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The impact of obesity on the dynamic transitions of disability and DFLE: results from the English Longitudinal Study of Ageing (ELSA)

Iain Lang, Carol Jagger, David Melzer

EVES 2007 St Petersburg, Florida

English Longitudinal Study of

Background

- Growing problem of obesity in the UK
  - Prevalence has trebled since the 1980s
  - Over half of all adults are overweight or obese
- Impact on mortality
  - Obese adults < 70 live 6-7 years less (Peeters, 2003
  - Obese adults 70+ have similar LE to non-obese (Reynolds, 2005)
- Impact on DFLE
  - Obesity is associated with reduced ALE – 1.4 years for men and 2.4 for women (Reynolds, 2005)

Research questions

- What is the effect of measured BMI on DFLE defined by self-report and performance measures?
- Is it differences in incidence, recovery or mortality that drive these?

ELSA

- A panel study of 11,500 people aged 50 and older, drawn from the Health Survey for England and interviewed every two years (since 2002) with a nurse visit every four years.
- Topics include:
  - Health trajectories, disability and healthy life expectancy
  - The relationship between economic position and health
  - The determinants of economic position in later life
  - Timing of retirement and post retirement labour market activity
  - Social participation, productivity, networks and support
  - Economic, social and health inequalities

www.ifs.org.uk/elsa

English Longitudinal Study of

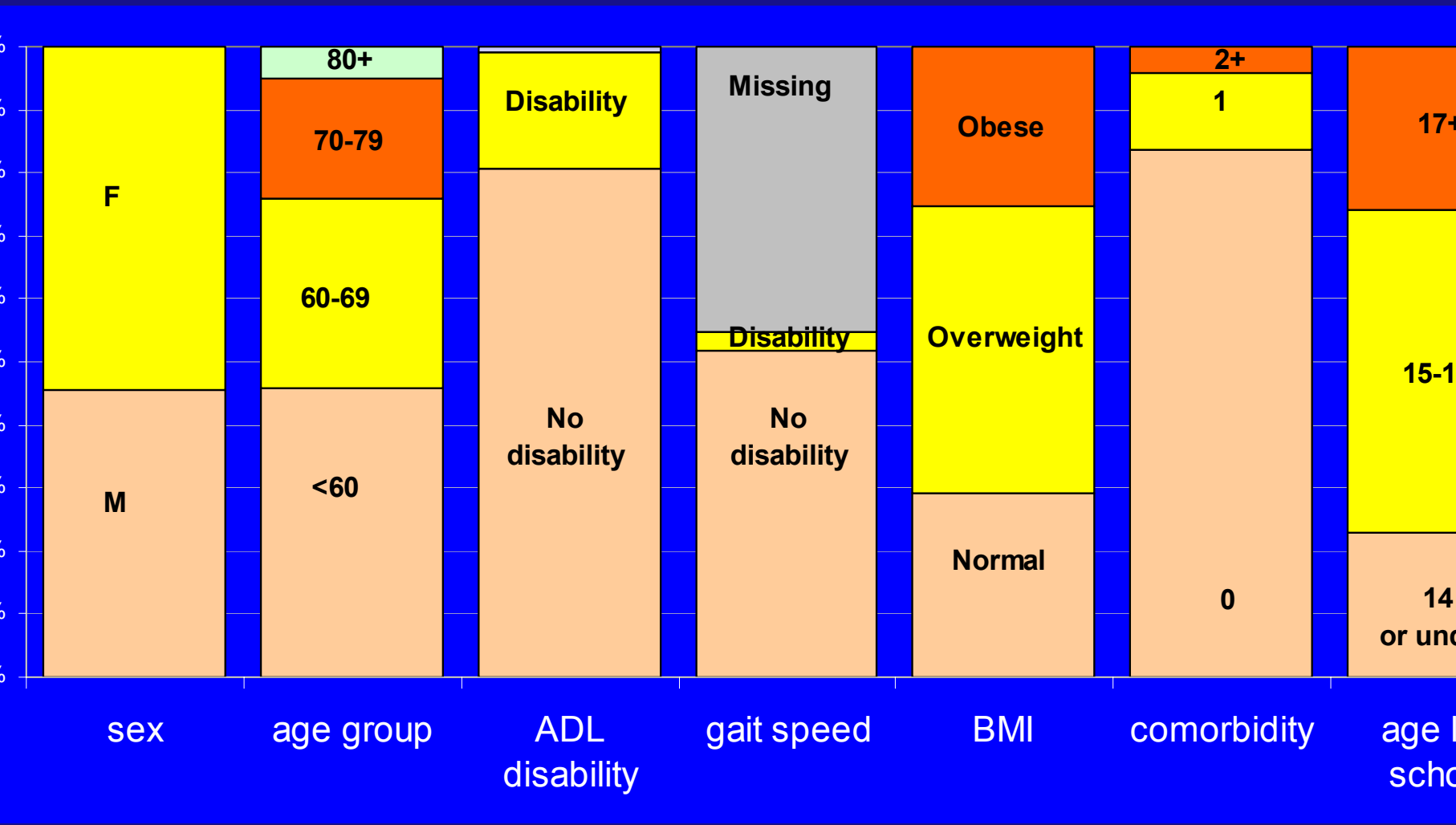
Definitions

- Disability
  - ADL disability – difficulties with 1+ ADLs
  - Gait speed of <0.4 m/s from 2*80gt walks
- BMI (measured)
  - Normal (18.5 to 24.9 kg/m^2)
  - Overweight (25 to 29.9 kg/m^2)
  - Obese (30+ kg/m^2)
- Comorbidity
  - 0/1/2+ baseline comorbidities
- Education
  - Age finished full-time education <=14/ 15-16/ 17+ years
- Wealth
  - quintiles

