List of references on health expectancy
Update n°9
September 2008

New references with keywords and abstracts

2008

Abatih, E., Van Oyen, H., Bossuyt, N., Bruckers, L. **Variance estimation methods for health expectancy by relative socio-economic status**. *European Journal of Epidemiology* 2008;23(4):243-249.

CB18/54

(http://www.springerlink.com/content/f62x576g0234362n/)

HEALTH EXPECTANCY / SOCIAL INEQUALITY / CALCULATION / SULLIVAN METHOD / BELGIUM / 1997

In many studies, health expectancies (HE) by relative socio-economic status have been calculated but the estimation of confidence intervals and the performance of tests of significance for differences in HE between sub-populations have been impeded by lack of variance estimation methods. Also in most scenarios, the sampling designs of the surveys from which prevalence of ill-health conditions are obtained have been ignored. This paper aims at presenting variance estimation techniques such as the bootstrap and the delta method taking account of the survey design. The study suggests that using the raw survey data and the Delta method while accounting for the survey design, gives better estimates for the variance compared to the bootstrap method and therefore is a highly recommended method for variance estimation of HE by relative socio-economic status.
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Boustani, M., Justiss, M. D. **Subtle neurological abnormalities and functional cognition in older adults**. *Archives of Internal Medicine* 2008;168(12):1252-1253.   CB18/61
(http://archinte.ama-assn.org/cgi/content/extract/168/12/1252)

ACTIVE LIFE EXPECTANCY (ALE) / ELDERLY / COGNITIVE FUNCTION / DISABILITY / USA

In this editorial, the authors emphasize the relationship between Subtle Neurological Abnormalities (SNAs) and both cognitive and functional decline. This provides support for the study of functional cognition to better understand the significant interactions between cognition and active life expectancy.

Camargos, M. C., Machado, C. J., Rodrigues, R. N. **Life expectancy among elderly Brazilians in 2003 according to different levels of functional disability**. *Cadernos de Saúde Pública* 2008;24(4):845-852.

CB18/47

(http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=18392362)

DISABILITY-FREE LIFE EXPECTANCY / ACTIVITIES OF DAILY LIVING (ADL) / INSTRUMENTAL ACTIVITIES OF DAILY LIVING (IADL) / FUNCTIONAL LIMITATION / ORIGINAL CALCULATION / SULLIVAN METHOD / BRAZIL / 2003

The aim of the present study was to estimate disability-free life expectancy for the Brazilian elderly in 2003, by gender and age, based on different concepts of functional disability. The Sullivan method is used to combine the period life tables from the Brazilian Institute of Geography and Statistics (IBGE, 2003) and the prevalence of functional disability according to the 2003 National Sample Household Survey (PNAD 2003). The main results of the study indicate that at age 60, Brazilian men can expect to live 19 years, 39% with mild, 21% with moderate, and 14% with severe functional disability, respectively. At the same age, Brazilian women can expect to live 22 years: 56% with mild, 32% with moderate, and 18% with severe functional disability.

Camargos, M. C. S., Machado, C. J., Rodrigues, R. N. **Sex differences in healthy life expectancy from self-perceived assessments of health in the city of Sao Paulo, Brazil**. *Ageing and Society* 2008;28:35-48.   CB18/66
(http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=1458744)

HEALTH EXPECTANCY / HEALTHY LIFE EXPECTANCY / PERCEIVED HEALTH / ELDERLY / DISEASE (CHRONIC) / DEPENDENCE / ORIGINAL CALCULATION / SULLIVAN METHOD / BRAZIL / 2000-2001

Whether life is spent in good health or disability has a critical influence on the use of health-care services. It is also known that average healthy life expectancy differs by sex. This paper reports estimations of healthy and unhealthy life expectancy in old age using self-reported health assessments for the City of São Paulo, Brazil in 2000–01. The data derived from the Health, Well-being and Aging in Latin America and the Caribbean Project (SABE), and from population censuses and mortality statistics. Sullivan's estimation method was used. It combines the age-specific schedule of the current probabilities of death with the prevalence of self-perceived 'poor' and 'good' health. The paper also reports multivariate analyses of the factors associated with variations by age group and sex in self-perceived health. The findings revealed that, at all ages, women live longer than men and for more years in a healthy state. Among men, those aged 60, 65 and 70 years were expected to live a higher percentage of their remaining life than women in a healthy state, but among those aged 75, 80 and 85 years, the opposite held. Among women, the percentage of remaining years that were unhealthy did not increase as age increased, which differs from previous findings. The multivariate analyses showed that with increasing age, for women the number of chronic diseases decreased but dependency increased, and for men the opposite held. This finding indicated that the percentage of life spent in poor self-perceived health more accurately predicts mortality in men than women.

