

# Health Trajectories and Future Care Need in Germany

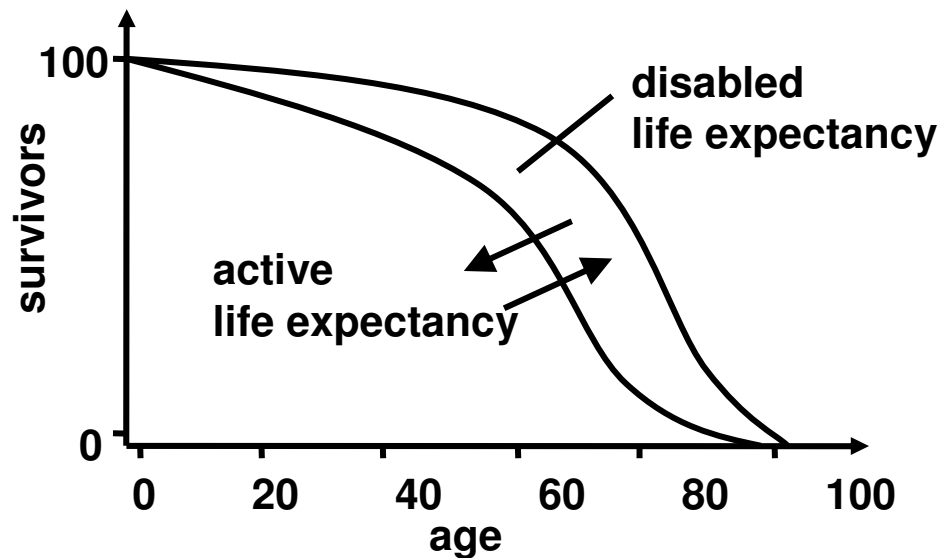
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Workshop: Aging, Care Need, and Quality of Life  
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# Changes in active life expectancy

## The concept of active life expectancy



## Three hypotheses

- Compression of Morbidity (Fries 1980)
- Expansion of Morbidity (Gruenberg 1977)
- Dynamic Equilibrium (Manton 1982)

# Changes in active life expectancy

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## What we know so far (in the case of Germany):

- Only few studies are available about *changes* in active life expectancy
- These studies show a positive development regarding active life expectancy (Dinkel 1999, Klein and Unger 2002).
- According to studies on other countries (Robine 2003) the improvements are stronger for severe limitations and less for moderate limitations (Unger 2006).

## Framework of the analysis

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- The Goal of the analysis is to project the future care need in consideration of the health improvements of the population (active life-expectancy).
- The question to answer is to what extent the increase in need for care is due to the changing age distribution and to what extent can the health improvements compensate for the increase in need for care.

# Methods

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## The multistate Life Table

$$l_{x+1}^a = l_x^a - d_x^{ad} - d_x^{ab} + d_x^{ba}$$

$$l_{x+1}^b = l_x^b - d_x^{bd} - d_x^{ba} + d_x^{ab}$$

## Event history analyses

$$r_{ij}(age) = \exp(\alpha_{ij} + \beta_{ij0}age + \beta_{ij1}cohort)$$

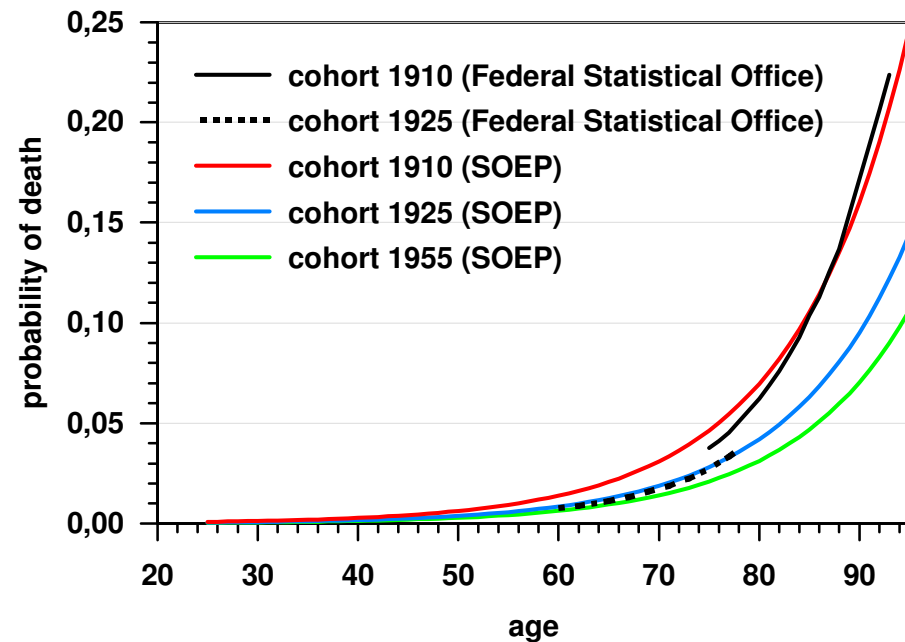
# Data: The Socio-economic Panel (SOEP)

