Forecasting disability in the European Union

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Assessing Needs of Care In European Nations

ANCIEN, general information

- Assessing Needs of Care in European Nations

- 7th Framework Programme, European Council

- January 2009 – August 2012

- 21 EU-countries included

Summary

- Basic ADL disability
- Deriving incidence from prevalence
- Forecasts of long term care needs
- Conclusions

Katz ADL

Dressing

Eating

Ambulating

Toilet

Hygiene

Katz Index of Independence in Activities of Daily Living

Activities Points (1 or 0)	Independence (1 Point) NO supervision, direction or personal assistance	Dependence (0 Points) WITH supervision, direction, personal assistance or total care
BATHING Points: _____	(1 POINT) Bathes self completely or needs help in bathing only a single part of the body such as the back, genital area or disabled extremity	(0 POINTS) Need help with bathing more than one part of the body, getting in or out of the tub or shower. Requires total bathing
DRESSING Points: _____	(1 POINT) Get clothes from closets and drawers and puts on clothes and outer garments complete with fasteners. May have help tying shoes.	(0 POINTS) Needs help with dressing self or needs to be completely dressed.
TOILETING Points: _____	(1 POINT) Goes to toilet, gets on and off, arranges clothes, cleans genital area without help.	(0 POINTS) Needs help transferring to the toilet, cleaning self or uses bedpan or commode.
TRANSFERRING Points: _____	(1 POINT) Moves in and out of bed or chair unassisted. Mechanical transfer aids are acceptable	(0 POINTS)Needs help in moving from bed to chair or requires a complete transfer.
CONTINENCE Points: _____	(1 POINT) Exercises complete self control over urination and defecation.	(0 POINTS) Is partially or totally incontinent of bowel or bladder
FEEDING Points: _____	(1 POINT) Gets food from plate into mouth without help. Preparation of food may be done by another person.	(0 POINTS) Needs partial or total help with feeding or requires parenteral feeding.