Cambois, E., Laborde, C., Robine, J.-M. **La double peine des ouvriers : plus d'incapacité au sein d'une vie plus courte**. *Population et Sociétés* 2008(441)   CB18/44
(http://www.ined.fr/fichier/t_publication/1341/publi_pdf1_441.pdf)

DISABILITY-FREE LIFE EXPECTANCY / SOCIAL INEQUALITY / CALCULATION / FRANCE / 2003

The authors calculate disability-free life expectancies at age 35 for workers and managerial staff, using data from the 2002-2003 French Insee survey on health and medical care In France. On average workers are living less long than managers, and live longer with disabilities.

Diehr, P., Yanez, D., Derleth, A., Newman, A. B. **Age-specific prevalence and years of healthy life in a system with three health states**. *Statistics in Medicine* 2008;27(9):1371-1386.   CB18/52
(http://www3.interscience.wiley.com/cgi-bin/fulltext/116314682/PDFSTART)

HEALTH EXPECTANCY / PERCEIVED HEALTH / TRANSITION PROBABILITY / CALCULATION / MULTI-STATE LIFE TABLE METHOD / SULLIVAN METHOD

Consider a 3-state system with one absorbing state, such as Healthy, Sick, and Dead. Over time, the prevalence of the Healthy state will approach an 'equilibrium' value that is independent of the initial conditions. We derived this equilibrium prevalence (Prev:Equil) as a function of the local transition probabilities. We then used Prev:Equil to estimate the expected number of years spent in the healthy state over time. This estimate is similar to the one calculated by multi-state life table methods, and has the advantage of having an associated standard error. In longitudinal data for older adults, the standard error was accurate when a valid survival table was known from other sources, or when the available data set was sufficient to estimate survival accurately. Performance was better with fewer waves of data. If validated in other situations, these estimates of prevalence and years of healthy life (YHL) and their standard errors may be useful when the goal is to compare YHL for different populations. Copyright copyright 2007 John Wiley & Sons, Ltd.

Gilgenkrantz, S. **Les inégalités sociales face à la mortalité et aux incapacités [Social inequalities in disability-free life expectancy in France]**. *Medecine Sciences* 2008;24(4):415-418.   CB18/45
(http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=18405641)

DISABILITY-FREE LIFE EXPECTANCY / SOCIAL INEQUALITY / FRANCE / 2003

Commentary on the study by Emmanuelle Cambois (18/44)

Jagger, C., Robine, J.-M., Van Oyen, H., Cambois, E. ***Life expectancy with chronic morbidity***. In: European Commission, editor. Major and chronic diseases - report 2007. Luxembourg: European Communities; 2008. p. 291-304.   CB18/63
(http://ec.europa.eu/health/ph_threats/non_com/docs/mcd_report_en.pdf)

HEALTH EXPECTANCY / MORBIDITY-FREE LIFE EXPECTANCY / LONG-STANDING ILLNESS / CALCULATION / EUROPEAN UNION

This chapter brings together all chronic diseases through assessment of life expectancy with and without chronic morbidity in Europe. The authors report comparisons across Europe of life expectancy with chronic morbidity at age 65 based on the global chronic morbidity question of the Minimum European Health Module in SILC 2005. Data is therefore available for 25 countries: Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, United Kingdom.

Jagger, C., Robine, J.-M., Van Oyen, H., Cambois, E. ***Life expectancy with chronic morbidity: executive summary***. In: European Commission, editor. Major and chronic diseases - report 2007 - executive summary. Luxembourg: European Communities; 2008. p. 33-34.   CB18/64
(http://ec.europa.eu/health/ph_threats/non_com/docs/mcd_report_exs_en.pdf)

HEALTH EXPECTANCY / MORBIDITY-FREE LIFE EXPECTANCY / LONG-STANDING ILLNESS / CALCULATION / EUROPEAN UNION

The authors report the main results of comparisons across Europe of life expectancy with chronic morbidity at age 65 based on the global chronic morbidity question of the Minimum European Health Module in SILC 2005.