- Household survey (1984-2004)
- approx. 12,000 respondents
- Need for care is measured as „strong functional limitations in the ADL“

## Restrictions:

- Selection of women because the mortality risk of men is negatively selected as a result of the world wars.
- The analysis is restricted to the ages 60-90

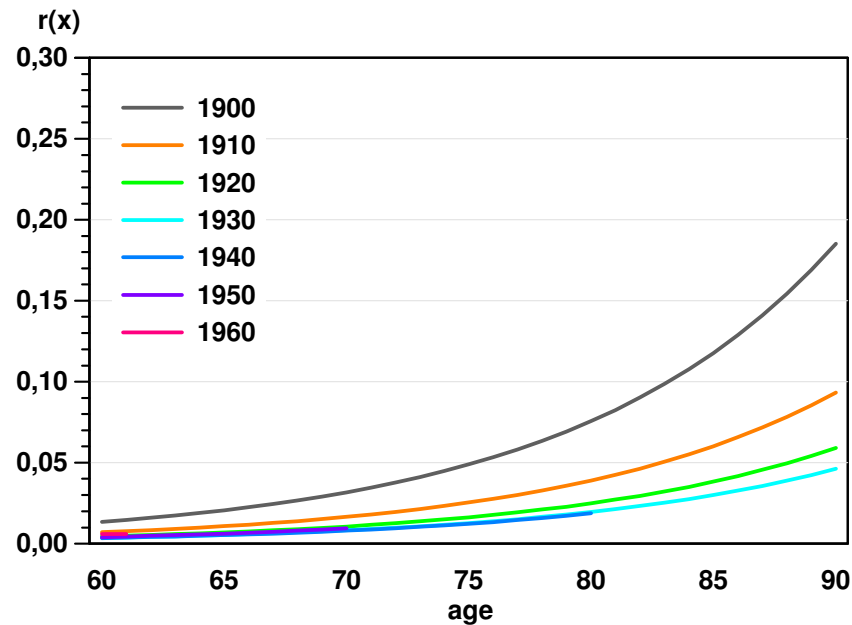
## Probabilities of death by birth cohort



Source: SOEP (1984-2004)

