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# Title: Health expectancies and the International Classification of Functioning, Disability and Health (ICF)

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Purpose: for information

## Recommendations:

## Abstract:

Health expectancies are population health indicators, combining information on mortality and health. Since health expectancies calculations are based on the normal life table approach, the results are independent of the composition of the population and thus suited for comparison between groups or over time. The International Network on Health Expectancies (REVES) has proposed a classification system, based in the ICD and ICIDH, to make international comparison (conceptually) easier. In 2001, the WHO presented a new classification system on functioning and disabilities, the ICF. The health expectancy classification system has not yet been updated to the ICF.

In the Netherlands, life expectancy in perceived good health, in disability-free life expectancy, and in life expectancy in wellbeing (mental health) have been calculated. The disability-free life expectancy comes closest to the activity-domain of the ICF. In this paper we will show trends in disability- free life for the period 1989-2000. Within the disability-free life expectancy, in 1997 we have also published results for some specific disabilities: hearing, seeing and mobility/daily activity disabilities. We will also present these results.

Finally we will also address some efforts to standardise instruments measuring health status (including disabilities according to the ICF) to make international comparison possible.

# Health expectancies and the ICF: the classification system

Health expectancies are composite health indicators, combining information on length of life and quality of life. Quality of life is expressed in terms of health or disabilities. Health expectancies are calculated, using the life table approach that is also used to calculate total life expectancy. Including the prevalence of good and ill health this total life expectancy is then divided in a life expectancy in good health and a life expectancy in ill health. The interpretation of health expectancy is 'the number of years the average person of a given age can expect to live in a certain state of health'. The use of the life table approach allows for easy comparison of health expectancies between different groups (males versus females, different socio-economic groups, regions or countries) or over time (trends) (1). However, comparison not only asks for the same method of calculation, but also for the same concepts of health and the same instruments to measure prevalence of health and ill health (2). And, as can be seen in the recent publication 'Determining Health Expectancies' although health expectancies have been calculated for many countries, they are not easily compared, because many different concepts of health and even more different instruments to measure these health concepts have been used (3).

In 1990, the International Network on Health Expectancies REVES has proposed a classification to harmonize the health expectancy calculations(4). In 1995, this classificationsystem is presented to the WHO in a REVES contribution to the World Health Report 1995 (5).This classification is based on the International Classification of Diseases (ICD) and the International Classification of Impairments, Disabilities and Handicaps (ICIDH) (see table 1). As can be seen from this table, the core stems from the ICIDH. However, the ICIDH did not cover all concepts, used in health expectancy calculations. Those health expectancies, that try to capture a more encompassing concept of health, like perceived health needed to be added to the classification (6). More recent, it is proposed to also add general mental health to the classification system (7).

In 2001, the WHO presented a new classification system, the ICF. The classification system used to harmonize the health expectancies has not yet been updated to this new ICF. Presumably, such an update will not be as easy as it looks. For instance, in the ICF, the distinction between 'activities' and 'participation'is less clear, and a qualifier 'performance' is used to evaluate the 'participation-component'. To allocate health expectancies according to the differences between activity and participation according to the definition of the ICF, much more information is needed on the operationalization of the concept by means of the measurement instruments.

Table 1 Classification system of Health Expectancies (source: (5))

| **Classification system** | **Concept** | **Health expectancy** |
|---|---|---|
| ICD-10 | Disease free | Disease free<br>Dementia free |
| ICIDH | Impairment free | Impairment free |
| | Disability free | Functional limitation free<br>From a list of impairments<br>Activity restriction free<br>Specific activities free |
| | Handicap free | General handicap free<br>Independent life<br>Active life (ADL/IADL)<br>Mobility handicap free<br>Occupational handicap free<br>Other handicap free |
| None | Perceived health | In good health |
| | Health adjusted | Health adjusted |

# Disability free life expectancy: an example from the Netherlands

In the next section of this paper I will present results of health expectancy calculations according to the ICF definition of activity limitations: (general) disability-free life expectancy, life expectancy without hearing disabilities, and life expectancy without seeing disabilities. I will not only present the results for one year, but instead show the trends over a longer period of time, from 1989 to 2000, for males and females. Trends are analyzed using linear regression. Due to time restrictions, I will present the results for males and females at birth only.

