Life expectancy and causes of death

Key points

- At the global level, life expectancy at birth increased by 5.5 years, from age 66.5 to age 72.0 (for both sexes combined) during the period 2000—2020.
- Boys born in 2020 will live, on average, to age 69.9 and girls to age 74.7, a difference of 4.8 years that has remained consistent over time.
- While the fastest rate of increase in life expectancy at birth is reported in sub-Saharan Africa, as of 2020, life expectancy in the region remains 12 years lower than the global average.
- The gender gap in life expectancy at birth ranges from less than 3 years in Central and Southern Asia (70.9 years for women versus68.2 yearsfor men) to 6.5 years in Latin America and the Caribbean (78.5 years for women versus 72 years for men): in general, the gap is greater in developed countries and smaller in developing ones.
- Causes of death vary by age and sex, and the patterns observed across regions and countries are closely linked to the development of health systems and the epidemiological transition from communicable to non-communicable diseases.
- Women have a longer life expectancy than men at all ages and death rates from almost all leading causes of death are higher among men than women.
- While young women are at risk of dying in childbirth and from related complications, young men are more likely to die as a result of road injuries and/or interpersonal violence.
- In all regions, men aged 15—49 are more prone than women to dying from injuries or external causes: in Latin America and the Caribbean, six and a half times more likely; in Northern America and Europe, four times more likely; and in Western Asia and Northern Africa, Australia and New Zealand, sub-Saharan Africa and Oceania (excluding Australia and New Zealand) at least three times more likely.
- As men age, they die in greater numbers than women from causes such as tuberculosis, HIV/AIDS, stroke and heart disease, lower respiratory infections and cancer.
- At older ages, however, women are more likely to die from rheumatic heart disease, Alzheimer's disease and other types of dementia.

Background

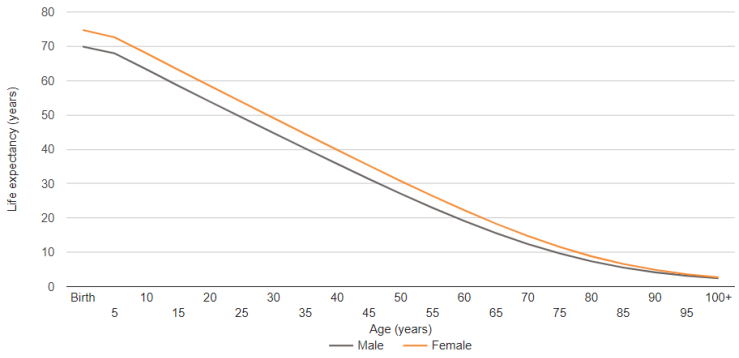
Life expectancy is a key measure of a population's health; healthier populationslive longer. Analysis of trends in life expectancy can reveal changes in health status over time. Analysis of differences in life expectancy between specific population groups, as well as between women and men, can uncover inequalities in health status that need to be addressed.

Current situation

Life expectancy for girls born in 2020, on average, age 74.7; for boys, on average, age 69.9 – a difference of 4.8 years

During the period 2000—2020, global life expectancy at birth increased by 5.5 years, from age 66.5 to age 72.0 (for both sexes combined): women continued to have a longer life expectancy than men at all ages (see figure I).While this difference is partly due to an inherent biological advantage, it also reflects behavioural differences between men and women, as well as gender differentials in the social determinants of health. Girls born in 2020 will live, on average to age 74.7, while boys will live, on average, to age 69.9 — a difference of 4.8 years thathas remained more or less constant over the past 20 years.

