verywell health

Healthy Life Expectancy and How It's Calculated

HLE is indicative of years of wellness, not total years of life

By Mark Stibich, PhD | Updated on April 20, 2022

Ⓥ Medically reviewed by Jenny Sweigard, MD

Health-adjusted life expectancy (HALE) is the average number of years that a person can expect to live in full health—that is, not hampered by disabling illnesses or injuries. Commonly referred to as healthy life expectancy (HLE), it is a measurement used by the World Health Organization (WHO) in assessing the health and well-being of a country.

Not to be confused with lifespan (the maximum amount of years a species can live—currently over 120 for humans) or life expectancy (the average length of life for a population), HALE takes into account years lived in less-than-full health due to disease or injury.

History

HALE combines mortality and morbidity data of a country or region to estimate the expected years of life in good health for the average person in that area. The WHO began compiling this data into tables in 1999 using estimates of patterns and trends in all-cause and cause-specific mortality.

Working in conjunction with the United Nations Population Division (UNPD), the WHO releases updated HALE tables for its 180-plus member states every two years. Individual countries often break down HALE into regions, states, and communities.

Uses

HALE estimates are used to predict future health service needs, evaluate existing health programs, and identify trends in countries across the globe. The data is used by public health officials in creating policies to address inequalities in health programs and services across different regions.

A standard summary measure of population health at both the international and national levels, HALE is used by the WHO to measure a country's effectiveness in reducing the burden of diseases.

Worldwide, substantial resources are devoted to decreasing the incidence, duration, and severity of diseases and chronic health conditions. Effective public health policies devoted to preventing or managing various health conditions result in improved overall quality of life and increased HALE.

HALE increased by 5.31 years for males and 5.73 years for females all over the

world between 1990 and 2013. This can be attributed to public health policies aimed at:

- Improving care for pregnant women and children
- Reducing the spread of communicable diseases through vaccines, clean-water initiatives, and hygiene practices
- Preventing nutritional deficiencies through food programs
- Encouraging better heart health through exercise, diet, and cessation of smoking

How HALE Is Calculated

HALE takes into consideration several different data points, like mortality rates and health status information, to estimate healthy life expectancy.

> HALE represents the expected number of remaining years of life spent in good health from a particular age (typically birth or 65 years), assuming the rates of mortality and morbidity remain unchanged. HALE data is often also separated out by gender and race.

The available data can vary from country to country but commonly includes objective and subjective health status indicators that measure physical health, mental health, and functional status, along with self-perceived health scores based on national health surveys.

Sullivan's Index

The most commonly used method to determine HALE is the Sullivan method, which is computed by subtracting the probable duration of disability or inability to perform important activities from the life expectancy.

Also known as disability-free life expectancy (DFLE), Sullivan's index results in prevalence-based life tables that studies show provide a clear and consistent population health outcome measure for evaluating the success of investments in healthcare.

Multistate Life Tables

Another method of formulating HALE, the multistate life table method allows individuals to move between different health states over time. These can include

things like smoking status, hypertension, and diabetes.

A study comparing the Sullivan's index to the multistate tables found they both produce similar results at ages 60 and 70, but the multistate tables provide higher HALE estimates at age 90 and over.

HALE Around the World

Globally, the average healthy life expectancy for someone age 60 was 75.8 years in 2016 (men: 74.8 years; women: 76.8 years).

Regionally, people living in North, South, and Central America have the longest healthy life expectancy at 77.6 years, while those living in Africa have the shortest health life expectancy at 72.5 years.

HALE by Global Region			
Region	**All**	**Men**	**Women**
Americas	77.6	76.4	78.7
Europe	77.4	75.9	78.7
Western Pacific	76.6	75.6	77.6
Eastern Mediterranean	73.3	73.0	73.6
South-East Asia	73.3	72.7	73.9
Africa	72.5	72.0	73.0

In the United States, the average life expectancy is 84.1 years and the average HALE is 78.9 years.

Women, live 2.6 years longer than men (85.3 to 82.7 years), on average, and enjoy good health for almost two years longer (79.8 to 77.9 years).

Race also contributes to longevity: Whites live an average of 84.2 years, 79.3 years of which are in good health; Blacks live an average of 83.1 years, but just 76.1 years in good health.

U.S. States With the Highest HALE	
State	**HALE**

State	HALE
Hawaii	81.2
Connecticut	80.7
Minnesota	80.6
Florida	80.4
Vermont	80.2

U.S. States With the Lowest HALE	
State	HALE
Mississippi	75.8
West Virginia	76.0
Kentucky	76.0
Alabama	76.1
Tennessee	76.9

Will COVID-19 Impact HALE?

It is too soon to determine how the global pandemic of COVID-19 will impact health-adjusted life expectancy across the globe.

Researchers at the Social Science Research Council suspect countries that are hard hit by COVID-19 may see a temporary decline in overall life expectancy similar to the dip observed following the 1918 pandemic flu. Total life expectancy in the U.S. dropped by about 6.8 years in 1918, but then increased by 8.8 years in 1919.

How this will translate to years in good health remain to be seen as the long-term effects of COVID-19 are not yet understood. Coronavirus has lead to blood clots, blood vessel problems, and damage to the heart, lungs, and brain leading to potential chronic health problems that can impact an individual's quality of life.

A Word From Verywell

Health-adjusted life expectancy estimates are used to make predictions about specific populations. While it can provide hints about how long you can expect to live in good health, it won't give you a definitive answer.

Take steps to increase your years in good health, such as getting regular exercise, eating more plant-based foods, and keeping routine doctor appointments and regular physicals.

10 Sources

Verywell Health uses only high-quality sources, including peer-reviewed studies, to support the facts within our articles. Read our editorial process to learn more about how we fact-check and keep our content accurate, reliable, and trustworthy.

1. World Health Organization. Healthy life expectancy (HALE).

2. World Health Organization. WHO methods and data sources for life tables

3. Centers for Disease Control and Prevention (CDC). State-specific healthy life expectancy at age 65 years--United States. *MMWR Morb Mortal Wkly Rep*; 62(28):561-566.

4. Chen H, Chen G, Zheng X, Guo Y. Contribution of specific diseases and injuries to changes in health adjusted life expectancy in 187 countries from 1990 to 2013: retrospective observational study. *BMJ*. 2019;364:l969. doi:10.1136/bmj.l969

5. Stiefel MC, Perla RJ, Zell BL. A healthy bottom line: healthy life expectancy as an outcome measure for health improvement efforts. *Milbank Q*. 2010;88(1):30-53. doi:10.1111/j.1468-0009.2010.00588.x

6. Lynch SM, Brown JS. Obtaining multistate life table distributions for highly refined subpopulations from cross-sectional data: A Bayesian extension of Sullivan's method. *Demography*. 2010;47(4):1053-1077. doi:10.1007/BF03213739

7. Murakamia Y, Tsukinokib R, Miurac K, et al. Comparison of methods for calculating healthy life expectancy in a Japanese population: An analysis of Nippon Data90. *Rev Epidemiol Sante Publique*. 2018;5(66):S329-S330. doi:10.1016/j.respe.2018.05.247

8. World Health Organization. Global Health Observatory data repository: Healthy life expectancy (HALE) data by WHO region.

9. Social Science Research Council. Measures and models for longevity and aging: The burden of mortality from COVID-19.

10. Mayo Clinic. COVID-19 (coronavirus): Long-term effects.