Mind over matter?

20-year trends in physically and cognitively healthy life years of 65-year-olds in the Netherlands

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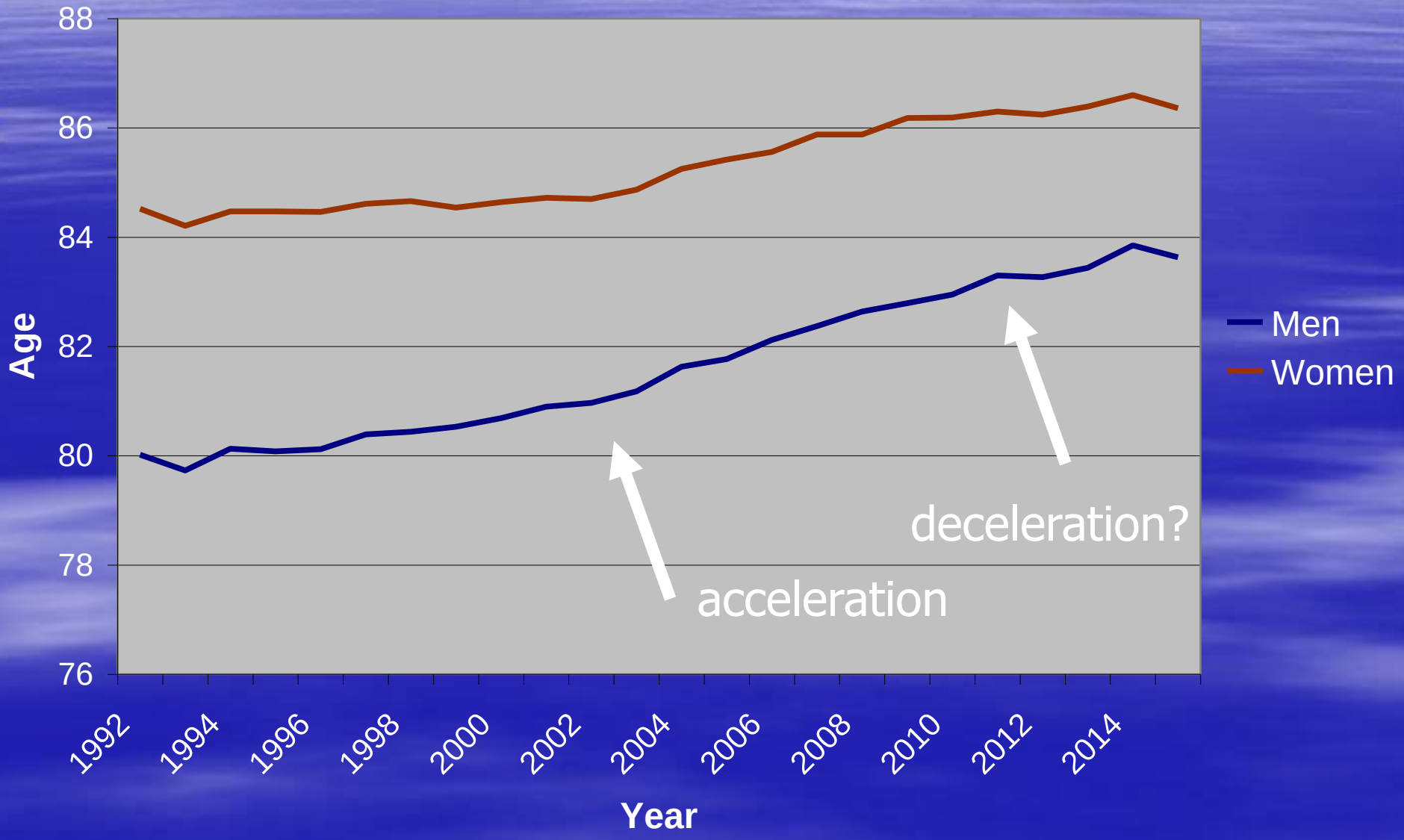
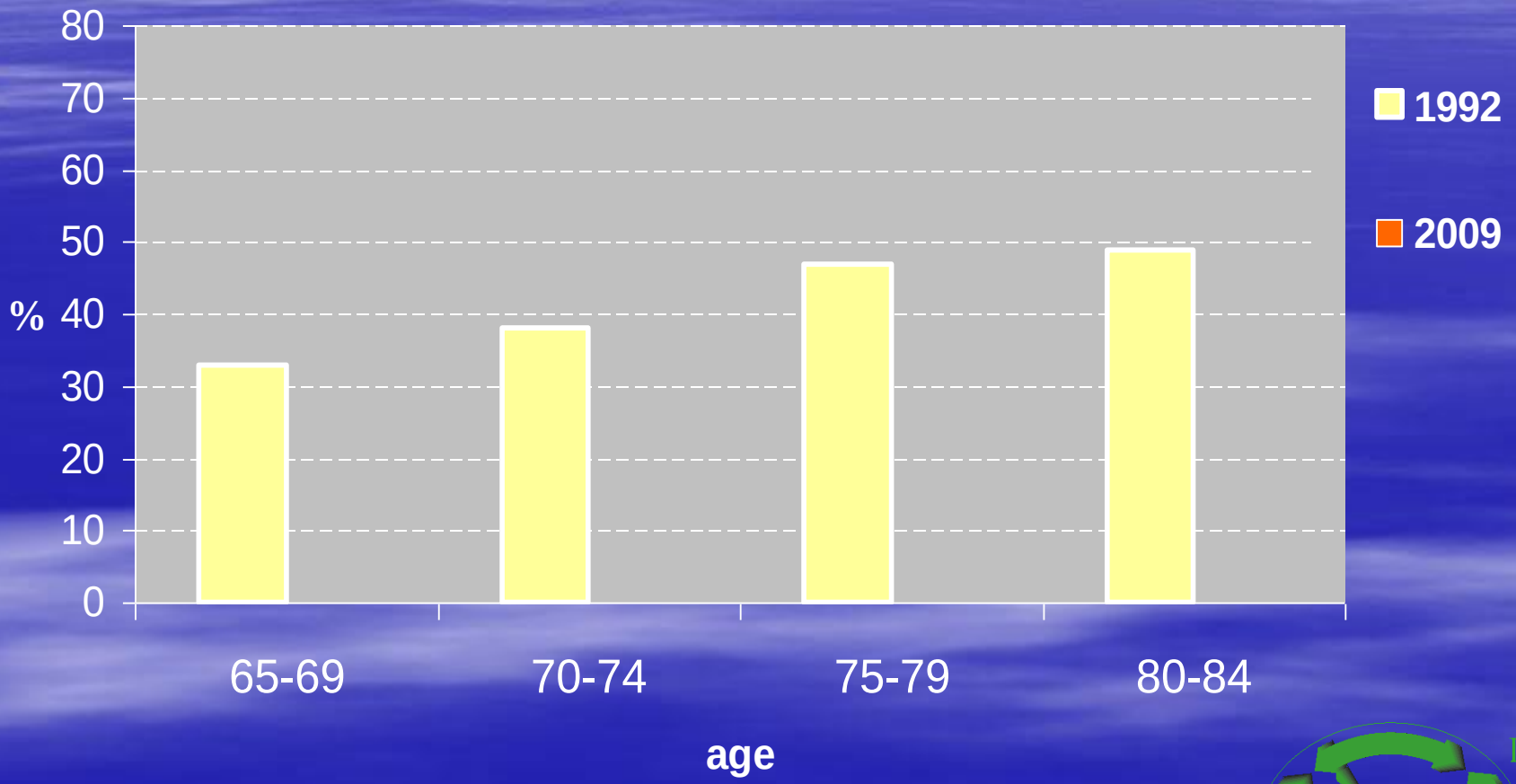
Life expectancy at age 65 in the Netherlands