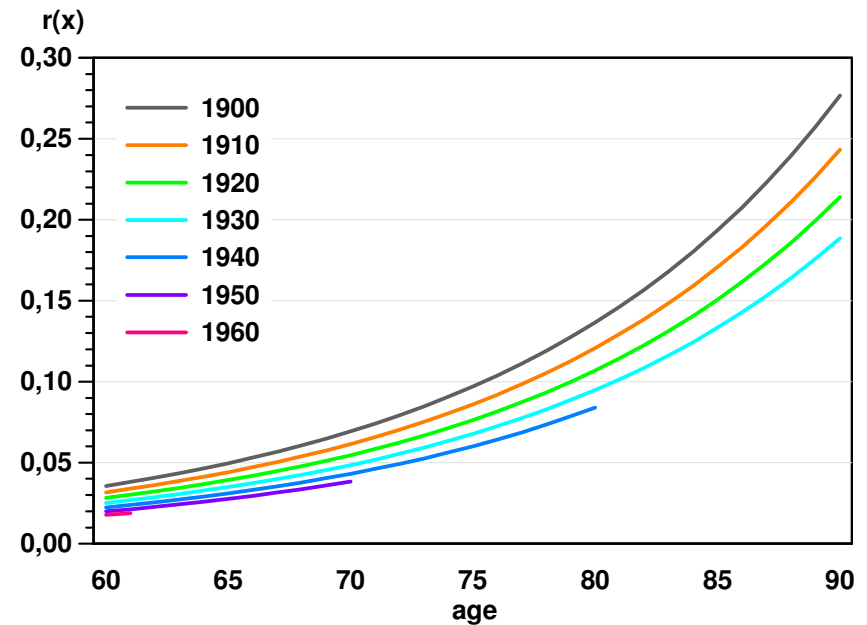
# Mortality rates by cohort

## Active population



Source: SOEP (1984-2001)

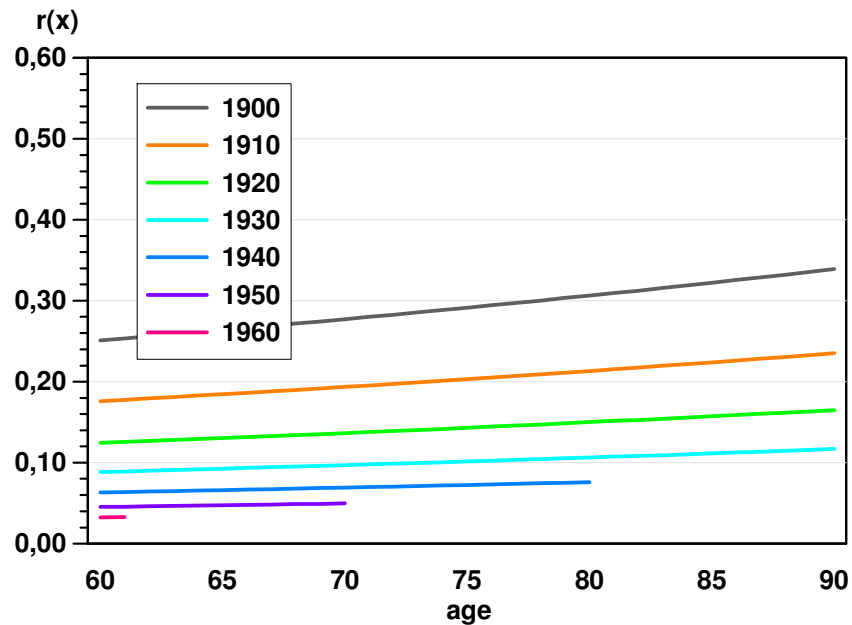
## Inactive population



Source: SOEP (1984-2001)

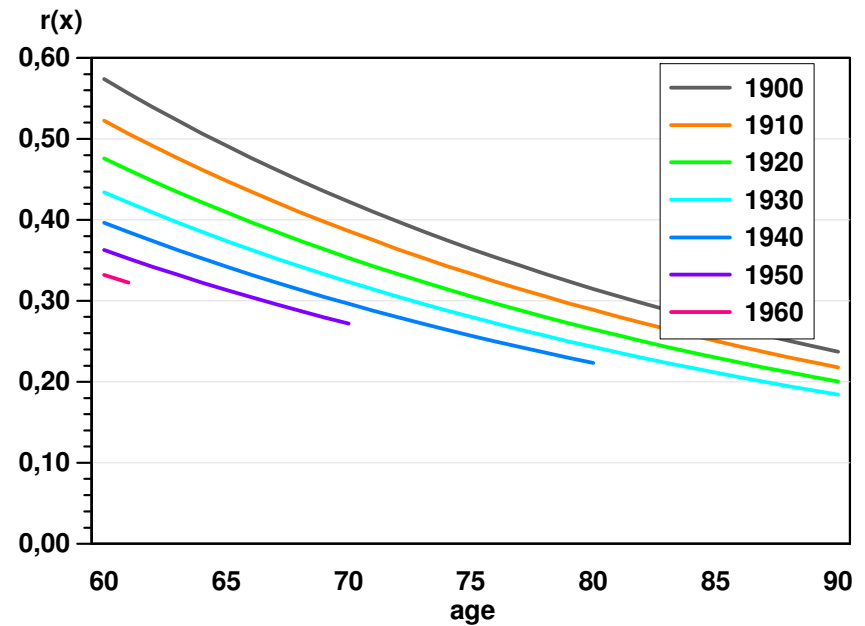
# Incidence and recovery rates by cohort