Figure I: Global life expectancy by sex and age: 2015-2020

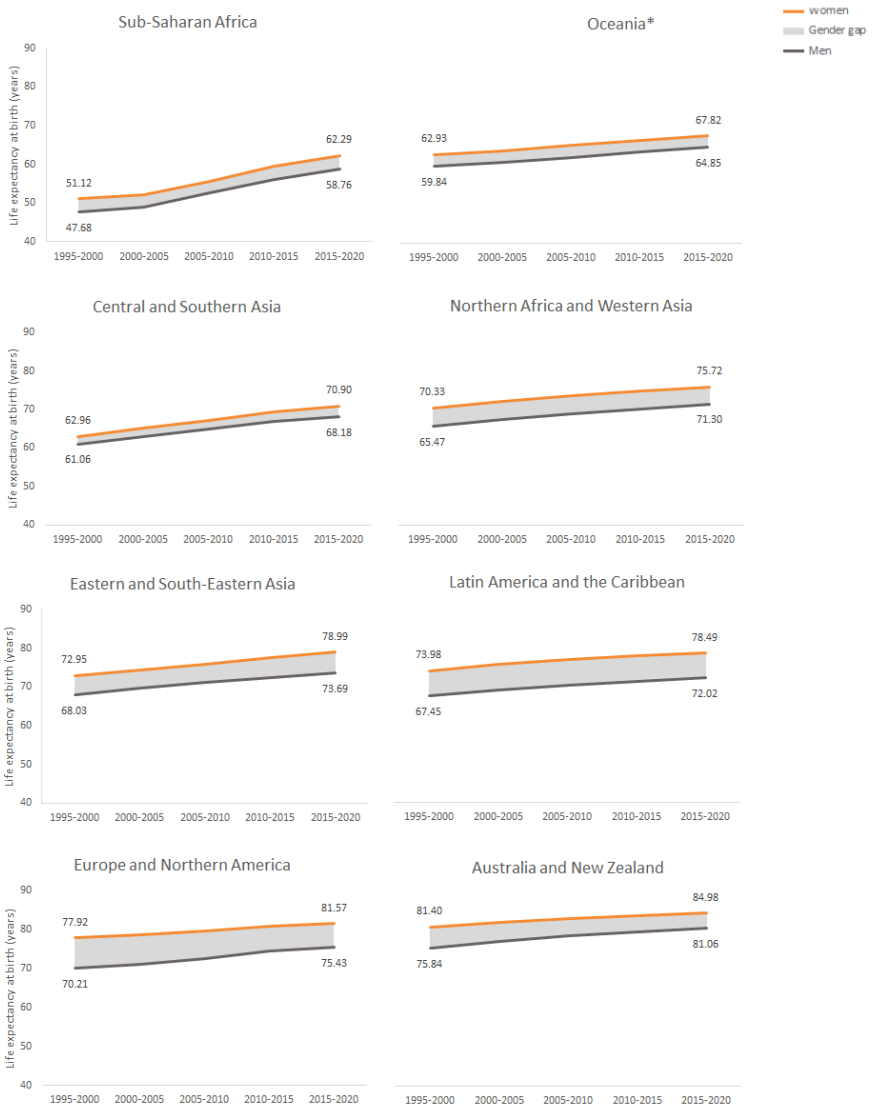


Source: United Nations Department of Economic and Social Affairs (UNDESA), Population Division, World Population Prospects 2019 (https://population.un.org/wpp/).

Over the period 2015—2020, the greatest increase in life expectancy at birth was in sub-Saharan Africa (see figure II), mainly due to improved quality and access of medical care, as well as the tapering off of HIV/AIDS infection in the region. Nevertheless, in 2020, life expectancy in sub-Saharan Africa remains 12 years lower than the global average, and the gender gap has remained constant, hovering at around 3.5 years (life expectancy for women is age 62.3 versus age 58.8 for men). Thereare significant regional differences in the gender gap in life expectancy, ranging from less than 3 years in Central and Southern Asia (life expectancy for women is age 70.9 versus age 68.2for men) to 6.5 years in Latin America and the Caribbean (life expectancy for women is age 78.5 versus age 72 for men). In general, the gender gap is greater in developed countries and smaller in developing ones.

