

Data sources

This file provides the metadata related to the data sources used for France in the Human Multiple Births Database (<https://www.twinbirths.org/en/data-metadata/>).

Summary

Data from 1858 to 1919:

Source: Statistique générale de la France and Institut national de la statistique et des études économiques (SGF-INSEE)

Coverage and completeness:

- Data come from the civil registry and include all declared births, regardless of vitality at birth. Since the French Revolution, systematic registration of vital events (births, marriages, and deaths) must be declared in the place where they occur, to the local registrar. Births must be declared within three days (excluding the day of the birth).
- Although, in principle, all births must be declared to the civil registry, data coverage may not always reach 100%. Furthermore, registration completeness of vital events may have been disrupted during various conflicts that took place during the period 1858-1919, namely the Franco-Prussian War and the repression of the *Commune de Paris* (1870-1871), and World-War I (1914- 1918).

Treatment of births by vitality:

- Data on deliveries by plurality include all confinements resulting in at least one child (whether born alive or dead) declared to the civil registry.
- Up until 1993, a child who was not alive by the time of the declaration of the birth to the civil registry was counted as a stillbirth, even if he/she was born alive.

Data from 1920 to 2023:

Source: Institut national de la statistique et des études économiques (INSEE).

Coverage and completeness:

- Data include all births occurred in France which are declared to the civil registry. All births occurred in French territory must be declared to the civil registry within five days after the delivery date (until November 2016, the legal deadline was of three days instead of five).

- Data from 1920 to 1938 and from 1946 onwards cover the entire, current territory of mainland France (*France métropolitaine*). Data for the years 1939-1945 exclude some *départements* due to territorial changes during World War II.

Treatment of births by vitality:

- All deliveries resulting in at least one child declared to the civil registry are included in the statistics, regardless of the survival status of the child/children at the moment of birth.
- Until February 1993, a child born alive was registered as such only if he/she was alive at the moment of declaration of the birth to the civil registry; otherwise, a certificate for “child declared lifeless” was produced (*acte d’enfant déclaré sans vie*). Since March 1993, a “lifeless child” certificate (*acte d’enfant sans vie*) is issued only when it cannot be established that the child was born alive and that the birth was viable.
- There have been changes in the legislation regarding the criteria for the declaration of a stillbirth. Before 2001, a stillborn child could only be registered after 26 weeks of gestation. In 2001, this was reduced to 22 weeks (or if the child weighed at least 500 grams). Since 2008, the legislation allows the declaration of a stillbirth, regardless of its weight or period of gestation.

Detailed metadata by source

Source 1: Statistique générale de la France and Institut national de la statistique et des études économiques (SGF-INSEE)

References	<p>INSEE. 2022. « Les naissances - séries historiques, France métropolitaine ». État civil – INSEE résultats. URL : https://www.insee.fr/fr/statistiques/6524906?sommaire=6524912#consulter-sommaire (Accessed: 09/02/2023). :</p> <ul style="list-style-type: none"> • Table « T36-HISTO : Accouchements multiples selon le type, France métropolitaine - Séries de 1858 à 1919 » ; • Table « T35-HISTO : Enfants déclarés vivants et mort-nés selon le sexe, France métropolitaine - Séries de 1806 à 1974 ». <p>Statistique de la France. <i>Mouvement de la Population</i>. Available online at the website of the National Institute of Statistics and Economic Studies: INSEE. 2010. « Données historiques de la Statistique générale de France, SGF 1800-1925 », Tables : MVTPOP T102-T106, T108, T111-T114, T121-T122, T124, T126-T127, T150 and T173. URL: https://www.insee.fr/fr/statistiques/2659665?sommaire=2591397#consulter-sommaire Accessed: 08/10/2020</p> <p>Statistique générale de la France (1878-1903). <i>Annuaire statistique de France</i> (volumes for the years from 1878 to 1903). Available online at the website of Bibliothèque nationale de France (BnF): 1875-1894 : https://gallica.bnf.fr/ark:/12148/cb343503965/date&rk=21459;2 1898-1901 : https://gallica.bnf.fr/ark:/12148/cb34350395t/date Accessed : 07/10/2020</p> <p>INSEE. Data file provided by INSEE upon request. Accessed: 30/03/2023</p>
Period covered	1858-1894, 1898-1919 (data are not available for the years 1895-1897)
Code in database	SGF-INSEE
Coverage and completeness	<p>Data come from the civil registry and include all declared births, regardless of vitality at birth.</p> <p>In France, the civil registry – governed by specific legislation – exists since the French Revolution. Systematic registration of vital events (births, marriages, and deaths) dates from this period. These events must be declared in the place where they occur, to the local registrar. Since 1792, the mayor of each municipality acts as local registrar and is responsible for keeping timely registration of vital events in the municipality. Previously, civil status records existed but in the form of parish registers.</p> <p>All births occurred in France must be declared to the civil registry within three days (excluding the day of the birth). Until 1993, all births with a gestation period of at least 180 days had to be declared to the civil registry. In 1993, new criteria for the registration of live births and stillbirths were introduced (see Definitions and treatment of births by vitality for Source 2, p. 7).</p>

