SHOULD WE WORRY ABOUT MILD DISABILITY ?

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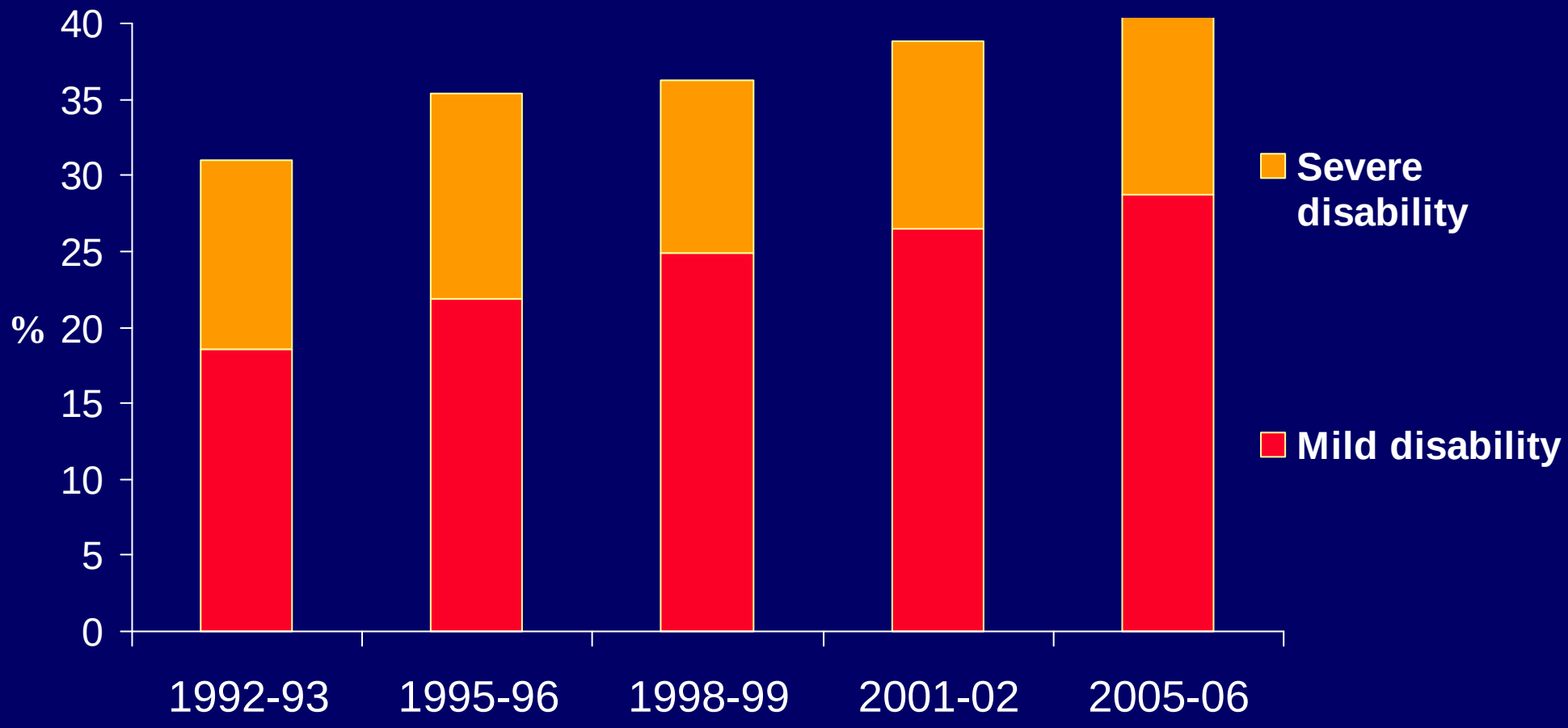
Background

- Contrasting scenario's: compression vs. expansion of morbidity & disability
- Dynamic equilibrium scenario (Manton 1982): fewer years with severe disability, more years with mild disability
- Latter observed in many countries, including The Netherlands
- Importance of distinction mild vs. severe disability

Prevalence of mild, not severe disability increases (ages 65-84, The Netherlands)