The life expectancy of women ranges from age 62.3in sub-Saharan Africa, to almost age 85 in Australia and New Zealand. In 64 countries, most in Europe and Northern America and Eastern Asia, women's life expectancy is higher than age 80, while in 11 countries in sub-Saharan Africa it is below age 60.

Figure II: Life expectancy at birth by region and sex: 1995-2020

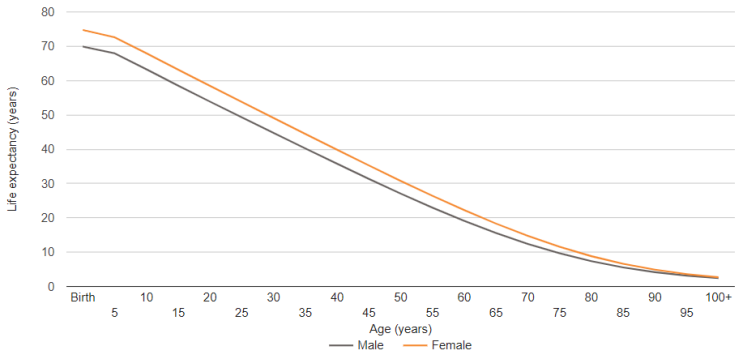


Source: United Nations Department of Economic and Social Affairs (UNDESA), Population Division, World Population Prospects 2019 (https://population.un.org/wpp/).

Note: Oceania* (excluding Australia and New Zealand).

Life expectancy at age 65 is also higher for women than men: 18.3 versus 15.6 additional years, a gender gap of 2.7 years.The differences in life expectancy between men and women may be due to biology, including hormonal differences and/or gender (socially influenced roles and behaviours), as well as differences in social determinants of health, access to health care or level of exposure to risk factors.The exact contributions of biological differences and gender roles to health status vary geographically, however, and are often difficult to separate because they do not operate independently.

Figure I: Global life expectancy by sex and age: 2015-2020



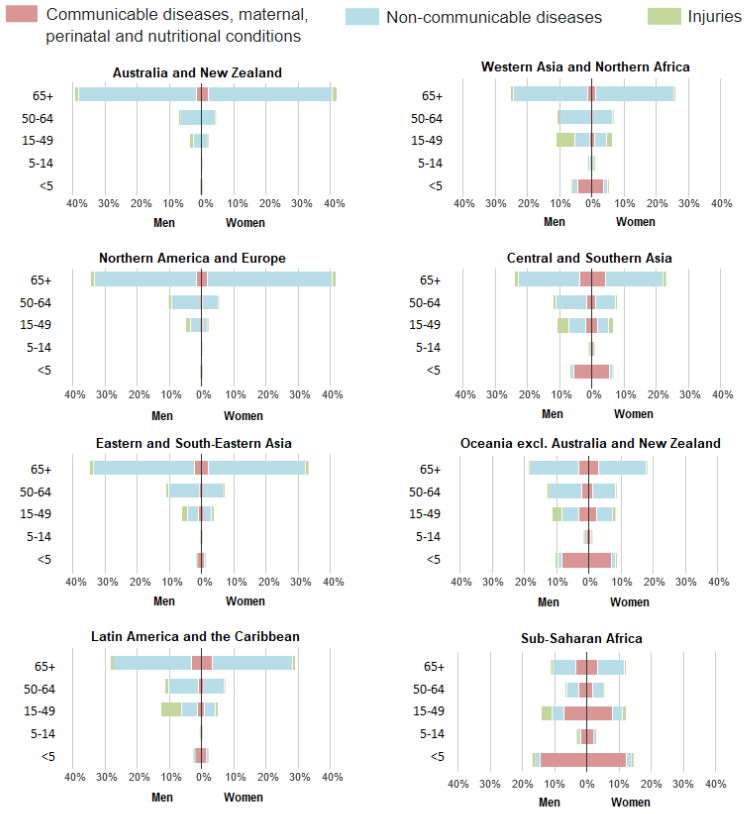
Source: United Nations Department of Economic and Social Affairs (UNDESA), Population Division, World Population Prospects 2019 (https://population.un.org/wpp/).

