Andrew Kingston, Julie Byles, Kaarin Anstey and Carol Jagger

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andrew.kingston@ncl.ac.uk

@DrAKingston

#REVES2018

Impact of Obesity on Disability-Free Life Expectancies in Older Australians

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Institute for Ageing

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Overview

01 Introduction & Background

02 Aims & Methods

03 Results

04 Conclusions

Introduction

01

Life expectancy (LE) continues to increase globally

02

Are increased years spent in good health?

03

Health expectancies (HE) are a set of population health indicators that combine information on morbidity and mortality

04

Address the question of whether the extra years of LE are healthy ones

05

What's the impact of risk factors on HE?

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The trend toward excess body weight

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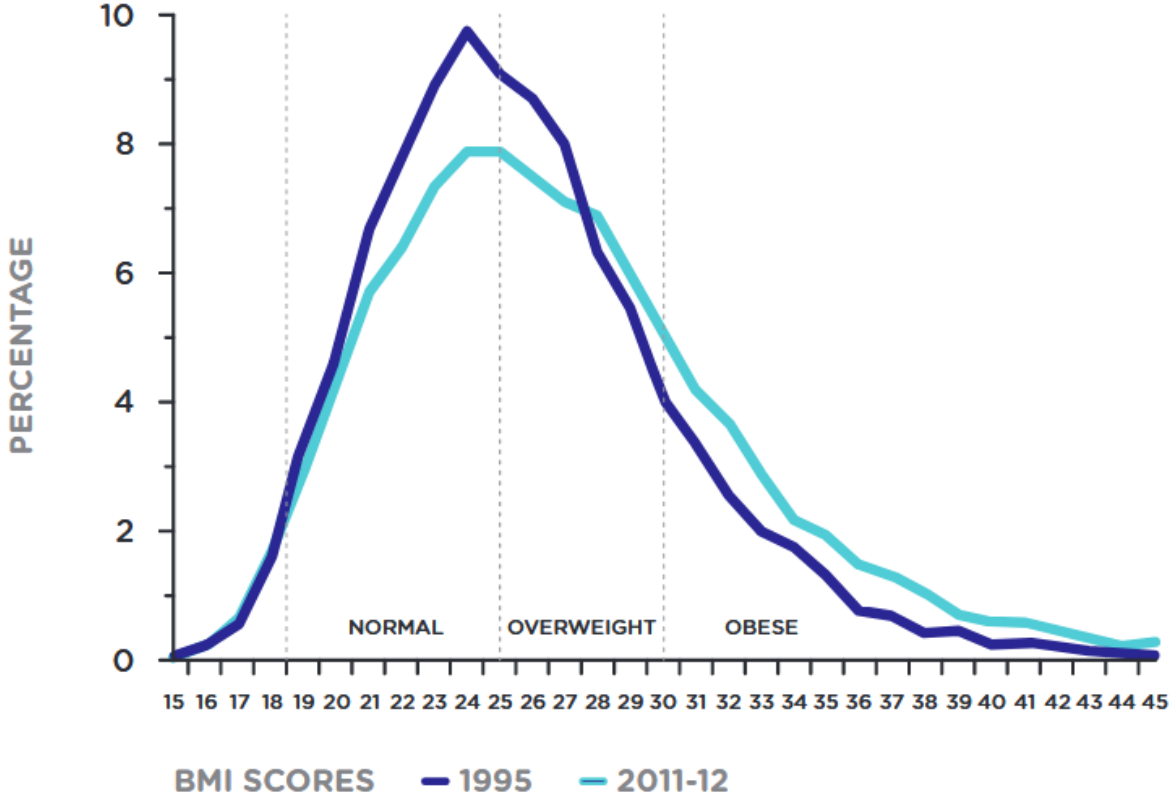

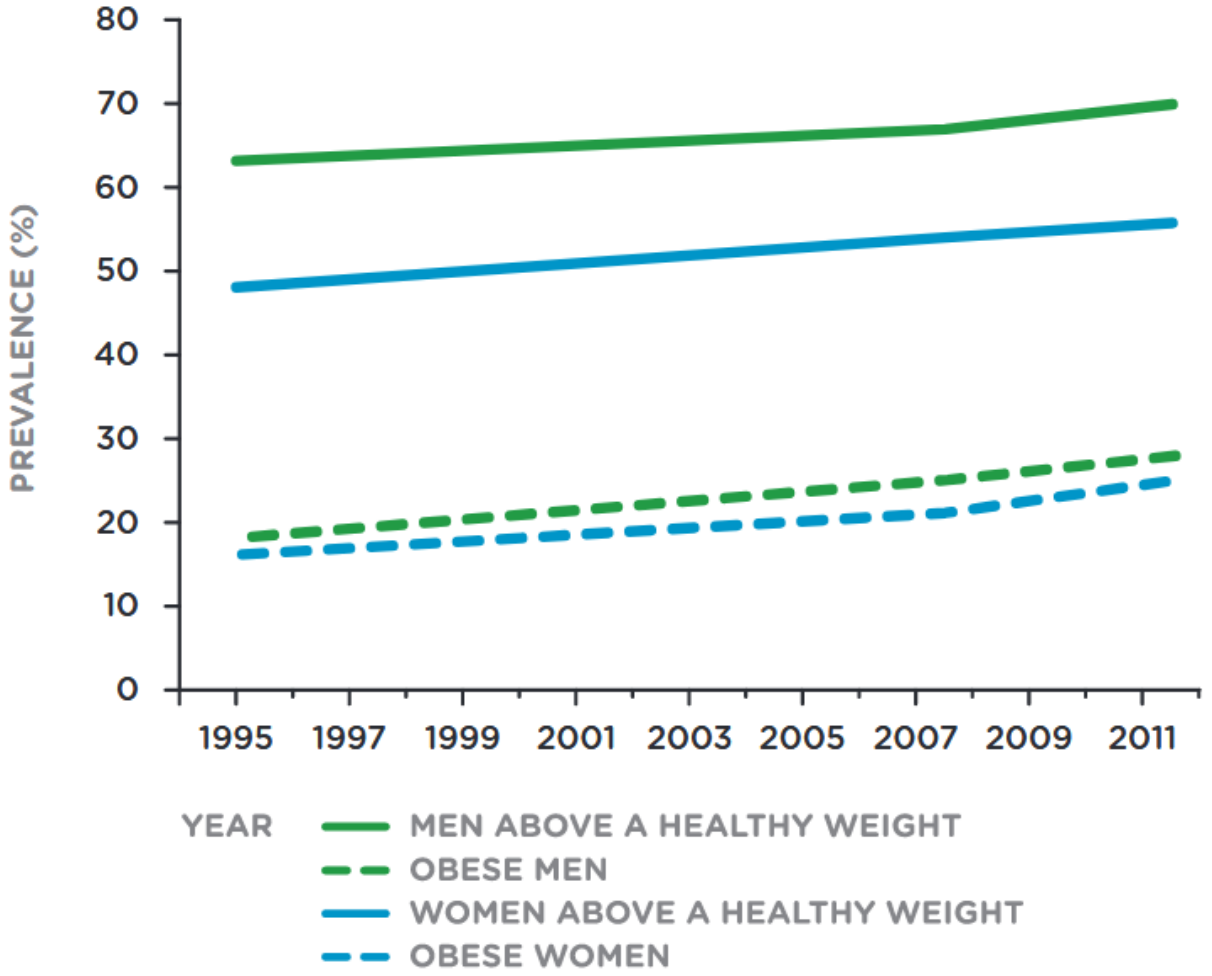

Data source: Boden Institute of Obesity, Nutrition, Exercise and Eating Disorders analysis of ABS NHS 1995, 2007-08 and ABS Australian Health Survey data 2011-12.