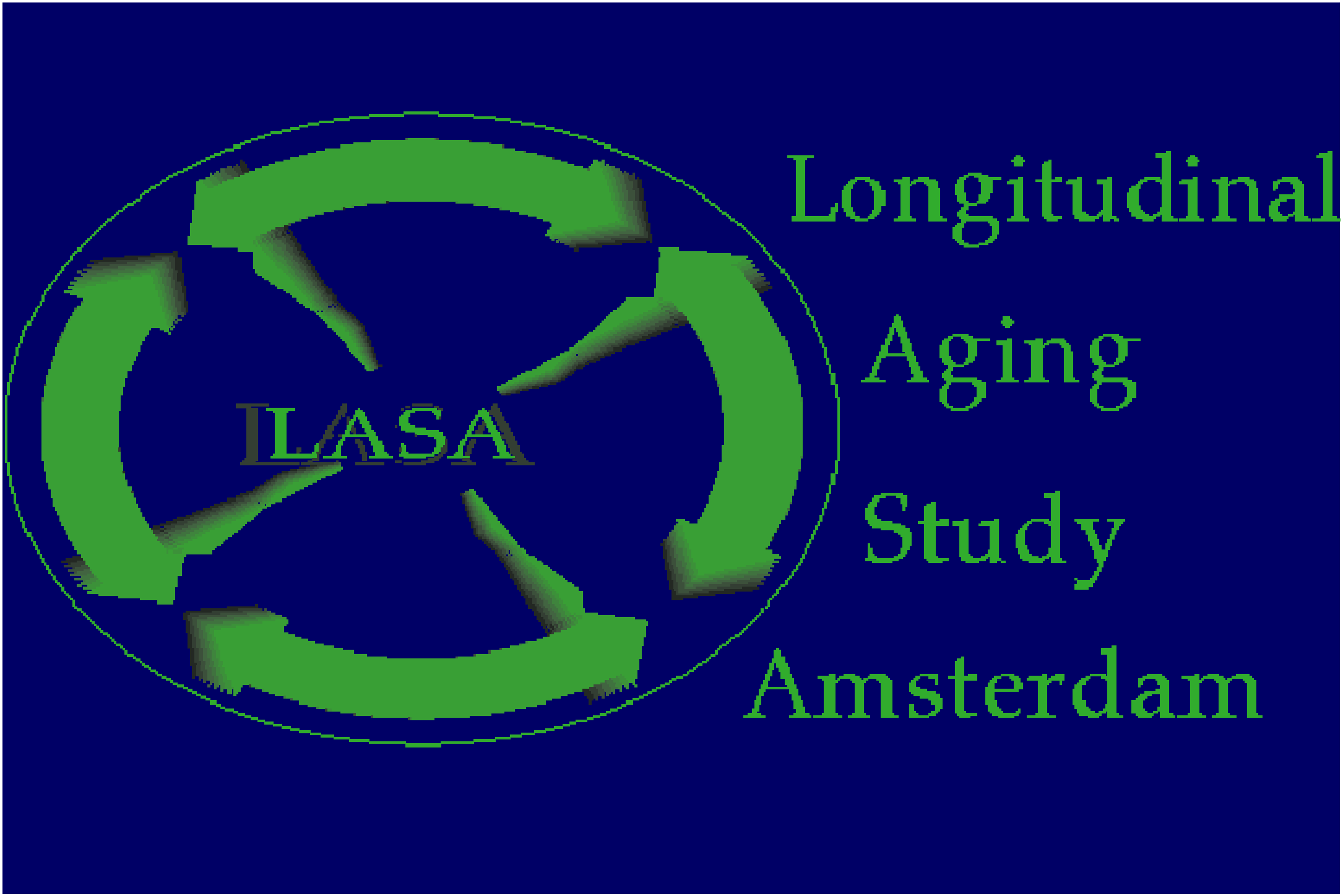
Longitudinal Aging Study Amsterdam, GALI, age-sex weights ~ population in each year

Research question

Should an increase in mild disability be a concern to health policy?

Or:

What is the predictive ability of mild disability for unfavourable outcomes over time?


ILASA
Longitudinal
Aging
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Amsterdam