To calculate these disability-free life expectancies, data on disabilities were derived from the Dutch Health Interview Surveys from 1989 to 2000. The instruments used to measure disability in general and seeing and hearing are items included in the OECD (Organization for Economic Cooperation and Development) instrument list to measure long term disability (table 2) (8). Items 1 and 2 are used to calculated life expectancy with and without seeing problems, items 3 and 4 to calculate life expectancy with and without hearing problems and item 1 to 10 to have a more general disability free life expectancy.

In figure 1, the trend in the different disability free life expectancies is presented for males at birth, between 1989 and 2000. The highest line represents the total life expectancy. Between

1989 and 2000, total life expectancy has risen from 73.7 years to 75.6 years. A man born in 2000 can expect to have 74 years without seeing problems, an increase of 2.9 years compared to a male, born in 1989. Life expectancy without hearing problems increased from 71.7 years in 1989 to 73.9 years and general disability free life expectancy showed a rise from 65.8 years in 1989 to 70.2 years.

Table 2: Items of the OECD-list for long term disabilities

| |
|---|
| 1. ability to read small print in newspapers |
| 2. ability to recognize another person's face |
| 3. ability to follow a conversation in a group |
| 4. ability to hold a conversation with one other person |
| 5. ability to carry a 5 kg object 10 metres |
| 6. ability to bend and pick something up from the floor |
| 7. ability to walk 400 meters in one go |
| 8. ability to dress and undress oneself |
| 9. ability to get in and out of bed |
| 10. ability to move from one room to another (on the same floor) |

Figure 2 presents the results for females at birth.

From this figure it can be concluded that for females total life expectancy has increased with only 0.6 years between 1989 and 2000. Life expectancy without seeing problems increased with 2.3 years from 75.7 years to 78.0 years. Life expectancy without hearing problems increased from 77.7 years to 79.3 years and general disability free life expectancy increased from 65.5 years to 70.6 years.

Figure 1. Total life expectancy, life expectancy without hearing problems, life expectancy without seeing problems, disability free life expectancy for males at birth, 1989-2000.