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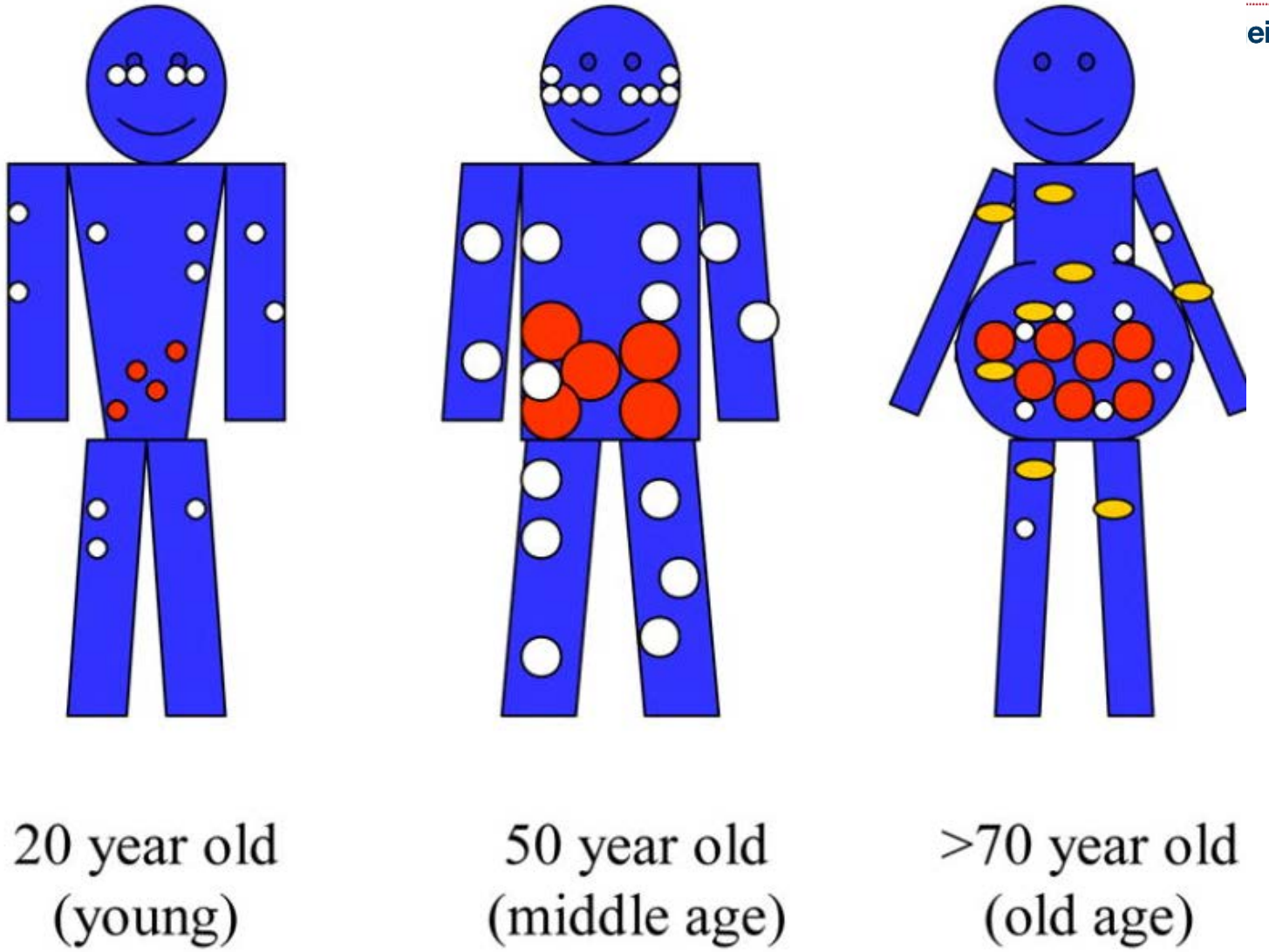
Fat distribution as we age

- White circles represent subcutaneous fat
- Red circles represent visceral fat
- Yellow circles represent the appearance of fat in non adipose tissue.



Cartwright MJ, Tchkonia T, Kirkland JL. Aging In Adipocytes: Potential Impact Of Inherent, Depot-Specific Mechanisms. *Experimental gerontology*. 2007;42(6):463-471. doi:10.1016/j.exger.2007.03.003.

