WELCOME TO THE FENLAND STUDY MEETING

UNIVERSITY OF CAMBRIDGE

MRC Epidemiology Unit

The Fenland Study: contributing to understanding the causes of diabetes and obesity and possible solutions

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June 2016

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Meeting outline

To update participants on the Fenland study including results from Phase 1 and progress with Phase 2

Presentation of key points

Questions and answer session

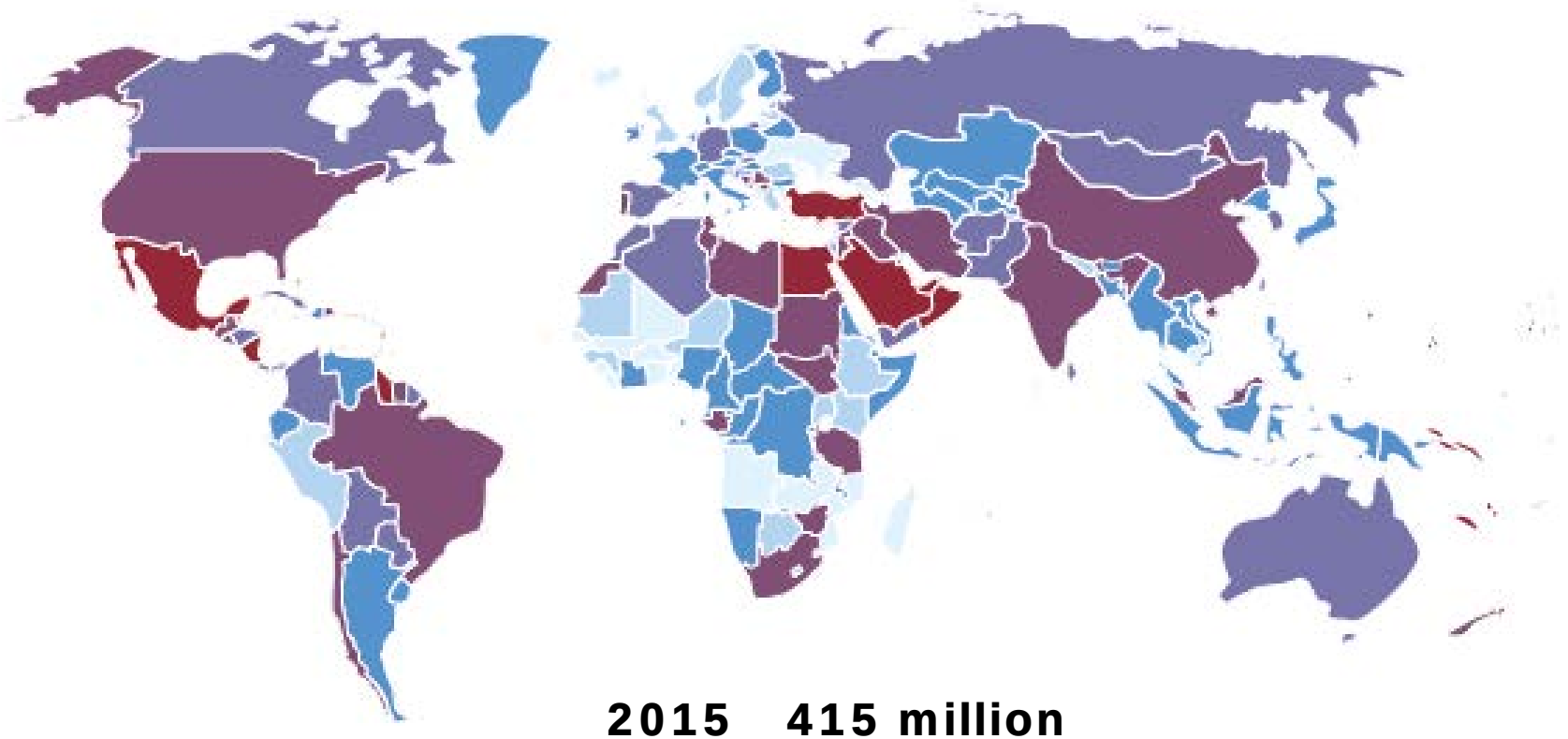
The Question Time Panel

Dr Soren Brage

Dr Nita Forouhi

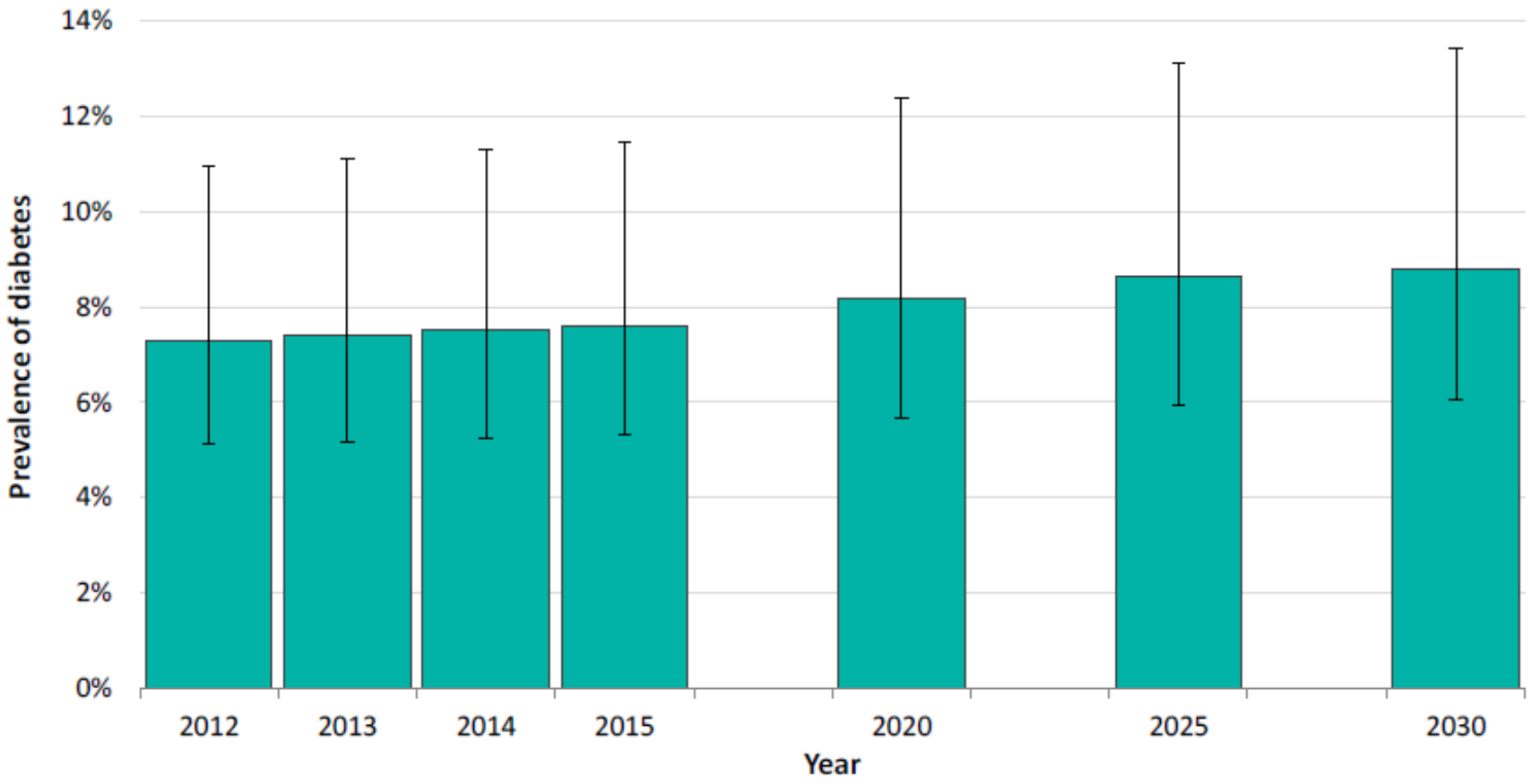
Dr Thomas Burgoine

Prevalence of diabetes in adults (20-79 years)