Basic ADL

- Data:
  - SHARE (survey) for community dwelling elderly
    - Low response
    - "Having difficulties with" basic ADL
  - Administrative data institutionalised persons
    - (In NL: corrected for 30% non disabled but institutionalised)
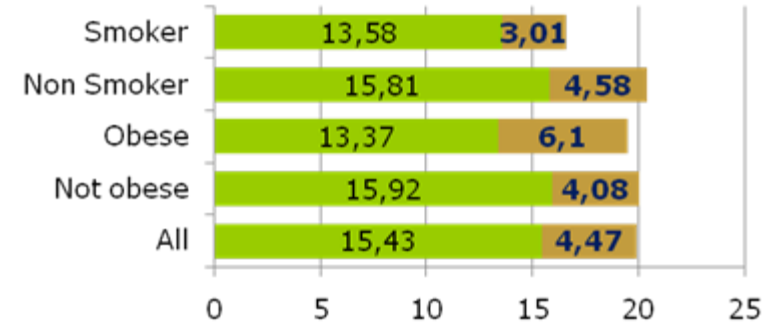
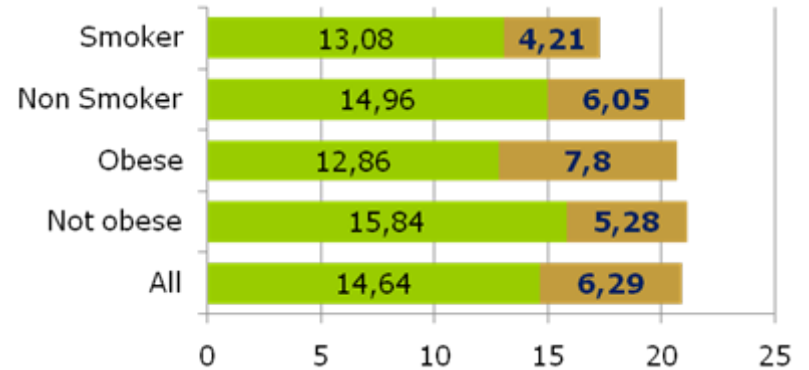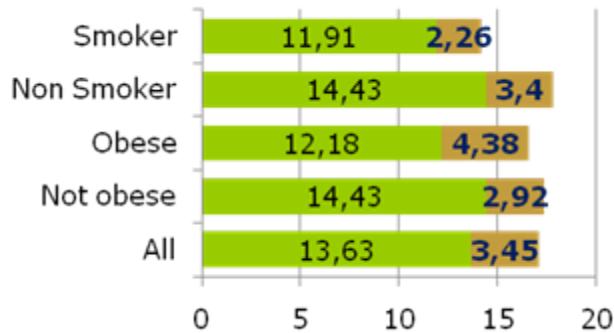# Prevalence disability 3 countries in 2008
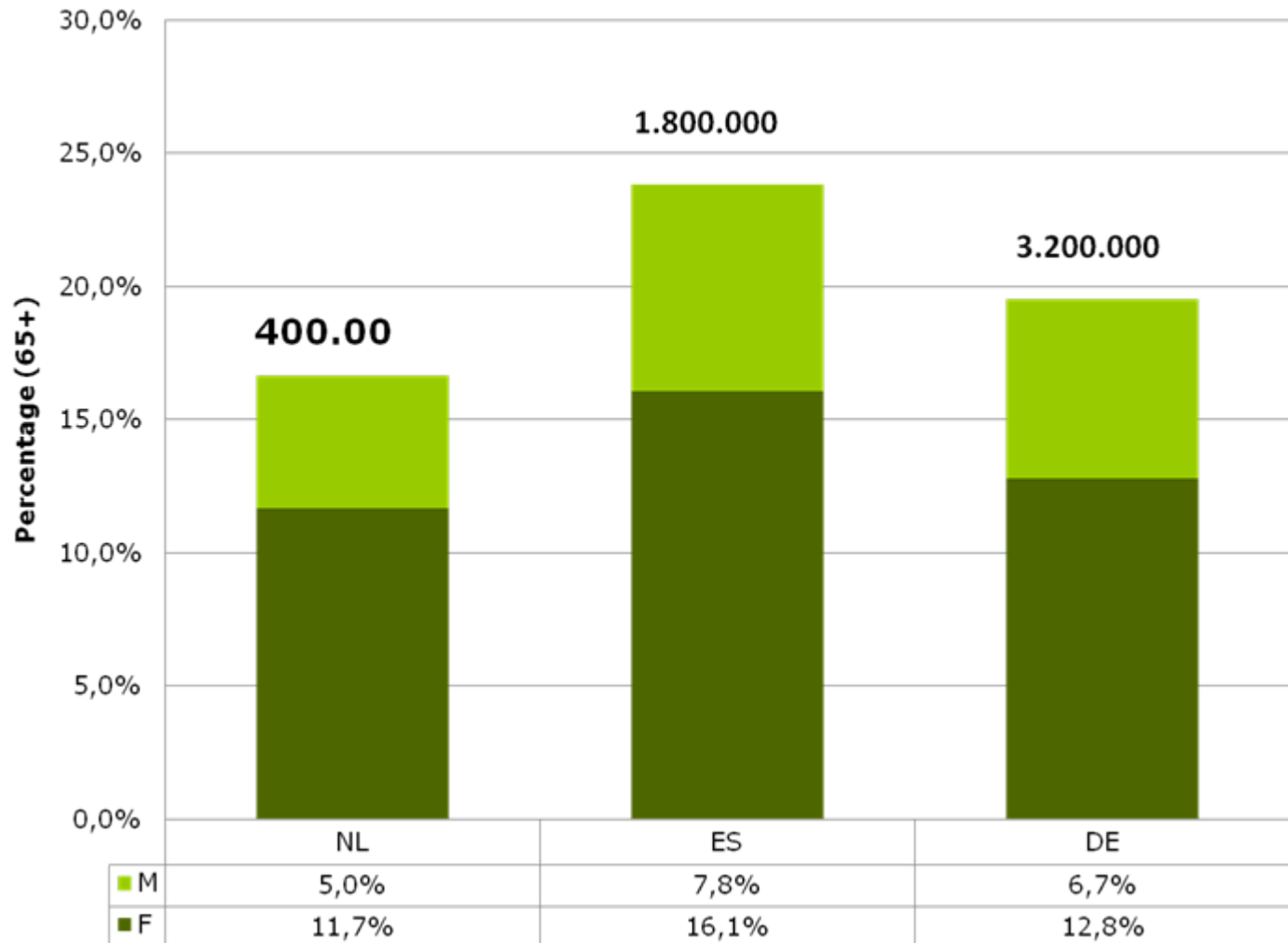
Methodology (1)

