



29 May 2024

PORTUGUESE LIFE TABLES 2021 - 2023

LIFE EXPECTANCY AT 81.17 YEARS AT BIRTH AND AT 19.75 YEARS AT THE AGE OF 65

In 2021-2023, **life expectancy at birth** was estimated at 81.17 years, 78.37 years for males and 83.67 years for females, following an increase of 0.32 years for males and of 0.15 years for females from the previous triennium.

Within a decade, there was a gain of 1.14 years in life expectancy at birth for the total population, 1.40 years for males and 0.87 years for females. This increase was mainly the result of a reduction in mortality at ages 60 and over. However, the contributions of older ages were more significant for females than for males.

Life expectancy at age 65, in 2021-2023, was estimated at 19.75 years for the total population. At the age of 65 years, men could expect to live 18.00 years and women 21.11 years, which corresponds to an increase of 0.24 for men and 0.13 years for women compared to 2020-2022. Over the last ten years, life expectancy at age 65 has increased 10.2 months for men and 8.4 months for women.

Statistics Portugal releases on its website – www.ine.pt – the 2021-2023 complete life tables for Portugal, by sex and for the total resident population, providing the official values of life expectancy for the same period.

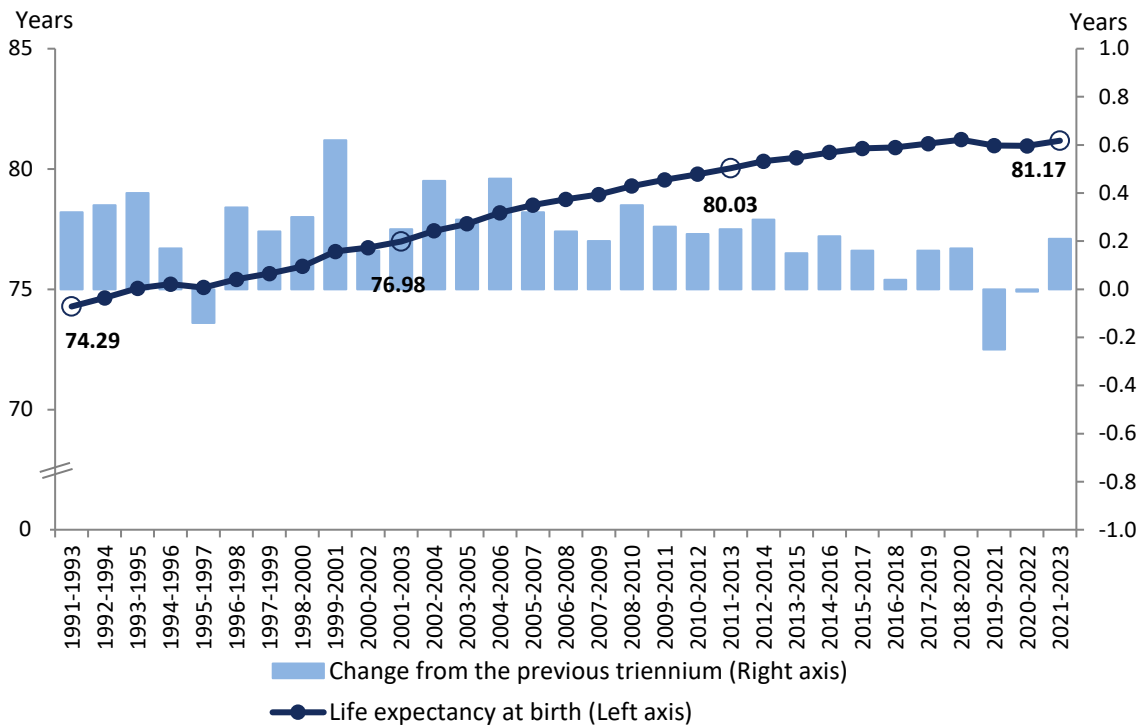
Life expectancy at birth of 81.17 years

Life expectancy at birth for both males and females were estimated at 81.17 years, which corresponds to an increase of 0.21 years (2.52 months) compared to the previous triennium (80.96 years).

