
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<tr>
<td>Aged 4-5 months</td>
<td>62</td>
<td>67</td>
<td>54</td>
<td>72</td>
<td>47</td>
<td>65</td>
<td>60</td>
<td>67</td>
<td>n/a</td>
<td>67</td>
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<td>68</td>
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<td>Aged 4-6 months</td>
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<td>82</td>
<td>84</td>
<td>82</td>
<td>68</td>
<td>80</td>
<td>82</td>
<td>82</td>
<td>n/a</td>
<td>82</td>
<td>n/a</td>
<td>81</td>
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<tr>
<td>Mean age of babies at: Stage 3 (nearest week)</td>
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<td>41</td>
<td>42</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>n/a</td>
<td>41</td>
<td>n/a</td>
<td>41</td>
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<tr>
<td>Proportion of babies:</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Aged 8-9 months</td>
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<td>25</td>
<td>15</td>
<td>30</td>
<td>35</td>
<td>29</td>
<td>33</td>
<td>26</td>
<td>n/a</td>
<td>25</td>
<td>n/a</td>
<td>25</td>
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<tr>
<td>Aged 8-10 months</td>
<td>66</td>
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<td>70</td>
<td>82</td>
<td>71</td>
<td>76</td>
<td>79</td>
<td>80</td>
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<td>Bases:</td>
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<tr>
<td>All Stage 1 mothers</td>
<td>5441</td>
<td>8210</td>
<td>2274</td>
<td>2194</td>
<td>1779</td>
<td>1886</td>
<td>9492</td>
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<td>All Stage 2 mothers</td>
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<td>1953</td>
<td>1918</td>
<td>1617</td>
<td>1755</td>
<td>8299</td>
<td>10814</td>
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<td>1854</td>
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<td>All Stage 3 mothers</td>
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