	<p>Although, in principle, all births must be declared to the civil registry, data coverage may not always reach 100%. Unfortunately, we could not find details on data coverage – even after consulting staff from INSEE directly –, as the historical data sources do not provide any information on that regard. Nevertheless, there is information about interruptions for specific years: registration completeness of vital events may have been disrupted during various conflicts that took place during the period 1858-1919, namely the Franco-Prussian War and the repression of the <i>Commune de Paris</i> (1870-1871), and World-War I (1914- 1918). Indeed, geographic coverage of data on births changed during the period, as a result of administrative changes in the borders of mainland France (<i>France métropolitaine</i>). The following list presents the territory covered by the data during specific sub-periods:</p> <ul style="list-style-type: none"> • <u>1858-1860</u>: mainland France (as it was back then), i.e., current territory excluding <i>Alpes-Maritimes</i>, <i>Savoie</i>, and <i>Haute-Savoie</i>; • <u>1861-1868</u>: mainland France, current territory; • <u>1869-1913</u>: mainland France, current territory excluding <i>Alsace-Lorraine</i> (i.e., the <i>départements</i> of <i>Moselle</i>, <i>Bas-Rhin</i>, and <i>Haut-Rhin</i>). With the Treaty of Frankfurt, the territory of <i>Alsace-Lorraine</i> was annexed by the German empire in 1871, following the defeat of the French army in the Franco-Prussian War of 1870. • <u>1914-1919</u>: mainland France, non-invaded <i>départements</i>, i.e., current territory excluding : <i>Aisne</i>, <i>Ardennes</i>, <i>Marne</i>, <i>Meurthe-et-Moselle</i>, <i>Meuse</i>, <i>Moselle</i>, <i>Nord</i>, <i>Oise</i>, <i>Pas-de-Calais</i>, <i>Bas-Rhin</i>, <i>Haut-Rhin</i>, <i>Somme</i>, and <i>Vosges</i>. The territory of <i>Alsace-Lorraine</i> (i.e., the <i>départements</i> of <i>Moselle</i>, <i>Bas-Rhin</i>, and <i>Haut-Rhin</i>) was restituted to France at the end of World War I, with the treaty of Versailles in 1919. <p>Annual estimates of the total number of births (i.e., without details on the distribution by plurality) are also available from 1901 to 1919 in Daguet (2002).¹</p>
Definitions and treatment of births by vitality	<p>Data for France in the HMBD include all births declared to the civil registry, regardless of vitality at birth. Data on deliveries by plurality include then all confinements resulting in at least one child (whether born alive or dead) declared to the civil registry.</p> <p>On birth registration according to vitality, there have been certain particularities in the French system, which do not affect the data for France in the HMBD, as the statistics provided include all children declared to the civil registry, regardless of vitality at birth. Nevertheless, those specific features are summarized here below.</p> <p>Up until 1993, all births with a gestation period of at least 180 days had to be declared to the civil registry. A child who was not alive by the time of the declaration of the birth to the civil registry was counted as a stillbirth, as an <i>acte d'enfant sans vie</i> was produced in such cases, even if the deceased child was</p>

¹ Daguet, F., 2002. *Un siècle de fécondité française : caractéristiques et évolution de la fécondité de 1901 à 1999*. INSEE résultats. Société (8).