Despite the increase in life expectancy at birth in the 2021-2023 triennium, it is still lower than that estimated for 2018-2020 (81.22 years), mainly as a result of the reduction in life expectancy at birth registered in the triennium 2019-2021 (-0.25 years) due to the increase in the number of deaths in the context of the COVID-19 disease pandemic.

PORTUGUESE LIFE TABLES 2021-2023

Figure 1. Life expectancy at birth, Portugal, 1991-1993 to 2021-2023

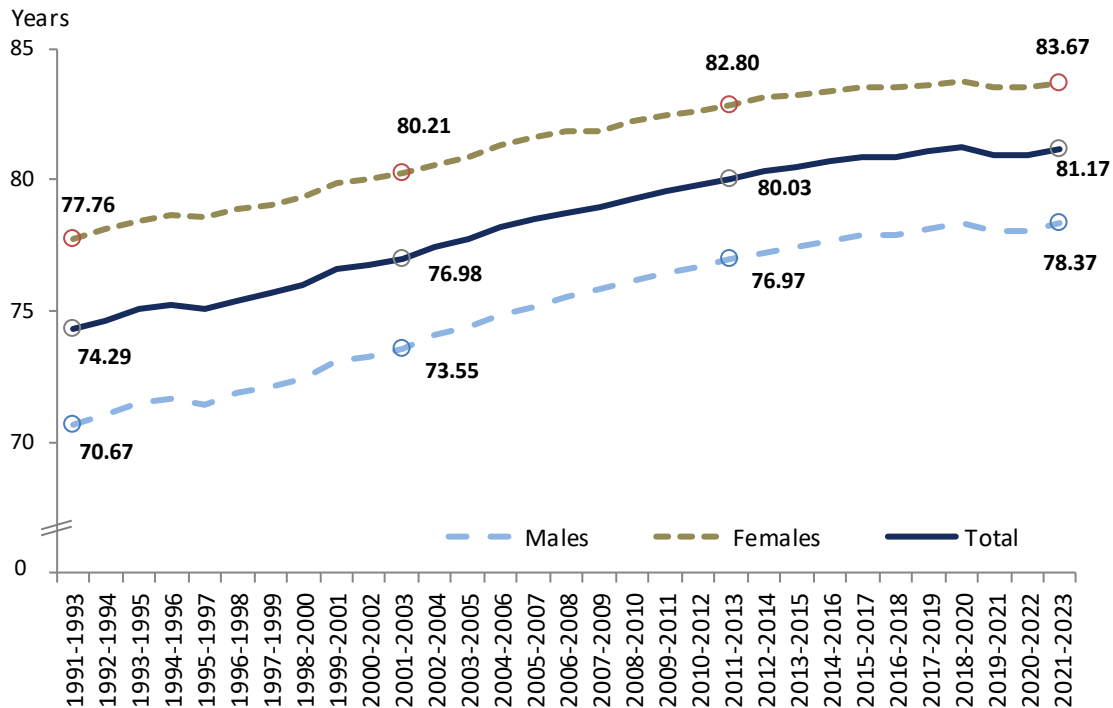


Source: Statistics Portugal, Complete Life Tables.

At birth, men could expect to live 78.37 years and women 83.67 years, which represents, relative to the estimated values for 2020-2022, an increase of 0.32 and of 0.15 years, respectively.

In the 2021-2023 triennium, despite the increase in life expectancy at birth for females, this is lower than that estimated for 2018-2020 (83.74 years), having not yet recuperated from the reduction recorded in the 2019-2021 triennium (-0.21 years), as opposed to what happened for men that, in 2021-2023, have already recovered from the decrease that occurred in that triennium (-0.30).

Figure 2. Life expectancy at birth by sex, Portugal, 1991-1993 to 2021-2023



Source: Statistics Portugal, Complete Life Tables.