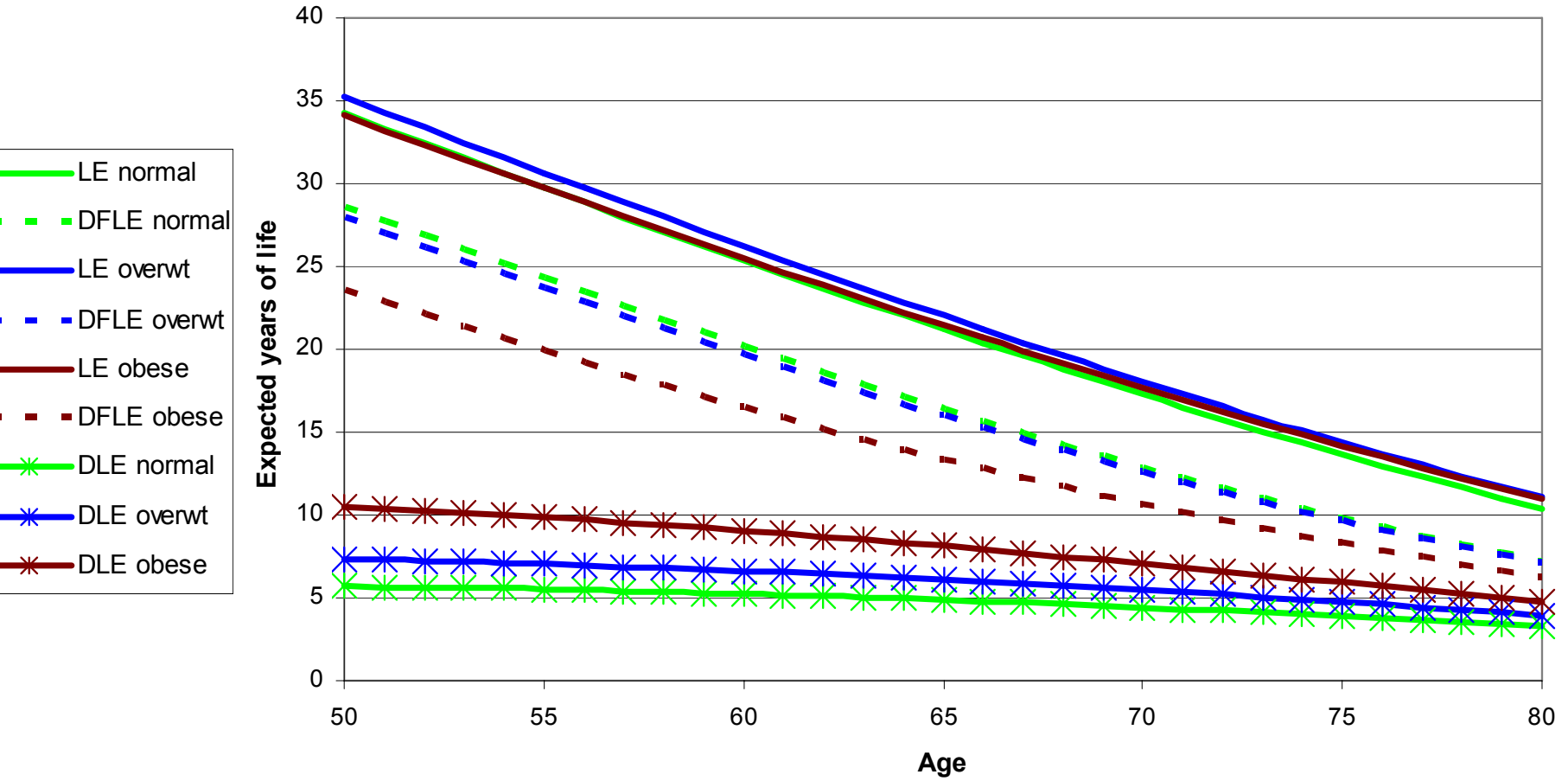
Analysis

- IMaCH 0.98i for DFLEs separately for men and women
- Cox proportional hazards regression for mortality from disabled and non-disabled states
- Logistic regression for incidence to (and recovery from) disability with