Health Expectancy in United Kingdom

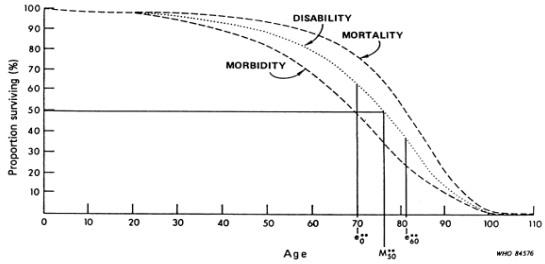
What is health expectancy?

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 indifferent 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 Core Health Indicators (ECHI) to provide summary measures of disability (i.e., activity limitation), 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.eurohex.eu.

What is in this report?

This report is produced by the European Health and Life Expectancy Information System (EHLEIS) as part of a country series. In each report we present:

- Life expectancies and Healthy Life Years (HLY) at age 65 for the country of interest and for the overall 28 European Union member states (EU28), using the SILC question on long term health related disability, known as the GALI (Global Activity Limitation Indicator), from 2005 to 2014. The wording of the question has been revised in 2008.
- Prevalence of activity limitation in the country of interest and in the European Union based on the GALI question by sex and age group;
- Health expectancies based on the two additional dimensions of health (chronic morbidity and self-perceived health) for the country of interest, based on SILC 2014;
- Prevalence of activity limitation in Europe (EU28) in 2005, 2008, 2011 and 2014.

References

Jagger C., Gillies C., Moscone F., Cambois E., Van Oyen H., Nusselder W., Robine J.-M., EHLEIS Team. Inequalities in healthy life years in the 25 countries of the European Union in 2005: a cross-national meta-regression analysis. *The Lancet*. 2008;372(9656) 2124-2131 Robine J.-M., Jagger C., Mathers C.D., Crimmins E.M., Suzman R.M., Eds. *Determining health expectancies*. Chichester UK: Wiley, 2003.
Sullivan D.F. *A single index of mortality and morbidity*. HSMHA Health Reports 1971;86:347-354.
World Health Organization.*The uses of epidemiology in the study of the elderly: Report of a WHO Scientific Group on the Epidemiology of Aging.* Geneva: WHO, 1984 (Technical Report Series 706)

* Before the revision of 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). This revision is being evaluated.

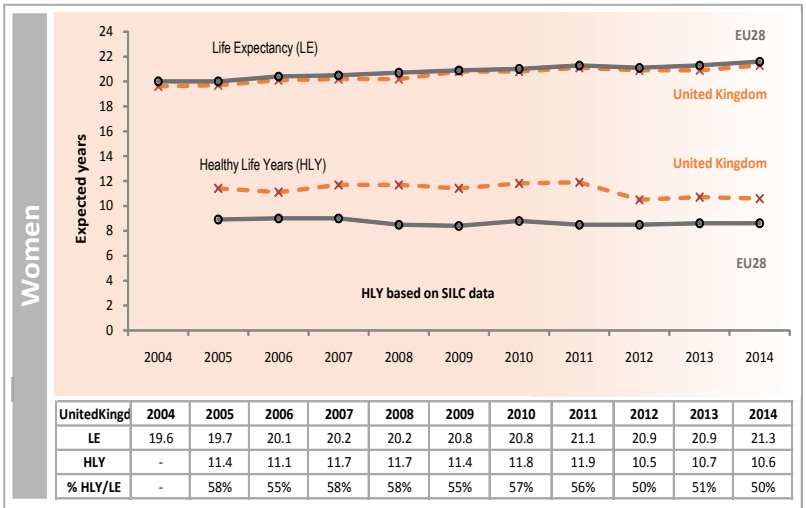
Life expectancy (LE) and Healthy Life Years (HLY) at age 65 for United Kingdom and the European Union (EU28) based on SILC (2005-2014)

Key points:

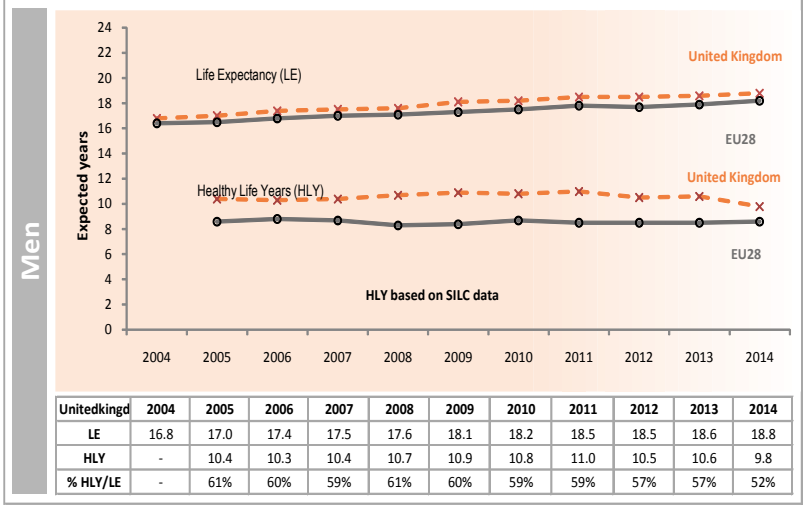
UK life expectancy (LE) at age 65 has increased by 1.7 years for women and 2.0 years for men over the period 2004-2014. In 2014 LE was above the EU28 average of 18.1 for men and slightly below the EU28 average of 21.6 for women.

The new HLY series, initiated in 2005 with the SILC data, shows values for the UK being in 2014 above the EU28 average (8.6 for women and men) by 2.0 years for women and 1.2 years for men. Women and men at age 65 can expect to spend 50% and 52% of their life without *self-reported long-term activity limitations* respectively. HLY for men in the UK grew by 0.6 years between 2005 reaching 11.0 years in 2011 before falling back to 10.6 years in 2014. For women HLY was highest in 2011 at 11.9 years, but the pattern was irregular, fluctuating between 11.1 and 11.8 years. HLY declined markedly by 1.4 years in 2012, remained stable in 2013 and declined again in 2014. The wording of the GALI question was not revised in UK in 2008, but the data source and questions did change in 2012; the survey source changed from the General Lifestyle Survey to the Family Resources Survey from April 2012. The EU-SILC data for 2012 was based only on data collected between April 2012 and September 2012 and therefore the available sample for the UK was reduced compared with previous years. The revised data items for activity limitation measurement changed from April 2012, using different responses categories, time periods and terminology. These differences in combination are likely reasons for the abrupt reduction in HLY observed in 2012 and 2013.

FRS collects data on benefits, likely to affect reporting of activity limitation.
Question changes can be seen at:
http://www.eurohex.eu/pdf/Reports_2014/2014_TR4%206_SILC%20questions_Backtranslation.pdf

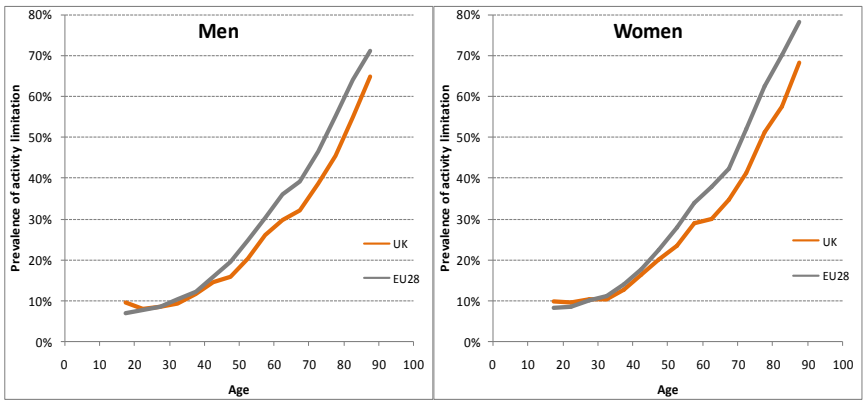


UnitedKingd	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
LE	19.6	19.7	20.1	20.2	20.2	20.8	20.8	21.1	20.9	20.9	21.3
HLY	-	11.4	11.1	11.7	11.7	11.4	11.8	11.9	10.5	10.7	10.6
% HLY/LE	-	58%	55%	58%	58%	55%	57%	56%	50%	51%	50%