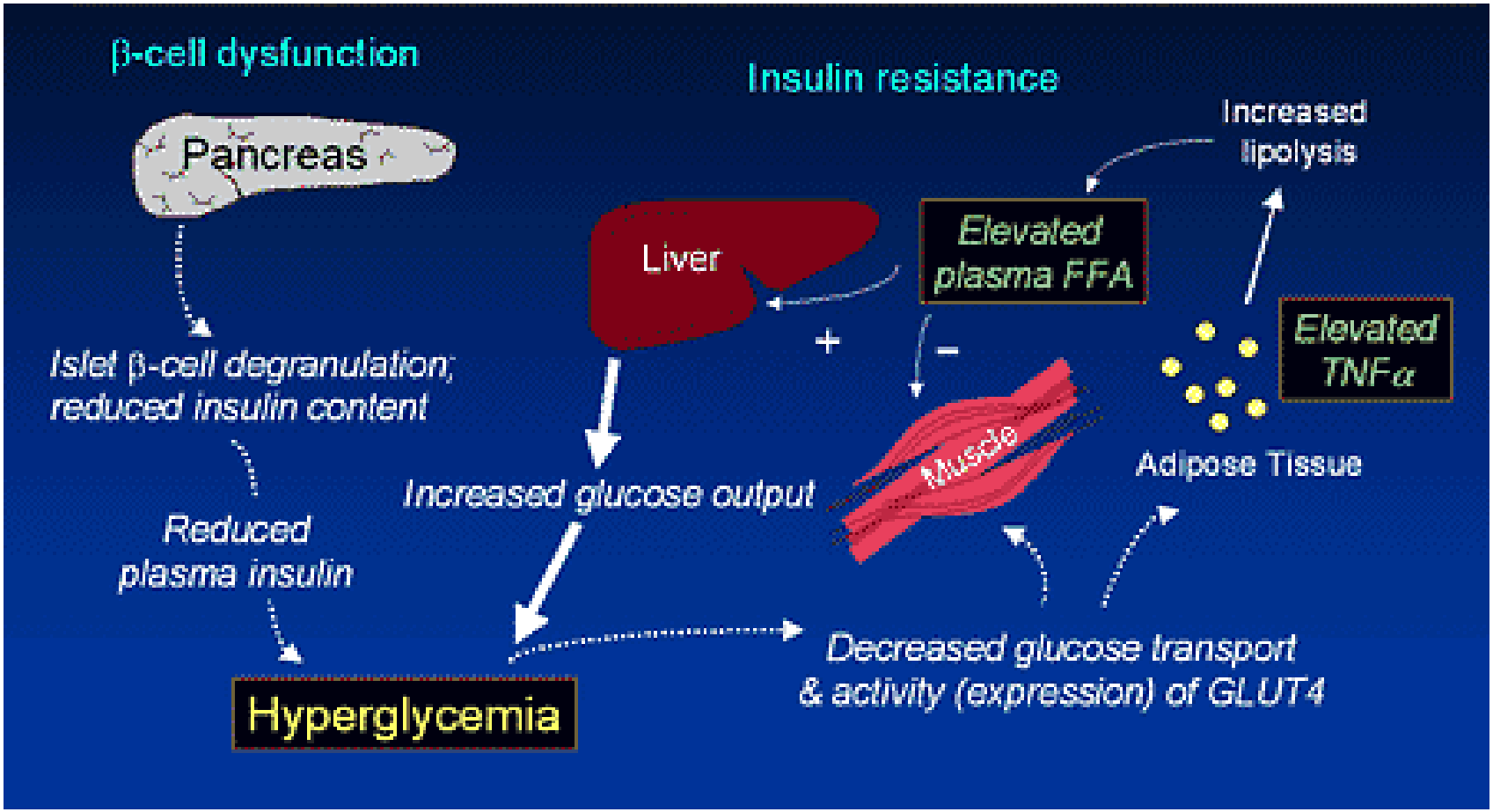
Source: IDF Diabetes Atlas

Trends in diagnosed adult diabetes prevalence in England

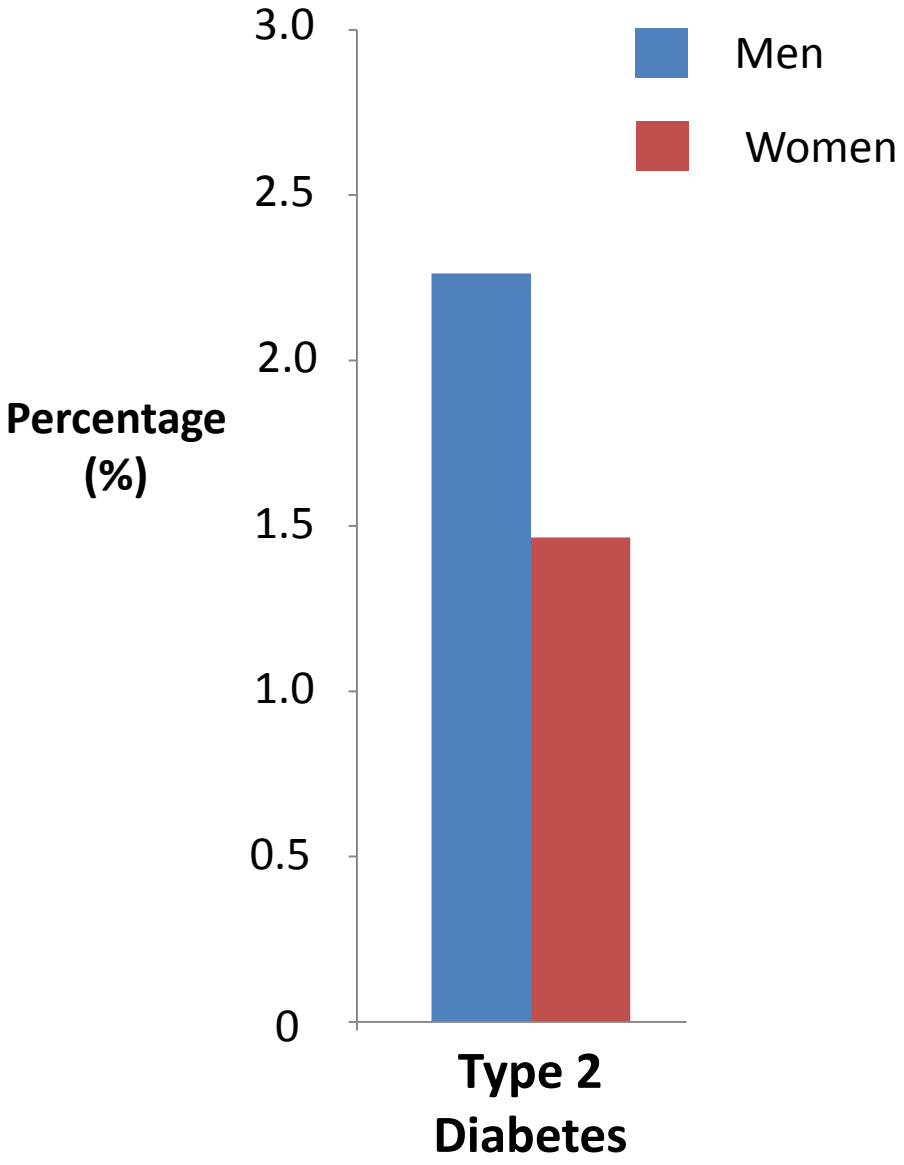


Source: Public Health England

Type 2 diabetes results from defects in insulin resistance and secretion



