2010-based Period and Cohort Life Expectancy tables

Period and Cohort expectation of life at birth, 1985-2035, UK

(Based on historical rates from 1985 to 2010 and assumed calendar year mortality rates from the 2010-based principal projections)

By 2035 period life expectancy at birth in the United Kingdom is projected to reach 83.4 years for males and 87.0 years for females. Cohort life expectancy at birth is projected to reach 94.2 years for males and 97.2 years for females.

Period life expectancy at birth is the average number of years a person would live, if he or she experienced the age-specific mortality rates at the time of their birth throughout their life. In contrast,
cohort life expectancy at birth is calculated using age-specific mortality rates which allow for known or projected changes in mortality throughout a person’s life. For more details see the [guide to period and cohort life expectancy](#).

The chart shows that both period and cohort expectations of life at birth have increased between 1985 and 2010 and are projected to continue to increase into the future after 2010. Throughout the period 1985-2035 cohort life expectancy is projected to be higher than period life expectancy for both males and females because mortality rates have generally fallen at most ages over the past 25 years and are projected to continue to fall in the future.

Over the last 25 years male period life expectancy at birth rose from 71.7 years in 1985 to 78.5 years in 2010, an increase of 6.8 years. It is projected to increase by a further 4.9 years over the next 25 years to 83.4 years in 2035. Female period life expectancy at birth rose from 77.4 years in 1985 to 82.4 years in 2010, an increase of 5.0 years. It is projected to increase by a further 4.6 years to 87.0 years in 2035. Male period life expectancy has seen the greater increases between 1985 and 2010 due to faster improvements in male mortality rates than female mortality rates in recent years. However, the rates of improvement for males and females at a given age are projected to converge over the period 2010 to 2035, leading to increases in life expectancy which are more similar for males and females.

Similar patterns are also exhibited for cohort life expectancy, although the increases are smaller than for period life expectancy. Under the principal (main) projection, cohort life expectancy at birth rose 4.6 years for males and 3.9 years for females between 1985 and 2010. Between 2010 and 2035 cohort life expectancy at birth is projected to increase by 4.0 years for males and 3.5 years for females.

Female period and cohort life expectancies are projected to continue to be higher than the corresponding figures for males. However the gap in period life expectancy at birth is projected to fall from 3.9 years in 2010 to 3.6 years in 2035. The gap between male and female cohort life expectancy at birth is projected to fall from 3.5 years in 2010 to 3.0 years in 2035 under the principal projection.

Projected period expectation of life at age 65 in 2035 is 22.1 years for males and 24.6 years for females. The equivalent figures for cohort expectation of life are 24.0 years for males and 26.6 years for females. At older ages the difference between male and female projected life expectancies is smaller than at younger ages, particularly for period expectations of life.

By 2060 period life expectancy at birth is projected to reach 86.8 years for males and 90.1 years for females. Cohort life expectancy at birth is projected to reach 98.0 years for males and 100.6 years for females. However, it should be noted that projections become increasingly uncertain the further they are carried forward in time. This is particularly so for cohort life expectancy as these incorporate projected improvements in mortality many years into the future. For example, period life expectancy at birth in 2060 is calculated using mortality rates at all ages projected 50 years ahead to 2060; however, cohort life expectancy at birth in 2060 requires mortality rates projected 50 years ahead for the youngest ages but over 140 years ahead for ages 90 and above.
Given the uncertainties in projecting forward period and cohort life expectancies, variant projections are produced using alternative sets of mortality assumptions to allow users to look at alternative scenarios for expectation of life and to assess the sensitivity arising from using different assumptions.

The table shows period and cohort expectations of life at birth for both males and females for the years 2010 and 2035 for each of the main life expectancy variant projections (high, low and principal). The three projections show the variation in expectation of life figures if different rates of mortality improvements are applied. Period life expectancy in 2010 is the same in each of the variants since this is the base year of the projections and no improvements have been applied. However, cohort life expectancy in 2010 includes improvements in mortality beyond 2010 and these vary between the principal and high and low life expectancy variants from 2011 onwards.

**Period and cohort expectations of life at birth, 2010 and 2035**

United Kingdom

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**Table source:** Office for National Statistics

**Download table**

[XLS](XLS format) (23 Kb)

The table illustrates a number of points:

- The difference between the period life expectancy figures for 2010 and 2035 under each of the variants gives a measure of the projected overall improvement in mortality between 2010 and 2035.
- The difference between the cohort life expectancy figures for 2010 and 2035 under each of the variants gives a measure of the differences in projected overall improvement in mortality over a lifetime for those born in 2010 and those born in 2035.
- For the principal and low life expectancy variant the increase in period life expectancy at birth is higher than for cohort life expectancy at birth because the overall annual increases in mortality
after 2035 are lower than the projected annualised improvements in mortality over the period 2010-2035. The opposite is true for the high life expectancy variant.

Current annual improvements in mortality rates vary considerably by age and sex. The life expectancy projections assume that for most ages these improvements will gradually converge to common ‘target rates’ of improvement, at each age and for both sexes, by the year 2035, and continue to improve at that constant rate thereafter. However, the projections also assume that those born in the years 1925 to 1938 (cohorts which have consistently experienced relatively high rates of mortality improvement over the last 25 years) will continue to experience higher rates of mortality improvement than the rest of the population.

The target rate assumptions for the 2010-based projections are as follows:

The target rate assumption in the principal projection is 1.2 per cent annual improvement in mortality at 2035 for most ages, and thereafter annual improvements remaining at 1.2 per cent. This rises to 2.4 per cent in 2035 for the high life expectancy variant and falls to 0 per cent in 2035 for the low life expectancy variant. For those born between 1925 and 1938 rates of annual improvement in and after 2035 have higher target rates: rising to peaks of 2.5 per cent in the principal projection, 3.7 per cent in the high life expectancy variant and 1.3 per cent in the low life expectancy variant for those born in 1931 and 1932. They then decline back to the target rates for each variant for those born in 1939 and later. In all cases, lower target rates of improvement in 2035 are assumed for those born before 1924.

More information on the mortality assumptions used in the 2010-based national population projections is available in the report: Mortality Assumptions.

Background notes

1. Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gsi.gov.uk

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