Unitedkingd	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
LE	16.8	17.0	17.4	17.5	17.6	18.1	18.2	18.5	18.5	18.6	18.8
HLY	-	10.4	10.3	10.4	10.7	10.9	10.8	11.0	10.5	10.6	9.8
% HLY/LE	-	61%	60%	59%	61%	60%	59%	59%	57%	57%	52%

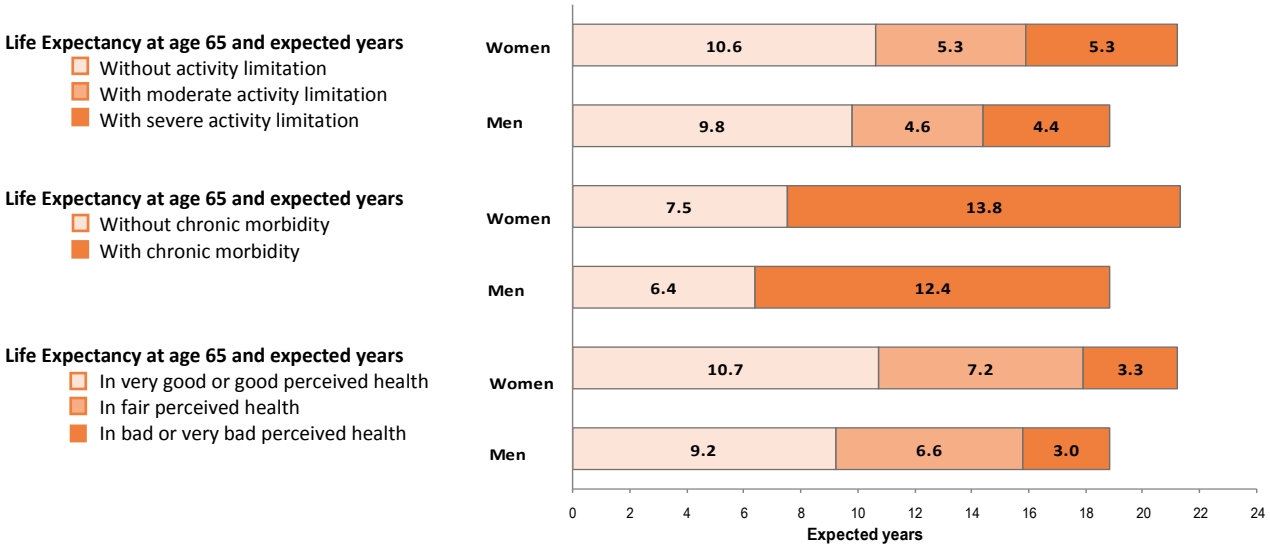
Prevalence of activity limitation in United Kingdom and in the European Union (EU28) based on the GALI question, by sex and age group (SILC, Mean2012-2014)



Reports of limitation in usual activities strongly increase with age in the European Union and women systematically report slightly more activity limitation than men. Compared to the mean trajectory by age observed in the European Union in the years 2012-2014, United Kingdom tends to display a lower prevalence rate of activity limitation after the age of 40 years for men and women, remaining lower at old age.

These results should be interpreted with caution as samples sizes in the SILC survey vary markedly; for instance in 2014 they ranged from 5758 in Denmark to 40274 in Italy. In 2014, the sample size for United Kingdom comprised 9469 women and 8436 men aged 16 years and over.

Life and health expectancies at age 65 based on activity limitation (Healthy Life Years), chronic morbidity and perceived health for United Kingdom (Health data from SILC 2014)



Key points:

In 2014, LE at age 65 in United Kingdom was 21.3 years for women and 18.8 years for men.

Based on the SILC 2014 at age 65, women spent 10.6 years (50% of their remaining life) without activity limitation (corresponding to Healthy Life Years, HLY), 5.3 years (25%) with moderate and 5.3 years (25%) with severe activity limitation.*

Men of the same age spent 9.8 years (52% of their remaining life) without activity limitation, 4.6 years (25%) with moderate and 4.4 years (23%) with severe activity limitation.*

For all health expectancies the years of life spent in positive health were greater for women than men; however, because women have longer life expectancies than men,they experience a slightly higher proportion of their livesin unfavourable health states than men.

