

# Life Expectancy

By: [Saloni Dattani](#), [Lucas Rod s-Guirao](#), [Hannah Ritchie](#), [Esteban Ortiz-Ospina](#) and [Max Roser](#)

[Introduction](#)   [Key Insights](#)   [Research & Writing](#)   [Charts](#)   [Endnotes](#)   [Cite This Work](#)   [Reuse This Work](#)

Across the world, people are living longer.

In 1900, the average life expectancy of a newborn was 32 years. By 2021 this had more than doubled to 71 years.

But where, when, how, and why has this dramatic change occurred?

To understand it, we can look at data on life expectancy worldwide.

The large reduction in child mortality has played an important role in increasing life expectancy. But life expectancy has increased at all ages. Infants, children, adults, and the elderly are all less likely to die than in the past, and death is being delayed.

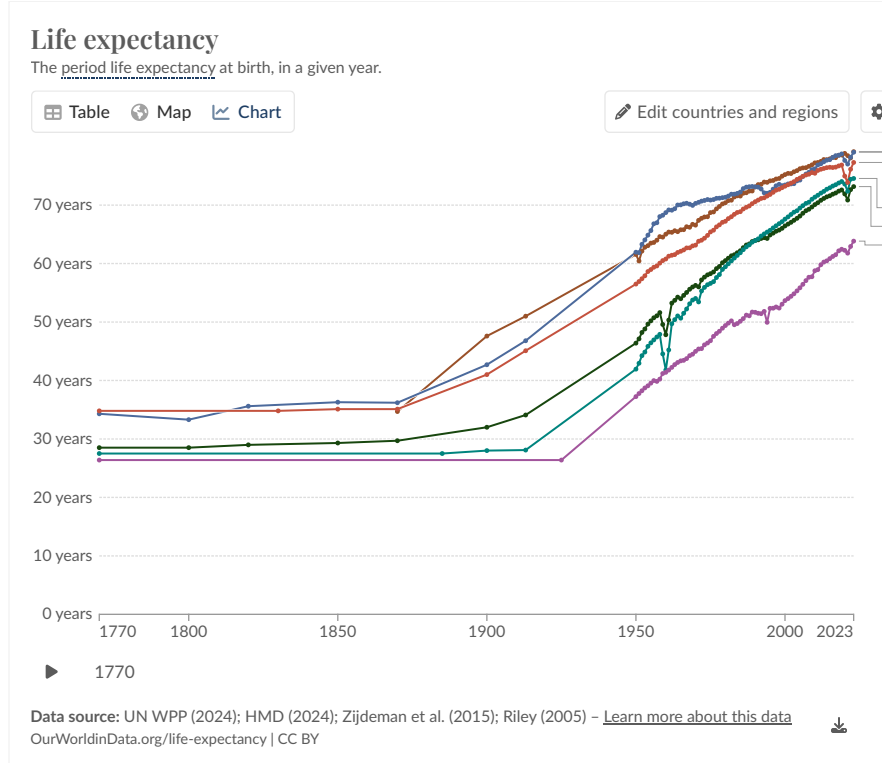
This remarkable shift results from advances in medicine, public health, and living standards. Along with it, many predictions of the ‘limit’ of life expectancy have been broken.

On this page, you will find global data and research on life expectancy and related measures of longevity: the probability of death at a given age, the sex gap in life expectancy, lifespan inequality within countries, and more.