## Incidence



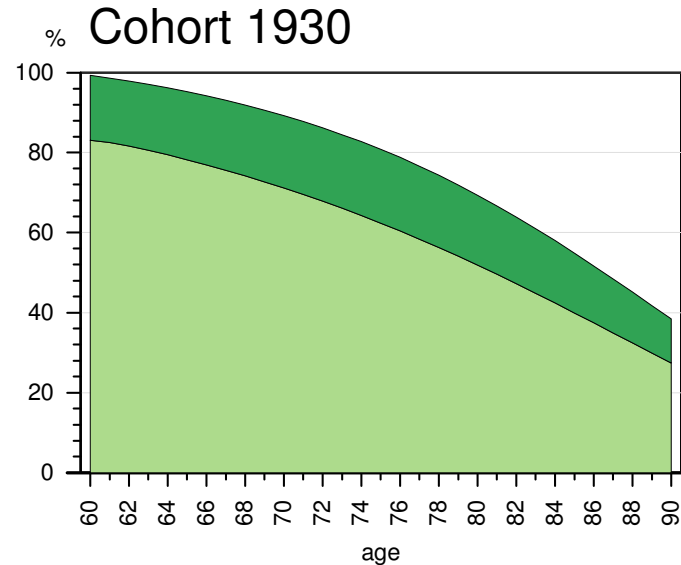
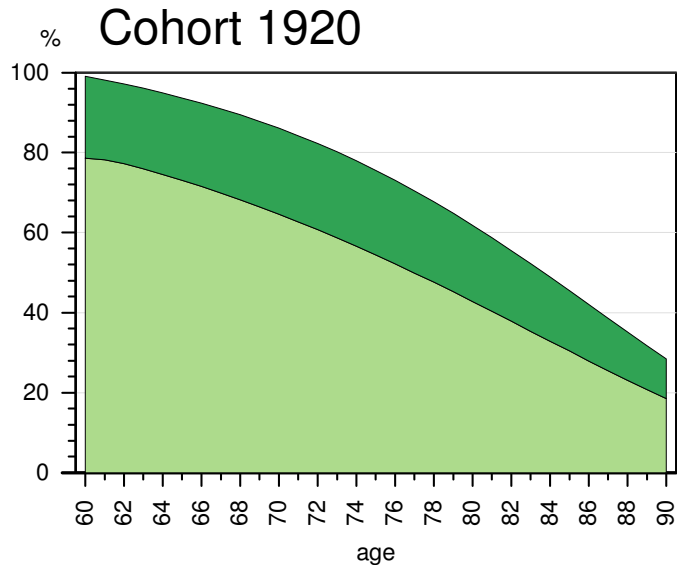
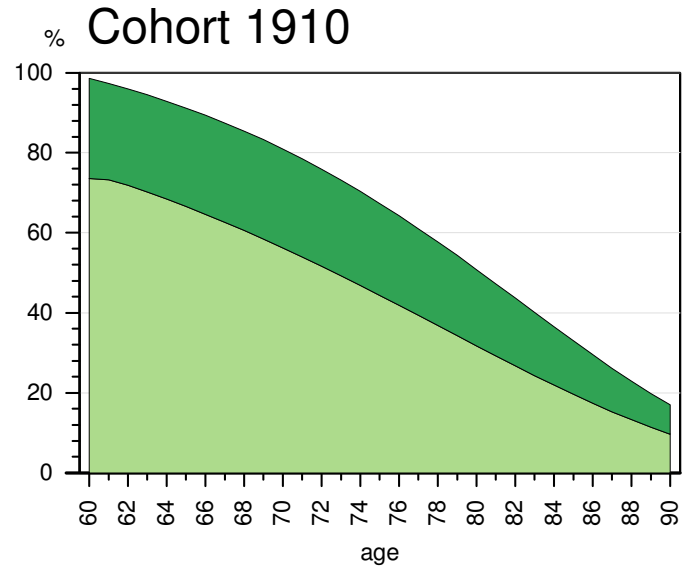
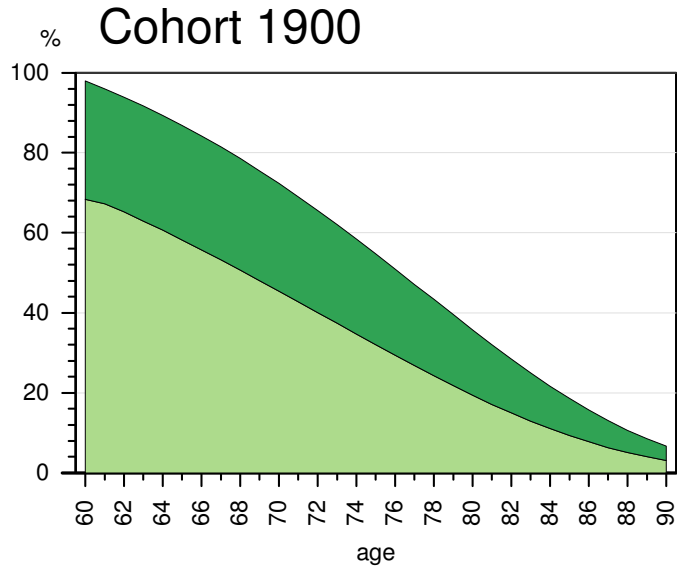
Source: SOEP (1984-2001)