- Prevalence of disability decomposed in incidence and duration by incidence/prevalence model

- All cause mortality from Eurostat, state specific mortality is determined by proportional hazard ratios derived from Rotterdam Study

- Recovery is ignored: "net incidence" (sum of transitions from able to disabled and from disabled to able in a single year of age)

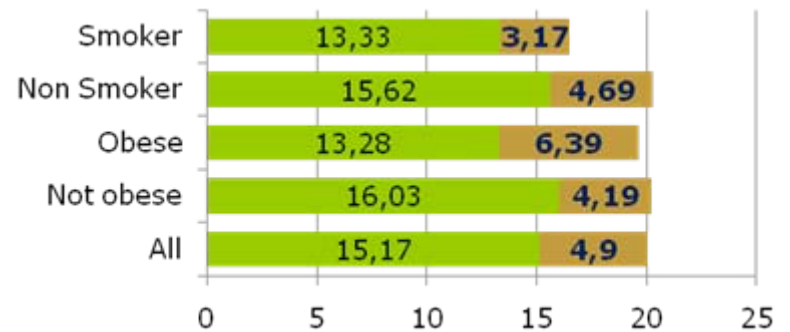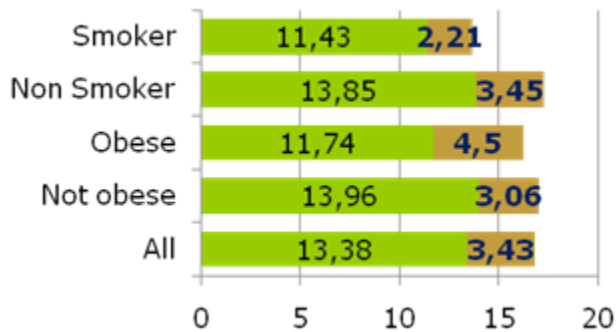# Life expectancy with or without disability at age 65 in 2008

NL

Men:
Smoker	12,22	1,56
Non Smoker	14,86	2,43
Obese	12,75	3,18
Not obese	14,6	2,09
All	14,24	2,3

Women:
Smoker	13,58	3,01
Non Smoker	15,81	4,58
Obese	13,37	6,1
Not obese	15,92	4,08
All	15,43	4,47

ES

Men:
Smoker	11,91	2,26
Non Smoker	14,43	3,4
Obese	12,18	4,38
Not obese	14,43	2,92
All	13,63	3,45

Women:
Smoker	13,08	4,21
Non Smoker	14,96	6,05
Obese	12,86	7,8
Not obese	15,84	5,28
All	14,64	6,29

DE

Men:
Smoker	11,43	2,21
Non Smoker	13,85	3,45
Obese	11,74	4,5
Not obese	13,96	3,06
All	13,38	3,43

Women:
|		
Smoker	13,33	3,17
Non Smoker	15,62	4,69
Obese	13,28	6,39
Not obese	16,03	4,19
All	15,17	4,9

Men

Women

Methodology (2)

- Forecasts:
    - Mortality forecast EUROPOP 2008
    - Lee Carter model (age period model)
        - Assumes continuing progress
        - Ignores cohort (smoking!) trends
        - Historical good fit
    - Estimated on EU-15 ("old" EU)
    - Assumes convergence in the far future
        - (Hikes up new member states)