In the last decade, life expectancy at birth in Portugal has increased by 1.14 years (13.7 months), an increase of 1.40 years (16.8 months) for males and 0.87 years (10.4 months) for females, when compared with the values estimated for 2011-2013. The increase in life expectancy at birth over the last ten years was mainly the result of a reduction in mortality at ages 60 and over, for both men and women. However, the contributions of older ages (75 and over) were more significant for women than for men¹.

In 2021-2023, women continued to live longer than men, resuming the convergence trend in life expectancy at birth for men and women interrupted in 2019-2021. Over the past ten years, the difference in life expectancy at birth for men and women has decreased from 5.83 in 2011-2013 to 5.30 years in 2021-2023.

In 2021-2023, it was estimated that 40.1% of male live births and 59.4% of female live births will survive to age 85 if subjected, throughout their lives, to the age-specific mortality conditions observed in this period. In 2011-2013, these values were, respectively, 34.3% and 54.7%, for men and women².

¹ Results based on the decomposition of the difference in life expectancy at birth between 2010-2012 and 2020-2022 (see technical note).

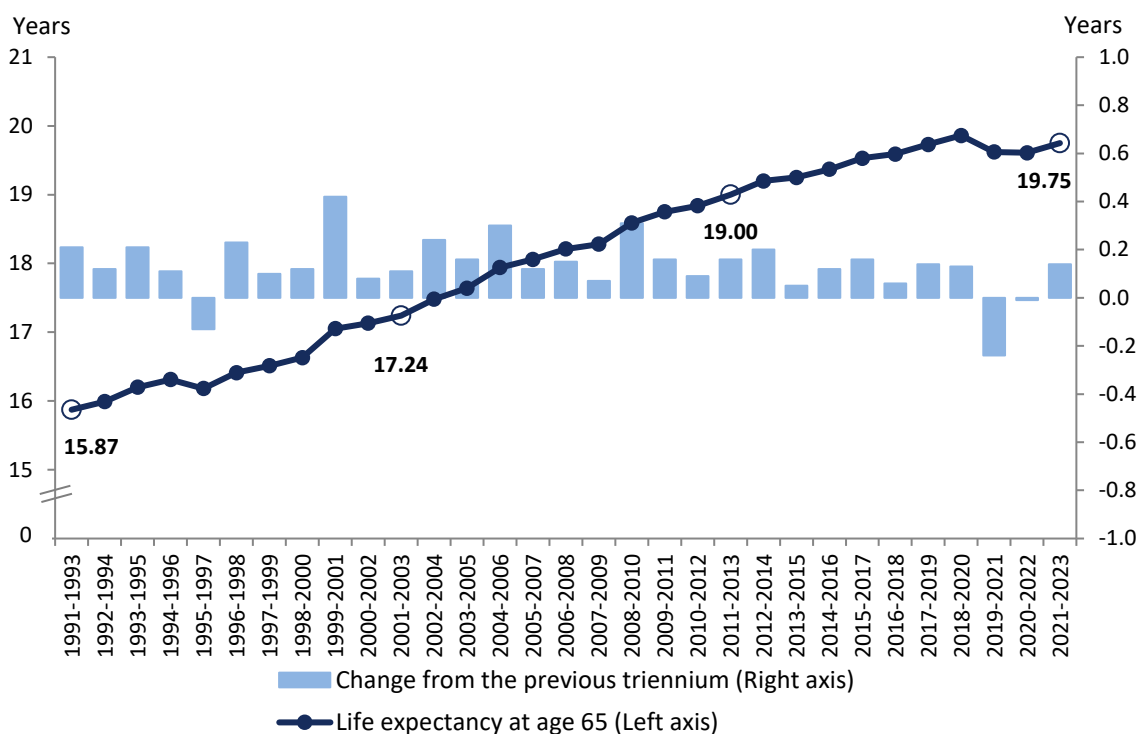
² Values are taken from the survival function (lx) of the life table (see technical note).