## Recovery

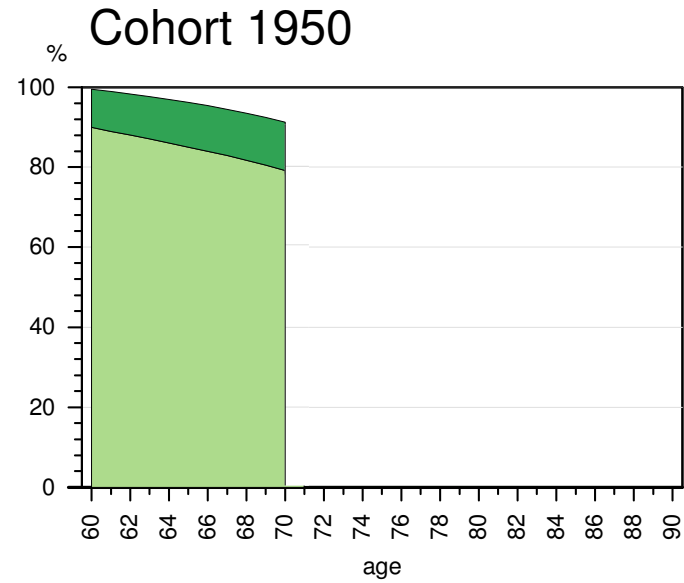
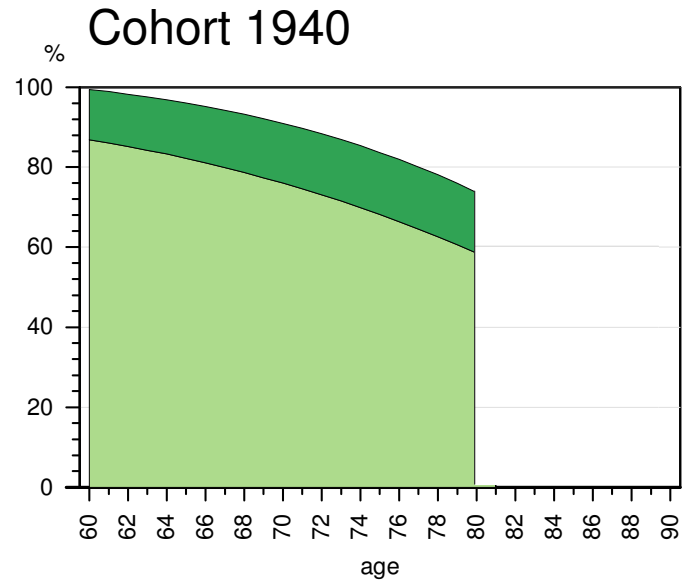