Longitudinal Aging Study Amsterdam

Random sample across the Netherlands

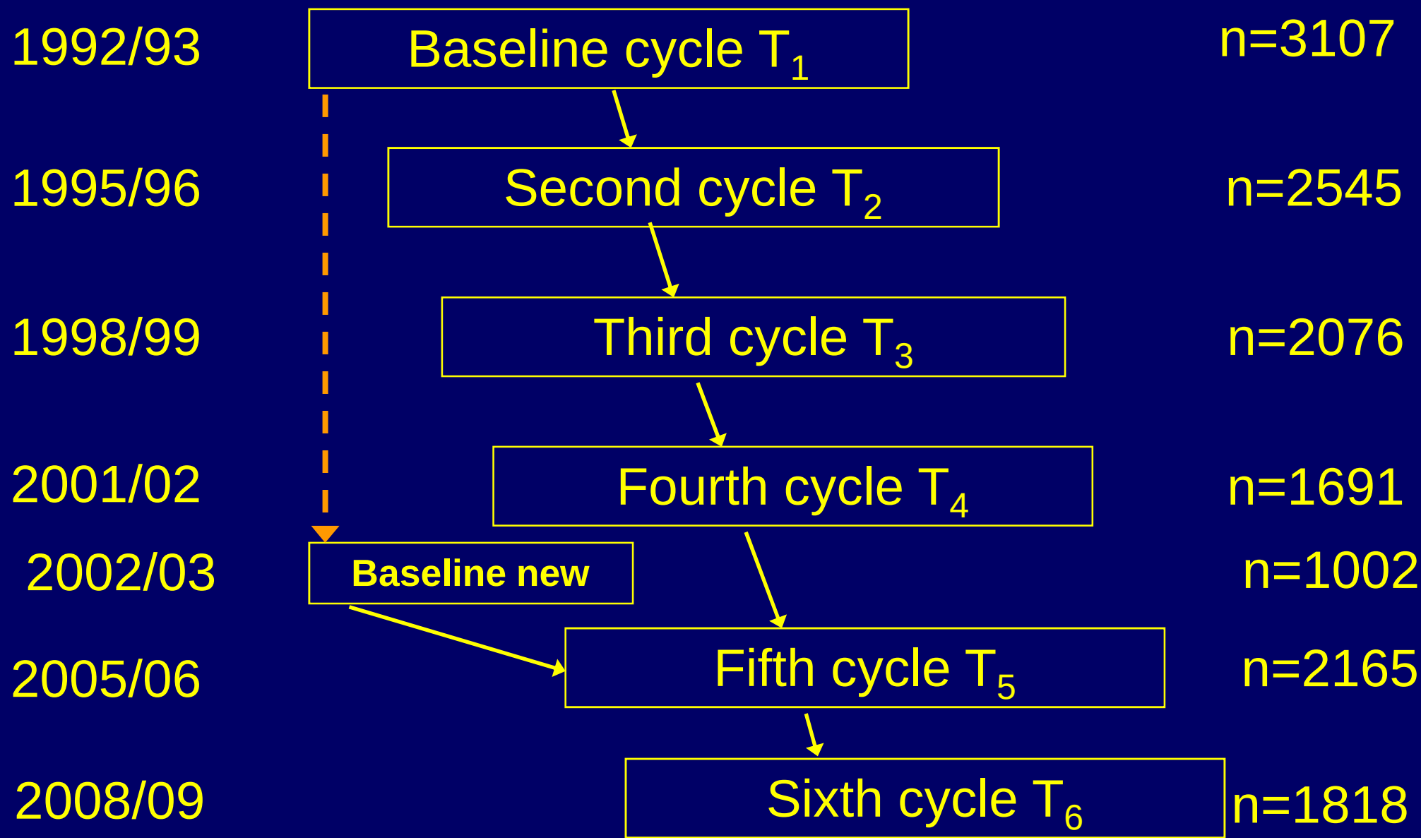
4109 men and women

Initial ages 55-85

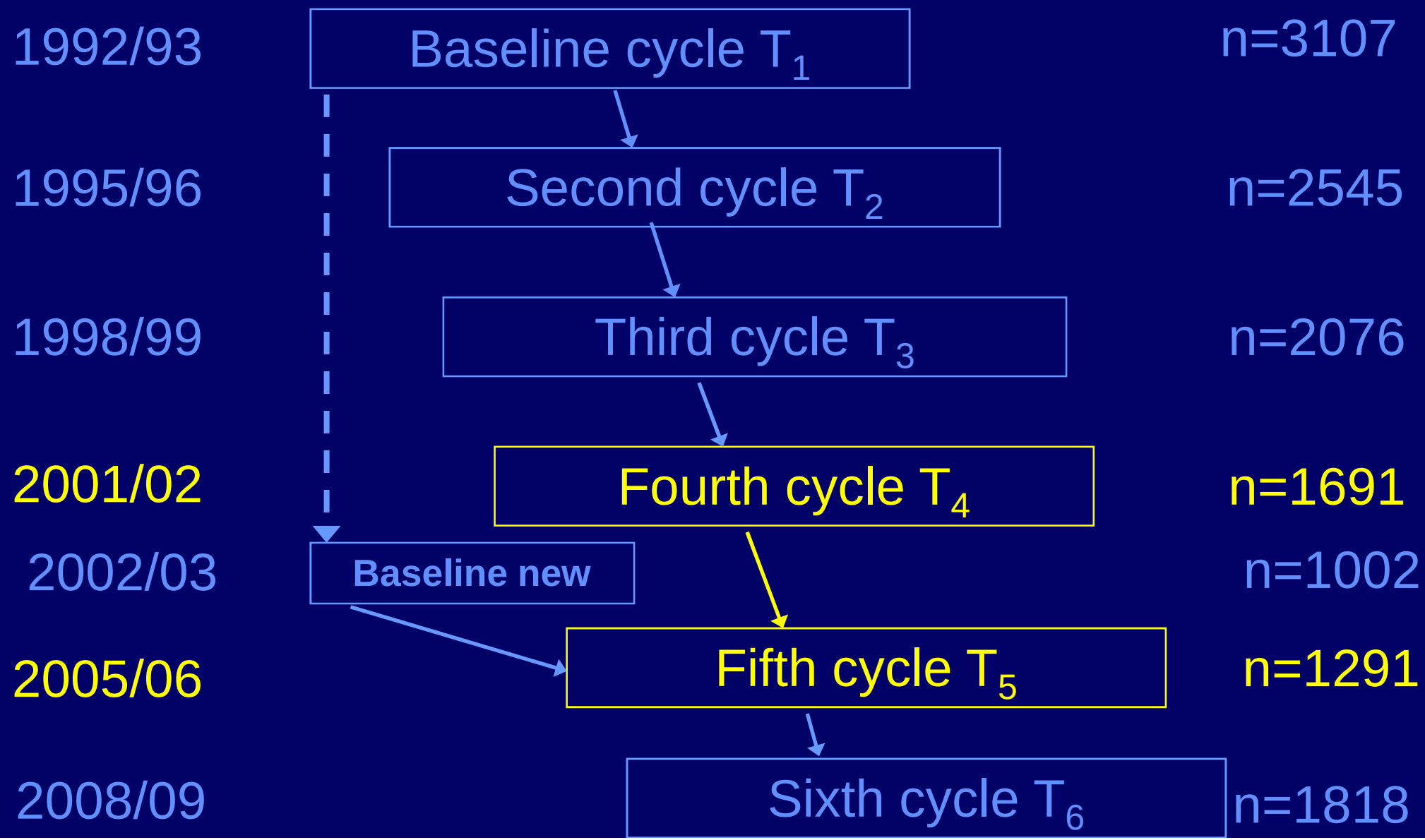
Start 1992 and 2002

3-year intervals

LASA time schedule



LASA time schedule



Design

Initial ages 64-94 years
N (follow-up) = 876 – 998, depending on outcome

Unfavourable outcomes:
Follow-up 4 years for
- Severe disability
- Needing help with personal care
- Institutionalisation

Follow-up 5 years of
- Mortality

Disability measures

Physical Performance Score, based on quartiles of time needed for:

- Walk 2x3 meter
- Chair stands 5x
- Putting on and taking off cardigan
- Tandem stand 10 seconds

N = 1335

0 (minimum ability) … 16 (maximum ability)

Mild disability: 1 SD < median (scores 5-9)

Severe disability: < 5

Self-report of Global Activity Limitation > 3 months (GALI):