The eternal questions…

1. ***Are the additional years gained spent in good or poor health / no disability or disability?***
2. ***Is the answer different when looking at mild or severe health conditions / disability?***
3. ***(More recently) Is the answer different for physical and cognitive health?***

Prevalence of multimorbidity by age, 1993, the Netherlands

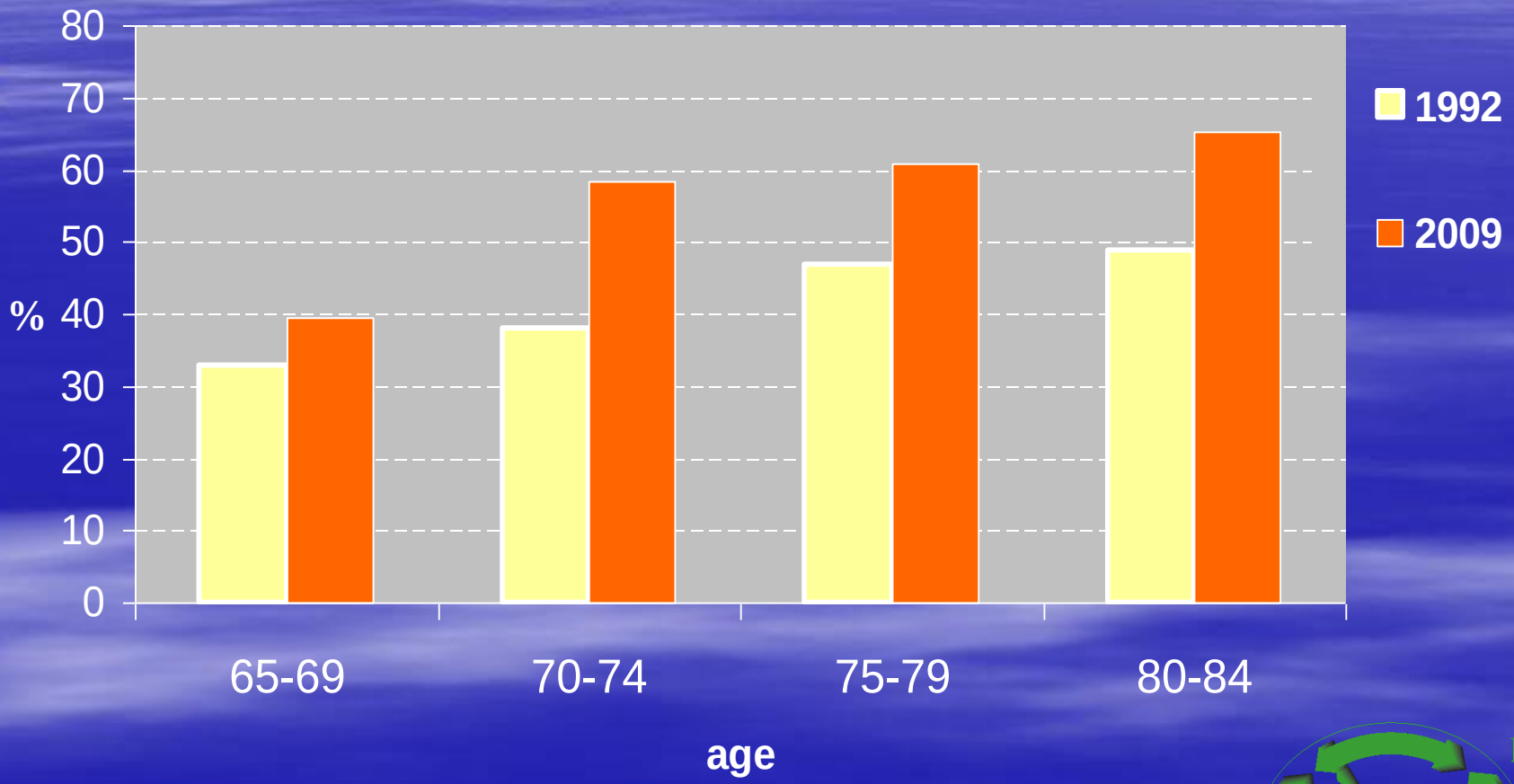


Weighted for sex

Source: Longitudinal Aging Study Amsterdam

Longitudinal Aging Study Amsterdam

Prevalence of multimorbidity by age, 1993 and 2009, the Netherlands



Weighted for sex

Source: Longitudinal Aging Study Amsterdam

Longitudinal Aging Study Amsterdam

Longitudinal Aging Study Amsterdam

Measures of physical health

- Multimorbidity: >=2 of a list of chronic conditions with prevalence >=5%
- Mild disability: difficulty with >=1 of 6 activities
- Severe disability: needing help with >=1 of 6 activities

Three health states:

1. Healthy = no multimorbidity + no mild disability
2. Mildly limited = multimorbidity and/or disability
3. Severely limited = multimorbidity + severe disability