Source: SOEP (1984-2001)

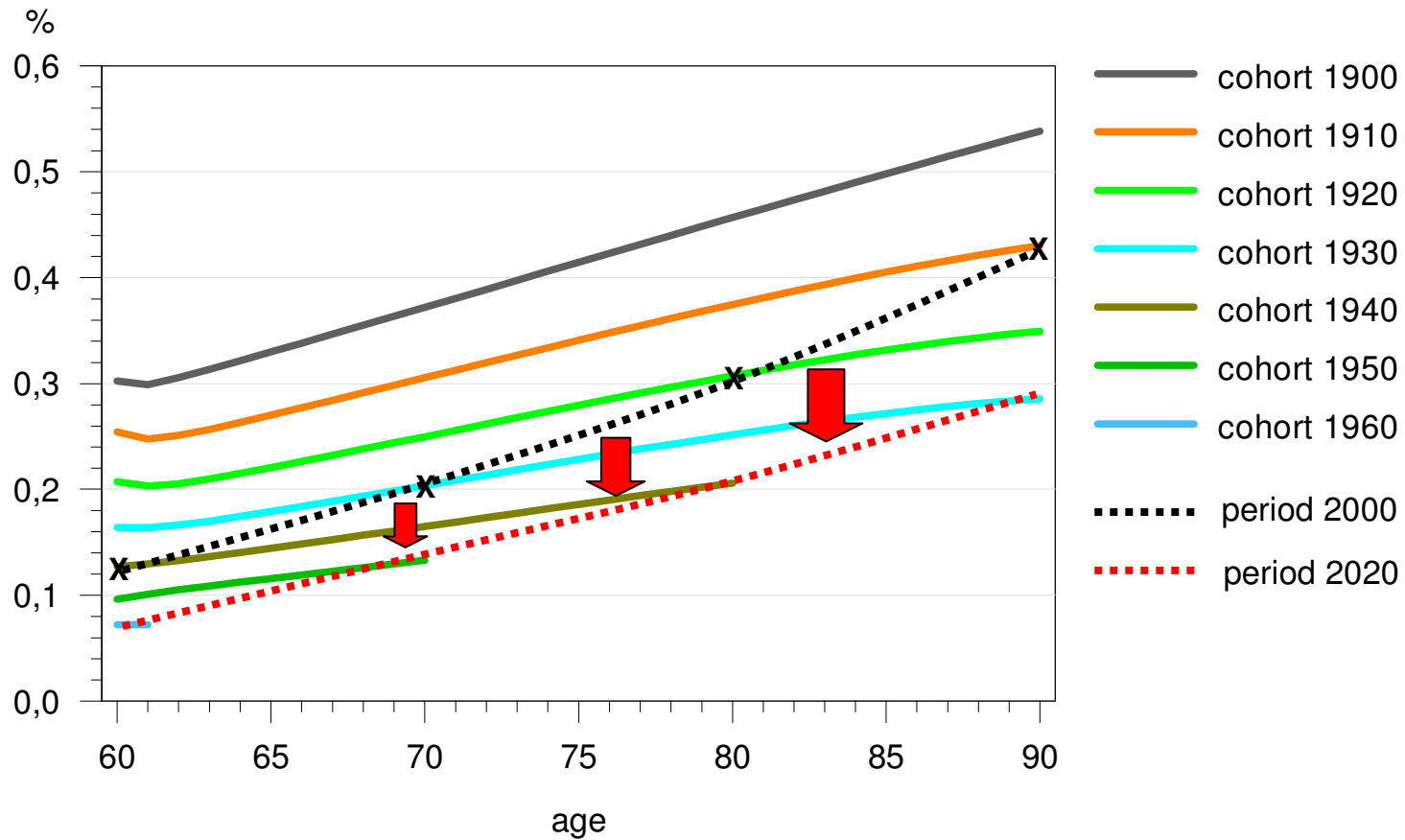
# Survivors with/ without functional limitations (ADL)