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**. *Journal of the Royal Statistical Society. Series A* 2008;171:203-222. CB18/42
(http://www.blackwell-synergy.com/toc/rssa/171/1)

HEALTH EXPECTANCY / HEALTHY LIFE EXPECTANCY / PERCEIVED HEALTH / DISABILITY / MORBIDITY / MORTALITY / CALCULATION METHOD / TRANSITIONS / ENGLAND / UNITED KINGDOM

Will the UK's aging population be fit and independent, or suffer from greater chronic ill health? Life expectancy of healthy people represents the expected number of years of healthy well-being that a life-table cohort would experience if age-specific rates of mortality and disability prevailed throughout the cohort's lifetime. Robust estimation of this life expectancy is thus essential for examining whether additional years of life are spent in good health and whether life expectancy is increasing faster than the decline of rates of disability. The paper examines a means of generating estimates of life expectancy for people who are healthy and unhealthy for the UK that are consistent with exogenous population mortality data. The method takes population transition matrices and adjusts these in a statistically coherent way so as to render them consistent with aggregate life-tables.

Kuo, T. M., Suchindran, C. M., Koo, H. P. **The multistate life table method: an application to contraceptive switching behavior**. *Demography* 2008;45(1):157-171. CB18/59
(http://muse.jhu.edu/login?uri=/journals/demography/v045/45.1kuo.pdf)

MULTI-STATE LIFE TABLE METHOD / CALCULATION METHOD

The multistate life table (MSLT) can be used to properly describe, in a single analysis, complex transitions among multiple states. The authors provide methods for computing MSLT quantities using censored event-history data: namely, transition intensities and probabilities, "state occupancy" probabilities and standard errors, average time spent in specified states, and average number of visits to specified states. They apply these methods to contraceptive use.

Lievre, A., Alley, D., Crimmins, E. M. **Educational differentials in life expectancy with cognitive impairment among the elderly in the United States**. *Journal of Aging and Health* 2008;20(4):456-477. CB18/49
(http://jah.sagepub.com/cgi/content/abstract/20/4/456)

HEALTH EXPECTANCY / COGNITIVE FUNCTION / EDUCATION / ELDERLY / LONGITUDINAL STUDIES / ORIGINAL CALCULATION / MULTI-STATE LIFE TABLE (Imach) / TRANSITIONS / USA / 1993-2000

Objective: This article provides estimates of education differentials in life expectancy with and without cognitive impairment for the noninstitutionalized population aged 70 years and older in the United States. Method: Life expectancy with cognitive impairment was calculated using multistate models, allowing transitions between cognitively intact and cognitively impaired states and from each of these states to death and allowing transition rates to vary across age and education. Four waves of the Assets and Health Dynamics of the Oldest Old survey were used.
Results: Those with low levels of education are more likely to become cognitively impaired and do so at an earlier age. After age 70, persons with low educational levels can expect to live 11.6 years, and persons with high education 14.1 years, without cognitive impairment. Length of life with cognitive impairment differs by education (1.6 years and 1.0 years at age 70, respectively) but differs little by age.
Discussion: Although those with higher education have lower rates of both cognitive impairment and mortality, those who do become cognitively impaired appear to be in poorer health, leading to a reduced probability of improved cognition and increased probability of mortality relative to those with lower educational levels.

Manton, K. G. **Recent declines in chronic disability in the elderly US population: Risk factors and future dynamics**. *Annual Review of Public Health* 2008;29:91-113. CB18/53 (http://arjournals.annualreviews.org/doi/abs/10.1146/annurev.publhealth.29.020907.090812?cookieSet=1 &journalCode=publhealth)

ACTIVE LIFE EXPECTANCY (ALE) / ACTIVITIES OF DAILY LIVING (ADL) / CALCULATION / SULLIVAN METHOD / TRENDS / DISEASE / CARDIOVASCULAR DISEASE / DIABETES / CANCER / OBESITY / MORBIDITY COMPRESSION

As U.S. life expectancy has increased, questions arise as to how the quality of health and functioning in the elderly population has changed. Data from the 1982-2004 National Long-Term Care Survey (NLTCS) suggested that chronic disability prevalence above age 65 declined at an increasing rate with a 2.2% per annum from 1999 to 2 004. Active life expectancy is calculated using disability measures for Civil War veterans (1935 to 1980) and from the 1982-1999 US National Long Term Care Survey.ALE and LE are presented for ages 65-100 for 1935 to 2080.