Measures of cognitive health

- Mild cognitive impairment: MMSE <= 26 (Jagger et al, Lancet 2016)
- Numbers too small for study of severe cognitive impairment (MMSE <= 18)
- Adjustment for education (Kittner et al 1986):

✓ in each 5-year age group, regress MMSE on education (in years)

✓ adjusted MMSE is mean of age group plus residual

✓ education-correlation is 0, and age-correlation preserved

Longitudinal Aging Study Amsterdam, Design (1)

Random sample across the Netherlands

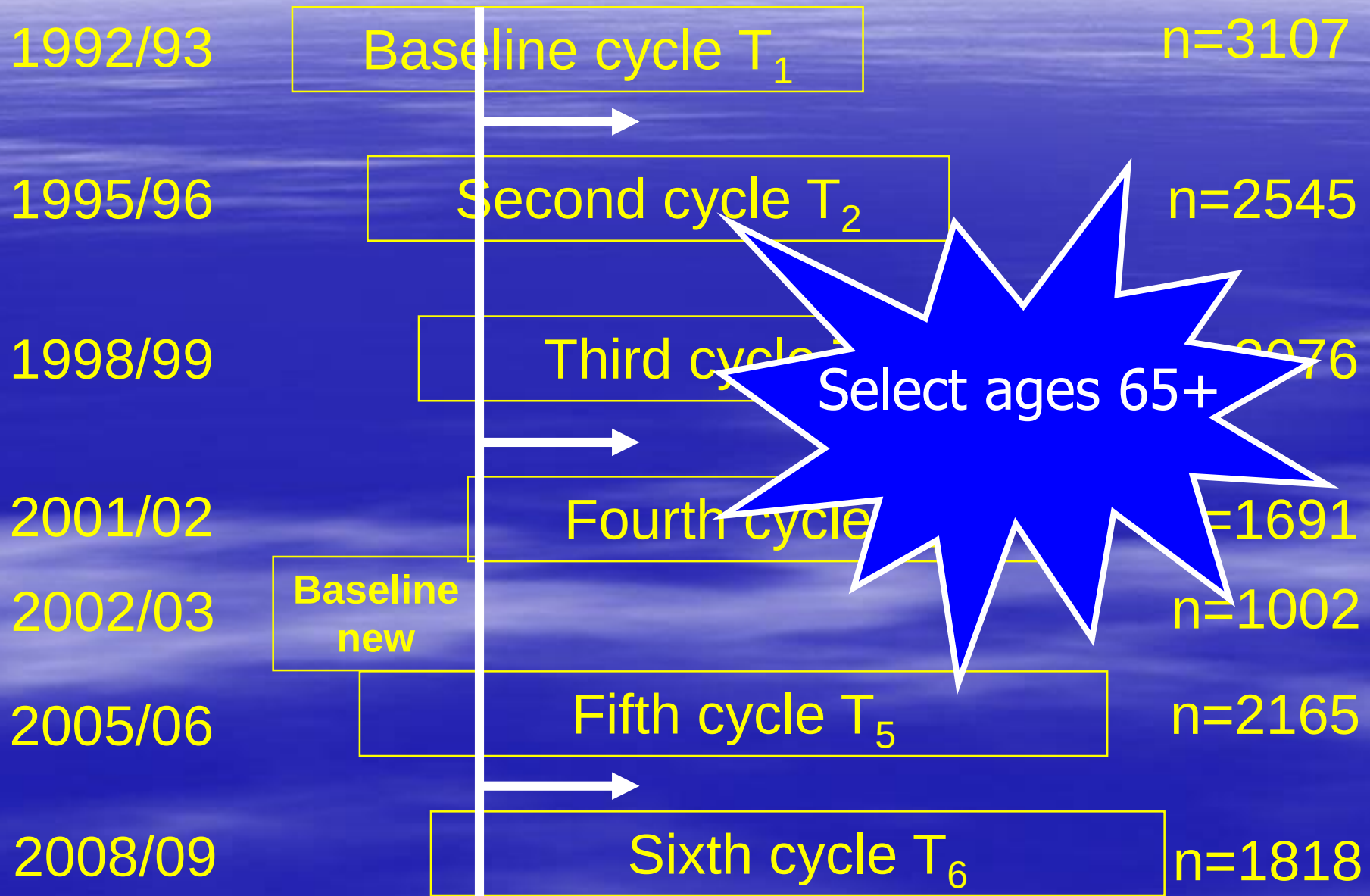
5600 men and women

Initial ages 55-85

Start 1992, 2002, 2012

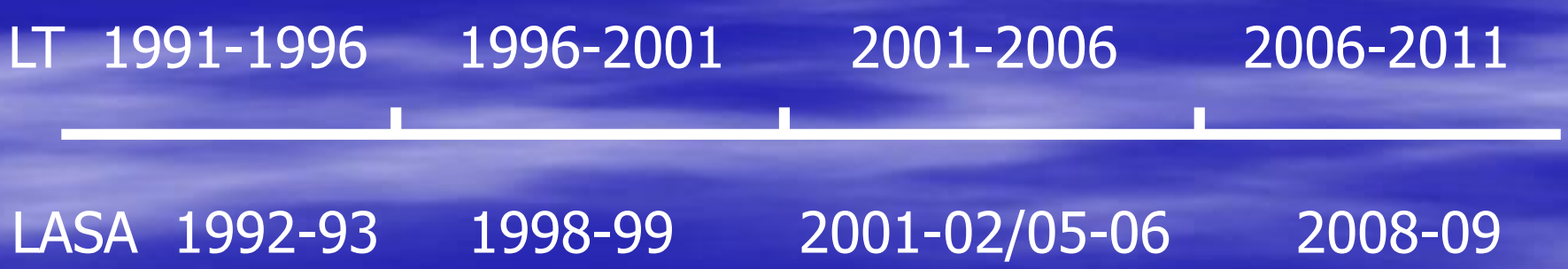
3-year intervals

Longitudinal Aging Study Amsterdam, Design (2)



Methods (1)