There aremarkedly different patterns in the ages at and causes of death in developed and developing countries

While in developed countries, the majority of people who die are older than age 65, in countries in developing regionsthere are a significant number of deaths prior to age 5, relatively few deaths at ages 5—14, and an increase in the proportion of deaths in the cohorts aged 15—49 and aged 50—64(see figure III). In Europe and Northern America more than 75%of deaths occur above age 65, but in sub-Saharan Africa the inverse is true (almost 75% of deaths occur below age 65) and almost one in three deaths are among children under 5 years of age.[1] The relatively low death rate among children aged 5—14, may be because, having survived the critical early years, they are still young enough to be under the protection of their parents and less likely to be exposed to risky behaviours or to work outside the home.

The most marked gender gap, which holds true in all regions, is linked to the fact that men aged 15—49 are significantly more likely than women to die from injuries or from external causes, including unintentional injuries, for example from road accidents, falls or drowning, as well as from intentional injuries, such as self-harm (suicide), interpersonal violence and collective violence. The largest gender gap in this cause of death among women and men in this age group is in Latin America and the Caribbean, where men are six and a half times more likely than women to die from one of these causes. In Northern America and Europe, men are four times as likely to die in this way, while in Western Asia and Northern Africa, Australia and New Zealand, sub-Saharan Africa and Oceania (excluding Australia and New Zealand) men are three times as likely as women to die in this manner (see figure III).

Figure III: Distribution of total deaths by age and sex by region: 2016 (Percentage)



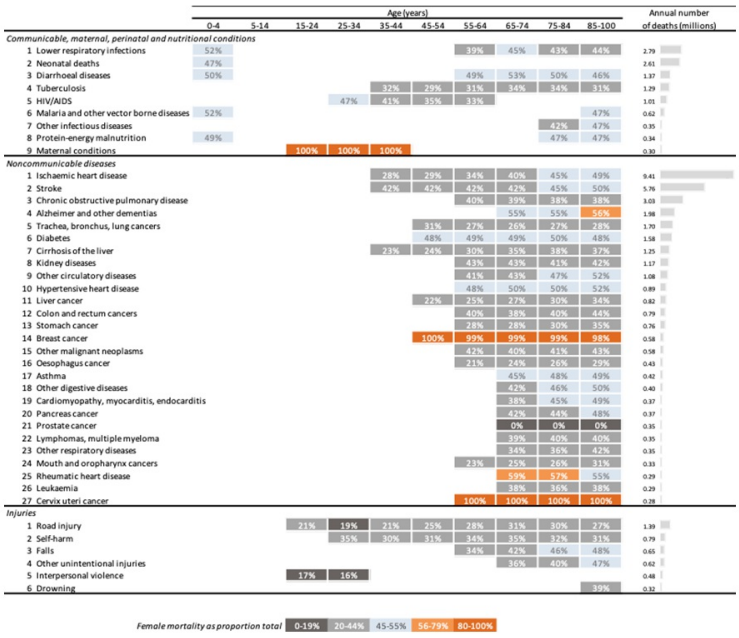
Source: WHO, Global Health Estimates 2016 ((https://www.who.int/healthinfo/global_burden_disease/en/).

Note: Causes of death are classified under the WHO International Classification of Diseases into three groups: (a) communicable diseases, maternal, perinatal and nutritional conditions, (b) non-communicable diseases, and (c) injuries. Regions are in descending order of the percentage of deaths among people aged 65 and older.