Abdominal obesity and ageing

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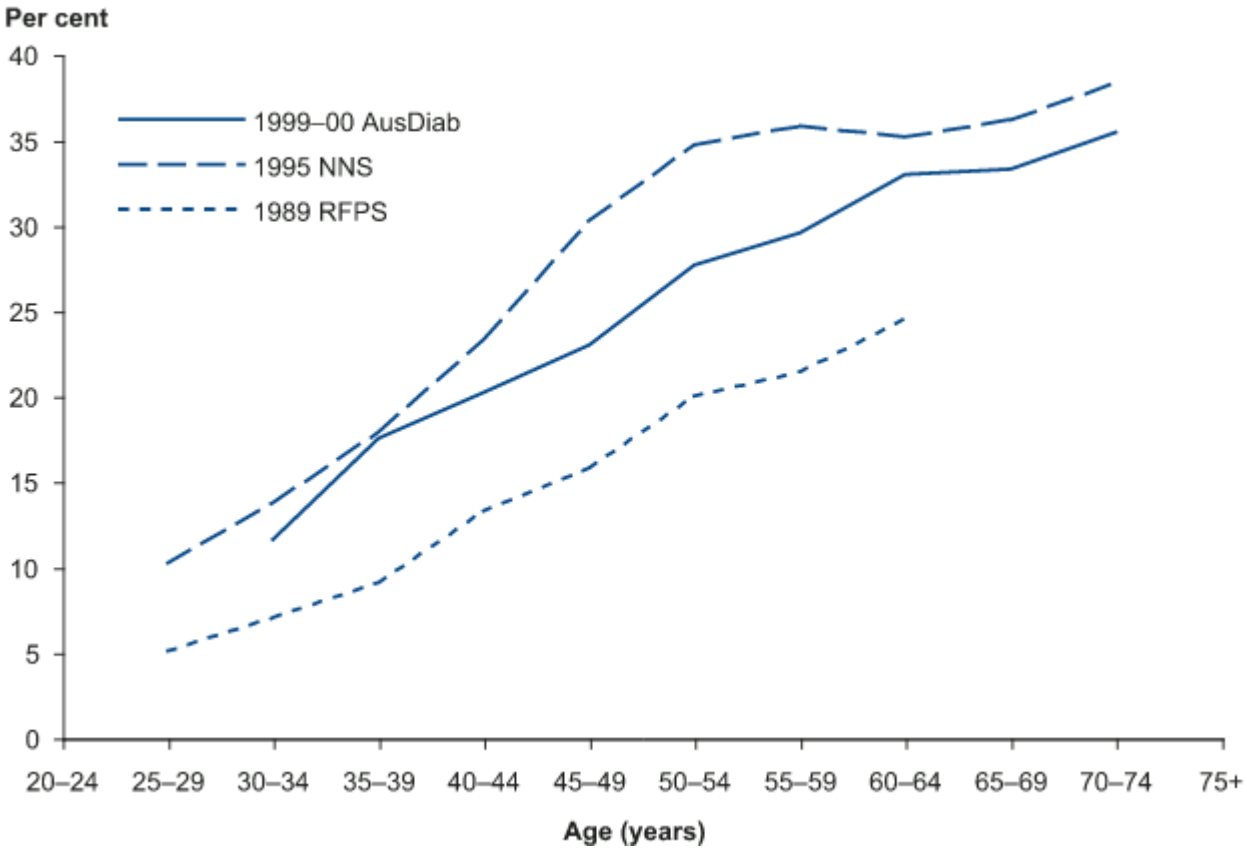
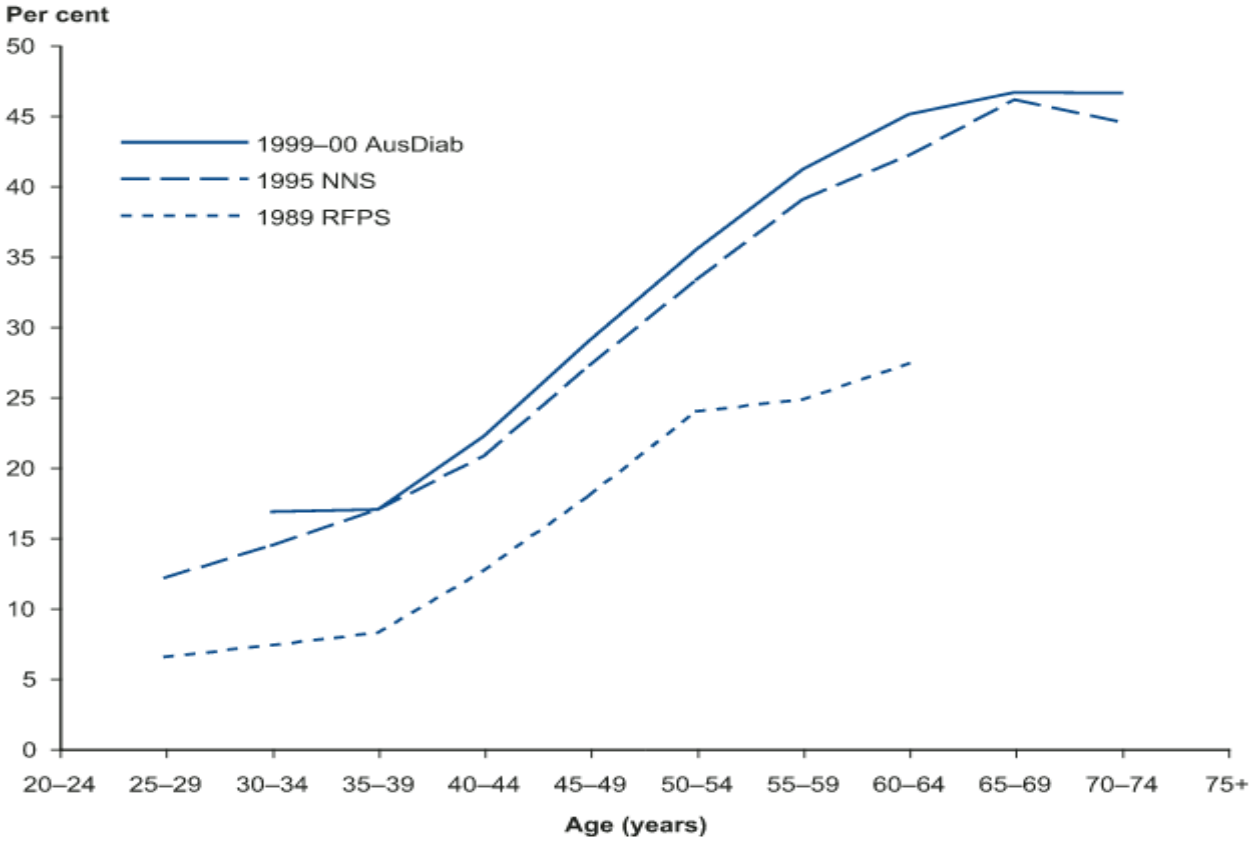
Men



Women



Sources: AIHW analysis of the 1989 Risk Factor Prevalence Survey; 1995 National Nutrition Survey; 1999–2000 Australian Diabetes, Obesity and Lifestyle Study (AusDiab).

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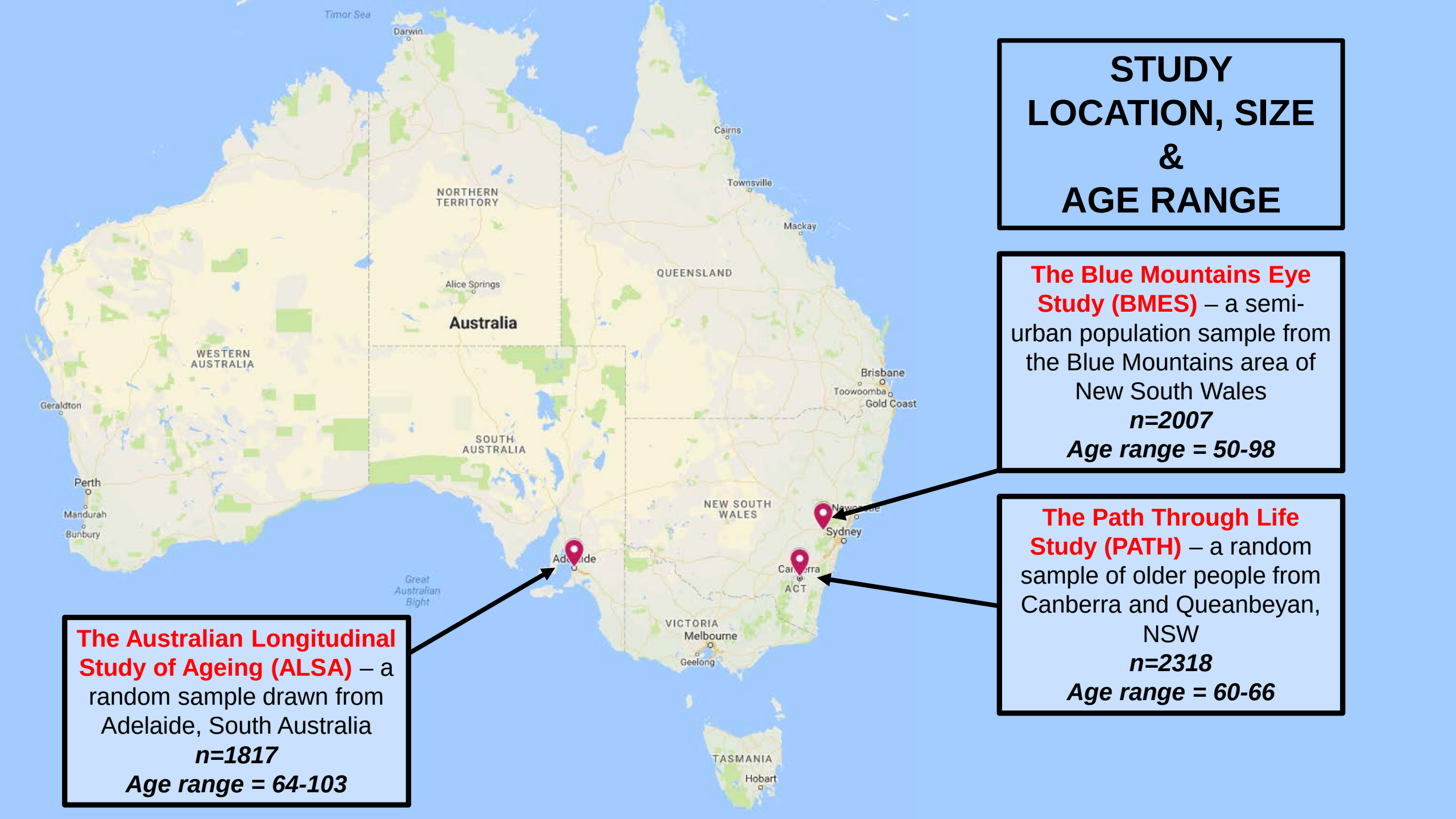
Aims & Study Data