Mc Rose, A., Hennis, A., Hambleton, I. R. **Sex and the city: Differences in disease- and disability-free life years, and active community participation of elderly men and women in 7 cities in latin America and the Caribbean**. *BMC Public Health* 2008;8:Art. n°127. CB18/60 (http://www.biomedcentral.com/1471-2458/8/127/abstract)

HEALTH EXPECTANCY / DISABILITY-FREE LIFE EXPECTANCY / DISEASE-FREE LIFE EXPECTANCY / PERCEIVED HEALTH / ACTIVITIES OF DAILY LIVING (ADL) / DEPRESSION / ORIGINAL CALCULATION / SULLIVAN METHOD / LATIN AMERICA / THE CARRIBBEAN / 1999-2000

The authors calculate prevalences of disability (difficulty with at least one activity of daily living), disease and co-morbidity (presence of at least one, and at least two, of seven chronic diseases/conditions, respectively), and active community engagement (using five levels of community participation, from less than weekly community contact to voluntary or paid work) in seven Latin America and the Caribbean cities (Buenos Aires, Bridgetown, Sao Paulo, Santiago, Havana, Mexico City, and Montevideo). They estimate remaining life expectancy (LE) with and without disability, disease and co-morbidity according to Sullivan's method, and investigate age, sex, and regional variations in disability-free LE. Finally, they model the association of disease, co-morbidity and disability with active community participation using an ordinal regression model, adjusted for depression.

Molla, M. T., Lubitz, J. **Retrospective information on health status and its application for population health measures**. *Demography* 2008;45(1):115-128. CB18/65
(http://muse.jhu.edu/login?uri=/journals/demography/v045/45.1molla.html)

HEALTH EXPECTANCY / LIFE EXPECTANCY IN DIFFERENT STATES OF HEALTH / PERCEIVED HEALTH / CALCULATION / DOUBLE DECREMENT TABLES METHOD / LONGITUDINAL STUDIES / USA / 1999-2001

Healthy life expectancies are almost always calculated by using health data from cross-sectional surveys. This type of calculation is done partly because data from longitudinal surveys are not always available, and when they are available, they are collected at intervals that are longer than one year. In such cases, collecting health information retrospectively for the years skipped by the survey is useful. The main purpose of this paper is to show how retrospective health information can be used to estimate life expectancies in different health states. Healthy life expectancies are estimated with and without using data on retrospective health information, and the corresponding estimates are compared. The two sets of estimates are similar. The authors conclude that retrospectively assessed health information based on a one-year recall period can be used to estimate years of life in various health states and that estimates based on such information will closely approximate estimates based on concurrent health information.

Molla, M. T., Madans, J. H. *Estimating healthy life expectancies using longitudinal survey data: Methods and techniques in population health measures*. Washington, D.C.: National Center for Health Statistics; 2008. (Vital and Health Statistics; series 2; n°146) CB18/48
(http://www.cdc.gov/nchs/products/pubs/pubd/series/ser.htm#sr2_146)

HEALTH EXPECTANCY / HEALTHY LIFE EXPECTANCY / ACTIVE LIFE EXPECTANCY (ALE) / LIFE EXPECTANCY / HEALTH STATUS / EDUCATION / ACTIVITY RESTRICTION / CALCULATION METHOD / TRANSITION PROBABILITY / MULTI-STATE LIFE TABLE (Imach) / USA / 1997-2000 / 2001-2002

The authors describe the method for estimating healthy and active life expectancy using the multistate life table model and data from two longitudinal surveys. First, data were used from LSOA II to estimate life expectancy with and without activity limitation (active life expectancy), and then data were used from the Centers for Medicare and Medicaid Services' (CMS) Medicare Current Beneficiary Survey (MCBS) to estimate expected years in good (healthy life expectancy) and poor health. Healthy life expectancies, as well as active life expectancies, are calculated using a personal computer (PC) program called IMaCh. Illustrative examples of active life expectancy and expected years of life in good and poor health are provided.

