

Conception statistics

**Conceptions for women resident
in England and Wales, 2008**

Office for National Statistics

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1 Introduction

Conception statistics 2008 presents final statistics on estimated conceptions for women usually resident in England and Wales. Prior to the 2001 figures, conception statistics were published in the annual volume *Birth statistics* (series FM1).¹ From 2001 the figures were published as a supplement to the *Birth statistics* volume and from 2005 as an annual reference volume. Provisional figures for 2008 were published in February 2010 with supporting commentary in a statistical bulletin.² This bulletin was linked to *Health Statistics Quarterly* 45.

Conception statistics have been produced by the Office for National Statistics (ONS). The statistics supported by this document have been designated National Statistics, guaranteeing that they have been produced to high professional standards set out in the [Code of Practice for Official Statistics](#). They undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political influence.

For brevity, the time series shown here have been limited to a run of 11 years at most. Figures for earlier years are shown in previous volumes of *Birth statistics* (series FM1).

1.1 Data analysed in this volume

Conception statistics bring together records of birth registrations collected under the *Births and Deaths Registration Act 1953* and of abortions under the *Abortion Act 1967*. They include all the pregnancies of women usually resident in England and Wales which lead to one of the following outcomes:

- (i) a maternity at which one or more live births or stillbirths occur, which is registered in England and Wales
- (ii) a termination of a pregnancy by abortion under the 1967 Act, which takes place in England and Wales. Pregnancies which lead to spontaneous abortions (that is, miscarriages) are not included.

Maternities which result in one or more live births or stillbirths are counted once only.

Maternities data

The registration of life events (births, deaths, marriages and civil partnerships) is a service carried out by the Local Registration Service in partnership with the General Register Office (GRO) in Southport. Most of the information, for both live births and stillbirths, is supplied to registrars by one or other, or both of the parents.

For stillbirths, details of cause of death, duration of pregnancy (gestation) and weight of foetus are supplied on a certificate or notification by the doctor or midwife either present at the birth, or who examined the body. The certificate or notification is then taken by the informant to a registrar.

For all births the **mother's usual address** is entered, as is that of the informant where appropriate. This information is used for tables showing usual residence of mother **Tables 7 to 10**.

Informants are also required to provide further information, treated as confidential, under the provisions of the Population (Statistics) Acts. The items relevant to this publication are listed below:

- (i) the **father's date of birth**, if his name is entered on the register
- (ii) the **mother's date of birth**
- (iii) the **date of the parents' marriage**, if the child's parents were married to each other at the time of birth

The notification of a birth to the local Primary Care Trust (Local Health Board in Wales) where the birth occurred is required under the *National Health Service Act 2006* and *National Health Service (Wales) Act 2006*. The acts include provisions for the supply of information about birth notifications by the National Health Service (NHS) to the Registrar General.

Abortions data

Information on abortions is derived from notifications supplied under the *Abortion Act 1967*. These are sent by registered practitioners to the Chief Medical Officer of the Department of Health, or to the Chief Medical Officer of the Welsh Assembly Government. The details supplied include the woman's date of birth, marital status and usual residence. Further details may be found in the ONS volume of *Abortion statistics*³ (produced until 2001) and the Department of Health Statistical Bulletin *Abortion statistics, England and Wales: 2009*.⁴

1.2 Issues affecting the quality of the data in this volume

Registration Online (RON)

In November 2006 a pilot for a web-based Registration Online system for births and deaths (RON), commenced in five registration districts. This enabled registrars to record births, stillbirths and deaths online. Following the success of this pilot, RON was implemented in most register offices on 26 March 2007. However, as a result of significant performance problems, the system was suspended on 10 April 2007 resulting in around half of registrars reverting back to using the previous electronic system, Registration Service Software (RSS).

From 8 May 2007, almost all register offices were submitting data electronically using either RON or RSS. Any remaining birth registrations that were held only on paper at register offices were later entered onto the RON system at ONS, or by the local registration service. Once all the birth records were available electronically, a rigorous statistical quality assurance process was completed by ONS.