Explore the impact of obesity on disability free life expectancy using three measures of disability.

The sample was drawn from DYNOPTA, a pooled dataset of Australian Longitudinal Studies.

Focus specifically on four outcomes that contribute to the burden of disease and disability

Anstey KJ, Byles JE, Luszcz MA, et al. Cohort profile: The Dynamic Analyses to Optimize Ageing (DYNOPTA) project. *International Journal of Epidemiology*. 2010



STUDY LOCATION, SIZE & AGE RANGE

The Blue Mountains Eye Study (BMES) – a semi-urban population sample from the Blue Mountains area of New South Wales

n=2007

Age range = 50-98

The Path Through Life Study (PATH) – a random sample of older people from Canberra and Queanbeyan, NSW

n=2318

Age range = 60-66

The Australian Longitudinal Study of Ageing (ALSA) – a random sample drawn from Adelaide, South Australia

n=1817

Age range = 64-103

Variables

Disability

- Mobility: *using steps or walking 1 km*
- IADL: *heavy housework, meal preparation, shopping*
- ADL: d*ressing and bathing*

Level of education was a binary variable:

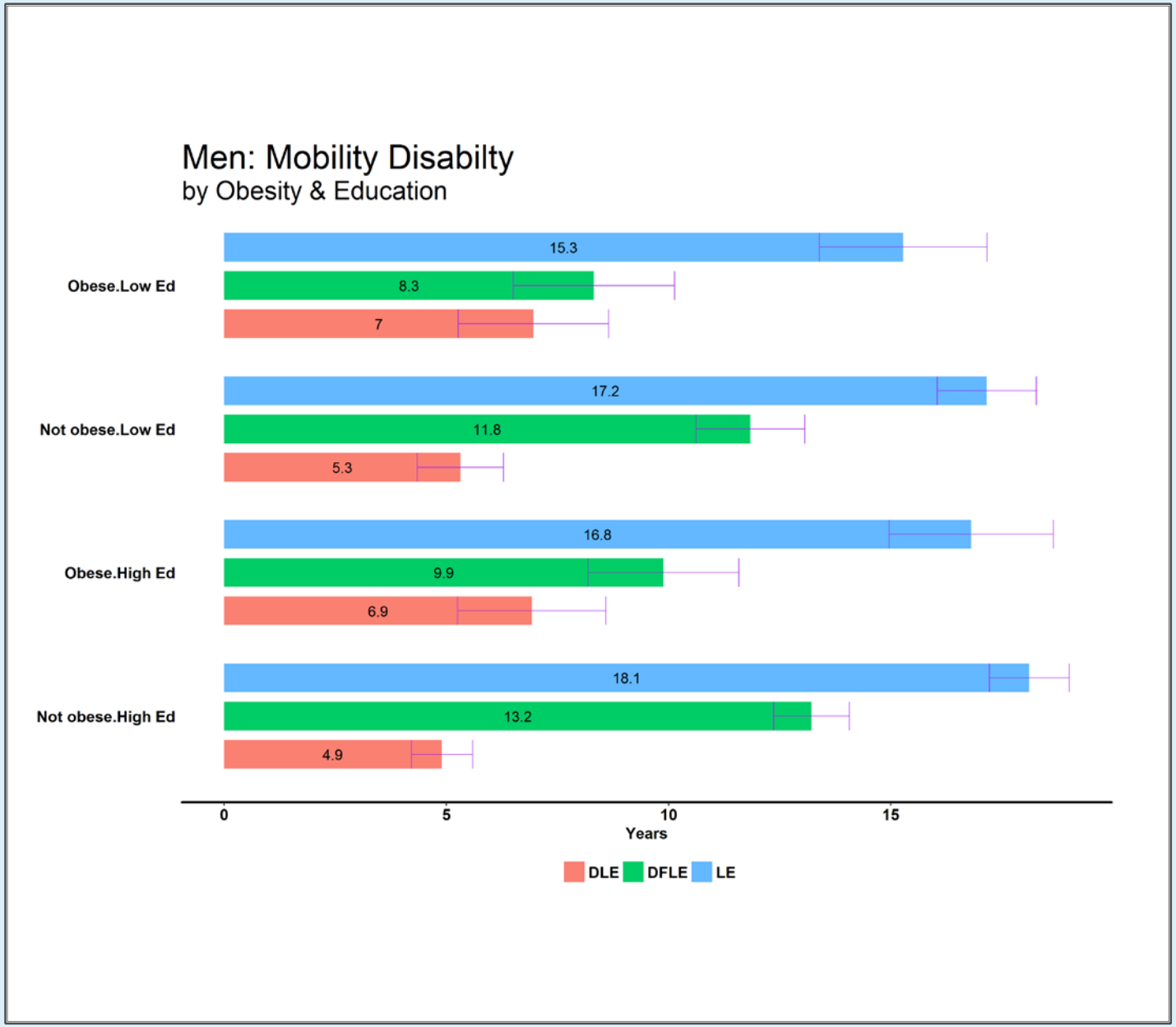
- Left school before the age of 15 (Early School Leavers)
- Left school after the of 15 (Late School Leavers)