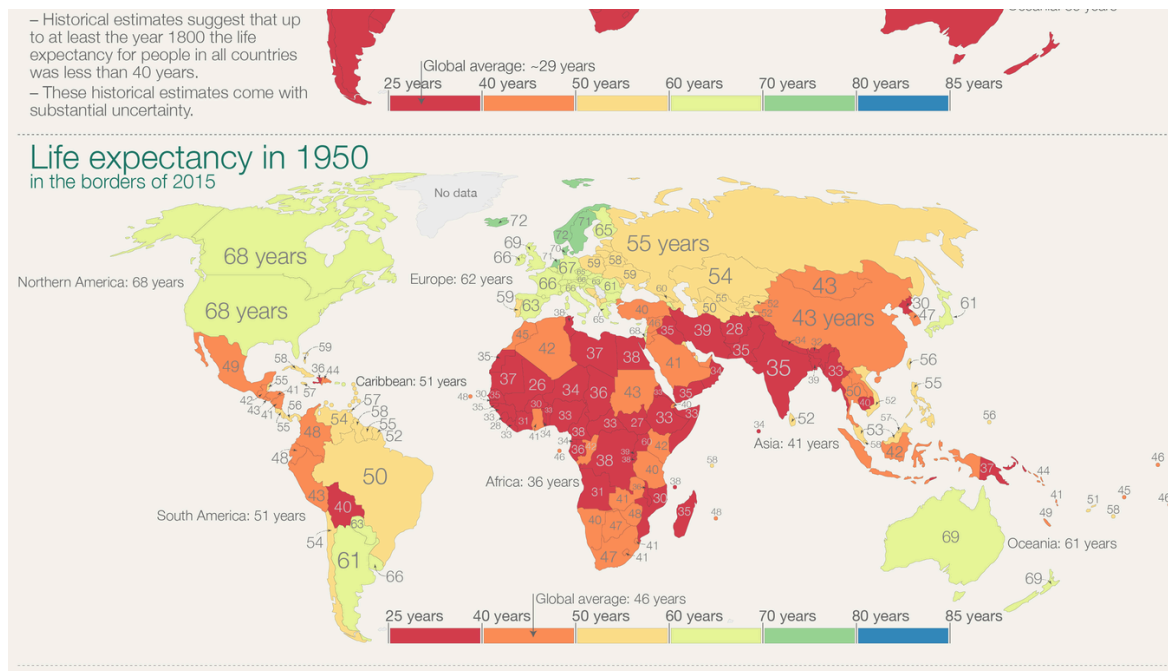
## Key Insights on Life Expectancy

|  |  |   |  |               |
|--|--|---|--|---------------|
| Life expectancy has increased across the world | There are wide differences in life expectancy around the world | Life expectancy has increased at all ages | Women tend to live longer than men, but this gap has changed over time | Life surj and |
|--|--|---|--|---------------|

- Period life expectancy is a metric that summarizes death rates across all age groups in one particular year.
- For a given year, it represents the average lifespan for a hypothetical group of people, if they experienced the same age-specific death rates throughout their whole lives as the age-specific death rates seen in that particular year.
- This data is compiled from three sources: the United Nations' World Population Prospects (UN WPP), Zijdeman et al. (2015)<sup>2</sup>, and Riley (2005)<sup>3</sup>. For data points before 1950, we use Human Mortality Database data<sup>4</sup> combined with Zijdeman (2015). From 1950 onwards, we use UN WPP data. For pre-1950 data on world regions and the world as a whole, we use estimates from Riley (2005).
- Riley (2005)<sup>3</sup> compiles life expectancy estimates from hundreds of historical sources and calculates the average of estimates that met an acceptable quality threshold, such as having estimates for entire nations or regions. Less historical data is available from the pre-health transition period in countries – this is especially the case for Africa, Asia, Oceania,