Work to improve the performance of RON continued throughout 2008. During this time a further 15 registration districts moved back onto RON. By the end of 2008, 56 per cent of registration districts were using RON for birth and death registrations. For births in 2009, 88 per cent were recorded by registrars using this system.

The RON system was fully rolled out on 1 July 2009 with all register offices using it to record births from this date. With the introduction of RON, it has become possible to carry out some additional validation checks at the point of registration, such as, validation of address and postcode.

Maternities data

Maternities data included in this volume have been derived from the ONS births database.

Maternities data collected at registration and relating to conceptions occurring in 2008 contained 0.7 per cent of records where mother's date of birth was not stated at registration. This compares with 1.1 per cent in 2007. Where the mother's date of birth was not stated it was obtained by ONS from the corresponding birth notification record. This was the case for 0.5 per cent of all maternities. Where this was not possible the mother's age was then imputed using Canadian Census Edit and Imputation System (CANCEIS)⁵. This system works by selecting the most appropriate donor record from the entire annual dataset. This was the case for 0.2 per cent of all maternities.

Abortions data

Under arrangements made following implementation of the *Abortion Act 1967*, the Office for National Statistics and its predecessors processed and analysed the abortion notification forms (HSA4) sent to the Chief Medical Officers of England and Wales. From 1 April 2002, responsibility was transferred to the Department of Health where a new system was introduced to process the new abortion notification forms that were made available from 18 April 2002. The collection of marital status information was affected in the changeover between the old and the new abortion notification form. There were some discontinuities in the recording and coding of marital status in the 2002 abortions data following the introduction of the new form. For further details see section 1.3 of *Conception statistics 2002*.⁶

1.3 Associated publications and the ONS website

[The ONS website](#) provides a comprehensive source of freely available vital statistics and ONS products. More information on the ONS website can be obtained from the contact in section 2.8. Detailed conception figures, including quarterly conceptions to women aged under 18, are published regularly on [the conceptions product page](#). Conceptions data for females aged under 18 at ward level is available on the [Neighbourhood Statistics website](#).

Figures for UK countries

In Scotland, conception figures are available for women aged under 16, under 18 and under 20. The definition of a conception in Scotland includes maternities (pregnancies ending in a live birth or stillbirth) and pregnancies resulting in a therapeutic abortion. Scottish figures are available on the [ISD website](#).

In Northern Ireland, abortion is illegal and is only considered lawful in exceptional circumstances where the life of the pregnant woman is at immediate risk or if there is a risk of serious injury to her physical or mental health. Due to the small numbers of abortions carried out in Northern Ireland each year, and in order to protect patient confidentiality, information on abortions is only released as a Northern Ireland total and as such cannot be broken down for comparative analysis. Consequently there are no comparable conception figures for Northern Ireland.

Reports on conceptions and births

Up to 1998 ONS published annual reports summarising patterns and trends, in the series known as FM1, for conceptions and live births. These contained basic information on annual conceptions and birth statistics, and were issued soon after the data became available. However, these reports have been discontinued and since 1999 these data have appeared in reports issued in the quarterly journal [Population Trends](#). Since the beginning of 1999, ONS has published two quarterly journals: *Population Trends*, which now has an emphasis on population and demography, covering most fertility topics, and [Health Statistics Quarterly](#), covering mortality and health topics, including conceptions, abortions, and some other fertility data. The annual report on conceptions in England and Wales is published as a statistical bulletin linked to *Health Statistics Quarterly*. [Quarterly reference tables on conceptions](#) are published in both *Population Trends* and *Health Statistics Quarterly*.

1.4 Other publications

Some other background publications on conceptions are listed below. Most are from the journals *Population Trends* and *Health Statistics Quarterly*, and where not available on the National Statistics website may be obtained from ONS (section 2.8).