time between last report of no disability and first disability (time between last report of disability and first report of no disability) included as covariates

Baseline characteristics (N=9941)



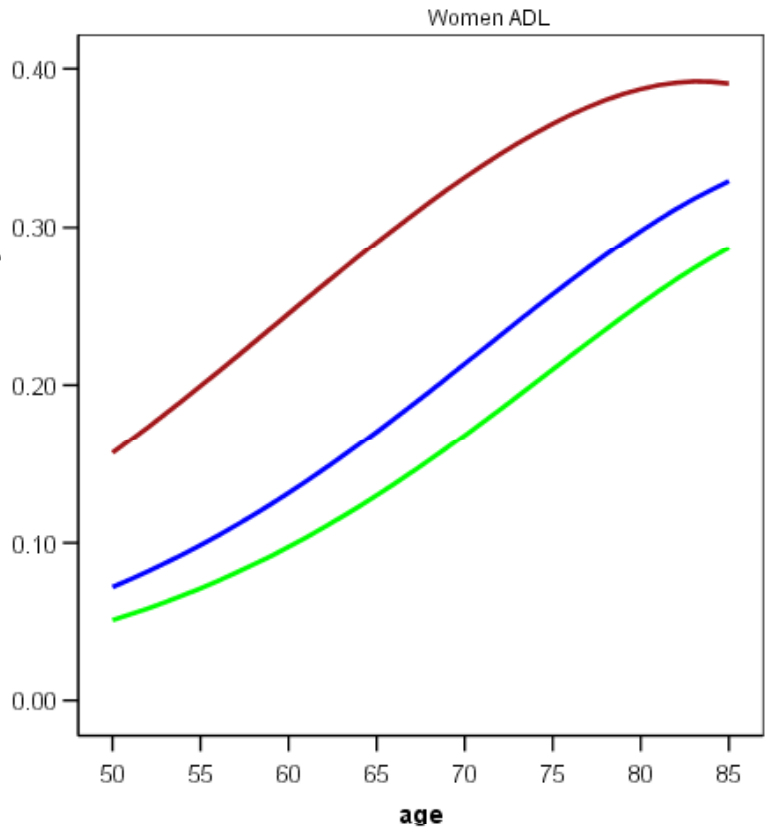
DFLE (ADL) by BMI (Women)