Mortality changes by age and gender, NL, 20 yr
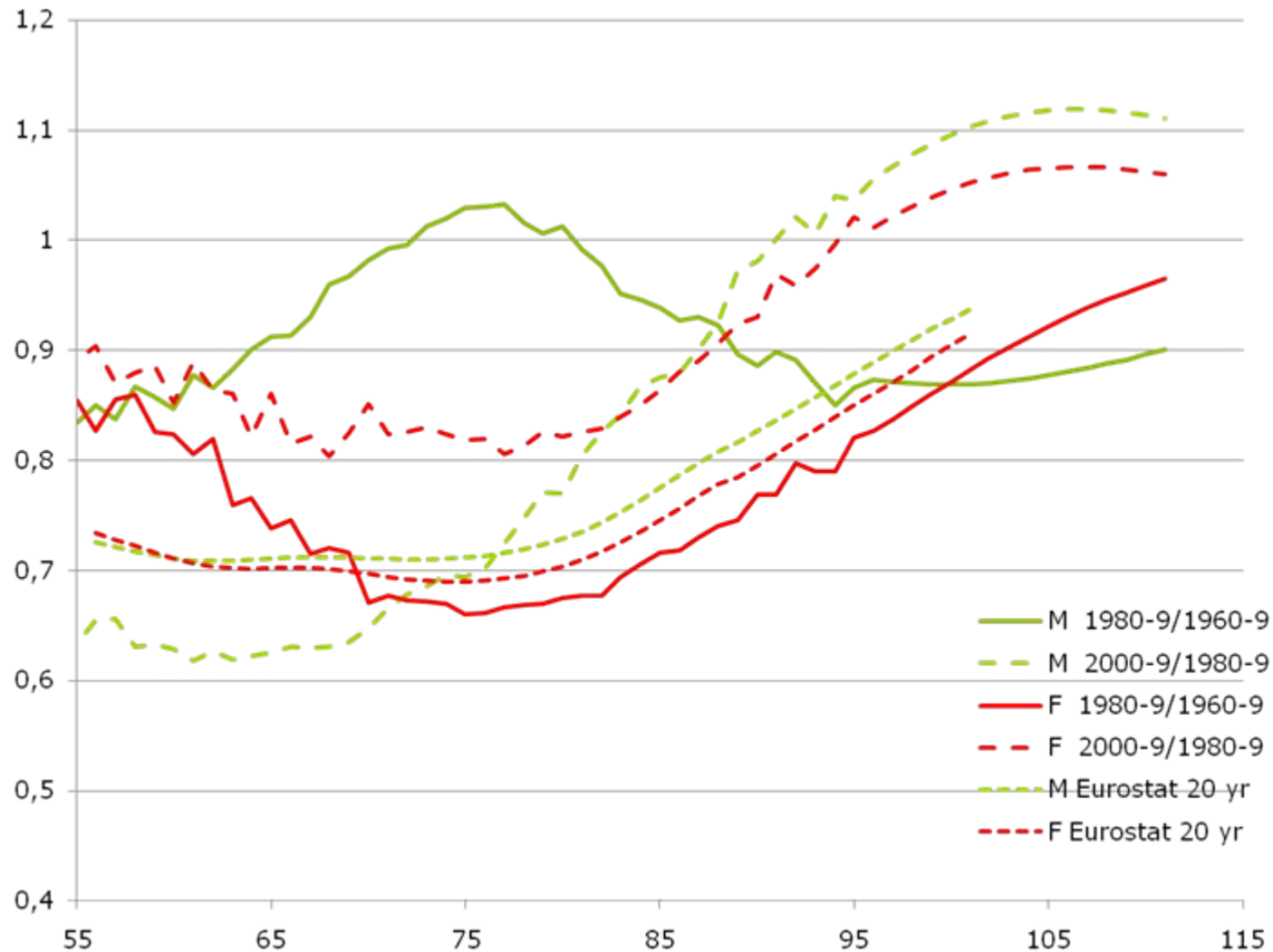