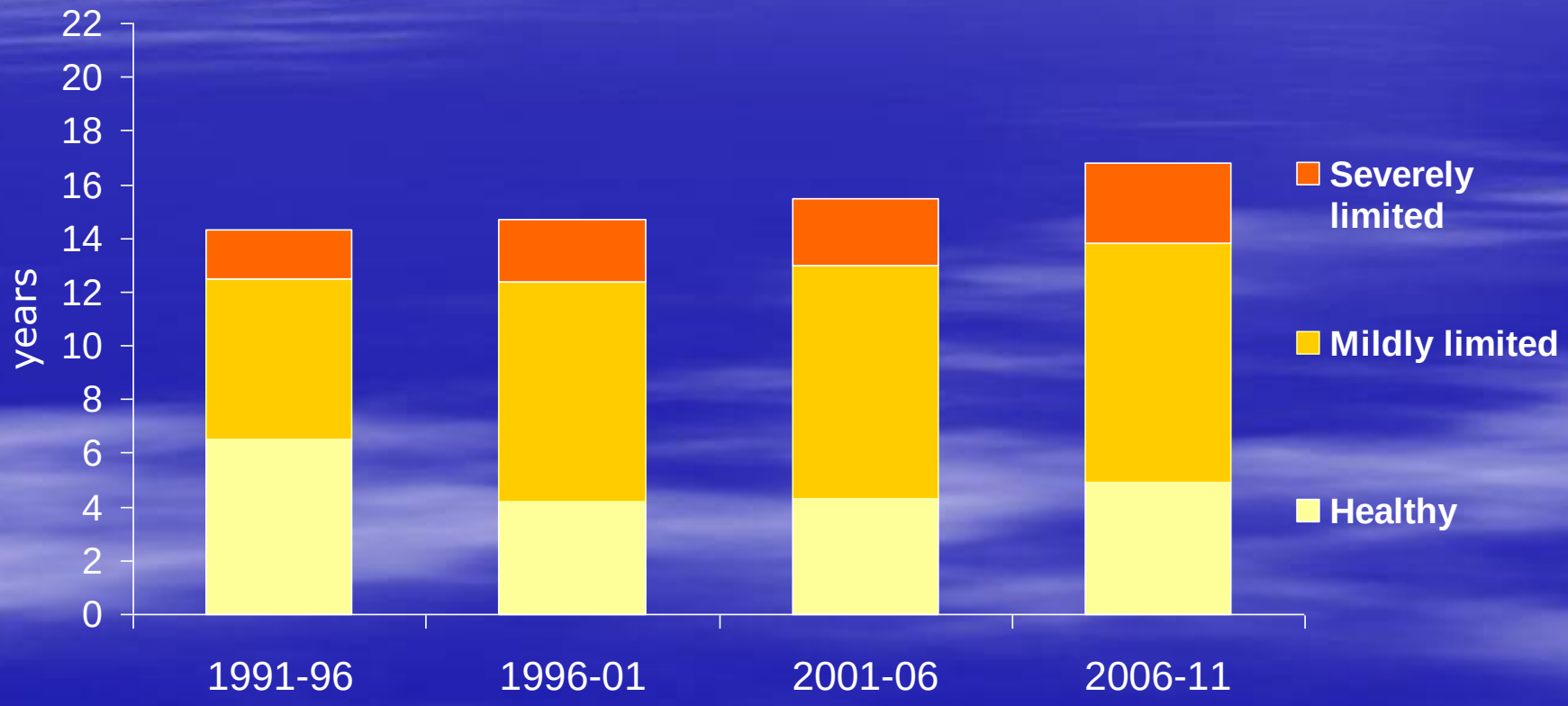
- Dutch single age-year life tables for 5-year periods: 1991-96, …, 2006-11
- Select LASA-cycle closest to mid-year of 5-year period, or middle across 2 cycles



Methods (2)

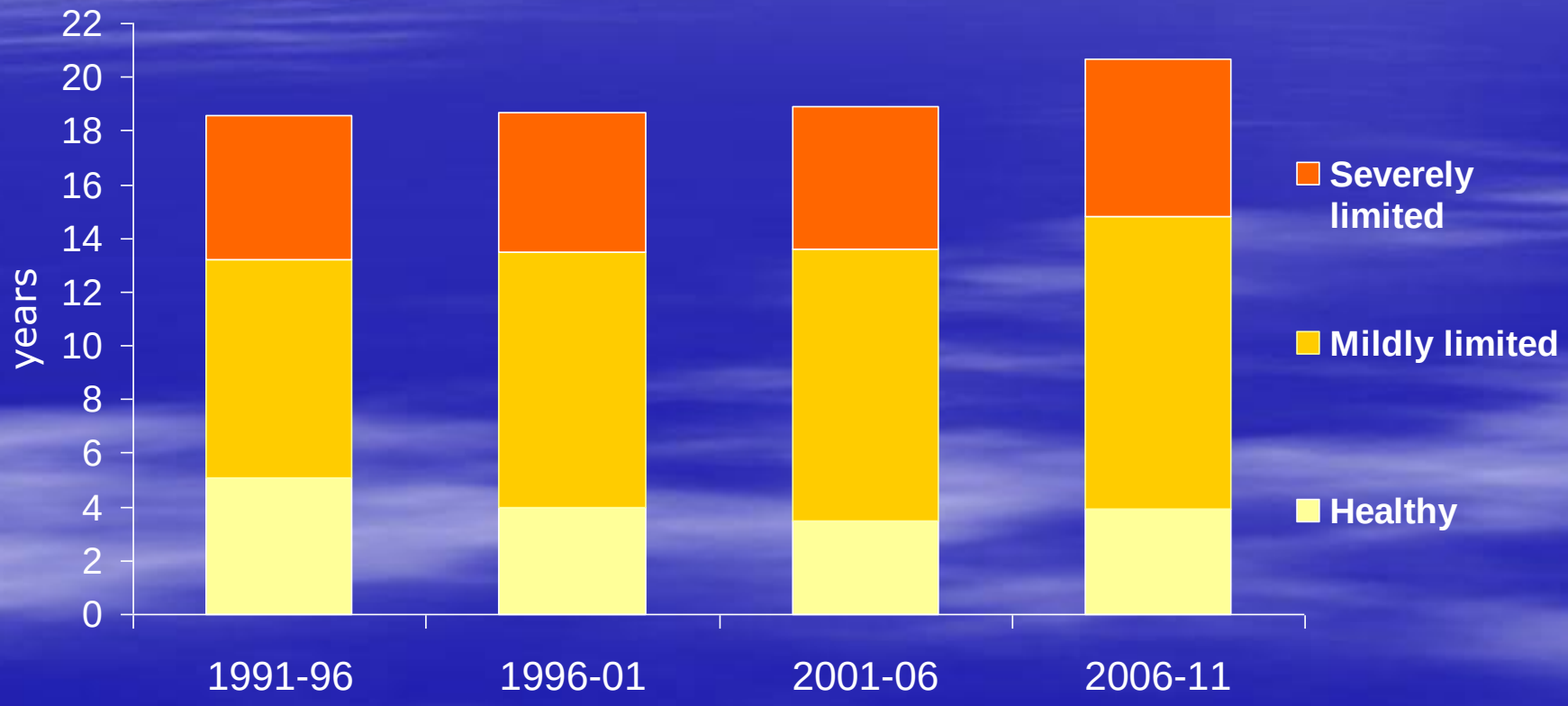
- Calculate age-sex-specific prevalences for each cycle
- Extrapolate prevalences for ages older than observed up to age 100 for each cycle
- Apply Sullivan method to calculate expected years without mild health condition, and expected years with severe condition