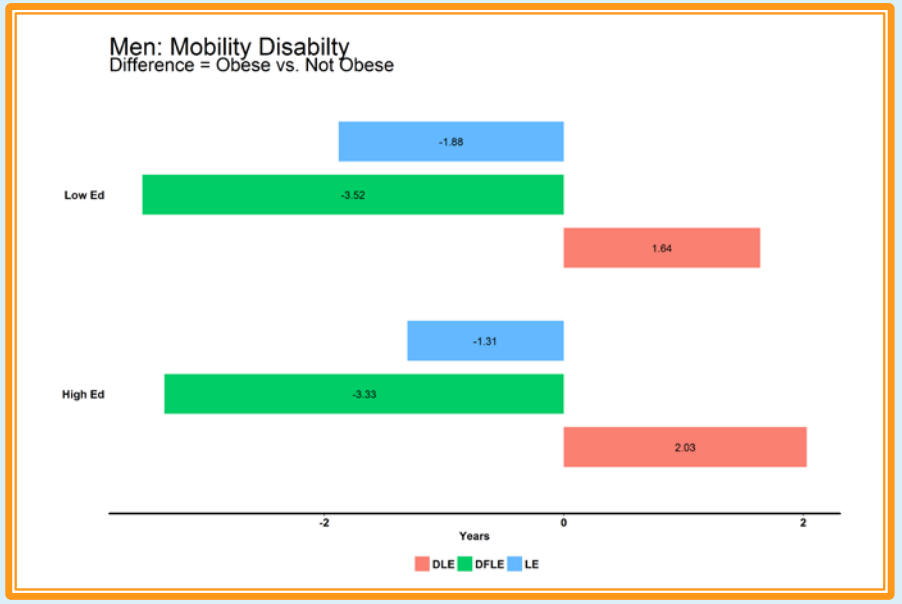
Body Mass Index

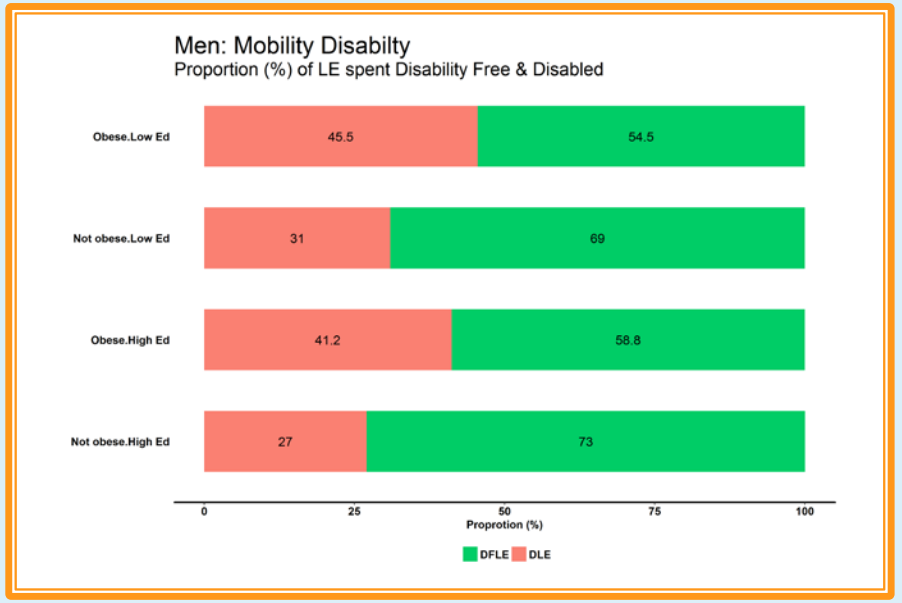
- Obesity defined as those with BMI >30

Methods

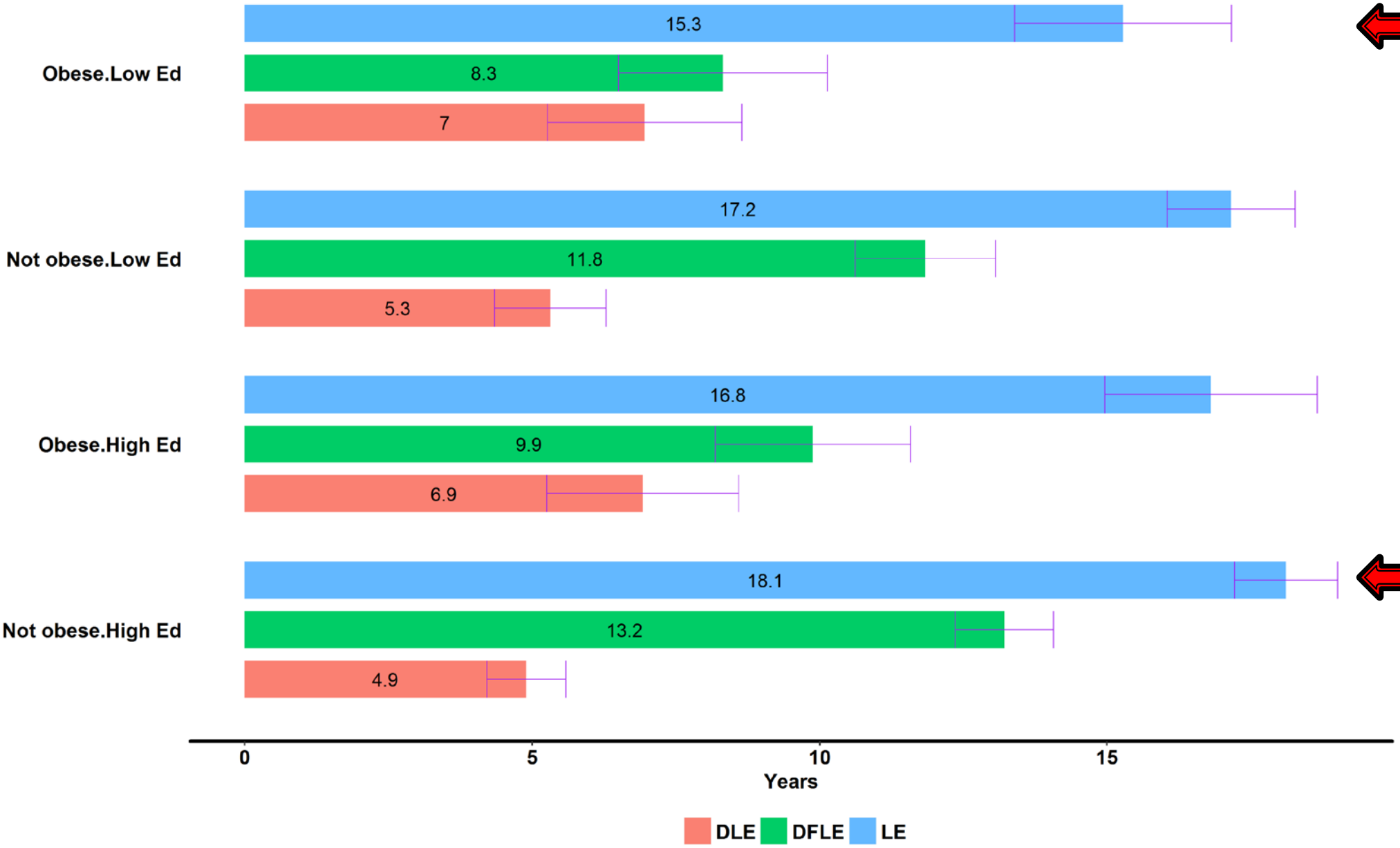
- Explore the impact of obesity on:
  - Life Expectancy (LE)
  - Disability Free Life Expectancy (DFLE)
  - Disabled Life Expectancy (DLE)
- Three levels of disability explored: Mobility, Instrumental Activities of Daily Living (IADL) and Activities of Daily Living (ADL)
- Stratified on level of education and gender
- IMaCh version: 0.99r14.
- Life expectancies calculated at age 65.