- Dattani, N. and Chow, Y.H. (2009). 'Estimating conception statistics using gestational age information from NHS Numbers for Babies data'. *Health Statistics Quarterly* 41, pp 21–27.
- Dattani, N. Sheers, D. and Uren, Z. (2007). 'Teenage conceptions by small area deprivation in England and Wales, 2001–2002'. *Health Statistics Quarterly* 33, pp 34–39.
- Lancucki, L. and Ruddock, V. (2001). 'The calculation of abortion rates for England and Wales'. *Health Statistics Quarterly* 10, pp 25–32.
- Griffiths, C. and Kirby, L. (2000). 'Geographic variations in conceptions to women aged under 18 in Great Britain during the 1990s'. *Population Trends* 102, pp 13–23.
- Botting, B. and Dunnell, K. (2000). 'Trends in fertility and contraception in the last quarter of the 20th century'. *Population Trends* 100, pp 32–40.
- Wood, R. Botting, B. and Dunnell, K. (1997). 'Trends in conceptions before and after the 1995 pill scare'. *Population Trends* 89, pp 5–12.
- Wood, R. (1996). 'Subnational variations in conceptions'. *Population Trends* 84, pp 21–27.
- Babb, P. (1993). 'Teenage conceptions and fertility in England and Wales, 1971–91'. *Population Trends* 74, pp 12–17.

2 Notes and definitions

2.1 Base populations

The population figures which are used to calculate conception rates in this volume, are mid-year estimates of the resident population of England and Wales based on the 2001 Census of Population. These estimates include members of HM and non-UK armed forces stationed in England and Wales, but exclude those stationed outside. ONS mid-year population estimates are updated figures using the most recent census, allowing for births, deaths, net migration and ageing of the population. In this volume, the population estimates used for the calculation of conception rates are the latest consistent estimates available at the time of its production.

Further details about [population estimates](#) can be found on the National Statistics website.

2.2 Areal coverage

Conception figures include only live births, stillbirths and abortions that occurred in England and Wales to women usually resident in England and Wales. Numbers and rates of conceptions are given by mother's usual area of residence based on local authority boundaries as at 31 December 2009 and health authority boundaries as at 1 October 2009. The postcode of the woman's address at the time of the maternity or abortion was used to assign the local authority and health authority of residence at the time of the conception. Direct comparisons with conceptions data published by area in previous years are not always possible because of boundary changes.

2.3 Estimating the date of conception

Information on the exact date of conception cannot be obtained from the registration details for either births or abortions. Date of conception is estimated by subtracting the gestation period from the baby's date of birth or date of termination.

Maternities (one or more live births)

Conception is assumed to occur 14 days (2 weeks) after the start of the last menstrual period and the time between the last menstrual period and birth is assumed as 40 weeks (referred to as gestational age). Therefore the length of pregnancy from conception to birth is assumed to be 38 weeks (40 weeks minus two weeks) for all maternities with one or more live births.

Maternities (all stillbirths)

Gestational age is recorded at the registration of a stillbirth. The date of conception is estimated as date of birth minus stated gestational age plus two weeks to allow for time to conceive.

For example, if a gestational age is 30 weeks and the date of birth is 10 October, then date of conception is (10 October - 30 weeks) + 2 weeks

14 March + 2 weeks = 28 March

On the few records where gestational age is not recorded or available at registration, the length of pregnancy from conception to stillbirth is assumed to be 33 weeks.

Abortions under the 1967 Act

For conceptions in 1980 and earlier years, the date of conception is taken as the date of the start of the last menstrual period, plus 2 weeks. For conceptions in 1981 and subsequent years, gestational age has been collected on all notifications of abortions. The date of conception for abortions is therefore estimated as the date of termination less the stated gestational age plus two weeks to allow for conception.

For example, if a gestational age is 10 weeks and date of termination is 10 October, then date of conception is (10 October - 10 weeks) + 2 weeks
1 August + 2 weeks = 15 August

2.4 Estimating a woman's age at conception

A woman's age at conception is estimated from her date of birth, as stated on the birth registration or abortion notification, together with the estimated date of conception. In the small number of cases of maternities for which the woman's date of birth was not stated, and the record could not be matched to the birth notification, the mother's age was imputed using CANCEIS⁵. In the small number of cases of abortions where the woman's date of birth was not recorded, the case is not used for statistical analysis.