These results should be interpreted cautiously given the lack of the institutional population, such as people living in residential and nursing homes, which constitute a higher proportion of those aged 65+ years.

**These may not sum to Life Expectancy due to rounding*

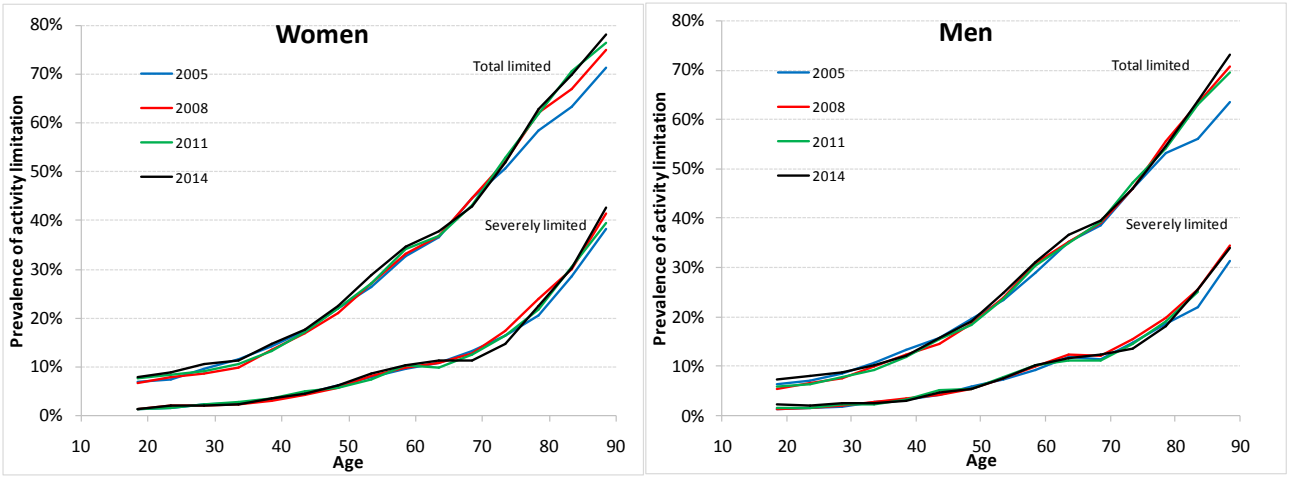
Publications and reports on health expectancies for United Kingdom

- ONS (2015) Inequality in Health and Life Expectancies within upper tiers local authorities : 2009 to 2013 https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/bulletins/inequalityinhealthandlifeexpectancieswithinuppertierlocalauthorities/2009to2013
- ONS (2014) Health state life expectancies, UK: 2013 to 2015 https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/bulletins/healthstatelifeexpectanciesuk/2013to2015
- ONS (2014) Disability-Free Life Expectancy by Upper Tier Local Authority: England 2009-11 and comparison with 2006-08
- Sub-national health expectancies summary podcast. Available on the ONS website at: http://www.ons.gov.uk/ons/rel/disability-and-health-measurement/sub-national-health-expectancies/subnational-health-expectancies-summary/subnational-health-expectancies-summary-podcast.html
- UK question changes introduced in SILC in 2012 can be seen at http://www.ons.gov.uk/ons/guide-method/harmonisation/primary-set-of-harmonised-concepts-and-questions/long-lasting-health-conditions-and-illnesses--impairments-and-disability.pdf
- Disability-free life expectancy, sub-national estimates for England 2007-09. Available on the ONS website at:http://www.ons.gov.uk/ons/rel/disability-and-health-measurement/sub-national-health-expectancies/2007-2009/stb-disability-free-life-expectancy.html
- ONS (2014). Health Expectancies at Birth and at Age 65 in the United Kingdom, 2009–11 available on the ONS website at http://www.ons.gov.uk/ons/rel/disability-and-health-measurement/health-expectancies-at-birth-and-age-65-in-the-united-kingdom/2009-11/stb-he-2009-2011.html
- ONS (2015) Health Expectancies at Birth for Middle Layer Super Output Areas (MSOAs), England, 2009 to 2013 available athttp://www.ons.gov.uk/ons/rel/disability-and-health-measurement/health-expectancies-at-birth-by-middle-layer-super-output-areas--england/2009-2013/index.html
- van den Hout A, Jagger C, Matthews FE. Estimating life expectancy in health and ill health using a hidden Markov model. *Journal of the Royal StatisticalSocietySeries C*. 2009, vol58,pp449-465.
- Peres K., Jagger C., Matthews F.E. Impact of late-life self-reported emotional problems on Disability-Free Life Expectancy: results from the MRC Cognitive Function and Ageing Study. *Int J Geriatr Psychiatry*. 2008 Nov 29; 23(6):643-649.
- Khoman E., Mitchell J., Weale M. Incidence-based estimates of life expectancy of the healthy for the UK: coherence between transition probabilities and aggregate life-tables. *J R StatSoc A*. 2008;171:203-222.
- Jagger C., Gillies C., Mascone F., Cambois E., Van Oyen H., Nusselder W.J., Robine J.-M., EHLEIS team. Inequalities in healthy life years in the 25 countries of the European Union in 2005: a cross-national meta-regression analysis. *The Lancet*. 2008;372(9656):2124-2131.
- Jagger C., Matthews R.J., Matthews F., Robinson T., Robine J.-M., Brayne C., Medical Research Council Cognitive Function and Ageing Study Investigators. The burden of diseases on disability-free life expectancy in later life.*JGerontol Med Sci*. 2007 Apr;62A(4):408-41