Life expectancy at age 65 of 19.75 years

In 2021-2023, life expectancy at age 65 was estimated at 19.75 years for the total population, being 18.00 years for men and 21.11 years for women, which corresponded to an increase of 0.14 years (1.7 months) for the total population, 0.24 years (2.9 months) for men, and 0.13 years (1.6 months) for women compared to 2020-2022.

In this triennium, mainly due to the reduction observed in the period 2019-2021 (-0.24 years), life expectancy at age 65 for the total population was 0.11 years lower than the estimated value for 2018-2020 (19.86 years). Life expectancy at age 65 in 2021-2023 was 0.04 years lower than in 2018-2020 for men and 0.08 years lower for women.

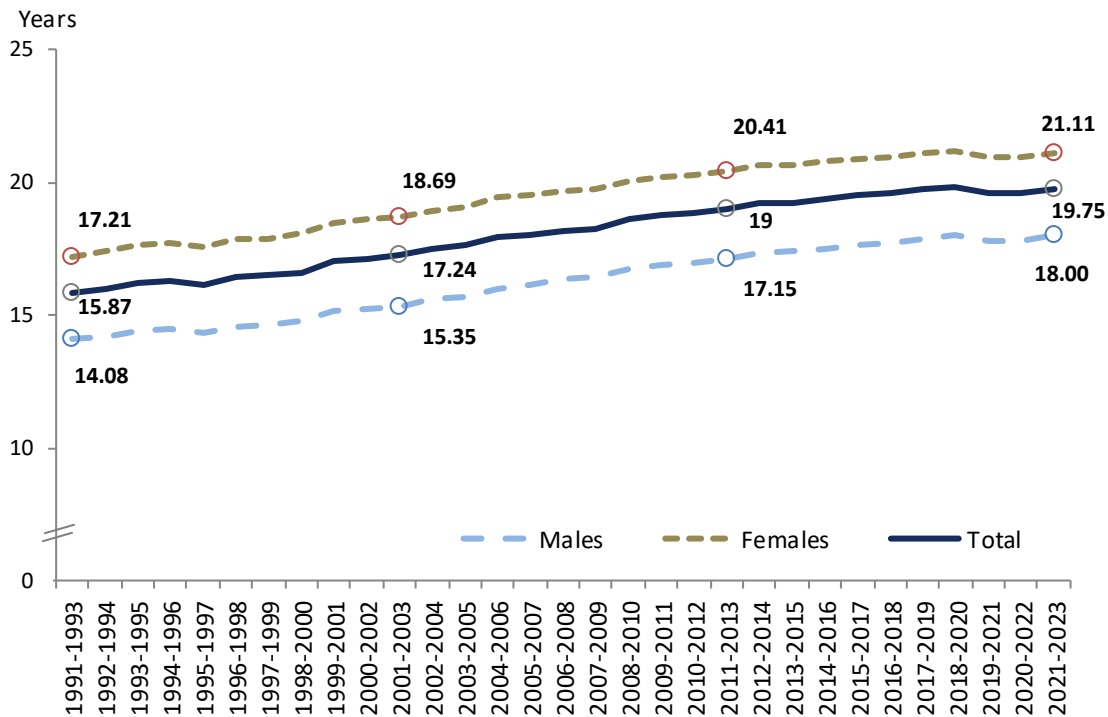
Figure 3. Life expectancy at age 65, Portugal, 1991-1993 to 2021-2023



Source: Statistics Portugal, Complete life tables.

Over the last ten years, life expectancy at age 65 has risen by 0.85 years (10.2 months) for males and by 0.70 years (8.4 months) for females. In 2021-2023 the gap in life expectancy at age 65 between men and women was 3.11 years.

Figure 4. Life expectancy at age 65 by sex, Portugal, 1991-1993 to 2021-2023



Source: Statistics Portugal, Complete life tables.