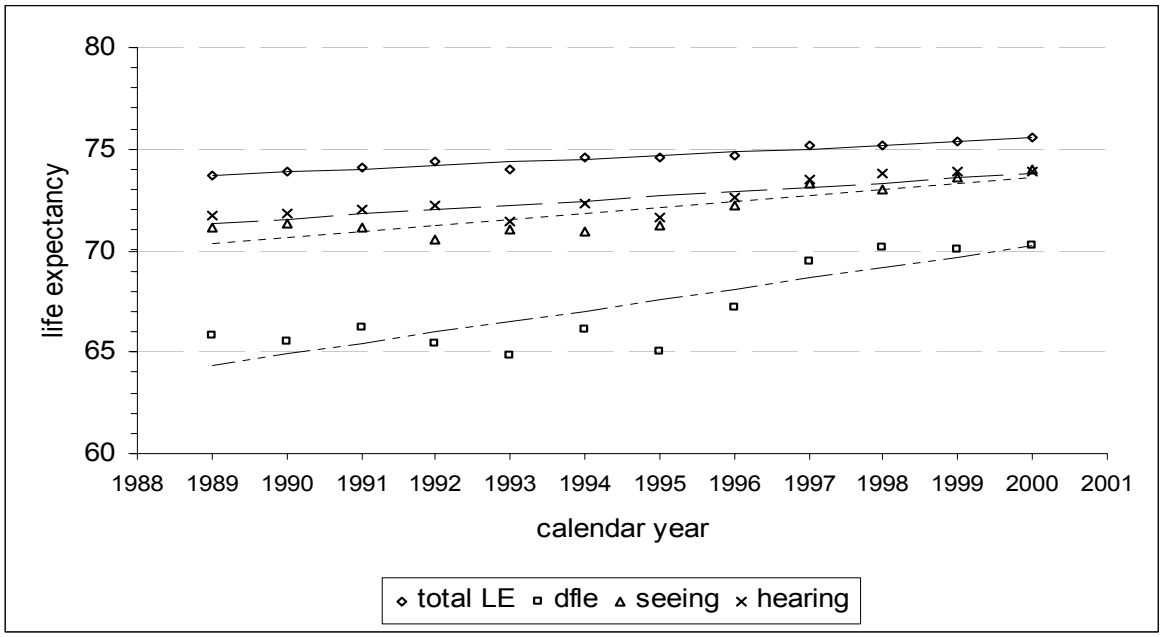
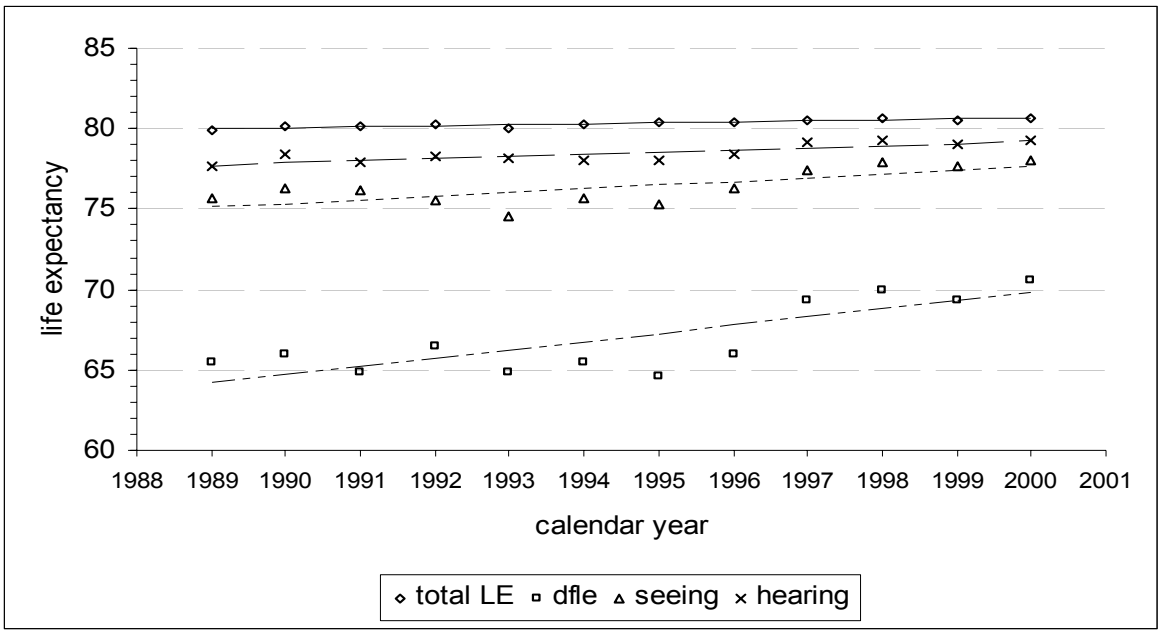


Figure 2 Total life expectancy, life expectancy without hearing problems, life expectancy without seeing problems, disability free life expectancy for females at birth, 1989-2000.




So, we observed an overall increase for both males and females in general disability free life expectancy as well as in life expectancy without seeing and without hearing disabilities.

To compare these results with results found in other countries, we can use the classification system of health expectancies and concentrate on those health expectancies that belong to the class of disability free life expectancy. Although the Disability free life expectancy is the health expectancy most often calculated, there are only a few countries that have performed trend-analysis (9). For instance in the USA, Crimmins et al also found an increase in DFLE (10). Although the measurement of the concept disability probably is different and thus the absolute number of disability free years might differ, due to the classification system we can compare the trends on a conceptual level and conclude that in the Netherlands as well as in the USA trends in health in terms of disabilities seem, indicating a compression of disabilities. The same goes for life expectancy without seeing and without hearing-problems as examples of more specific disabilities. However, comparison with other results is not possible, because no calculations of life expectancies without seeing or without hearing problems are published for other countries.

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