Men: Mobility Disabilty
by Obesity & Education
Obese.Low Ed
15.3
8.3
7
Not obese.Low Ed
17.2
11.8
5.3
Obese.High Ed
16.8
9.9
6.9
Not obese.High Ed
18.1
13.2
4.9
0
5
10
15
Years
DLE
DFLE
LE


Men: Mobility Disabilty
Difference = Obese vs. Not Obese
-1.88
Low Ed
-3.52
1.64
-1.31
High Ed
-3.33
2.03
-2
0
2
Years
DLE
DFLE
LE


Men: Mobility Disabilty
Proportion (%) of LE spent Disability Free & Disabled
Obese.Low Ed
45.5
54.5
Not obese.Low Ed
31
69
Obese.High Ed
41.2
58.8
Not obese.High Ed
27
73
0
25
50
75
100
Proprotion (%)
DFLE
DLE

Men: Mobility Disabilty
by Obesity & Education



Total LE is significantly greater for non-obese highly educated men compared to obese men with low education

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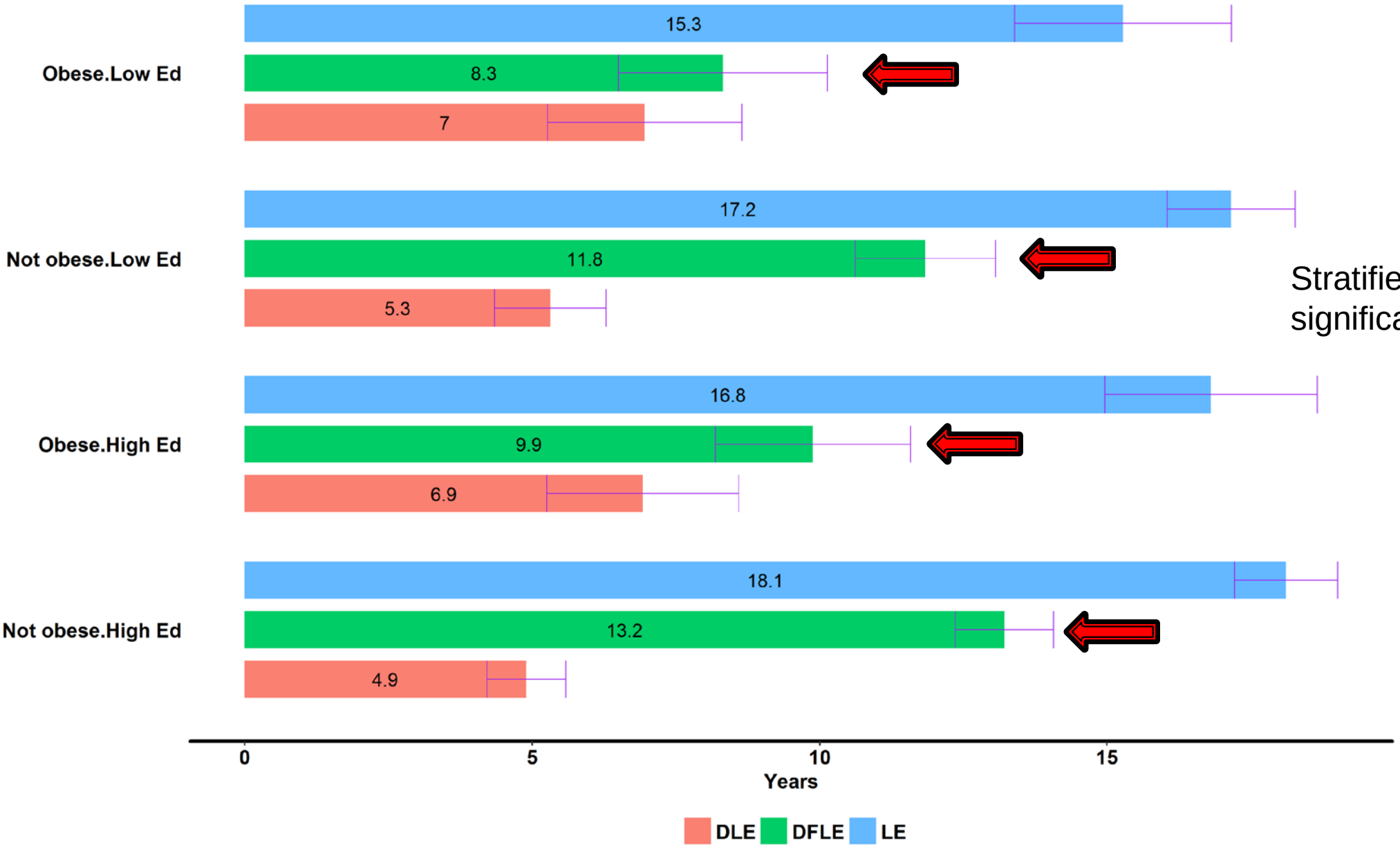
Men: Mobility Disabilty
by Obesity & Education



Stratified by education, obesity significantly reduces DFLE.

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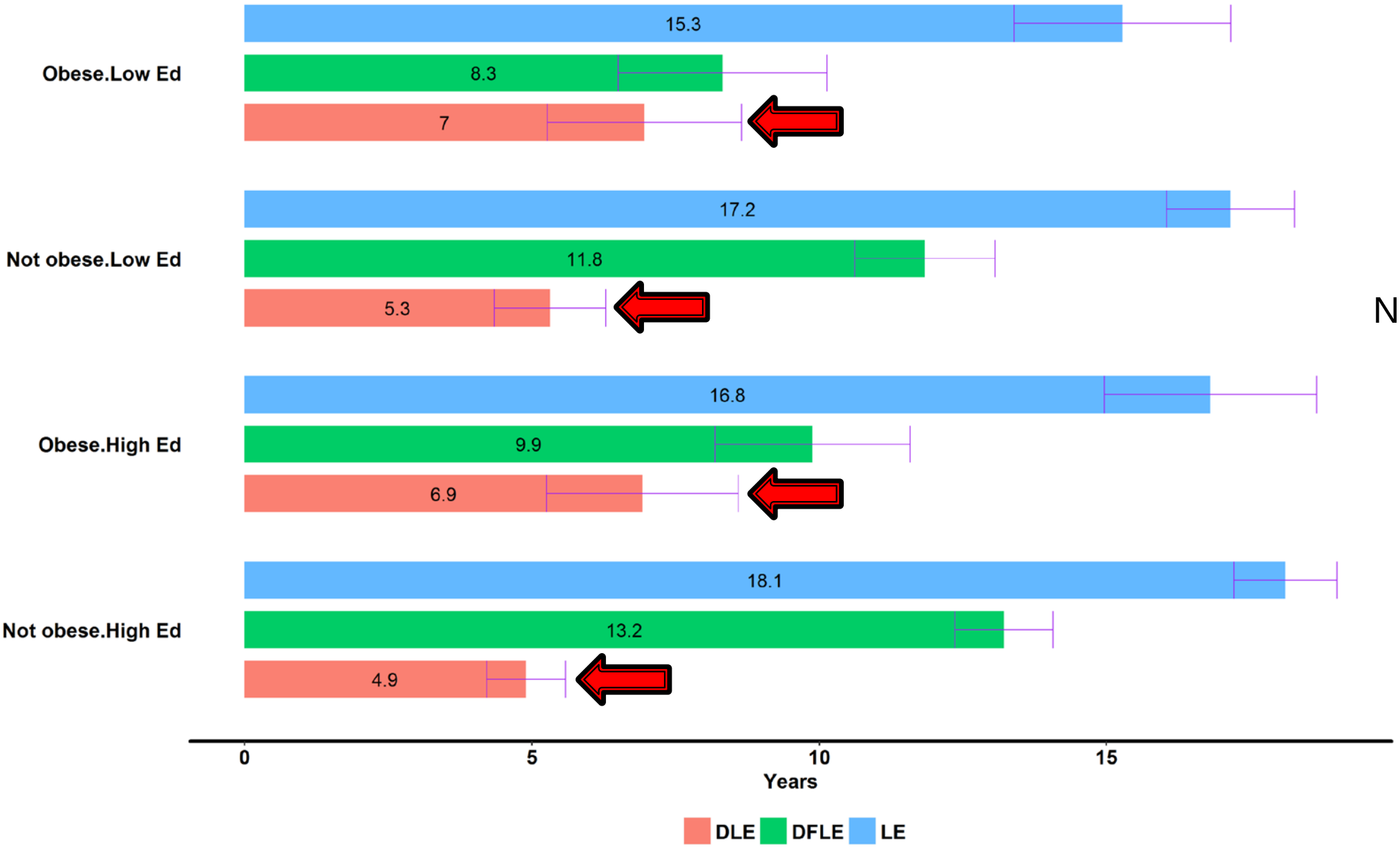
Men: Mobility Disabilty
by Obesity & Education