NL active life expectancy at age 55
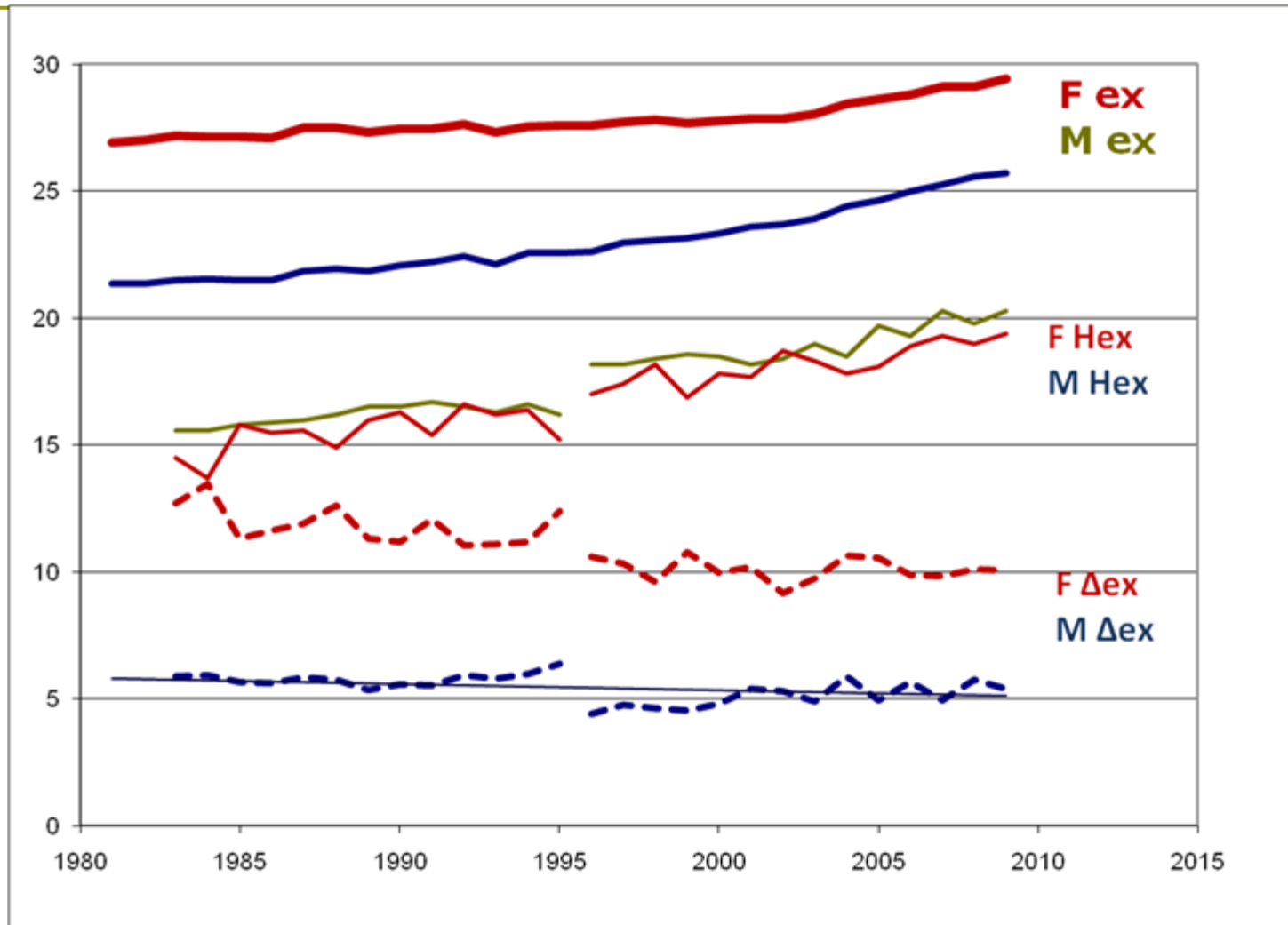
Forecasts 1 (2040)