Life expectancy from age 65: healthy, mildly, and severely limited* years: men



*Healthy = no multimorbidity + no mild disability
Mildly limited = multimorbidity and/or disability
Severely limited = multimorbidity + severe disability

Life expectancy from age 65: healthy, mildly, and severely limited* years: women



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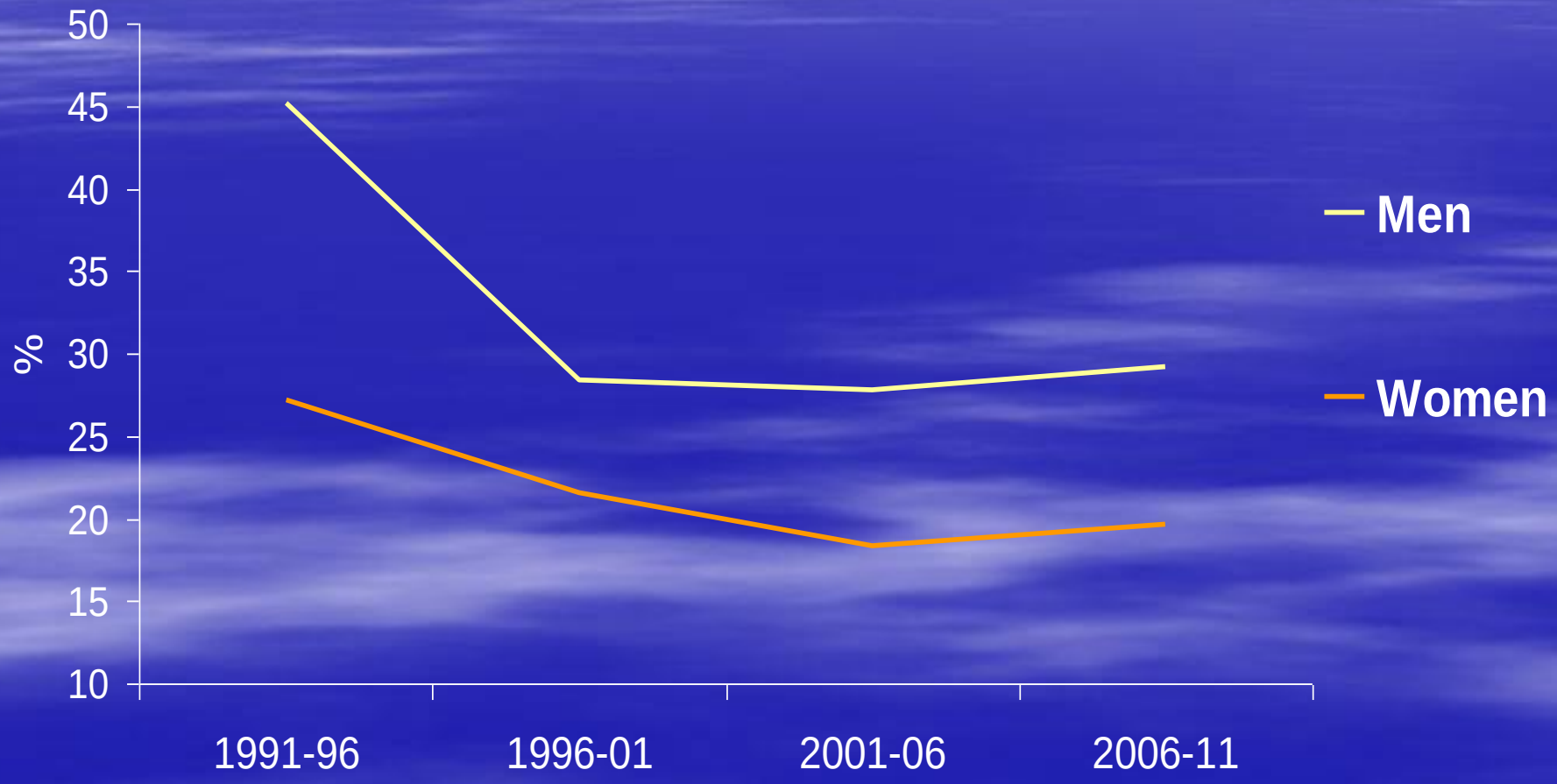
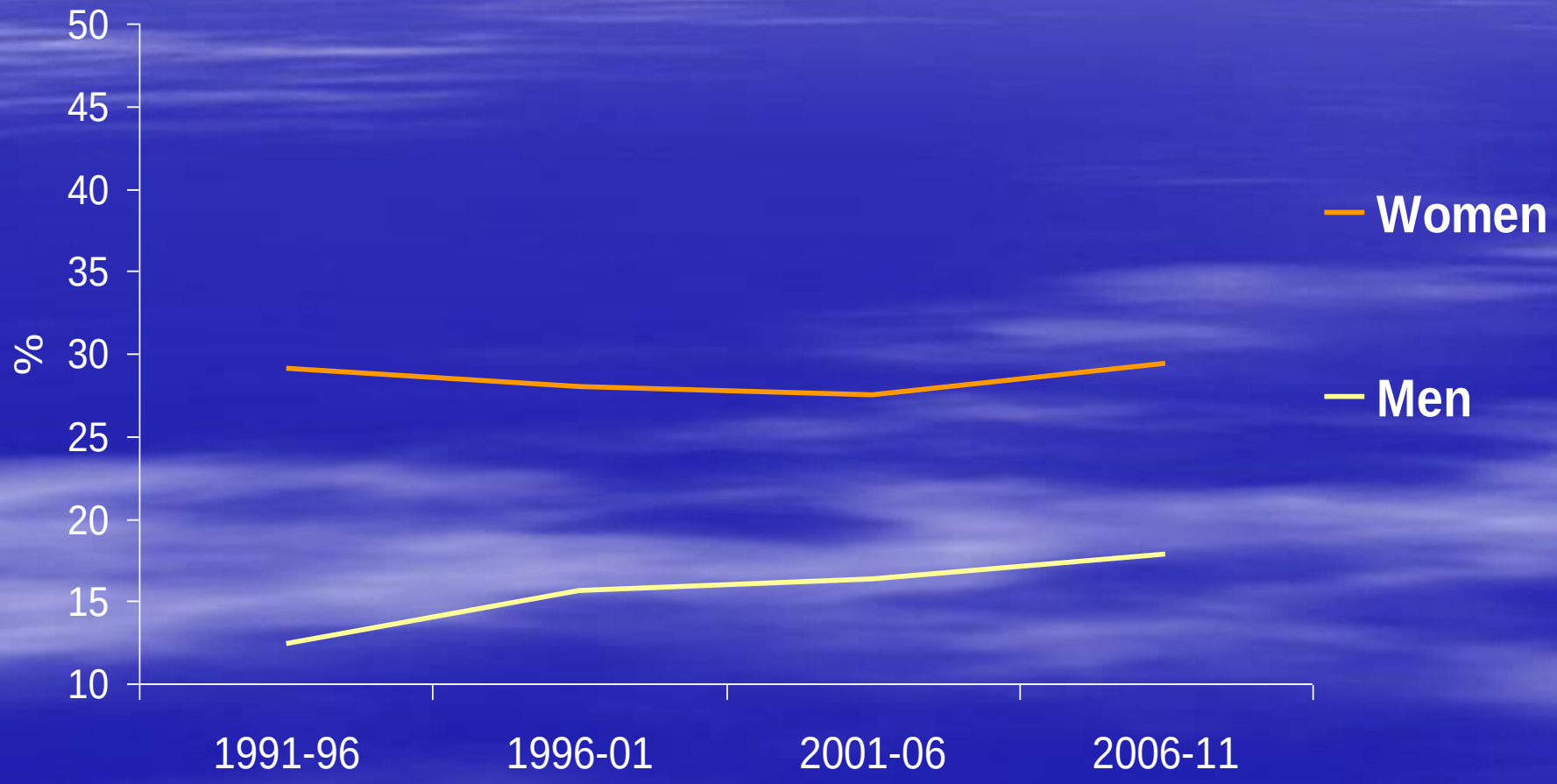
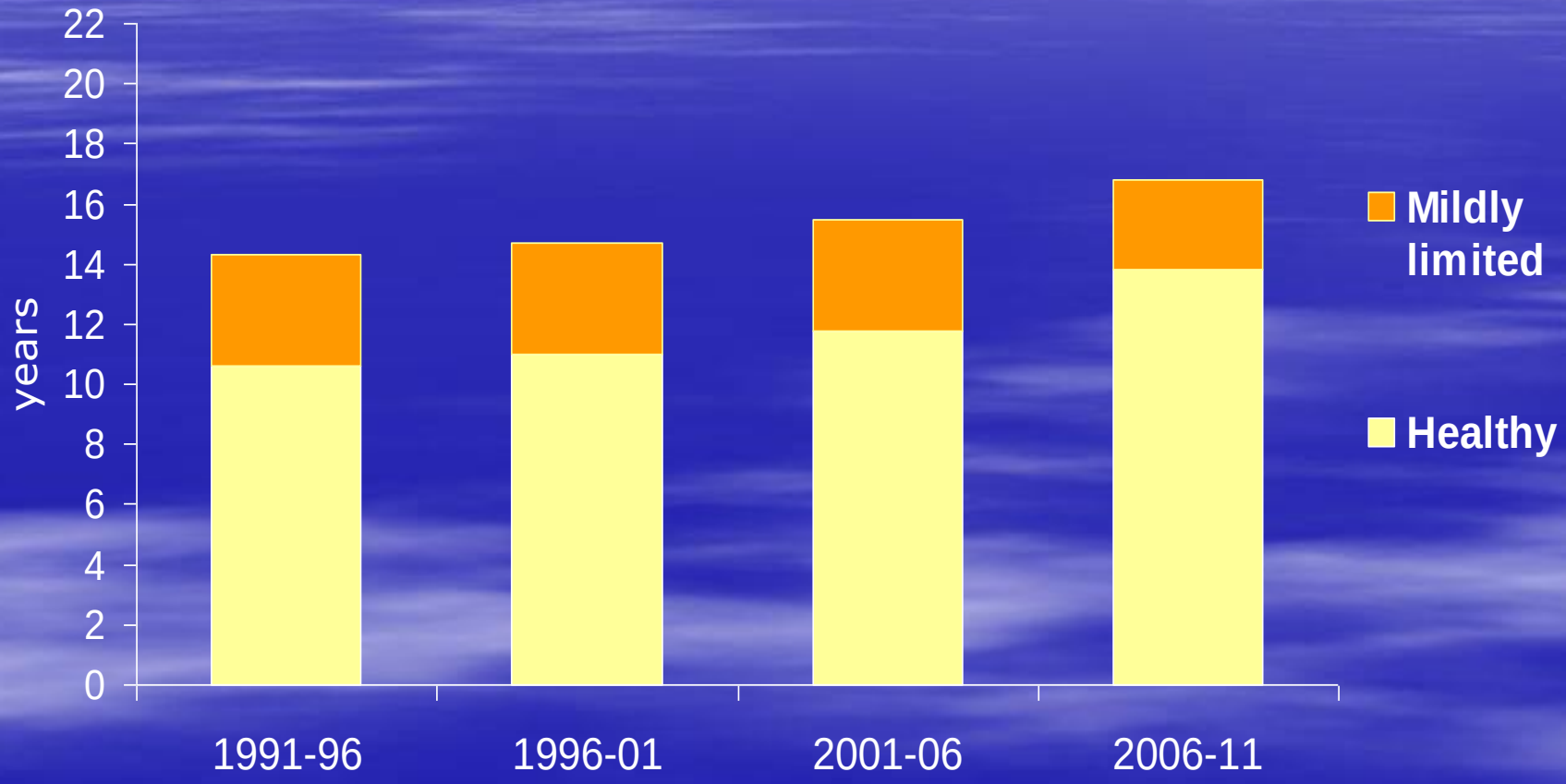
Proportion of life expectancy from age 65 in good physical health: 1992-2009