With the exception of deaths due to maternal conditions, breast and cervical cancers and Alzheimer's and other types of dementia, over the course of life, death rates from leading causes of death are higher among men than women

Men's reduced life expectancy compared with women is not due to a single or a restricted number of causes[2] (see figure IV). Death rates from almost all leading causes of death are higher among men than women over the life course. Exceptions include deathfrom maternal conditions, breast cancer, Alzheimer's and different types of dementia and cervical cancer. Causes of death vary by age and sex, and the patterns observed across regions and countries are closely linked to the development of health systems and the epidemiological transition from communicable to non-communicable diseases.

Figure IV: Female death rates as a percentage of total death rates by age and cause of death worldwide: 2016



Source: Source: WHO, Global Health Estimates 2016 (https://www.who.int/healthinfo/global_burden_disease/en/).

Note: Data are presented for the 42 leading causes of death in 2016 (where global number of deaths exceeded 280,000). These causes accounted for 89% of all deaths in 2016. The female death rate in relation to the combined male and female death rate is shown for cells where the age specific death rate from a cause, in either sex, exceeds 1,500 per 100,000.

In developing countries, life expectancy is reduced by causes that are frequently preventable or treatable through access to basic health services, notably deaths due to maternal conditions. Deaths from communicable diseases such as malaria, diarrhoeaand tuberculosis are also higher in developing countries. This situation has drastically changed, however, since early 2020 due to the emergence of the Coronavirus-19 (COVID-19), a communicable disease that has affected developing and developed countries alike.

In developed countries, premature deaths[3] due to non-communicable diseases are frequently associated with occupational risks or individual behaviours that are more common among men, including excessive drinking, and smoking, which results in higher deaths from lung cancer.

Throughout the life cycle, while young women are at risk of dying in childbirth and from related complications, young men are more likely to die from injuries and interpersonal violence; as men age, additional causes of death become more prominent compared to women, such as tuberculosis, HIV/AIDS, stroke and heart disease, lower respiratory infections andcancer; at older ages women are more likely than men to die from rheumatic heart disease, Alzheimer's and other types of dementia.

Although the differences in death rates between women and men are less noticeable inchildhoodthan later in life, they are nevertheless significant. For example, girls account for more than half of deaths due to lower respiratory infections (52%) and malaria and other vector borne diseases (52%) in children from birth to age 4 (see figure IV). Differences become more noticeable after puberty, however, when physical and behavioural differences between men and women are more marked.

At ages 15—24, stark gender differences in causes of death appear: a significant proportion of young women die of maternal conditions, while young men tend to die of injuries, including road accidents (79% of deaths) and interpersonal violence (83% of deaths) (see figure IV). Deaths from maternal conditions among young women are almost entirely preventable when access is

provided to skilled health-care during pregnancy and birth; the death rate among young men resulting from injuries and/or interpersonal violence needs to be addressed through behavioural modification and other approaches.

In the population aged 25—44, there are a significant number of deaths from tuberculosis, which is more prevalent among men aged 35—44 (68%), and from HIV/AIDS, which is more prevalent in men above age 34, albeit with important regional differences in rates ofHIV transmission. After age 34, deaths fromnon-communicable diseasesincrease, in particular deaths from heart disease and stroke. Stroke, a leading cause of death among this age cohort, both female and male, is more prevalent in men aged 35—44 (58% of global mortality), although with important regional differences (see figure IV).

Between ages 45—64, other causes of death become more noticeable, including death from lower respiratory infections, which are more common among men aged 55—64 (61% of mortality), and diarrhoeal diseases, which affect both women and men equally. Certain cancers (colon and rectum, stomach and liver), most of which occurafter age 54, tend to be more common among men than women. The exceptions are breast cancers, which affect women almost exclusively. After age 44, maternal conditions are no longer a significant cause of death among women.

