

HEALTH EXPECTANCY IN DENMARK

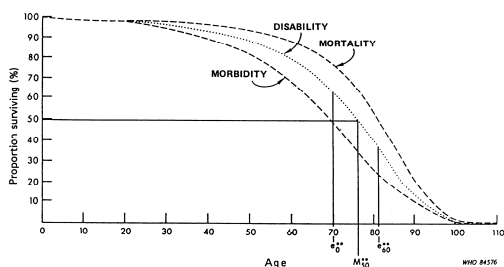
What is health expectancy?

Health expectancies were first developed to address whether or not longer life is being accompanied by an increase in the time lived in good health (the **compression of morbidity** scenario) or in bad health (**expansion of morbidity**). So health expectancies divide life expectancy into life spent in different states of health, from say good to bad health. In this way they add a dimension of quality to the quantity of life lived.

How is the effect of longer life measured?

The general model of health transitions (WHO, 1984) shows the differences between life spent in different states: total survival, disability-free survival and survival without chronic disease. This leads naturally to life expectancy (the area under the 'mortality' curve), disability-free life expectancy (the area under the 'disability' curve) and life expectancy without chronic disease (the area under the 'morbidity' curve).

The general model of health transition (WHO, 1984): observed mortality and hypothetical morbidity and disability survival curves for females, USA, 1980.



e_0^{**} and e_{60}^{**} are the number of years of autonomous life expected at birth and at age 60, respectively.
 M_{50}^{**} is the age to which 50% of females could expect to survive without loss of autonomy.

There are in fact as many health expectancies as concepts of health. The commonest health expectancies are those based on self-perceived health, activities of daily living and on chronic morbidity.

How do we compare health expectancies?

Health expectancies are independent of the size of populations and of their age structure and so they allow direct comparison of different population sub-groups: e.g. sexes, socio-professional categories, as well as countries within Europe (Robine et al., 2003).

Health expectancies are most often calculated by the Sullivan method (Sullivan, 1971). However to make valid comparisons, the underlying health measure should be truly comparable.

To address this, the European Union has decided to include a small set of health expectancies among its European Community Health Indicators (ECHI) to provide synthetic measures of disability, chronic morbidity and perceived health. Therefore the Minimum European Health Module (MEHM), composed of 3 general questions covering these dimensions, has been introduced into the Statistics on Income and Living Conditions (SILC) to improve the comparability of health expectancies between countries.* In addition life expectancy without long term activity limitation, based on the disability question, was selected in 2004 to be one of the structural indicators for assessing the EU strategic goals (Lisbon strategy) under the name of "Healthy Life Years" (HLY).

Further details on the MEHM, the European surveys and health expectancy calculation and interpretation can be found on www.ehemu.eu.

What is in this report?

This report is produced by the European Health Expectancy Monitoring Unit (EHEMU) as part of a country series. In each report we present:

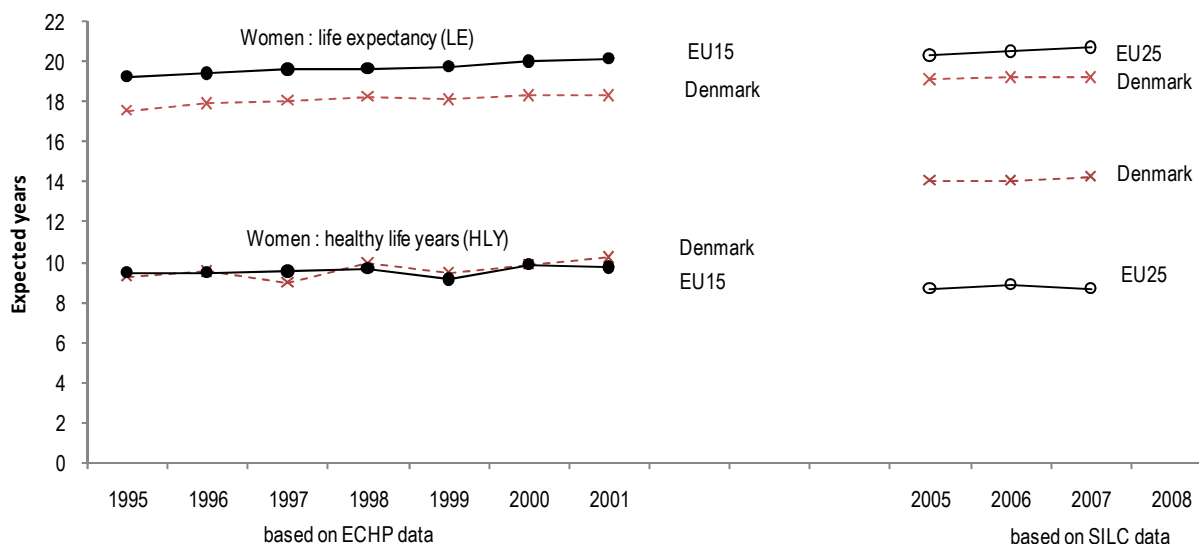
- Life expectancies** and health expectancies at age 65 based on activity limitation (HLY) for the country of interest and for the overall 25 European Union member states (EU25), using the SILC question on long term activity limitation for 2005, 2006 and 2007. As the SILC has been only recently initiated, to document trends we provide previous HLY series based on the disability question of the 1995-2001 European Community Household Panel (ECHP)
- health expectancies based on the two additional dimensions of health (chronic morbidity and self-perceived health) for the country of interest, based on SILC 2007
- a global analysis of health expectancies of European countries, based on the SILC 2007

References

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- Ekholm O, Bronnum-Hansen H. Cross-national comparisons of non-harmonized indicators may lead to more confusion than clarification. *Scand J Public Health* 2009;**37**:661-663.

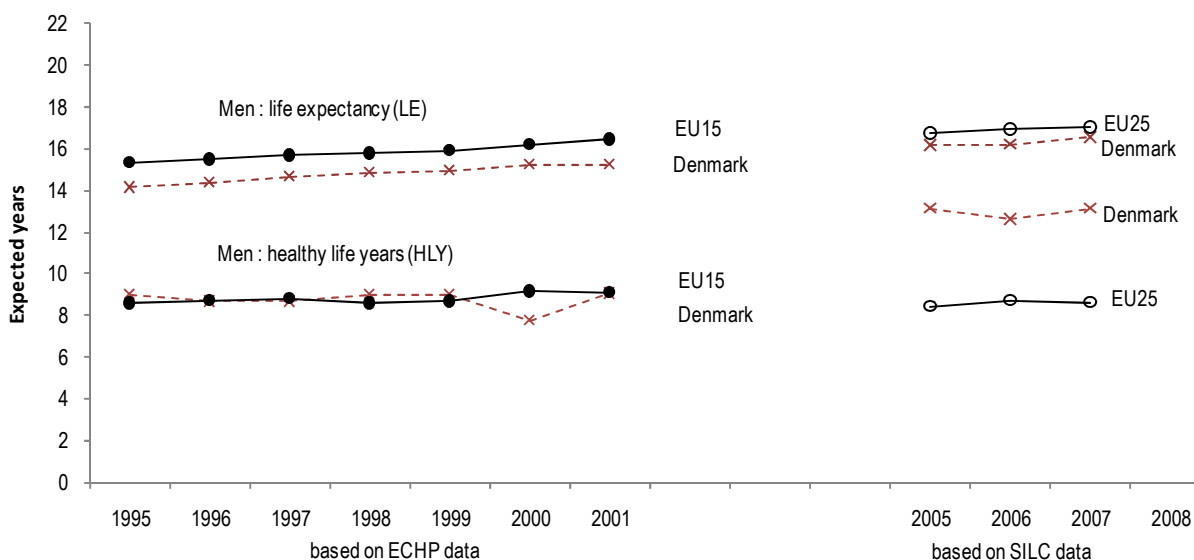
*Nevertheless, before 2008, the translations of the module used in some countries were not optimum (See Eurostat-EU Task Force on Health Expectancies common statement about the SILC data quality); ** Computed with the Eurostat method.