No impact on DLE

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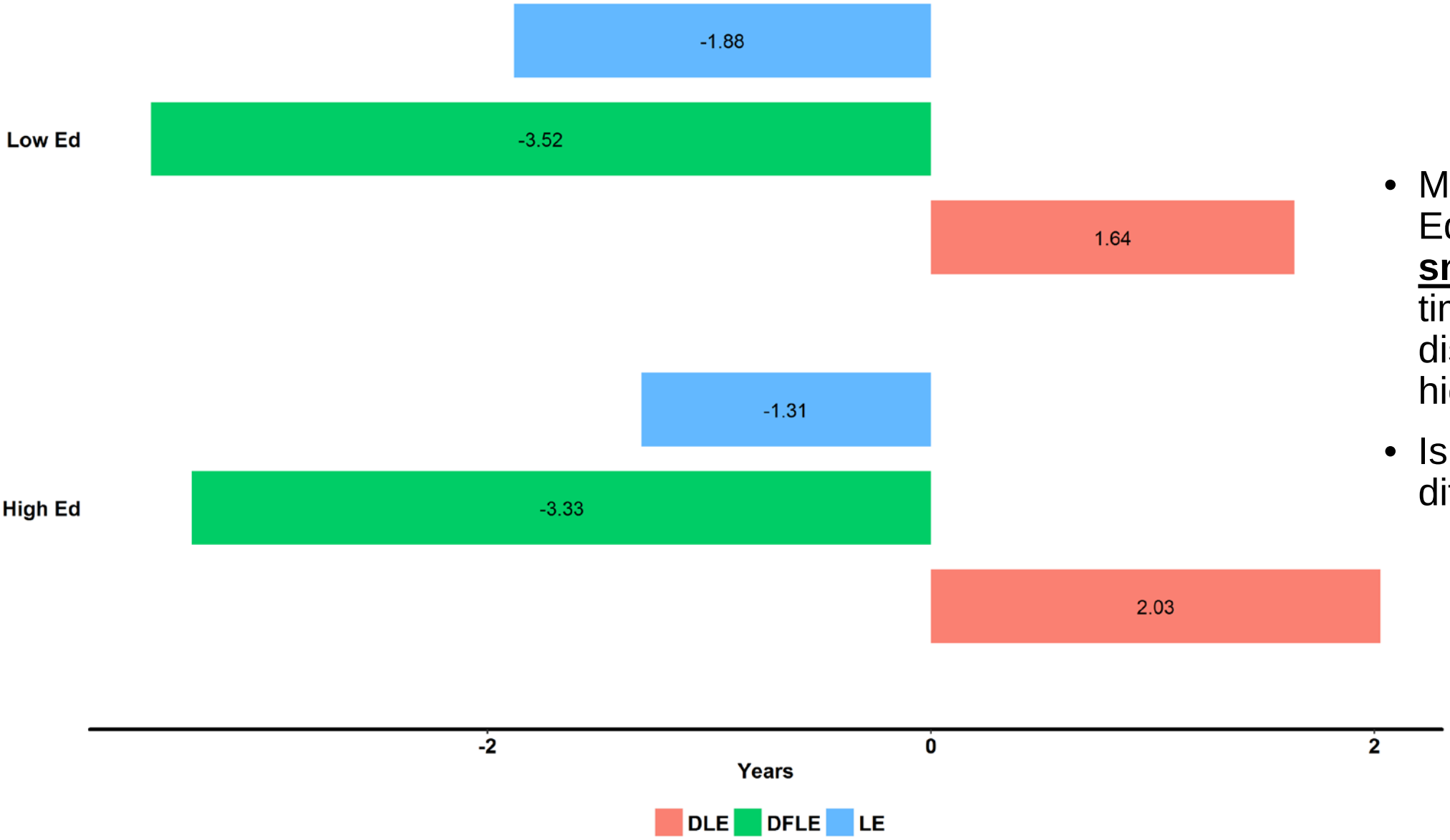
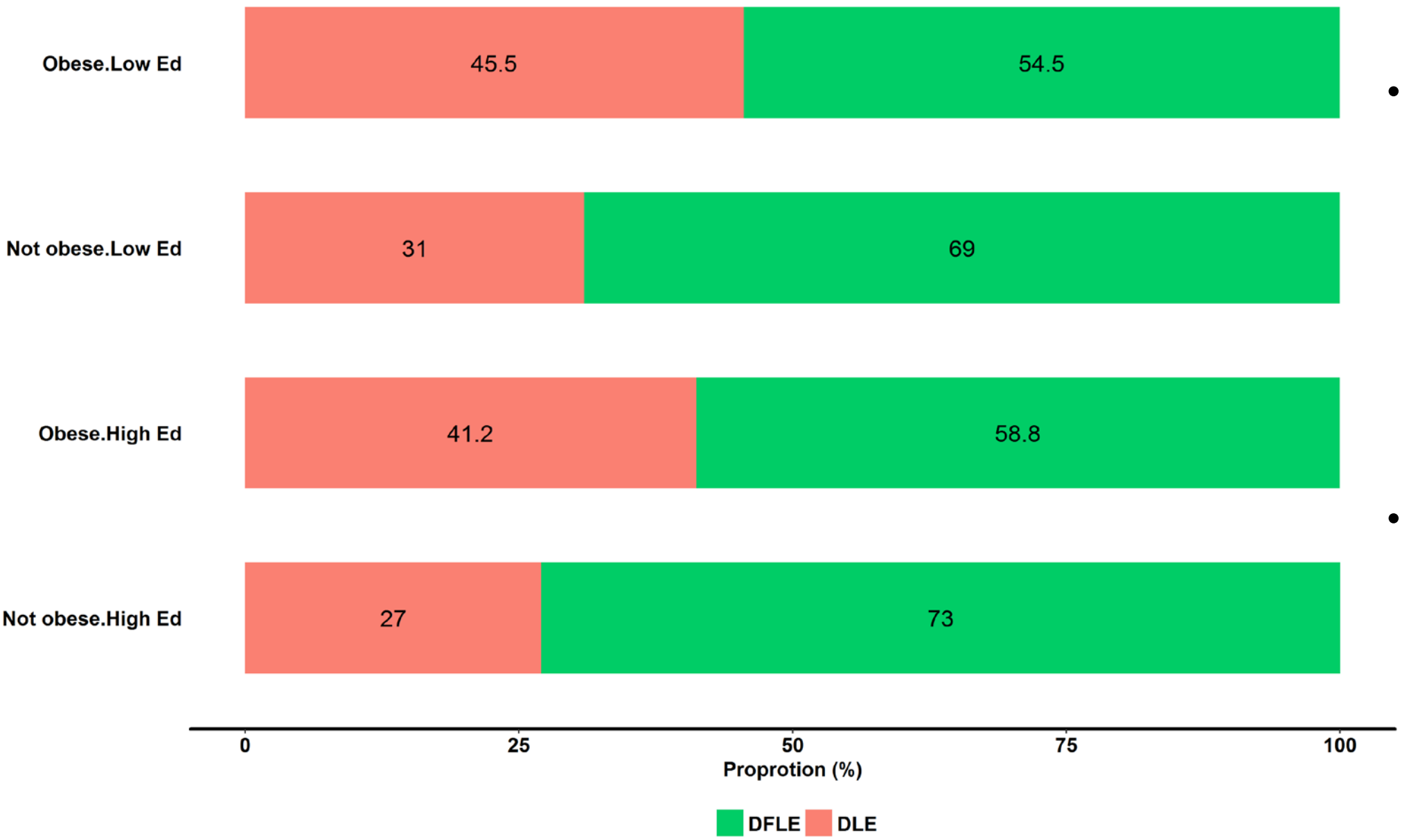
# Men: Mobility Disabilty
Difference = Obese vs. Not Obese