The woman's age at conception is calculated as the interval in complete years between her date of birth and the date she conceived (estimated as described in section 2.3 above). However, where conception occurs in the same calendar month as the woman's birthday, this can result in the estimated age of mother at conception being either a year too low – if the baby is born live after less than 38 weeks – or a year too high – if the baby is born live at over 38 weeks. The method for estimating a woman's age at conception in such cases was revised in 1999 to take into account the mother's *day* of birth and *day* of conception in addition to the month and year as used previously. This resulted in a revision to figures published before 1999. All figures in this volume are based on this revised methodology. A full explanation can be found in *Birth statistics 1998*.⁷

2.5 Conceptions within and outside marriage

A birth within marriage is that of a child born to parents who were lawfully married to each other either:

- (a) at the date of the child's birth, or
- (b) when the child was conceived, even if they later divorced or the father died before the child's birth.

For a birth within marriage the registrar will enter confidential particulars collected under the Population (Statistics) Acts on to RON. These particulars relate to the date of the parents' marriage, whether the mother has been married more than once, and the number of the mother's previous live born and stillborn children (see section 1.1).

Births occurring outside marriage may be registered either jointly or solely. A joint registration records details of both parents, and requires them both to be present. A sole registration records only the mother's details. Conceptions outside marriage which lead to maternities within marriage are restricted here to those where the birth occurred within eight months (35 weeks) of marriage. However, the date of conception and age of woman at conception are estimated from a date 38 weeks before birth, as in the case of all other conceptions leading to live births.

For abortions coded on the old form HSA4 originating from ONS, the categories of marital status were (a) single, (b) married, (c) widowed, (d) divorced and (e) separated. For abortions coded on the new form HSA4 originating from Department of Health, marital status was reclassified as (a) single no partner, (b) married, (c) single with partner, (d) single not known, (e) divorced, (f) widowed and (g) separated. To calculate rates separated mothers are included with married mothers because there are no official population estimates for the 'separated' marital status category.

2.6 Legislation

The existing provisions for the registration of births and the processing, reporting and analysis of births data appear in different legislation that reflects the distinct and separate roles of the Registrar General for England and Wales and the UK Statistics Authority. The Registrar General is guided by the following:-

- **Births and Deaths Registration Act 1953**, which covers all aspects of the registration of births and stillbirths.
- **Population (Statistics) Act 1938**, which deals with the statistical information collected at registration.
- **Population (Statistics) Act 1960**, which makes further provision for collecting statistical detail at registration.
- **Registration of Births, Deaths and Marriages Regulations 1968**, which added questions on father's and mother's place of birth to the details requested at registration.
- **Still-Birth (Definition) Act 1992**, which altered the definition of a stillbirth to 24 or more weeks completed gestation, instead of the previous definition of 28 or more weeks completed gestation.
- **National Health Service Act 2006 and National Health Service (Wales) Act 2006** which consolidate legislation relating to the Health Service and separate provision of the health service in Wales from that in England. The Acts require notification of a birth to the local Primary Care Trust (Local Health Board in Wales) where the birth occurred. Both Acts include provisions both for the supply of information about birth notifications by the National Health Service (NHS) and the supply of information on individual registered births by the Registrar General to the NHS.

The UK Statistics Authority is guided by the following:-

- **Registration Service Act 1953**, as amended by the **Statistics and Registration Services Act 2007**, which in section 19 requires the UK Statistics Authority to provide annual abstracts of live births and stillbirths.
- **Abortion Act 1967**, which permits termination of pregnancy by a registered practitioner, subject to certain conditions and the Abortion Regulations 1991 that enables the Chief Medical Officers to supply information about abortions to the UK Statistics Authority.
- **Human Fertilisation and Embryology Act 1990**, Section 37 made changes to the Abortion Act 1967.
- **Statistics and Registration Service Act 2007**, which created the Statistics Board, now known as the UK Statistics Authority, and defined its functions and powers.

2.7 Symbols and conventions

In this volume:

- : denotes not appropriate/not applicable
- 0 denotes less than 0.05
- denotes nil.
- * denotes not available (to protect confidentiality)

Rates and percentages calculated from fewer than 20 events are distinguished by italic type as a warning to users that their reliability as a measure may be affected by the small number of events.

Data displaying conception statistics as counts and rates cannot be used to disclose information on abortions. Therefore to protect confidentiality for conceptions data, all counts lower than 5, and all rates based on fewer than 5 events have been suppressed. For conceptions leading to abortions, counts less than 10 and rates based on fewer than 10 events have been suppressed.