Morata, L. B., Losilla, C. B., Estany, M. G., Gondolbeu, K. M. **Tipologias sociodemograficas de individuos con dependencia en Espana y su supervivencia en estado de Salud / Sociodemographic typologies on individuals with dependence in Spain and healthy life expectancy**. *Revista Española de Geriatría y Gerontología* 2008;43(1):19-31. CB18/51
(http://dialnet.unirioja.es/servlet/articulo?codigo=2533199)

HEALTH EXPECTANCY / DEPENDENCE / MARITAL STATUS / EDUCATION / SOCIAL INEQUALITY / ORIGINAL CALCULATION / SULLIVAN METHOD / SPAIN / 1999

The authors define profiles of persons -especially elderly- with dependence, based on their marital status, the care received, their economic and work situation, and educational level. They use data from the Spanish survey of disabilities, deficiencies and health status. Health expectancy at age 65 is calculated for the different groups.

Nusselder, W. J., Looman, C. W., Franco, O. H., Peeters, A., Slingerland, A. S., Mackenbach, J. P. **The relation between non-occupational physical activity and years lived with and without disability**. *Journal of Epidemiology and Community Health* 2008;62(9):823-828.   CB18/58 (http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=18701734)

HEALTH EXPECTANCY / PHYSICAL ACTIVITY / DISABILITY / ORIGINAL CALCULATION / MULTI-STATE LIFE TABLE METHOD / THE NETHERLANDS / 1991-1997

OBJECTIVES: The effects of non-occupational physical activity were assessed on the number of years lived with and without disability between age 50 and 80 years.
METHODS: Using the GLOBE study and the Longitudinal Study of Aging, multi-state life tables were constructed yielding the number of years with and without disability between age 50 and 80 years. To obtain life tables by level of physical activity (low, moderate, high), hazard ratios were derived for different physical activity levels per transition (non-disabled to disabled, non-disabled to death, disabled to non-disabled, disabled to death) adjusted for age, sex and confounders.
RESULTS: Moderate, compared to low non-occupational physical activity reduced incidence of disability (HR 0.66, 95% CI 0.51 to 0.86), increased recovery (HR 1.95, 95% CI 1.32 to 2.87), and represents a gain of disability-free years and a loss of years with disability (male 3.1 and 1.2; female 4.0 and 2.8 years). Performing high levels of non-occupational physical activity further reduced incidence, and showed a higher gain in disability-free years (male 4.1; female 4.7), but a similar reduction in years with disability.
CONCLUSION: Among 50-80-year-olds promoting physical activity is a fundamental factor to achieve healthy ageing.

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**. *International journal of geriatric psychiatry* 2008 Jun;23(6):643-649.   CB18/55 (http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=18044794)

DISABILITY-FREE LIFE EXPECTANCY / DEPRESSION / DISABILITY / QUALITY OF LIFE / ORIGINAL CALCULATION / MULTI-STATE LIFE TABLE METHOD / ENGLAND / WALES / UNITED KINGDOM

OBJECTIVES: Depression in old age is a major public health problem though its relationship to onset of disability and death is not well understood. We aim to quantify the impact of late-life self-reported depression and emotional problems on both the length and quality of remaining life.
METHODS: Longitudinal analysis of 11,022 individuals from the MRC Cognitive Function and Ageing Study (MRC CFAS), multi-centre longitudinal study on ageing in individuals age 65 years and older living in England and Wales. Individuals have been followed at intermittent time intervals over 10 years. Subjects reporting at baseline that they had consulted about emotional problems for the first time since the age of 60 years were considered, along with a subgroup where a GP suggested depression. Disability was defined as an IADL or ADL disability that required help at least once a week. Total and Disability-Free Life Expectancy (TLE and DFLE) were calculated using multi-state models, separately by gender, and with presence of emotional problems/depression and multimorbidity as covariates.

RESULTS: Emotional problems had a greater impact on DFLE than TLE, reducing DFLE by 1.8 years, but TLE by only 0.5 years at age 65 with the effect increasing with age. The effect was most marked in older people reporting other co-morbidities where emotional problems in addition resulted in a reduction of 0.9 years in total and 2.6 years disability-free.
CONCLUSIONS: Although emotional problems were only self-reported, these results highlight the burden of late-life depression on the quality of remaining years of life.
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Reynolds, S. L., Haley, W. E., Kozlenko, N. **The impact of depressive symptoms and chronic diseases on active life expectancy in older Americans**. *American Journal of Geriatric Psychiatry* 2008;16(5):425-432.   CB18/57
(http://ajgponline.org/cgi/content/abstract/16/5/425)