- Ageing of baby boom, no life extension (CONSTANT)

- Ageing of baby boom, life extension, constant age specific prevalence (PREVALENCE)

- Ageing of baby boom, life extension, constant age specific incidence (CHRONOLOGY)

NL: no life extension, demographic aging only
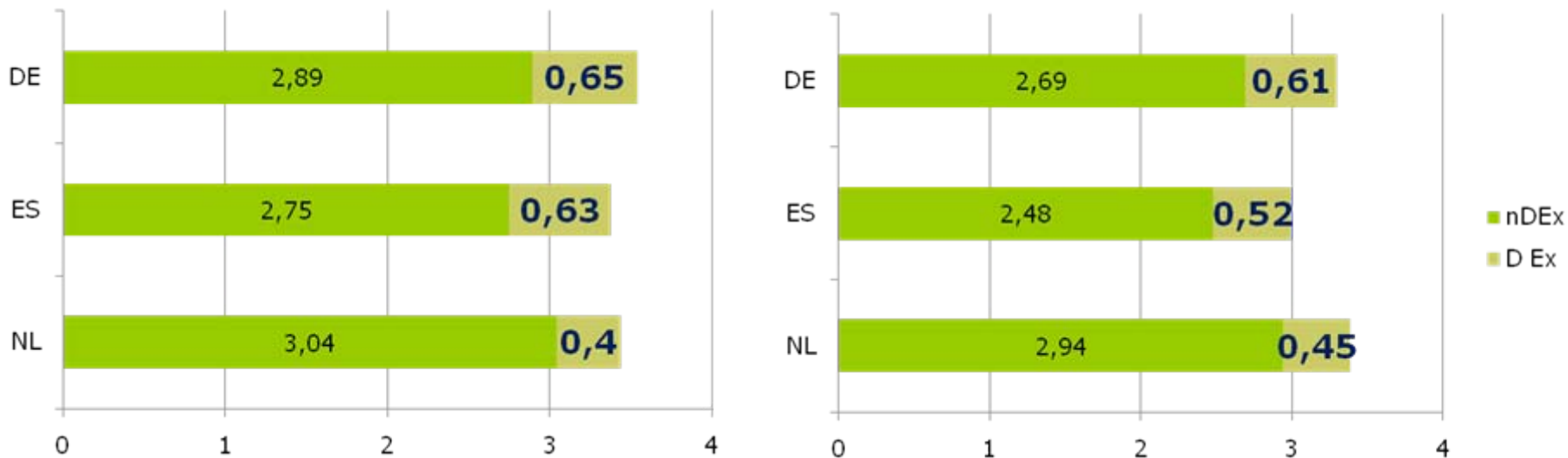
2008

2040

2040: prevalence and incidence

Forecasts: biological

- Decline in incidence of disability = decline of mortality ("moving down over the log y-axis") (BIOLOGY)

- Decline in incidence of disability = postponing disability with mortality ("moving right over the x-axis") (DELAY)

Change in (D)Le 2008-2040 (NL, delay)