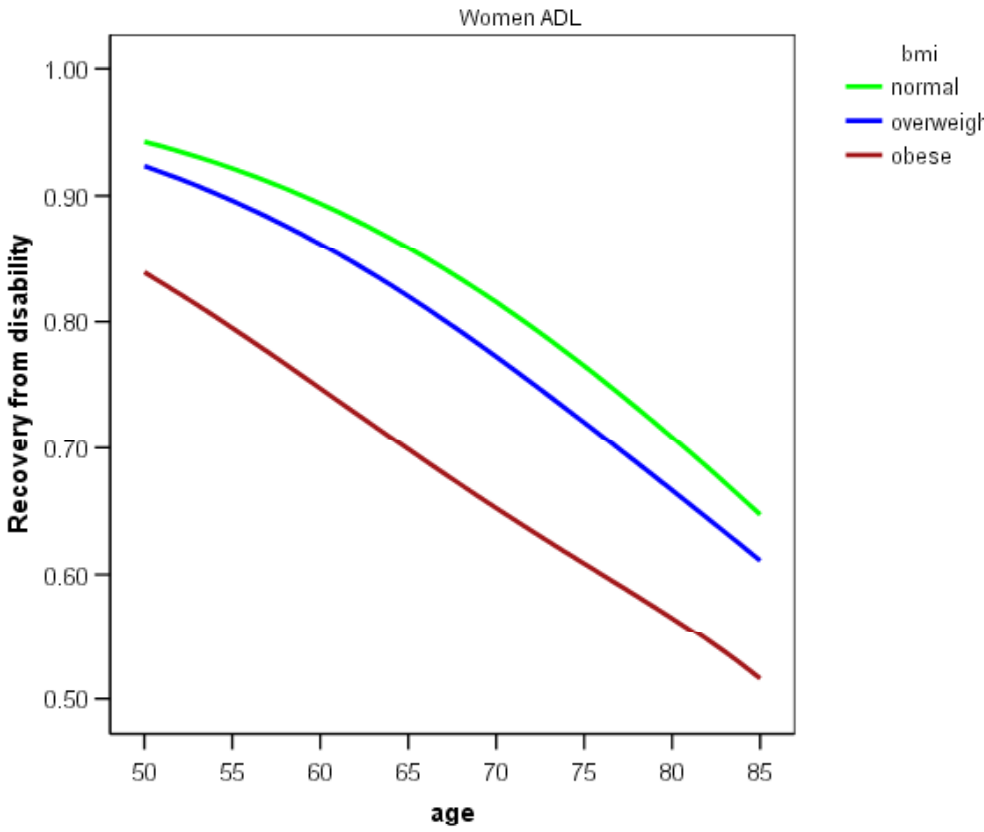


Transitions to and from disability (ADL) by BMI (women)