HEALTH EXPECTANCY / ACTIVE LIFE EXPECTANCY (ALE) / ELDERLY / MORTALITY / DISABILITY / DISEASE (CHRONIC) / DEPRESSION / ORIGINAL CALCULATION / MULTI-STATE LIFE TABLE (Imach) / USA / 1993-1998

Objectives: The authors prospectively examined whether depressive symptoms (DS) in older adults negatively affected active live expectancy (ALE), or remaining years free of disability, and mortality, independently and in the presence of chronic diseases, and after stratification by gender.
Design: Prospective cohort study, first three waves (1993 - 1998) of the Asset and Health Dynamics Among the Oldest Old.
Setting: Data collection: University of Michigan; analysis: University of South Florida. Participants: Nationally representative sample of community-dwelling adults age 70 and older (N = 7,381).
Measurements: DS (Center for Epidemiological Studies Depression, 8-item version), self-reported cancer, diabetes, heart disease, or stroke, difficulty with activities of daily living, death, and estimates of total, active, and disabled life expectancy.
Results: DS reduced ALE by 6.5 years for young - old men (age 70), 3.2 years for old - old men (age 85), 4.2 years for young - old women, and 2.2 years for old - old women, and these effects remained significant at all ages and across gender even after controlling for chronic disease, the one exception being DS and cancer in old - old women. DS also reduced total life expectancy significantly, although controlling for some chronic diseases (particularly cancer and stroke) eliminated the effect of DS across age and gender groups.
Conclusion: Depressive symptoms represent a serious and distinct threat to independent functioning in older adults. Whether experienced alone, or in combination with chronic diseases, depressive symptoms shorten ALE substantially. Timely diagnosis and treatment of depressive symptoms in older adults may delay the onset of disability and improve the quality of life.

Van Oyen, H., Cox, B., Demarest, S., Deboosere, P., Lorant, V. **Trends in health expectancy indicators in the older adult population in Belgium between 1997 and 2004**. *European Journal of Ageing* 2008;5(2):137-146.   CB18/56
(http://www.springerlink.com/content/m326140v029jl163/)

LIFE EXPECTANCY / HEALTH EXPECTANCY / DISABILITY-FREE LIFE EXPECTANCY / PERCEIVED HEALTH / MORBIDITY / DISEASE / DISABILITY / ORIGINAL CALCULATION / SULLIVAN METHOD / TRENDS / BELGIUM / 1997-2004

The objective is to assess if longer life in Belgium is associated with more healthy years through the evaluation of trends (1997-2004) in health expectancy indicators at ages 65 and 80 covering different health domains: self-perceived health, chronic morbidity, disease clusters, and disability. Information was

obtained from Belgian Health Interview Surveys. Health expectancies were calculated using the Sullivan method. Among males at age 65, the increase in years expected to live without chronic morbidity, without a disease cluster or without disability exceeded the increase of the life expectancy (LE). The rise in LE in good self-perceived health was equal to the gain in LE. Among women at age 65 and among men and women at age 80, none of the changes in the expected years of life in good health in any health domain were statistically significant. At age 65 among women, the increase in LE was smaller than the increase in years without chronic disease or without disability. The increase in years without disease clusters was less that the LE increase. At age 80 among men, the years without disability increased as the LE, with a shift toward years with moderate limitations. In any other health domains for men (except co-morbidity) and in all domains for women the years in good health either decreased or increased less than the LE. The recent rise in life expectancy in Belgium is, among the youngest old and especially among males, accompanied by an improved health status. At age 80 and particularly among women expansion of unhealthy years prevails.

2007

Camargos, M. C., Machado, C. J., Rodrigues, R. N. **Disability life expectancy for the elderly, city of São Paulo, Brazil, 2000: Gender and educational differences**. *Journal of Biosocial Sciences* 2007;39:455-463.   CB18/50
(http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=944324&fulltextType=RA&fileId=S0021932006001428)

HEALTH EXPECTANCY / DISABILITY-FREE LIFE EXPECTANCY / DISABILITY / EDUCATION / ORIGINAL CALCULATION / SULLIVAN METHOD / BRAZIL / 2000

The objective of this study was to estimate 'disability life expectancy' by age, gender and education attainment for the elderly of the city of São Paulo, Brazil, in the year 2000. Data came from the SABE database, population censuses and mortality statistics (SEADE Foundation). Life expectancy with disability was calculated using Sullivan's method on the basis of the current probability of death and prevalence of disability by educational level.