Life expectancy (LE) and Healthy Life Years (HLY) at age 65 for Denmark and the European Union (EU15 and EU25) based on ECHP (1995-2001) and SILC (2005-2007)



Denmark	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 ^P	2008
Women : LE	17.6	17.9	18.0	18.3	18.1	18.3	18.3				19.1	19.2	19.2	
Women : HLY	9.3	9.5	9.0	9.9	9.5	9.9	10.3				14.1	14.1	14.3	
% HLY/LE	53%	53%	50%	54%	52%	54%	56%				74%	73%	74%	

^P = provisional values



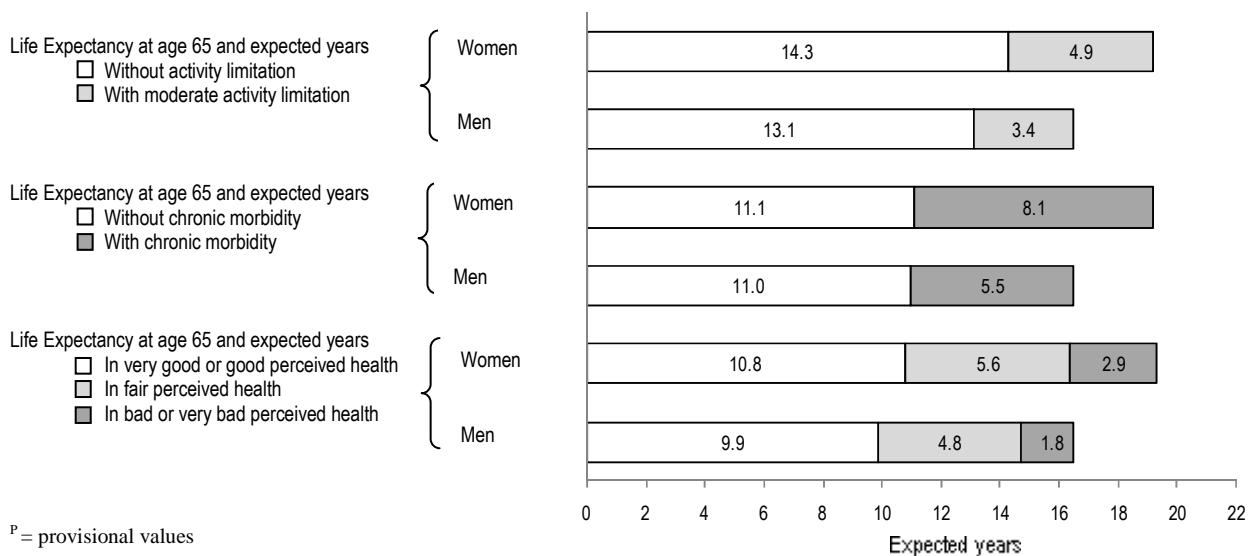
Denmark	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 ^P	2008
Men : LE	14.1	14.4	14.6	14.9	15.0	15.2	15.2				16.1	16.2	16.5	
Men : HLY	9.0	8.6	8.6	9.0	9.0	7.7	9.0				13.1	12.6	13.1	
% HLY/LE	64%	60%	59%	61%	60%	51%	59%				81%	78%	79%	

^P = provisional values

Key points:

- Danish life expectancy (LE) at age 65 has increased by 1.2 years for women and 1.9 years for men over the 1997-2007 period: LE for both sexes between 1995-2001 was below the EU15 average. In 2007 LE for both sexes was below the EU25.
- Over the 1995-2001 period, health expectancy based on activity limitation (HLY) at age 65 from the ECHP data remained almost stable. The proportion of HLY (or years without *self-reported limitations due to health condition or disability*), within the total expected years, increased for both sexes, being close to 56% for women and 59% for men in 2001. Between 1995 and 2001 HLY in Denmark was close to the EU15 average.
- The new HLY series, initiated in 2005 with the SILC data, shows values for Denmark being in 2007 5.6 and 4.5 years above the EU25 average for women and men respectively. In 2007 women and men at age 65 can expect to spend 74% and 79% of their life without *self-reported long-term activity limitations* respectively. Between 2006 and 2007 HLY slightly increased for women and men.
- Results for Denmark should be interpreted cautiously given the difference in response categories for activity limitation in the SILC compared to other EU countries.