Proportion of life expectancy from age 65 in severely limited health: 1992-2009

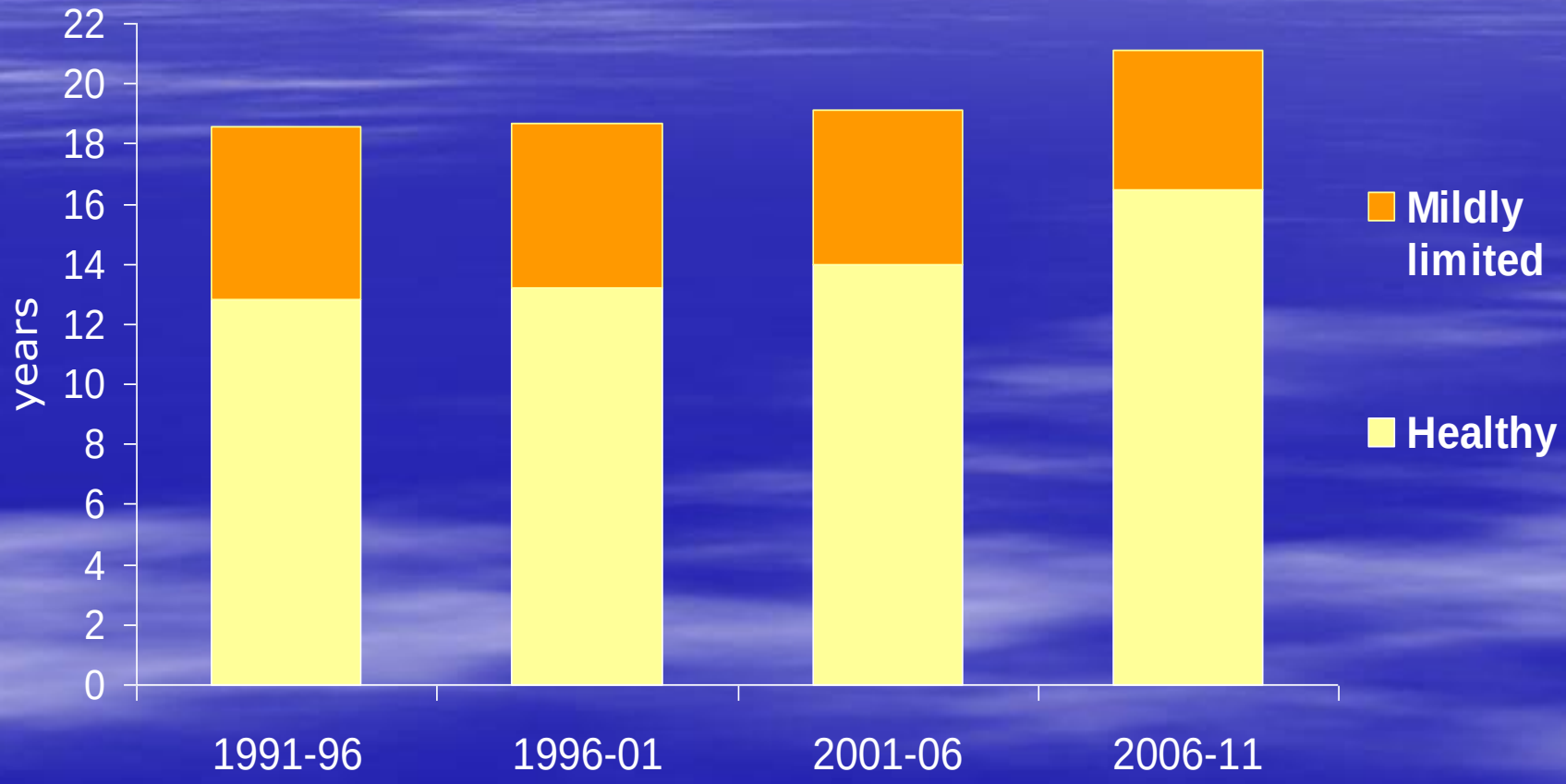


Life expectancy from age 65: years in good cognitive health: men



*Healthy = MMSE > 26
Mildly limited = MMSE <= 26

Life expectancy from age 65: years in good cognitive health: women



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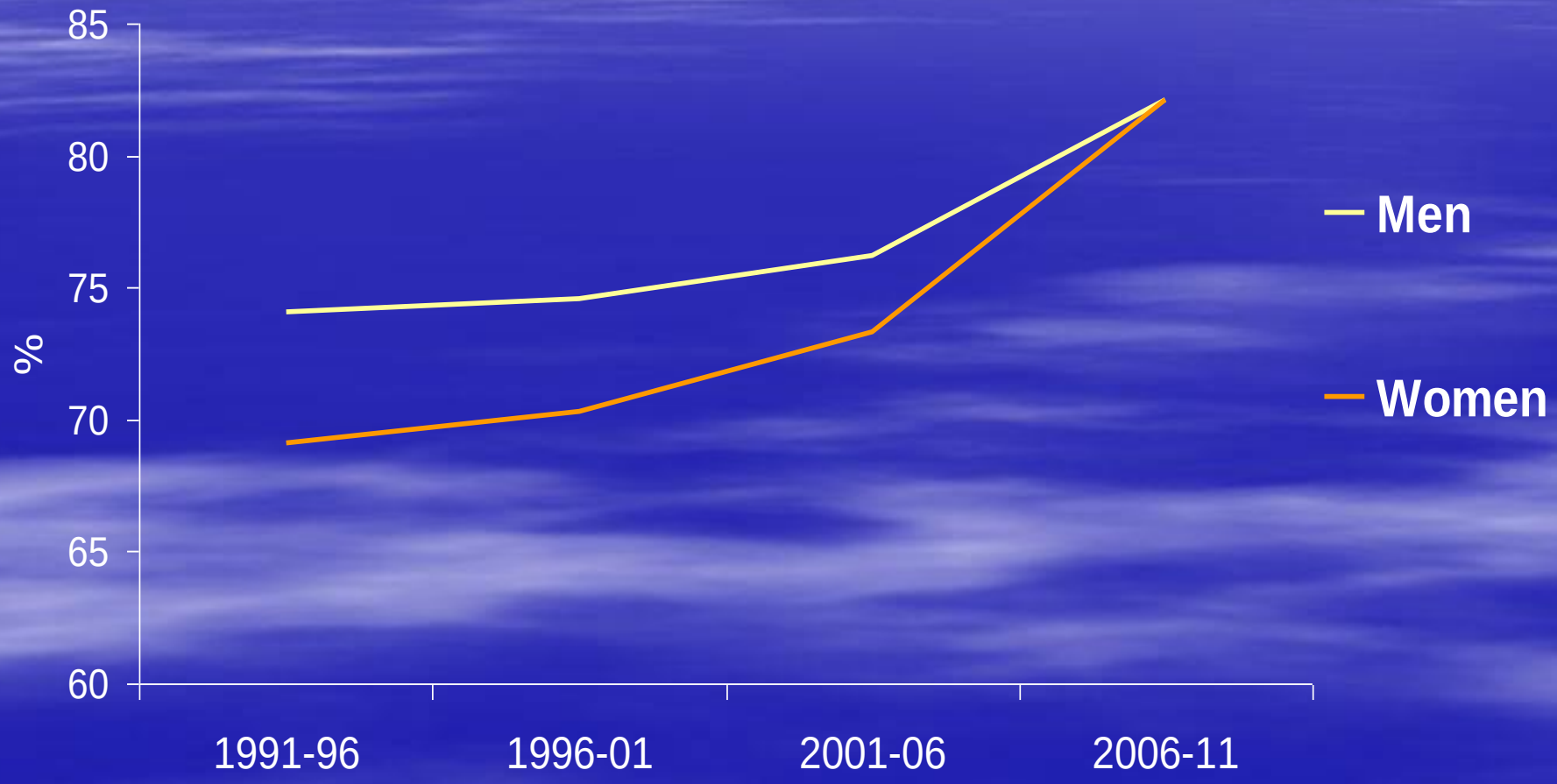
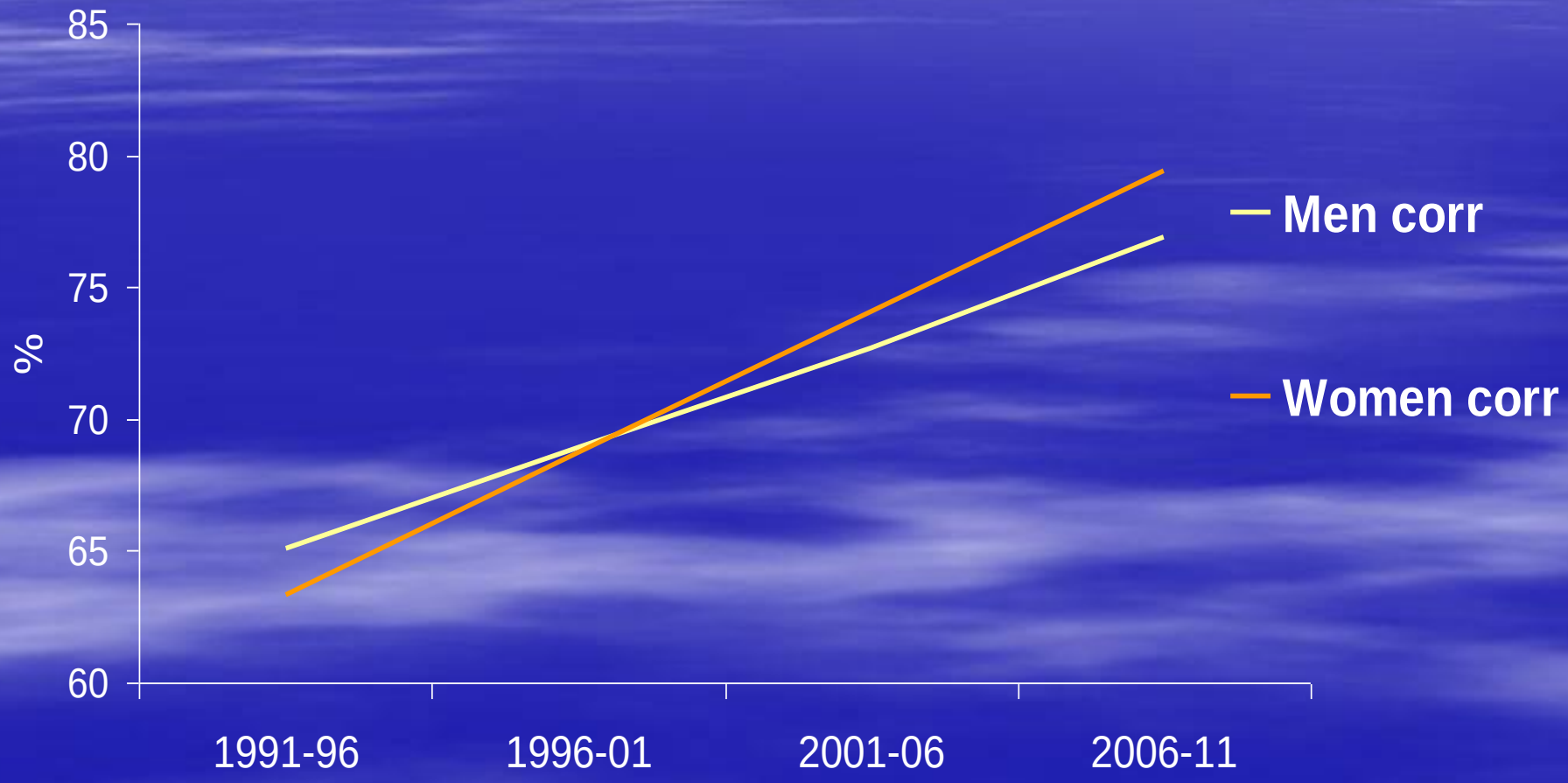
Proportion of life expectancy from age 65 in good cognitive health: 1992-2009



*Healthy = MMSE > 26

Proportion of life expectancy from age 65 in good cognitive health: 1992-2009



*Healthy = MMSE > 26, corrected for years of education

Summary

Physical health:

- Years with at least mild limitations increased, especially in the 1990s → 'expansion'
- Years with severe limitations high in women, increased in men

Cognitive health:

- Years with mild limitations decreased, especially in the 2000s → 'compression'
- Even greater increase after correction for education

Discussion

Physical health:

- Did the causes for accelerated increase in LE in the 2000s also stop the expansion of morbidity/disability? (Education, Health care?)

Cognitive health:

- Why did correction for education not flatten the increase in healthy cognitive years?
- Other causes for longer cognitive health?

We're not there yet

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Winslow Homer, 1892