	<p>alive at birth.² This certificate could be issued even when the declaration of the birth occurred after the official deadline of three days. These “false stillbirths” (<i>faux mort-nés</i>) imply then an under-enumeration of live-born children. Data on live births corrected for the false stillbirths have been published for the period 1899-1974.³</p>
Footnotes⁴	<p>1 - Data for the period 1858-1860 cover mainland France, as it was back then, i.e., the current territory excluding <i>Alpes-Maritimes</i>, <i>Savoie</i>, and <i>Haute-Savoie</i>.</p> <p>2 - Data for the period 1869-1919 exclude the territory of <i>Alsace-Lorraine</i>, i.e., the <i>départements</i> of <i>Moselle</i>, <i>Bas-Rhin</i>, and <i>Haut-Rhin</i> (see Coverage and completeness for Source 1 in p. 4).</p> <p>3 - For 1870, data on the number of multiple children are not available for <i>Seine</i> (i.e., columns for twins, triplets, and quadruplets and more. The total number of deliveries in the entire French territory is also unavailable for that year. For this reason, the year 1870 is excluded in the pooled data file of the HMBD.</p> <p>4 - For the year 1871, the numbers of twin and triplet deliveries reported in the <i>Mouvement de la population</i> are 7562 and 69, respectively. These figures differ from those provided by INSEE in Table “T36-HISTO” (see References for Source 1 in p. 3), which are 7834 and 73, for twin and triplet deliveries, respectively. In the HMBD, we retained the revised figures from the latter source.</p> <p>5 - For the year 1898, the number of twin deliveries reported in the Statistical Yearbook is 9562, i.e., 30 deliveries less than those indicated in INSEE’s “T36-HISTO” Table (see References for Source 1 in p. 3). In the HMBD, we retained the revised figures from the latter source.</p> <p>6 - The annual twinning rates from 1902 to 1919 are available in INSEE’s Table “T36”.⁵ However, data from that source have a different geographic coverage than data from INSEE’s table “T36-HISTO” (see References for Source 1 in p. 3). Therefore, the twinning rates from 1902 to 1919 provided</p>

² Up until 1919, it was mandatory to present before a civil registry officer the corpse of a child who had died, whose birth was not registered. The civil registry officer then produced a special certificate (*acte de presentation d'un enfant sans vie*). The obligation to present the deceased child in front of a civil registry officer was annulled by a law in 1919. That law ordained that those cases could be declared to the civil registry officer. Thus, the certificate of presentation of deceased child (*acte de presentation d'un enfant sans vie*) was replaced by the certificate of declaration of deceased child (*acte de déclaration d'un enfant sans vie*, or *d'enfant sans vie*).

See Légifrance. *Instruction générale relative à l'état civil du 11 mai 1999*, Chapter VI : « État civil des enfants décédés avant la déclaration de naissance ». URL : https://www.legifrance.gouv.fr/jorf/article_jo/JORFARTI000001138508 (Accessed: 16/02/2023).

³ Vallin, J. and F. Meslé. (2001). *Tables de mortalité françaises pour les XIXe et XXe siècles et projections pour le XXIe siècle*. Paris: INED, 102 p. + CD-ROM.

⁴ Number indicated in the variable *Footnotes*.

⁵ INSEE. 2022. « Les naissances en 2021 - Tableaux de séries longues [T36 - Accouchements multiples selon le type et le groupe d'âges atteints dans l'année de la mère, Champ : France métropolitaine] : », URL : <https://www.insee.fr/fr/statistiques/6524900?sommaire=6524912> (Accessed : 07/02/2023)

	<p>in HMBD's pooled data file are calculated based on the input data from the latter source. Furthermore, the high twinning and multiple rates calculated for the year 1919 are identified as outliers in the series using the function <i>tsoutliers</i> of the forecast package in R.⁶ According to Pison and Couvert, the high twinning rate observed in 1919 is explained by a high mean childbearing age as well as by the massive reunion of couples that were separated during the First World War and a selection effect of fecund couples.⁷</p> <p>7 - In addition to <i>Alsace-Lorraine</i> (see footnote 2 above), 10 other <i>départements</i> that were invaded during the war are excluded from data for the period 1914-1919 (see Coverage and completeness for Source 1 in p. 4).</p>
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Source 2: Institut national de la statistique et des études économiques (INSEE)

