Office for National Statistics

Statistical bulletin

Past and projected period and cohort life tables: 2020-based, UK, 1981 to 2070

Life expectancy (e), probability of dying (q) and number of persons surviving (l) from the period and cohort life tables, using past and projected mortality data from the 2020-based interim national population projections (NPPs), for the UK and constituent countries.

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Next release:
To be announced

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1 . Main points

- Baby boys born in the UK in 2020 can expect to live on average to age 87.3 years and girls to age 90.2 years, taking into account projected changes in mortality patterns over their lifetime.

- Cohort life expectancy at birth in the UK is projected to increase by 2.8 years to reach 90.1 years for boys and by 2.4 years to 92.6 years for girls born in 2045.

- People aged 65 years in the UK in 2020 can expect to live on average a further 19.7 years for males and 22.0 years for females, projected to rise to 21.9 years for males and 24.1 years for females aged 65 years in 2045.

- An estimated 13.6% of boys and 19.0% of girls born in the UK in 2020 are expected to live to at least 100 years of age, projected to increase to 20.9% of boys and 27.0% of girls born in 2045.

2 . Past and projected period and cohort life tables data

Expectation of life, principal projection, UK
Dataset | Released on 2 December 2019
Period and cohort expectation of life in the UK using the principal projection by single year of age 0 to 100.

Life tables, principal projection, UK
Dataset | Released on 2 December 2019
Life tables for the UK, period and cohort, from the principal projection, single year of age 0 to 100. Historical data before 1961 are not national statistics.

Mortality rates (qx), principal projection, UK
Dataset | Released on 2 December 2019
Period and cohort mortality rates (qx) for the UK using the principal projection by single year of age 0 to 100.

Numbers surviving at exact age (lx), principal projection, UK
Dataset | Released on 2 December 2019
Period and cohort numbers surviving at exact age (lx) in the UK using the principal projection by single year of age 0 to 100.

View all related data on the related data page.

3 . Measuring the data

This release contains tables of life expectancy (e_x), probability of death (q_x) and numbers of persons surviving (l_x) from the 2020-based interim national population projections (NPPs). These tables contain historical and projected figures for 1981 to 2070 on a period and cohort basis from life tables calculated using observed and projected deaths, and population estimates and projections. This NPP release consists of a principal projection only; there are no variant projections, therefore the mortality measures are provided for the principal projection only. For more information on this, please see Background, methodology and assumption setting.

The definitions of life expectancy (e_x), probability of death (q_x) and numbers of persons surviving (l_x) are as follows:

- e_x is the average period expectation of life at exactly age x, that is, the average number of years that those aged x exactly will live thereafter based on the mortality rates experienced in the year or years to which the life table relates

- q_x is the mortality rate between age x and (x + 1), that is, the probability that a person aged x exactly will die before reaching age (x + 1)

- l_x is the number of survivors to exact age x of 100,000 live births of the same sex who are assumed to be subject throughout their lives to the mortality rates experienced in the year or years to which the life table relates

Period life expectancies use mortality rates from a single year (or group of years) and assume that those rates apply throughout the remainder of a person's life. This means that any subsequent changes to mortality rates would not be taken into account. A period life expectancy is therefore the average number of additional years a person would live if he or she experienced the age-specific mortality rates of the given area and time period for the rest of their life.

Cohort life expectancies make allowances for future changes in mortality by taking into account observed and projected improvements in mortality for the cohort throughout its lifetime. In this bulletin, cohort life expectancies have been used for the main projection figures because these are regarded as a more realistic measure of how long a person of a given age would be expected to live on average than period figures. A more detailed explanation of the difference between period and cohort life expectancies can be found in Period and cohort life expectancy explained methodology.

Further explanation and guidance on how to use the data published in the past and projected period and cohort life tables are available in our Guide to interpreting past and projected period and cohort life tables.

Mortality projections are based largely on extrapolation of past trends in rates of mortality improvement. Expert opinion is used to inform the assumptions made about future mortality rates. Information on the assumption setting process for future mortality patterns is available in the mortality assumptions chapter of the NPP methodology.

Quality and methodology

The National life tables Quality and Methodology Information Report and the National population projections Quality and Methodology Information Report contain important information. This information includes:

- the strengths and limitations of the data and how they compare with related data

- uses and users

- how the output was created

- the quality of the output, including the accuracy of the data

4 . Related links

Life expectancy calculator
Article | Released on 12 January 2022
Enter your age and sex in our calculator to find out your life expectancy, and the likelihood of you living to be 100 years old.

National life tables - life expectancy in the UK: 2018 to 2020
Bulletin | Released 23 September 2021
Trends in period life expectancy, a measure of the average number of years people will live beyond their current age, analysed by age and sex for the UK and its constituent countries.

2020-based interim national population projections
Bulletin | Released 12 January 2022
The potential future population size of the UK and its constituent countries. These statistics are widely used in planning, for example, fiscal projections, health, education and pensions.