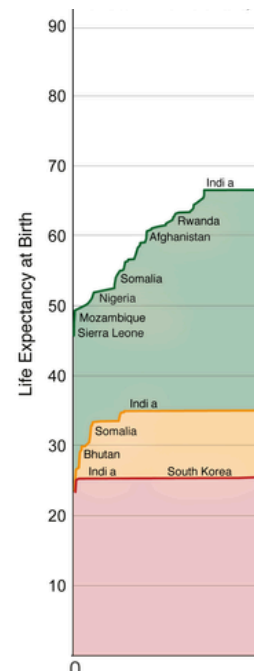
## Research & Writing



## Twice as long – life expectancy around the world

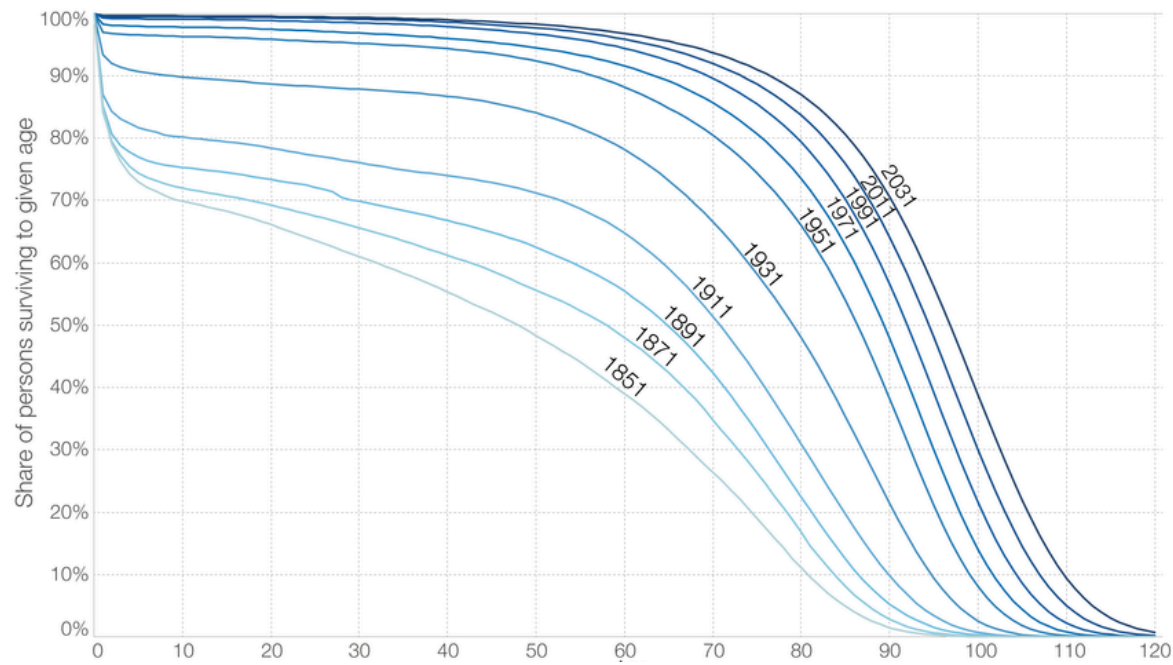
Max Roser

## More articles on life expectancy



## Life expectancy increases

Max Roser



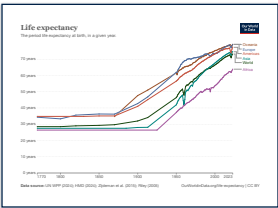
“Life Expectancy” – What does this actually mean?