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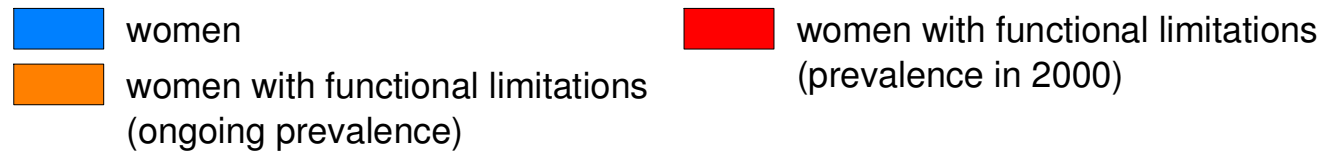
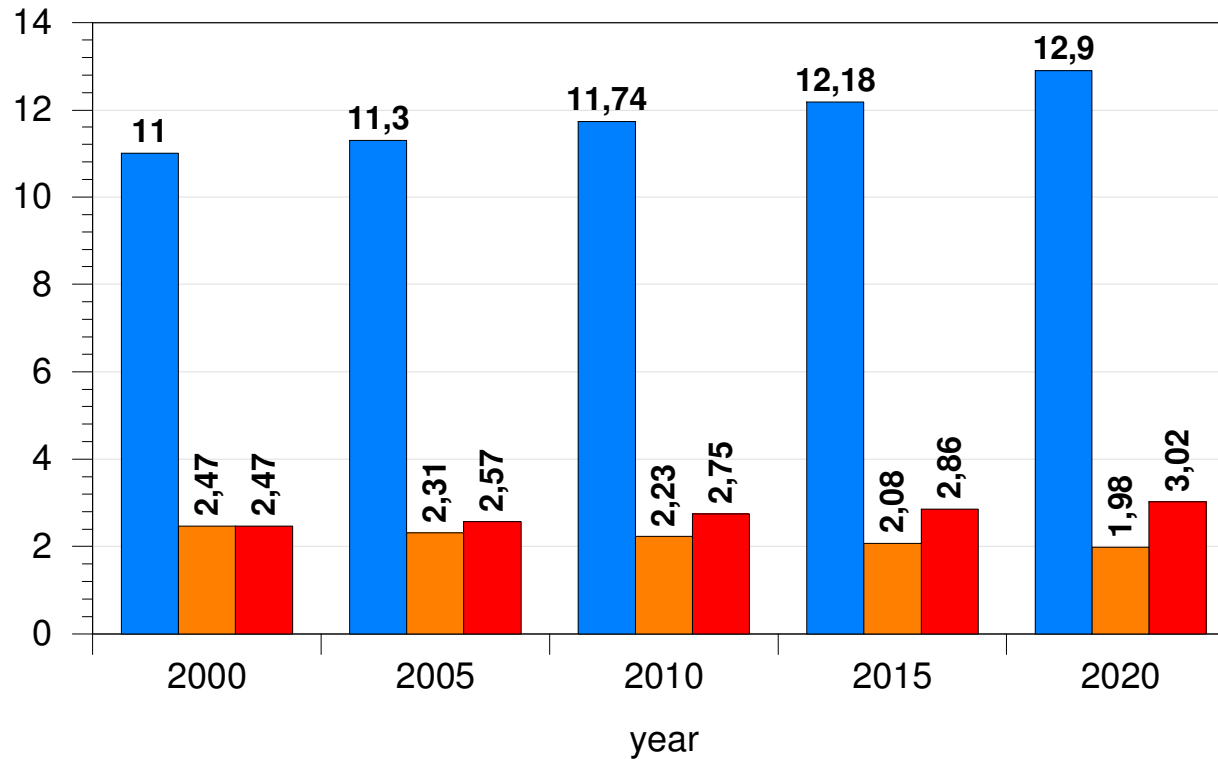


# Changes in prevalence rates of ADL



# Development of the 60-90-year old population

million



# Conclusions

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- For women life expectancy and life expectancy without functional limitations (ADL) is increasing
- The need for care (ADL) is decreasing from 2,47 million in 2000 to 1,98 million in 2020
- If health improvements are not taken into account, the changing age distribution leads to an increase in need for care from 2,47 million in 2000 to 3,02 million in 2020
- Overall the health improvements overcompensate the effect of the changing age distribution (1,98 vs. 3,02 million)

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