Added life years with or without disability

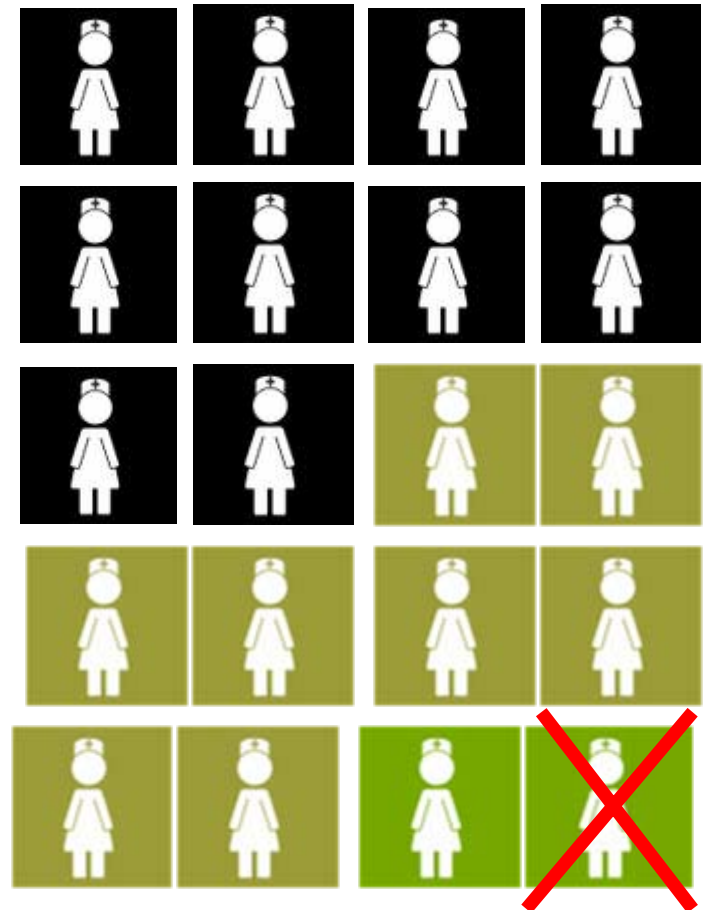# 2040 (NL): delay or biological

biological

delay

For goodness's sake, Gerard, go back smoking

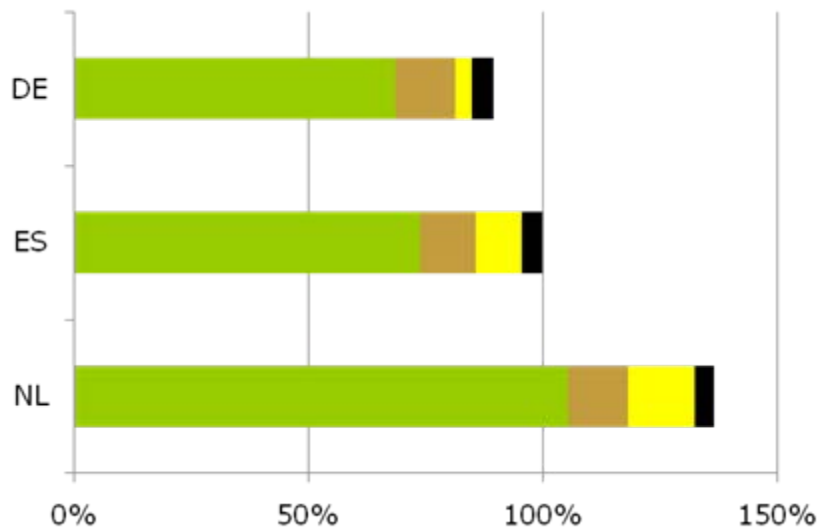# 2040: delay and doubling of obesity (NL 2040 = USA 1990)
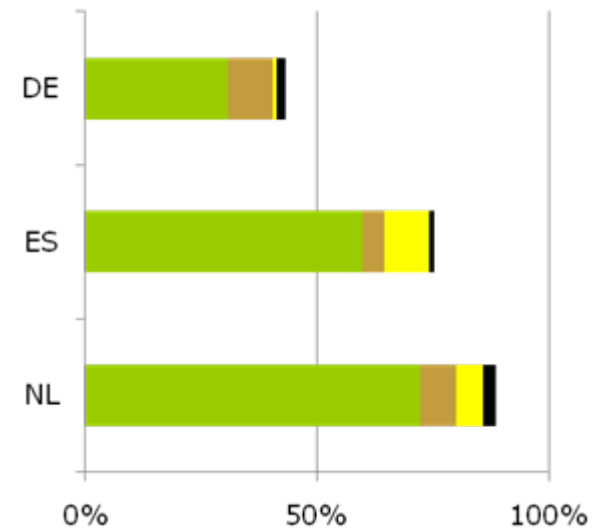
Double obesity

No smoking

Comparing countries and risk scenarios

2040/2008

Strength

Limited data needs, captures dynamics

Transparent assumptions

Adds disability to EUROPOP scenarios

Shows relative strength of demografic and epidemiologic processes

Weakness

No dynamics in 2008, recovery ignored

Transparent, but strong assumptions

The most important age group, 85+, is extrapolated from younger populations

EUROPOP scenarios questionable

Risk ratios not yet country dependent

Data needs

- SHARE will deliver – in due time - risk and country specific transition probabilities to all relevant states

- We know desperately little about 85 and over!
  - And this will not improve: low numbers in Share

Conclusions

Future disability can robustly be estimated

- Depends strongly on demography
- Even strong risk factor scenario's have limited effects
- Effect of life extension depends on common process of aging

HOWEVER: we will need sufficient AND sufficiently competent care giving personnel. ADL disabled in 2040:

NL: +100% / ES: +75% / DE: +60%