Parker, M. G., Thorslund, M. **Health trends in the elderly population: getting better and getting worse**. *Gerontologist* 2007;47(2):150-158.   CB18/46
(http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=17440120)

HEALTH INDICATOR / PERCEIVED HEALTH / IMPAIRMENT / DISABILITY / FUNCTIONAL LIMITATION / TRENDS / ELDERLY

Health trends in the fastest growing sector of the population, the oldest old, have received much attention during the past decade because of the rising costs of medical and long-term care. Many studies have suggested a compression of morbidity in this sector, implying that the future care needs of elderly people will not follow the demographic prognoses. Most of these studies have used health indicators based on disability, a concept that is contextually embedded. We have taken a closer look at health-trend surveys with a focus on the health indicator used. Our findings reveal that although disability measures often show improvement, there is a simultaneous increase in chronic disease and functional impairments-health components that require care resources. That is, an expansion of other health problems may accompany a compression of disability. Therefore, a concept of general morbidity is not sufficient when discussing health trends and the need for care services in the elderly population. Because different indicators do not show the same trends over time, we suggest a more refined discussion that distinguishes between different

health components. In addition, different components have different implications for the amount and kind of care resources needed. If the current positive trends in disability continue, future need for social services and long-term care may not parallel demographic projections. Trends in disease and functional limitations seem to have taken a different direction, suggesting a parallel or increased need for resources in medical care, rehabilitation, and compensatory interventions such as assistive technology.

Wolf, D. A., Mendes de Leon, C. F., Glass, T. A. **Trends in rates of onset of and recovery from disability at older ages: 1982-1994**. *Journals of Gerontology* 2007;62(1):S3-S10.   CB18/41
(http://psychsoc.gerontologyjournals.org/cgi/content/abstract/62/1/S3?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&andorexacttitle=and&andorexacttitleabs=and&andorexactfulltext=and&searchid=1&FIRSTINDEX=0&sortspec=relevance&volume=62&firstpage=S3&resourcetype=HWCIT)

ACTIVE LIFE EXPECTANCY (ALE) / ELDERLY / ADULT / DISABILITY / PREVALENCE / TRANSITIONS / TRENDS / USA

Objectives. Although there is substantial evidence of declining prevalence of disability among the older population during the late 1980s and 1990s, evidence on trends in the underlying dynamics of disability is lacking. For this study, we estimated models of transitions between discrete disability and vital states that incorporated simple linear time trends.
Methods. We analyzed data from the 1992-1994 interviews of the New Haven Established Populations for Epidemiologic Studies of the Elderly study and used three alternative measures of disability status. We estimated separate models of disability prevalence and disability transitions by gender.
Results. Eleven of 12 estimated trends in transition rates were statistically significant. For men and women, and for three alternative disability indicators, we found downward trends in rates of both onset of and recovery from disability among people aged 75 and older. We did not find any consistent pattern of trends in disability among those aging into the 75 and older group during this period.
Discussion. Our findings are consistent with declining population-level disability prevalence only if any downward trend in onset outweighs the downward trend in recovery. These findings are also consistent with a trend toward more severe disability problems among the disabled population.

2005

Wanner, P., Sauvain-Dugerdil, C., Guilley, E., Hussy, C. *Ages et générations: la vie après 50 ans en Suisse*. Neuchâtel: Office Fédéral de la Statistique; 2005.   CB18/43
(http://www.bfs.admin.ch/bfs/portal/fr/index/dienstleistungen/publikationen_statistik/publikationskatalog.html?publicationID=1649)

HEALTH EXPECTANCY / DISABILITY-FREE LIFE EXPECTANCY / HEALTHY LIFE EXPECTANCY / LIFE EXPECTANCY / PERCEIVED HEALTH / DISABILITY / FRAILTY / ORIGINAL CALCULATION / GEOGRAPHIC COMPARISON / MORBIDITY COMPRESSION / TRENDS / 1992-2002 / SWITZERLAND

The authors calculate disability-life expectancies and healthy life expectancies for the Swiss population in 1992 and 2002, using data from the Swiss health survey.

2002

Fries, J. F. **Reducing disability in old age**. *Journal of the American Medical Association* 2002;288(24):3164-3166.   CB18/62

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DISABILITY / TRENDS / ELDERLY / MORBIDITY COMPRESSION / USA

The declining trends in disability in the US elderly population are largely unexplained and reasonable explanations are multifactorial. The author emphasizes the need for research agenda on the health of seniors.