TECHNICAL NOTE

Complete life table for Portugal 2021-2023

The life table is a mathematical model of demographic analysis composed by a set of functions which provide a basis for measuring longevity in a given population and for making probabilistic judgments about the evolution of mortality with age and time. It is based on age-specific probabilities of dying estimates obtained from the observed number of deaths and the estimated population exposed to the risk of death in a given period of time, for which it is a period life table. Thus, the life table functions represent the experience of a hypothetical cohort of 100,000 live births (called the radix of the table) through their entire life under the assumption that they are subject to the observed schedule of age-specific mortality rates in a given period of time. The life table for Portugal is referred to as a complete since it contains data for every single year of age from birth to the last applicable age.

The functions of the complete life table are:

- Probability of dying (q_x): Probability that a person aged x exactly will die before reaching age $(x + 1)$;
- Survivors at exact age x (l_x): Number of survivors to exact age x of the initial cohort of 100,000 live births (radix of the table);
- Deaths between the exact ages x and $(x + 1)$ (d_x): Number of the initial cohort dying between the exact ages x and $(x + 1)$;
- Person-years lived between exact ages x and $(x + 1)$ (L_x): Number of person-years lived by the survivors of the initial cohort between exact ages x and $(x + 1)$;
- Person-years lived above age x (T_x): Total number of person-years lived by survivors after age x ;
- Life expectancy at age x (e_x): The average number of years a person can expect to live from exact age x .

The Complete Life Table for Portugal, which is produced annually, has a reference period of 3 years. The probabilities of dying are obtained by the ratio between the number of deaths by age of individuals from two generations (defined by the year of birth) who reach that age in the three consecutive years of reference of the table and the population exposed to the risk of death of those same generations in the same period, which softens the effects on the survival function caused by atypical fluctuations in the population's mortality behaviour. More precisely, in the 2020-2022 table, when calculating the probability of dying at the exact age x , data on the number of deaths at the exact age x that occurred in 2020 from generation 2020- x (lower Lexis triangle), the total number of deaths at exact age x occurred in 2021 (Lexis square), and deaths at exact age x occurred in 2022 from generation 2022- $x + 1$ (upper Lexis triangle) were considered.

In the most advanced ages (over 85 years), due to the variability in the probabilities of dying at these ages, the method proposed by Denuit and Goderniaux (2005) is applied for smoothing and extrapolation to the last applicable age (closing age of the life table).

Life expectancy at birth, one of the most important longevity indicators provided by the life table, is a well-known summary measure of mortality, widely employed in comparisons through time and between populations. When analysing changes in life expectancy at birth or studying differences in life expectancy between two populations, it is useful to estimate the contributions of the various age groups that explain them. In the present exercise, the variation of life expectancy values at birth between 2011-2013 and 2021-2023 was analysed using the method proposed by Andreev, E. M., Shkolnikov, V. M., & Begun, A. (2002).



References:

Andreev, E. M., Shkolnikov, V. M., & Begun, A. (2002). Algorithm for decomposition of differences between aggregate demographic measures and its application to life expectancies, healthy life expectancies, parity-progression ratios and total fertility rates. *Demographic Research*, 7, 499-522.

Denuit, M., & Goderniaux, A. C. (2005). Closing and projecting lifetables using log-linear models. *Bulletin of the Swiss Association of Actuaries*, 1, 29-49.

DEFINITIONS

Life expectancy at birth: The mean number of years that a new-born child can expect to live if subjected throughout his life to the current mortality conditions (age specific probabilities of dying).

Life expectancy at age 65: The mean number of years still to be lived by a person who has reached the exact age 65, if subjected throughout the rest of his life to the current age specific probabilities of dying.

Detailed methodological information available at: www.ine.pt, option Products, Metadata system: [Complete Life Tables](#).

Detailed statistical information available at: www.ine.pt, option Products, Statistical data, database, theme Population, Subtheme Mortality and life expectancy: [Complete life tables, Portugal, 2021-2023](#).