References	<p>INSEE. 2024. « Les naissances en 2021 - Tableaux de séries longues » :</p> <ul style="list-style-type: none"> • Table T34 : « Nés vivants et enfants sans vie selon la situation matrimoniale des parents [Champ : France métropolitaine] » • Table T36 : « Accouchements multiples selon le type et le groupe d'âges atteints dans l'année de la mère [Champ : France métropolitaine] » <p>URL : https://www.insee.fr/fr/statistiques/8256967?sommaire=8256973 Accessed : 25/11/2024</p> <p>Daguet, F., 2002. <i>Un siècle de fécondité française : caractéristiques et évolution de la fécondité de 1901 à 1999</i>. INSEE résultats. Société (8).</p> <p>INSEE. Data file provided by INSEE upon request. Accessed: 30/03/2023.</p>
Period covered	1920-2023
Code in database	INSEE
Coverage and completeness	<p>Data include all births occurred in France which are declared to the civil registry. All births occurred in French territory must be declared to the civil registry within five days after the delivery date (until November 2016, the legal deadline was of three days instead of five). When the declaration is made within that legal time frame, a birth certificate (<i>acte de naissance</i>) is issued. Beyond that period, a declaration of birth is registered as a “declaratory statement of birth” (<i>jugement déclaratif de naissance</i>), which results in a transcription of the birth in the civil registry. INSEE, the national French bureau of statistics, uses both types of declarations for the production of live-birth statistics only since 2011. Before that, INSEE's live-births statistics were based on the information obtained from the birth certificates only.⁸</p> <p>Birth registration takes place in the municipality where the birth occurred,</p>

⁶ Hyndman, R., and Khandakar, Y. (2008). Automatic time series forecasting: the forecast package for R. *Journal of Statistical Software*, 26(3), 1–22.

⁷ Pison, G. and Couvert, N. (2004). La fréquence des accouchements gémellaires en France: La triple influence de la biologie, de la médecine et des comportements familiaux. *Population*, 59, 877-907. <https://doi.org/10.3917/popu.406.0877>

⁸ Unfortunately, we could not obtain information on the proportion of births declared late (i.e., the “declaratory statements of birth”), whether the share of those cases has changed over time, and their potential impact on the statistics on live births.

	<p>usually at the local town hall. In each municipality, the mayor – as local registrar – has the responsibility of registering all vital events occurring in the municipality, that is, all births, marriages, and deaths. When a vital event occurs, the local registrar records that information in the registry in the form of certificates and also fills the bulletin that corresponds to the vital event (<i>bulletin d'état civil</i>). For example, when there is a birth, the local registrar issues a birth certificate and fills a “births bulletin” (<i>bulletin de naissances</i>). INSEE's statistics are based on the information provided in those bulletins. The bulletins are forms containing questions that replicate information from the certificates, but they may also include additional questions, which the local registrar must ask to the declarant.</p> <p>Regarding geographic coverage, data from 1920 to 1938 and from 1946 onwards cover the entire, current territory of mainland France (<i>France métropolitaine</i>). Data for the years 1939-1945, from Daguet (2002), cover a smaller area, as they do not include the territory of <i>Alsace-Lorraine</i> (i.e., the <i>départements</i> of <i>Moselle</i>, <i>Bas-Rhin</i> and <i>Haut Rhin</i>), which was re-annexed by Germany during World War II. Data for 1943 and 1944 also exclude <i>Corse</i>. The total number of births (without details on the distribution by plurality) for all mainland France from 1939 to 1945 are available in INSEE's Table “T34” (see References for Source 2 in p. 6).</p> <p>Although, in principle, all births must be declared to the civil registry, data coverage may not always reach 100%. Unfortunately, we could not find details on data coverage, even after consulting staff from INSEE directly.</p> <p>Until 1997, vital statistics only included the vital events declared and registered in the municipalities of mainland France. Since 1998, French overseas <i>départements</i> are also included. However, in the HMBD, data for France refer to mainland France, as the INSEE data files used for constructing long time-series are those for <i>France métropolitaine</i>.</p>
Definitions and treatment of births by vitality	<p>All deliveries resulting in at least one child declared to the civil registry are included in the statistics, regardless of the survival status of the child/children at the moment of birth.</p> <p>Until February 1993, a child born alive was registered as such (i.e., received a birth certificate, <i>acte de naissance</i>) only if he/she was alive at the moment of declaration of the birth to the civil registry; otherwise, a certificate for “child declared lifeless” was produced (<i>acte d'enfant déclaré sans vie</i>). This means that the children declared lifeless included not only the stillbirths, but also the children born alive who died before the birth was declared to the civil registry. The latter are known as “false stillbirths” (<i>faux mort-nés</i>). It is possible to identify the false stillbirths starting in 1907, thanks to a question included in the bulletin for “child declared lifeless” (<i>bulletin d'enfant déclaré sans vie</i>), asking whether the child had breathed (“or shown any other sign of life”, which was added to the bulletin's question in 1961). Since March 1993, a birth certificate is issued for every child born alive (i.e., showing any sign of life at birth), regardless of survival by the time of the declaration of the birth to the civil</p>