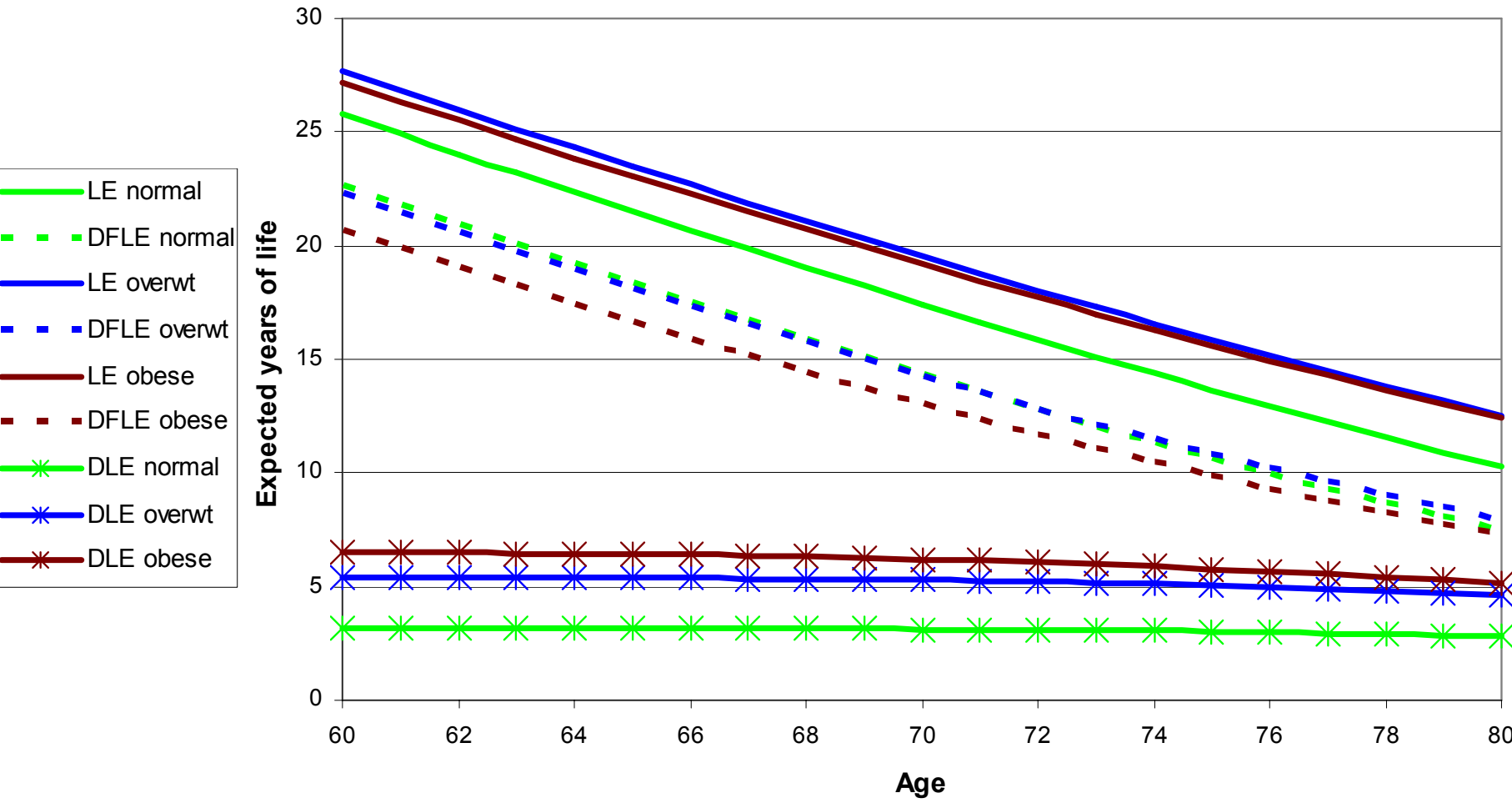
Incidence

Recovery



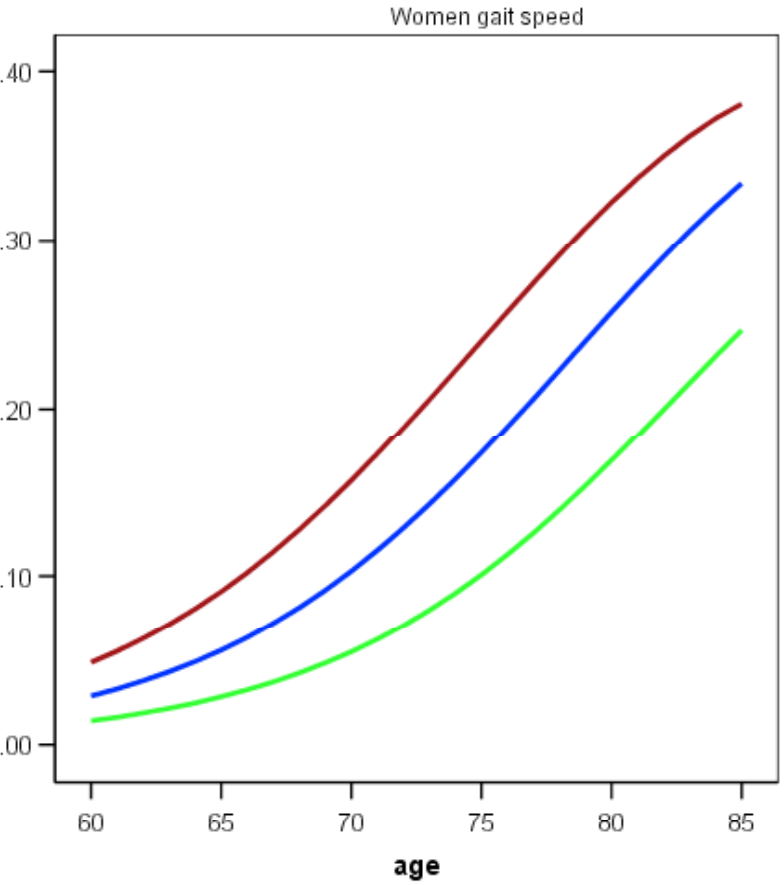


DFLE (gait speed) by BMI (Women)