- Men with Low Education spend a **smaller** amount of time with mobility disability compared to highly educated men.
- Is this a function of differential LE's?

Men: Mobility Disabilty

Proportion (%) of LE spent Disability Free & Disabled



- Proportionally, obese men with low education and spend a **greater** proportion of their remaining LE disabled compared to obese men with high education
- Education has no significant effect when interacted with obesity

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Men – Proportion (%) DFLE & DLE

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	High Education				Low Education			
	Not Obese		Obese		Not Obese		Obese	
	DFLE	DLE	DFLE	DLE	DFLE	DLE	DFLE	DLE
ADL	85.0	15.0	82.1	17.9	82.2	17.8	78.8	21.2
IADL	67.5	32.5	65.5	34.5	61.5	38.5	59.4	40.6
Mobility	73.0	27.0	58.8	41.2	69.0	31.0	54.5	45.5

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Women - Proportion (%) DFLE & DLE

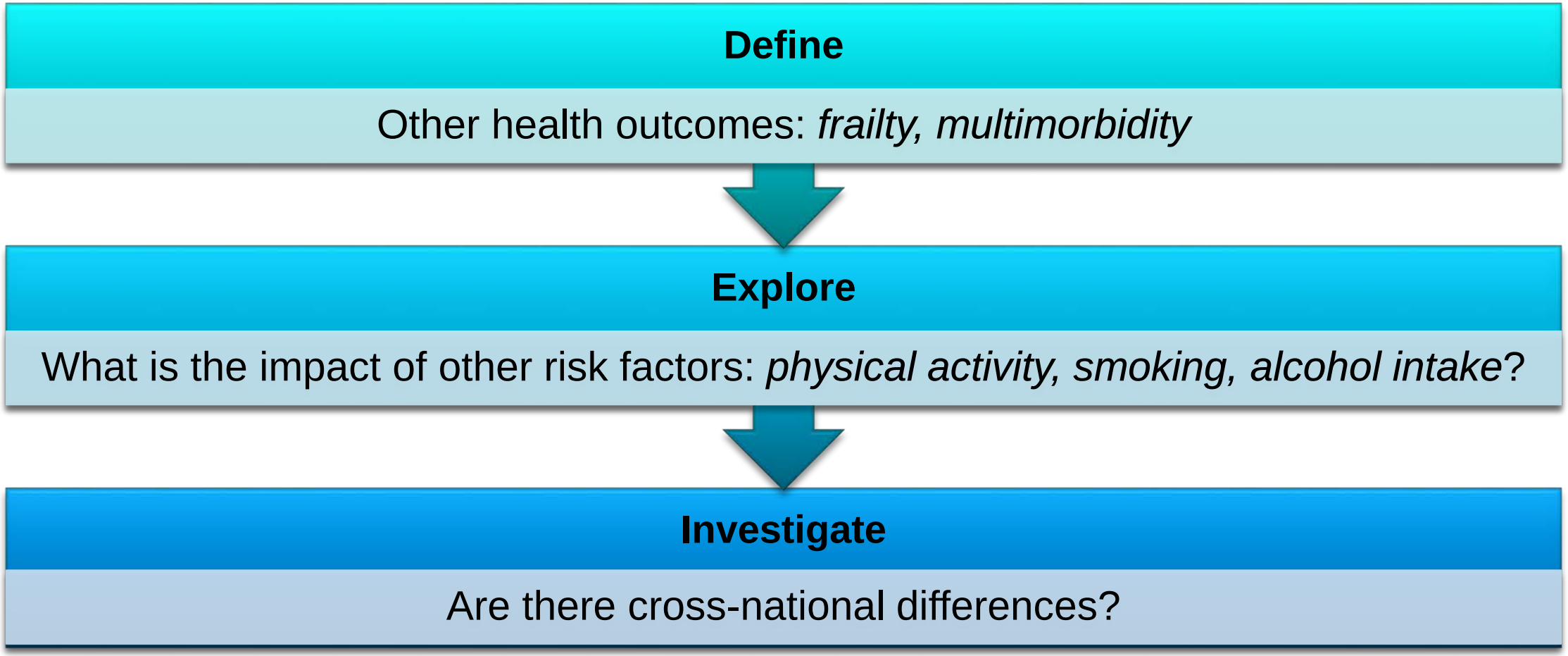
	High Education				Low Education			
	Not Obese		Obese		Not Obese		Obese	
	DFLE	DLE	DFLE	DLE	DFLE	DLE	DFLE	DLE
ADL	80.1	19.9	72.2	27.8	79.9	20.1	72.5	27.5
IADL	48.6	51.4	41.3	58.7	47.6	52.4	39.5	60.5
Mobility	58.6	41.4	~~40.2~~	59.8	59.9	40.1	~~41.8~~	58.2

Conclusions

- **Men:**
  - Obesity has the greatest impact on mobility disability.
  - Those obese with low education have the worst outcome (45.5% Mobility DLE)
  - Men with high education aren't obese have ~7.6% increase in DFLY at age 65 compared with those obese with low education.
- **Women**:
  - Obesity had a similar impact on IADL **and** mobility DLE.
  - Those obese with high education have the worst outcome (~59.8% Mobility DLE). Similar result for those with low education (~58.2% Mobility DLE).

- An effect of obesity on ADL DFLE and DLE was observed but this was not statistically significant.

Future directions



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Thank you

Questions…

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