Esteban Ortiz-Ospina

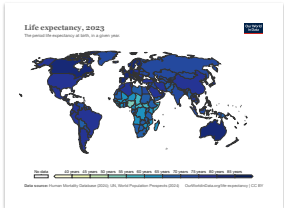
The rise of maximum life

Max Roser

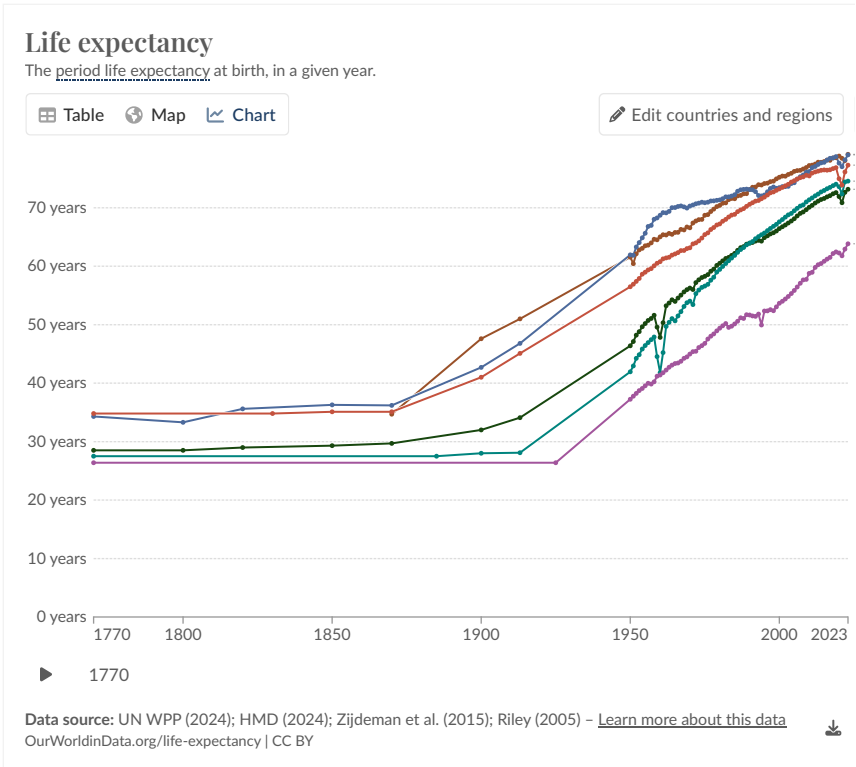
Interactive Charts on Life Expectancy



Life expectancy over the long-run



Life expectancy HMD, UN WPP



ENDNOTES

1. As you can see, the chart also shows that the rise has not been completely constant. Major events – the World Wars, the 1918 Spanish flu pandemic, the HIV/AIDS epidemic, and the COVID-19 pandemic – have had a major impact on mortality rates and left a visible mark on life expectancy.
2. Zijdeman, Richard and Filipa Ribeira da Silva (2015). Life Expectancy at Birth (Total). <http://hdl.handle.net/10622/LKYT53> , accessed via the Clio Infra website. Zijdeman, R. L., & de Silva, F. R. (2014). Life expectancy since 1820.
3. Riley, J. C. (2005). Estimates of regional and global life expectancy, 1800–2001. *Population and Development Review*, 31(3), 537–543.
4. Barbieri, M., Wilmoth, J. R., Shkolnikov, V. M., Gleij, D., Jasilionis, D., Jdanov, D., Boe, C., Riffe, T., Grigoriev, P., & Winant, C. (2015). Data Resource Profile: The Human Mortality Database (HMD). *International Journal of Epidemiology*, 44(5), 1549–1556. <https://doi.org/10.1093/ije/dyv105>
5. Wrigley E.A. et al. (1997) English population history from family reconstitution 1580-1837, Cambridge University Press, Cambridge.
6. Kannisto, V., Nieminen, M. and O. Turpeinen (1999), “Finnish life tables since 1751,” *Demographic Research*, Vol. 1/1.
7. Aburto, J. M., Villavicencio, F., Basellini, U., Kjærgaard, S., & Vaupel, J. W. (2020). Dynamics of life expectancy and life span equality. *Proceedings of the National Academy of Sciences*, 117(10), 5250–5259. <https://doi.org/10.1073/pnas.1915884117> Liou, L., Joe, W., Kumar, A., & Subramanian, S. V. (2020). Inequalities in life expectancy: An analysis of 201 countries, 1950–2015. *Social Science & Medicine*, 253, 112964. <https://doi.org/10.1016/j.socscimed.2020.112964>
- Permanyer, I., & Scholl, N. (2019). Global trends in lifespan inequality: 1950-2015. *PLOS ONE*, 14(5), e0215742. <https://doi.org/10.1371/journal.pone.0215742>
- Vaupel, J. W., Zhang, Z., & Van Raalte, A. A. (2011). Life expectancy and disparity: An international comparison of life table data. *BMJ Open*, 1(1), e000128–e000128. <https://doi.org/10.1136/bmjopen-2011-000128>
- Wilson, C. (2011). Understanding Global Demographic Convergence since 1950. *Population and Development Review*, 37(2), 375–388. <https://doi.org/10.1111/j.1728-4457.2011.00415.x>
8. Aburto, J. M., Villavicencio, F., Basellini, U., Kjærgaard, S., & Vaupel, J. W. (2020). Dynamics of life expectancy and life span equality. *Proceedings of the National Academy of Sciences*, 117(10), 5250–5259. <https://doi.org/10.1073/pnas.1915884117>
9. Zarulli, V., Kashnitsky, I., & Vaupel, J. W. (2021). Death rates at specific life stages mold the sex gap in life expectancy. *Proceedings of the National Academy of Sciences*, 118(20), e2010588118. <https://doi.org/10.1073/pnas.2010588118>
- Vladimir Canudas-Romo, Nandita Saikia, & Nadia Diamond-Smith. (2016). The contribution of age-specific mortality towards male and female life expectancy differentials in India and selected States, 1970-2013. *Asia-Pacific Population Journal*, 30(2), 1–20. <https://doi.org/10.18356/8ec0129d-en>
10. Drevenstedt, G. L., Crimmins, E. M., Vasunilashorn, S., & Finch, C. E. (2008). The rise and fall of excess male infant mortality. *Proceedings of the National Academy of Sciences*, 105(13), 5016–5021. <https://doi.org/10.1073/pnas.0800221105>
11. Feraldi, A., & Zarulli, V. (2022). Patterns in age and cause of death contribution to the sex gap in life expectancy: A comparison among ten countries. *Genus*, 78(1), 23. <https://doi.org/10.1186/s41118-022-00171-9>
12. Janssen, F. (2020). Changing contribution of smoking to the sex differences in life expectancy in Europe, 1950–2014. *European Journal of Epidemiology*, 35(9), 835–841. <https://doi.org/10.1007/s10654-020-00602-x>
- Luy, M., & Wegner-Siegmundt, C. (2015). The impact of smoking on gender differences in life expectancy: More heterogeneous than often stated. *The European Journal of Public Health*, 25(4), 706–710. <https://doi.org/10.1093/eurpub/cku211>
13. Gleij, D. A., & Horiuchi, S. (2007). The narrowing sex differential in life expectancy in high-income populations: Effects of differences in the age pattern of mortality. *Population Studies*, 61(2), 141–159. <https://doi.org/10.1080/00324720701331433>
- Bergeron-Boucher, M.-P., Alvarez, J.-A., Kashnitsky, I., & Zarulli, V. (2022). Probability of males to outlive females: An international comparison from 1751 to 2020. *BMJ Open*, 12(8), e059964. <https://doi.org/10.1136/bmjopen-2021-059964>