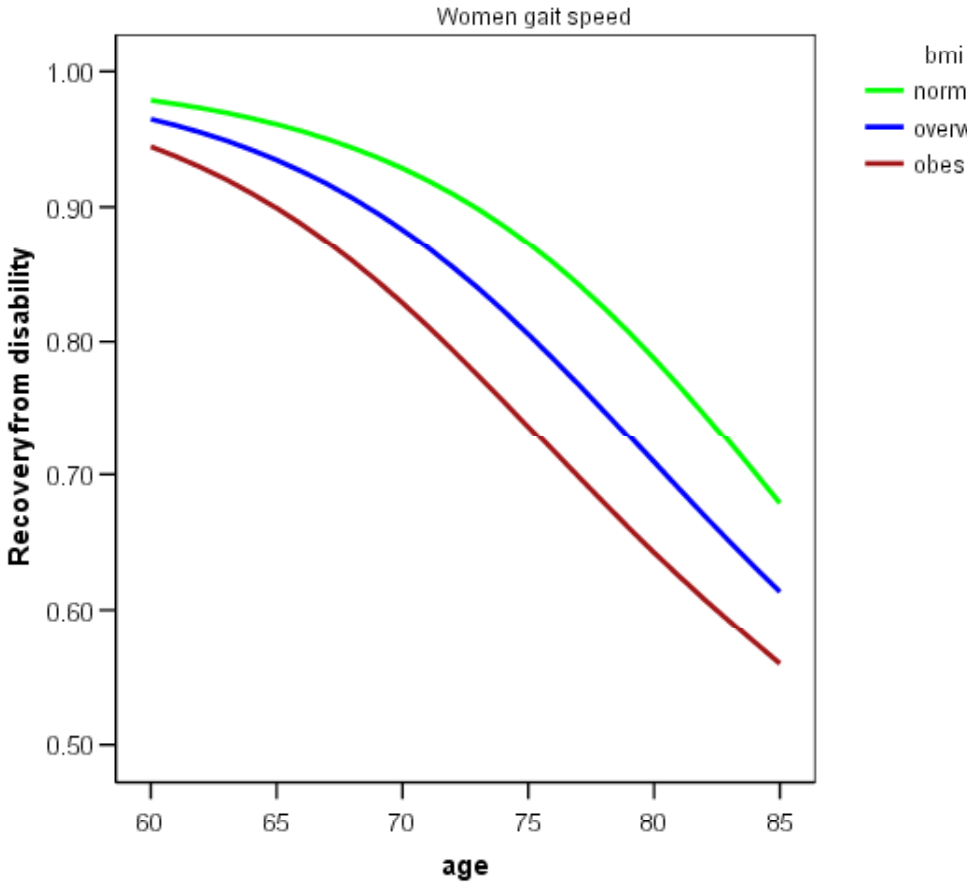


Transitions to and from disability (gait speed) by BMI (women)

Incidence



Recovery



Incidence

	ADL disability		Gait speed disability	
	Unadjusted OR (95%CI)	Adjusted* OR (95%CI)	Unadjusted OR (95%CI)	Adjusted* OR(95%CI)
MEN				
BMI				
normal	1	1	1	1
overweight	1.1 (0.8,1.5)	1.0 (0.8,1.5)	1.2 (0.8,1.9)	1.2 (0.8,1.9)
obese	2.1 (1.5,3.0)***	1.9 (1.3,2.8)***	2.2 (1.3,3.7)***	2.0 (1.2,3.4)*
WOMEN				
BMI				
normal	1	1	1	1
overweight	1.4 (1.4,1.8)*	1.3 (1.0,1.7)*	1.7 (1.2,2.5)**	1.6 (1.1,2.3)*
obese	2.3 (1.8,3.1)***	2.2 (1.7,2.9) ***	2.6 (1.7,3.8)***	2.2 (1.5,3.3)***

OR adjusted for age, comorbidity, wealth, education, smoking

Recovery

- Numbers very small
  - No significant difference between BMI groups though trend to less risk of recovery in obese for both ADL and gait speed

Strengths and limitations

- Strengths
  - Large study
  - Measured BMI
  - Nationally representative
- Limitations
  - Only 2 years follow-up
  - Doesn't include those in institutions
  - Loss to follow-up (though mortality complete)
  - Gait speed only for 60 years +
  - Incomplete adjustment for comorbid conditions
  - Few transitions to no disability

Conclusions

- DFLE slightly higher for ADL measure than gait speed but patterns similar
- Size of differences in DFLE between BMI groups?
  - Little difference on overall length of life
  - Compared to those of normal weight obese women have 3.8 years less ADL disability-free at age 60 whilst men have 2.9 years less
  - Differences remain significant up to age 70

Conclusions

- Is it differences in incidence, recovery or mortality that drive DFLE differences?
  - Incidence – though suggestion of reduced recovery
  - Differentials in incidence not a result of increased burden of disease, lower education, wealth or smoking

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