Life and health expectancies at age 65 based on activity limitation (Healthy Life Years), chronic morbidity and perceived health for Denmark (Health data from SILC 2007^P)



Key points:

- In 2007, LE at age 65 in Denmark was 19.2 years for women and 16.5 years for men.
- Based on the SILC 2007, at age 65, women spent 14.3 years (73% of their remaining life) without activity limitation (corresponding to Healthy Life Years (HLY)) and 4.9 years (27%) with activity limitation.*
- Men of the same age spent 13.1 years (79% of remaining life) without activity limitation compared to 3.4 years (21%) with activity limitation.*
- Although for all the health expectancies the years of life spent in positive health were greater for women than men, women spent a larger proportion of their life in ill health.
- Results for Denmark should be interpreted cautiously given the difference in the wording of the SILC questions in Denmark compared to other EU countries.

These results should be interpreted cautiously given the lack of the institutional population and the difference in response categories for activity limitation. The sample size for Denmark comprised 590 women and 501 men aged 65+ years in 2007.

Published results and other reports of health expectancies for Denmark

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The prevalence of activity limitation in Europe in 2007 and change over time

Since 2005, SILC (Statistics on Income and Living Conditions) has allowed activity limitation to be monitored at the EU25 level thanks to the Global Activity Limitation Indicator (GALI), a key component of the Healthy Life Years (HLY).

After three years of monitoring, three main points can be made which confirm and generalize previous studies made in specific EU countries (Figure and Table below).

Prevalence of activity limitation in Europe in 2007, by age group and gender, SILC EU25, 2007



1. Limitation in usual activities strongly increases with age, from a few percent of the population below age 20 to more than 50% after age 75.

2. Women systematically report more activity limitation than men. It is noteworthy that this difference declines with age from about 25% for the youngest (0.07 vs 0.05) to about 10% for the most elderly (0.71 vs 0.65)

3. The prevalence of activity limitation in the EU25 appears to have remained stable over time as demonstrated by the standardized prevalence rate at age 65 and over (see Table).

Standardized prevalence of activity limitation at age 65 years and over, SILC EU25, 2005-2007ⁿ

From a methodological point of view, this picture clearly suggests that the irregularities observed for some countries, by age or over time, might be fluctuations due to smaller sample size. At the EU level, SILC provides sound information on disability and more specifically on limitation in usual activities.

	2005	2006	2007
Men	0.45	0.44	0.44
Women	0.50	0.50	0.50

ⁿStandardized to the 2007 EU Population

From a public health point of view, these results suggest that the current increase in life expectancy in Europe is not accompanied by an increase in the prevalence of activity limitation.

About EHEMU

The European Health Expectancy Monitoring Unit (EHEMU) and its current project European Health and Life Expectancy Information System (EHLEIS) are funded by the European Public Health Programme (2004-2008) and is a collaboration between: the French national institute on health and medical research (INSERM) and CRLC (Montpellier, France), the University of Leicester (UK), the Scientific Institute of Public Health (ISP Belgium), the French National Institute of Demography (INED), University Charles (Czech Republic), Erasmus University Medical centre (The Netherlands) and University of Rostock (Germany). EHEMU aims to provide a central facility for the co-ordinated analysis, interpretation and dissemination of life and health expectancies to add the quality dimension to the quantity of life lived by the European populations. Further details about EHEMU can be found on the websites: www.ehemu.eu and www.healthy-life-years.eu