	<p>registry.⁹ Data on live births corrected for the false stillbirths have been published by Vallin and Meslé¹⁰ for the period 1899-1974 and by INSEE from 1975 until the introduction of new registration procedures in 1993.</p> <p>Regarding the “lifeless children” or stillbirths, the current definition provided by INSEE says that, generally, births with at least 180 days of gestation must be declared to the civil registry.¹¹ Since March 1993, a “lifeless child” certificate (<i>acte d’enfant sans vie</i>) is issued only when it cannot be established that the child was born alive and that the birth was viable.¹² This is the case:</p> <ul style="list-style-type: none"> • When a child – dead by the time of the declaration of the birth to the civil registry – is born alive, but not viable. The local registrar then issues the certificate, regardless of the duration of gestation, but only if a medical certificate for the delivery is available; • When a child dies before the birth is declared to the civil registry and there is no medical certificate stating that he/she was born alive and viable; • When a child is stillborn. Before 2001, a stillborn child could only be registered after 26 weeks of gestation (196 days of amenorrhea or 182 days of gestation). In 2001, this was reduced to 22 weeks (154 days of amenorrhea or 140 days of gestation) or if the child weighed at least 500 grams (viability criterion of the World Health Organization, WHO). Since 2008, the legislation allows the declaration of a stillbirth, regardless of its weight or period of gestation. As a result, of these legislative changes, there was a sharp increase in the stillbirth rate in 2002 and again in 2008.¹³ Since duration of gestation, duration of amenorrhea, or weight – which are the usual criteria used in other countries – are no longer considered in France, French data on stillbirths are not comparable with those of other countries.
Footnotes	<p>8 - Data from 1939 to 1945 (World War II) exclude some <i>départements</i> (see Coverage and completeness for Source 2 in p. 6-7).</p> <p>9 - Changes in the legislation regarding the criteria for registering a stillbirth occurred in 2001 and in 2008. These changes produced an increase in the number of declared stillbirths the following years. See Definitions and treatment of births by vitality for Source 2 in p. 7-8).</p> <p>10 - INSEE’s Table “T36” (see References for Source 2 in p. 6), which is the main source for data on the distribution of deliveries by plurality since 1920,</p>

⁹ INSEE. 2021. « Définitions : Naissance ». URL : <https://www.insee.fr/fr/metadonnees/definition/c1032> (Accessed: 02/03/2023).

¹⁰ Vallin, J. and F. Meslé. (2001). *Tables de mortalité françaises pour les XIXe et XXe siècles et projections pour le XXIe siècle*. Paris: INED, 102 p. + CD-ROM.

¹¹ This is the case since 1920. Before that year, lifeless embryos of less than six months of gestation were recorded as stillbirths only in certain cities, like Paris. Since 1920, only the stillbirths occurring after at least 180 days of gestation are registered. (Daguet 2002, see **References** for Source 2 in p. 6).

¹² INSEE. 2016. « Définitions : Enfant sans vie ou mort-né ». URL : <https://www.insee.fr/fr/metadonnees/definition/c1394> (Accessed: 02/03/2023).

¹³ Niel, X. « F1106 : Les facteurs explicatifs de la mortalité infantile en France et leur évolution récente. L’apport de l’échantillon démographique permanent. (EDP)”, INSEE – Direction des Statistiques Démographiques et Sociales, Document de travail, URL : <https://www.insee.fr/fr/statistiques/fichier/1380997/F1106.pdf> (Accessed: 29/03/2023)

	<p>includes a footnote indicating that changes in the way multiple births are processed may slightly disrupt the series, specially between 2006 and 2011. In particular, in 2010, the number of twin births was artificially inflated by duplicates. Unintended changes in the identification of twins may have also affected figures for the four previous years. As it was not possible to distinguish the true cases of twins from the duplicates, it was not possible to correct the series for those years.</p> <p>11- The column "Quadruplet_plus_deliveries" includes a delivery of sextuplets in 1989 and 2020, as well as a delivery of six children born dead in 2019.</p>
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