no disability / **mild** disability / **severe** disability

N = 1453

Overlap performance-based / self-reported disability at baseline

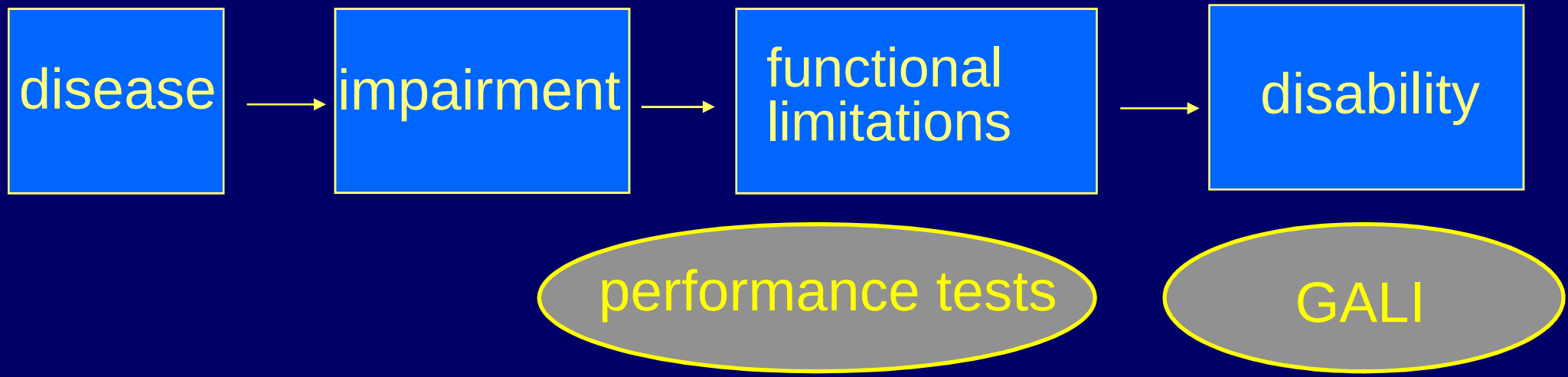
	Self-report			
Performance-based	No	Mild	Severe	Total
No	**75%**	22%	3%	100%
Mild	53%	**34%**	13%	100%
Severe	34%	24%	**42%**	100%

Agreement in scores = 56%

Spearman correlation = 0.37

Longitudinal Aging Study Amsterdam 2001-02

The disablement process



Verbrugge & Jette 1994

Baseline prevalence and transition rates

	Disability	
	Performance-based	*Self-report*
Mild	34%	27%
Severe	16%	14%
Mild → severe	30%	20%
Mild → personal care	10%	8%
Mild → institutionalisation	3%	4%
Mild → death	17%	19%

Transitions among those without the ‘unfavourable’ condition at baseline

Longitudinal Aging Study Amsterdam 2001-02 (prevalence), and 2001-02/2005-06 (transition)

Unfavourable outcomes for mild and severe performance-based disability

	Mild disability	p	Severe disability	p
Survived but no data[1]	1.28	0.23	1.57	0.002
Severe disability[1]	15.99	<0.001	-	
Personal care[1]	5.25	<0.001	4.76	<0.001
Institutionalisation[1]	1.91	0.24	11.39	<0.001
Mortality[2]	1.58	0.005	3.06	<0.001

[1] Multinomial logistic regression, those with 'favourable' condition at baseline only, adjusted for age, sex, reference: no disability

[2] Cox regression, adjusted for age, sex

Longitudinal Aging Study Amsterdam 2001-02/2005-06

Unfavourable outcomes for mild and severe self-reported disability

	Mild disability	p	Severe disability	p
Survived but no data[1]	1.13	0.51	1.18	0.18
Severe disability[1]	10.24	<0.001	-	
Personal care[1]	2.19	0.02	4.48	<0.001
Institutionalisation[1]	2.30	0.07	10.02	<0.001
Mortality[2]	1.30	0.04	2.20	<0.001

[1] Multinomial logistic regression, those with ´favourable´ condition only, adjusted for age, sex, reference: no disability

[2] Cox regression, adjusted for age, sex

Longitudinal Aging Study Amsterdam 2001-02/2005-06

Population attributable risk (PAR)

How can we compare the impact of mild versus severe disability at the population level?

$$PAR = 100 \times \frac{p\,(RR-1)}{p\,(RR-1)+1}$$

Combines prevalence with impact

Population attributable risks of outcomes for mild and severe disability (both types)

	Mild disability		Severe disability	
	Perf	Self	Perf	Self
Severe disability	83.7	71.4	-	-
Personal care	59.2	24.3	38.1	32.3
Institutionalisation	23.7	26.0	63.0	55.3
Mortality	16.6	7.5	25.2	14.1

Longitudinal Aging Study Amsterdam 2001-02/2005-06; grey: no significant impact

Conclusions

- Mild disability has increasing prevalence (currently about 30%)
- Mild disability has predictive ability for unfavourable outcomes severe disability, needing help with personal care, and mortality (institutionalisation n.s.)
- Population attributable risk of mild disability is substantial, and not much smaller than of severe disability

Discussion

- Cut points for performance-based mild disability?
- Low rate of institutionalisation
- Adjustment of models for other covariates?
- Specific groups at higher risk?

Beware of mild disability !

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Longitudinal Aging Study Amsterdam