Occasionally it has been necessary to apply a secondary suppression to avoid the possibility of disclosure by differencing.

Figures in some tables in this publication may not add precisely due to rounding.

2.8 Further information

Requests for conceptions data, as well as background information on this volume, and on data quality, should be made to:

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References

1. [ONS Birth statistics, series FM1](#).
2. [ONS Statistical Bulletin: Conceptions in England and Wales, 2008](#).
3. [ONS \(2001\) *Abortion statistics*, series AB no. 28](#).
4. [Department of Health Statistical Bulletin Abortion Statistics, England and Wales: 2009](#).
5. Statistics Canada (2005) CANCEIS User's Guide: Canadian Census Edit and Implementation System, CANCEIS Development Team, Social Survey Methods Division.
6. ONS (2005) [Conception statistics 2002](#), supplement to series FM1 no. 32.
7. ONS (1998) [Birth statistics 1998, series FM1 no. 27](#).

This volume is available at

<http://www.statistics.gov.uk/statbase/product.asp?vlnk=15055>.

Glossary

Abortion

The legal termination of a pregnancy under the 1967 Abortion Act.

Annual Reference Volume (ARV)

ARVs are yearly publications produced by ONS for a variety of topics.

Canadian Census Edit and Imputation System (CANCEIS)

A donor-based imputation system, developed by Statistics Canada, used to impute missing values for Population (Statistics) Act data items for birth records since 2004.

Code of Practice for National Statistics

The principles and protocols followed and upheld by all those involved in producing National Statistics.

Conception

ONS uses the definition - a pregnancy of a woman which leads either to a maternity or an abortion.

General Register Office (GRO)

The GRO (part of the Identity and Passport Service since 1 April 2008) is responsible for ensuring the registration of all births, deaths, marriages and civil partnerships that have occurred in England and Wales and for maintaining a central archive.

Gestation Period

The average duration of pregnancy from conception.

Health Statistics Quarterly

A quarterly National Statistics publication that covers mortality and health information, including articles and reports on conceptions.

Informant

The person(s), normally one or both parents, who provide the registrar with the information required at the registration of a birth.

Joint Registration

A birth outside marriage registered by both the mother and father of the child. Both parents' details are recorded and both must be present at the registration.

Live Birth

A baby showing signs of life at birth.

Maternity

A pregnancy resulting in the birth of one or more live-born or stillborn children. Therefore, the number of maternities is less than the total number of live births and stillbirths.

Notification

A document completed by the doctor or midwife present at the birth. The notification provides certain data items, such as the birthweight, to the birth record.

ONS

Office for National Statistics. Since 1 April 2008, ONS is the executive office of the UK Statistics Authority.

Population (Statistics) Act

These Acts makes provision for certain information to be collected at the registration of the birth for statistical use. This information is confidential and is not entered on the register.

Population Trends

A quarterly National Statistics publication that covers population and demographic information, including articles and reports on births.

Registrar

Local authority employee responsible for the registration of births, deaths, marriages and civil partnerships.

Registrar General

Statutory appointment with responsibility for the administration of the registration Acts in England and Wales and other related functions as specified by the relevant legislation.

Registration Officer

Generic term for registrar, superintendent registrar and additional registrars.

RON

Registration Online. A web-based system which enables registrars to record births, stillbirths, deaths and civil partnerships online. Over half of maternities contributing to this volume were registered on RON.

RSS

Registration Service Software. System of collecting data electronically at the registration of a birth or a death. Used prior to the introduction of RON.

Singleton

Only birth born in a maternity.

Sole Registration

A birth outside of marriage registered only by the mother. No information on the father is recorded.

Stillbirth

A child that has issued forth from its mother after the 24th week of pregnancy, and that did not at any time after being completely expelled from its mother breathe or show any signs of life.

UK Statistics Authority

The UK Statistics Authority is an independent body operating at arm's length from government as a non-ministerial department, directly accountable to Parliament. It was established on 1 April 2008 by the Statistics and Registration Service Act 2007.

VSOB

Vital Statistics Outputs Branch (at ONS).