Prevalence of activity limitation in Europe (EU28) in 2005, 2008, 2011 and 2014

Thanks to the EU-SILC survey, we now have 10 years of experience in measuring disability within the European Union. The survey really started in 2005 with 25 Member States (MS). In 2008, a coordinated revision of the translation of the GALI was made by some countries to better reflect the original standard. An evaluation made by Eurostat shows that in 2012 the translation of the GALI fully follows the English standard in 18 MS, partially in 8 others and still not in 5 MS. Progressively EU-SILC involved 27 then 28 MS but all the estimations provided below have been estimated for the EU28. The prevalence of disability among women and men is displayed by age and level of severity of the reported disability, from the age group 16-19 to 85+, for the calendar years2005, 2008, 2011 and 2014.

Prevalence of activity limitation in Europe (EU28), by sex and age group, SILC EU28, 2005, 2008, 2011 and 2014



The revision of the translation of the GALI in 2008 significantly changed the age trajectory of the prevalence of disability, increasing the report of disability among the oldest participants in the EU-SILC survey, especially for those reporting being not severely limited in usual activities. Beyond this change between 2005 and 2008, the general pattern of the age trajectory remains almost unchanged over time. In particular, and especially for the severe limitation, we observed less rapid increase of the prevalence around the retirement age. Among men and women, the age standardized prevalence of reported disability increases over time (Table).

Standardized prevalence of activity limitation at age 15 and over (in %), SILC EU28, 2005, 2008, 2011 and 2014

The standardized rate of disability varies little over the years, even between 2005 and 2008 (period of changes in the instrument in some MS). Overall, these rates disclose a small increase over time in the prevalence of reported disabilty accross the European Union.

	2005	2008	2011	2014
Men	23,0	23,1	23,0	23,9
(3-year gap)		(0,1)	(-0,1)	(0,8)
Women	27,8	28,2	28,6	29,3
(3-year gap)		(0,3)	(0,4)	(0,7)

BRIDGE-Health (Bridging Information and Data Generation for Evidence-based Health Policy and Research)

The **European Health and Life Expectancy Information System** (EHLEIS) is part of **BRIDGE-Health** which aims to prepare the transition towards a sustainable and integrated EU health information system within the third EU Health Program, 2014-2020 (www.bridge-health.eu).

BRIDGEHEALTH
BRidging Information and Data Generation for Evidence-based Health Policy and Research

European Health and Life Expectancy Information System – EHLEIS - website: http://www.eurohex.eu
Project leader : Jean-Marie Robine – Coordination of the Country reports : Isabelle Beluche
Contact: Christine Perrier - Université de Montpellier – U1198 MMDN - Place Eugène Bataillon - CC105 - 34095- Montpellier cedex 5 – France
Tel: +33 (0)4 67 14 33 85 /e-mail: christine.perrier@inserm.fr