After age 64, other causes of death become more common, including Alzheimer's disease, asthma and certain cancers (including oesophageal, pancreatic and prostate). At older ages (ages 65—84) men are more likely than women to die from a range of diseases, with the exception of rheumatic heart disease, which is a cause of death for significant numbers of women aged 65—74 (59% of global mortality). After age 84, Alzheimer's and different types of dementia affect women more than men (56% at ages 85—100). In this latter, most aged, group (85—100), women and men are equally likely to die from a broad range of causes, including stroke, ischaemic heart disease, cardiomyopathy, myocarditis, endocarditis or from falls.

Diabetes and hypertensive heart disease affect men and women of all ages at roughly equal rates, and some of these conditions are easier to prevent and treat than others. While to a certain extent some of these non-communicable diseases can be prevented or their effects reduced through the adoption of a healthy lifestyle, others, notably cancer, cannot. However, early detection and modern treatment can greatly reduce mortality for many forms of cancer. WHO estimates that about 30% to 50% of cancers can be prevented with lifestyle modifications, such as eliminating tobacco use, being physically active and reducing exposure to carcinogens in the environment.[4]

Classification of causes of death

Causes of death are generally classified into three groups: (1) communicable diseases, maternal, perinatal and nutritional conditions, (2) non-communicable diseases, and (3) injuries. Within each of these groups, causes of death are further separated into 123 causes and analysis can be undertaken by major causes of death throughout the life course.

Non-communicable diseases, the most common cause of death globally, were responsible for 70% of deaths in 2016. However, in sub-Saharan Africa, communicable diseases and maternal, perinatal and nutritional conditions are responsible for more than 50% of deaths. Injuries are prominent as a cause of death among youth and adults, particularly males aged 15—49.

Communicable (or infectious) diseases caused by micro-organisms, such as bacteria, viruses or parasites, can spread from person to person or animal to person: lower respiratory infections, HIV/AIDS and diarrhoeal diseases are three of the most prominent communicable diseases. Leading risk factors for such diseases include unsafe water and poor sanitation, poor hygiene, unsafe sex and inadequate health services.Maternal, neonatal and nutritional conditions are health conditions related to pregnancy and childbirth, the neonatal period or nutritional deficiencies, respectively. Communicable diseases, maternal, perinatal and nutritional conditions accounted in total for 20% of deaths in 2016.

Non-communicable diseases are diseases that are non-transmissible and often, but not always, of long duration and generally slow progression. The four main types of non-communicable diseases are: cardiovascular diseases (such as heart attacks and stroke); cancer; chronic respiratory diseases (mostly chronic obstructed pulmonary disease and asthma); and diabetes.

The third leading cause of death is injuries, including unintentional injuries, such as those resulting from road accidents, falls or drowning, along with intentional injuries, such as self-harm (suicide), interpersonal violence and collective violence.

About the data

Definitions

- **Life expectancy at birth** in a given year is the average number of years a newborn is expected to live if current mortality patterns remain constant in the future.
- **Proportion of deaths by leading cause of death** is the number of deaths in each age group, both female and male, by leading cause of death, expressed as a percentage of the total number of deaths.
- **Female death rate as a proportion of the total death rate by cause of death and by age** is the female death rate in relation to the combined male and female death rate.

Coverage

Data on life expectancy and cause of death are available for 201 countries and territories, classified by regional grouping under the Sustainable Development Goals (SDGs) indicators framework.[5]

Footnotes

1. World Health Organization (WHO), Global Health Estimates 2016 (deaths by cause, age, sex, by country and by region, 2000–2016; and life expectancy, 2000–2016), Geneva, 2018.

2. The International Classification of Diseases, developed by WHO, includes three major categories of causes of death: the first includes communicable diseases and maternal, neonatal and nutritional conditions; the other two categories are non-communicable diseases and injuries.

3. Premature deaths are deaths that occur before the average age of death in a certain population (see link). To allow for global comparison, they are generally defined by WHO as deaths occurring prior to age 70 (see link).

4. WHO, Health Topics, Cancer prevention.

5. Regional groupings under the Sustainable Development Goals indicators framework.