14. Oeppen, J., & Vaupel, J. W. (2002). Broken Limits to Life Expectancy. *Science*, 296(5570), 1029–1031. <https://doi.org/10.1126/science.1069675>
15. Dublin, L., Israel. (1928). *Health and Wealth: A Survey of the Economics of World Health*. Harper & Brothers.

---

## Cite this work

Our articles and data visualizations rely on work from many different people and organizations. When citing this topic page, please also cite the underlying data sources. This topic page can be cited as:

Saloni Dattani, Lucas Rodés-Guirao, Hannah Ritchie, Esteban Ortiz-Ospina and Max Roser (2023) – “Life Expectancy” Published online at OurWorldinData.org. Retrieved from: 'https://ourworldindata.org/life-expectancy' [Online Resource]



### BibTeX citation

```
@article{owid-life-expectancy,  
  author = {Saloni Dattani and Lucas Rodés-Guirao and Hannah  
Ritchie and Esteban Ortiz-Ospina and Max Roser},  
  title = {Life Expectancy},  
  journal = {Our World in Data},  
  year = {2023},  
  note = {https://ourworldindata.org/life-expectancy}  
}
```



Our World  
in Data

## Reuse this work freely

All visualizations, data, and code produced by Our World in Data are completely open access under the [Creative Commons BY license](#). You have the permission to use, distribute, and reproduce these in any medium, provided the source and authors are credited.

The data produced by third parties and made available by Our World in Data is subject to the license terms from the original third-party authors. We will always indicate the original source of the data in our documentation, so you should always check the license of any such third-party data before use and redistribution.

All of [our charts](#) can be embedded in any site.

**Our World in Data is free and accessible for everyone.**

**Help us do this work by making a donation.**

Donate now

---

About

---

Contact

---

Feedback

---

|                              |
|------------------------------|
| Jobs                         |
| Funding                      |
| FAQs                         |
| Donate                       |
| Privacy policy               |
|                              |
| Latest work                  |
| Data Catalog                 |
| X                            |
| Instagram                    |
| Threads                      |
| Facebook                     |
| LinkedIn                     |
| Bluesky                      |
| GitHub                       |
| Research & Writing RSS Feed  |
| Daily Data Insights RSS Feed |



Licenses: All visualizations, data, and articles produced by Our World in Data are open access under the [Creative Commons BY license](#). You have permission to use, distribute, and reproduce these in any medium, provided the source and authors are credited. All the software and code that we write is open source and made available via GitHub under the permissive [MIT license](#). All other material, including data produced by third parties and made available by Our World in Data, is subject to the license terms from the original third-party authors.

Please consult our full [legal disclaimer](#).

Our World In Data is a project of the [Global Change Data Lab](#), a registered charity in England and Wales (Charity Number 1186433).