Prevalence of Undiagnosed Type 2 Diabetes



12,435 participants studied between 2005 and 2015

Three sites – Ely, Wisbech and Cambridge

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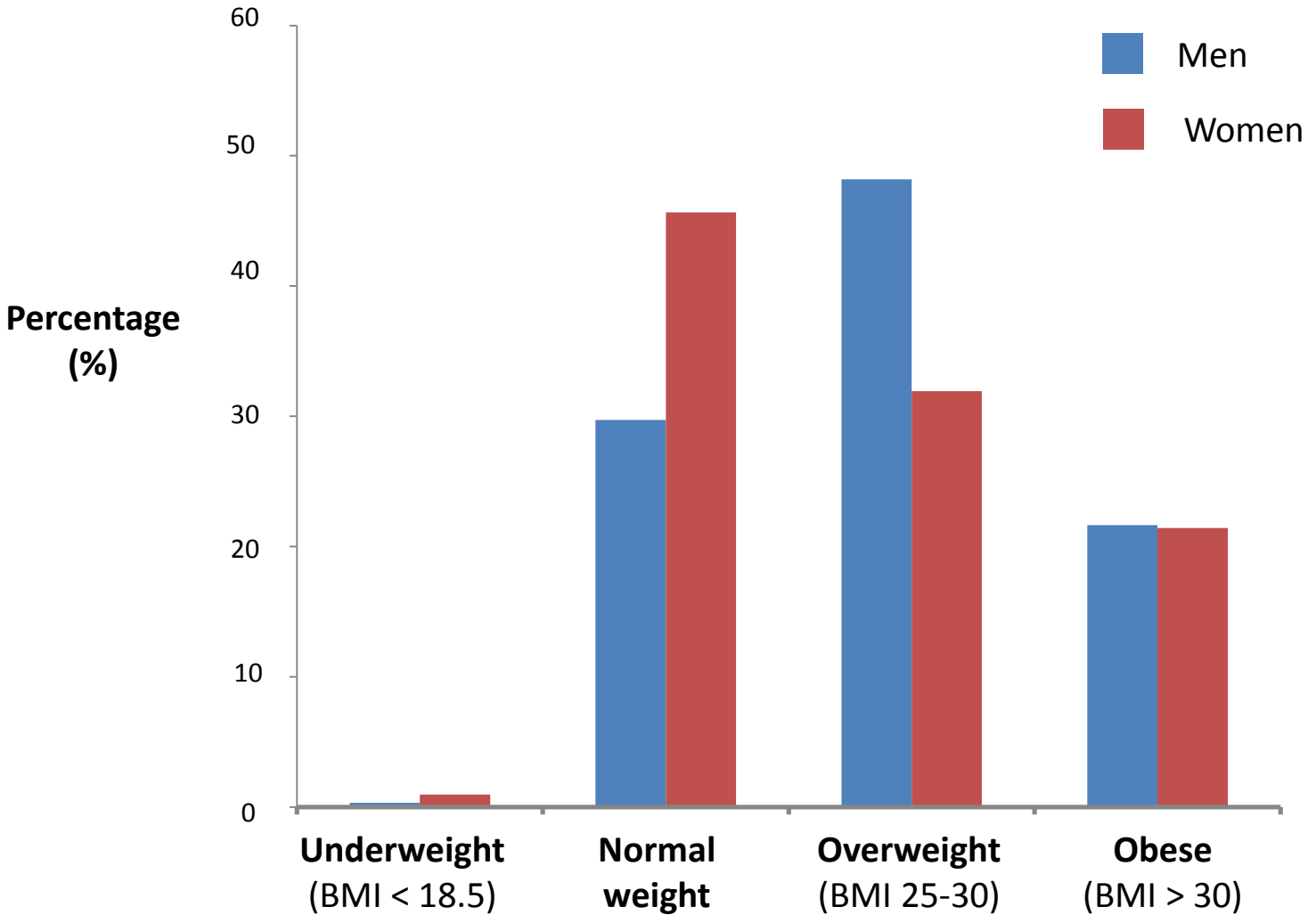
Prevalence of Overweight and Obesity



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Trend in obesity prevalence among adults

Health Survey for England 1993-2013 (3-year average)

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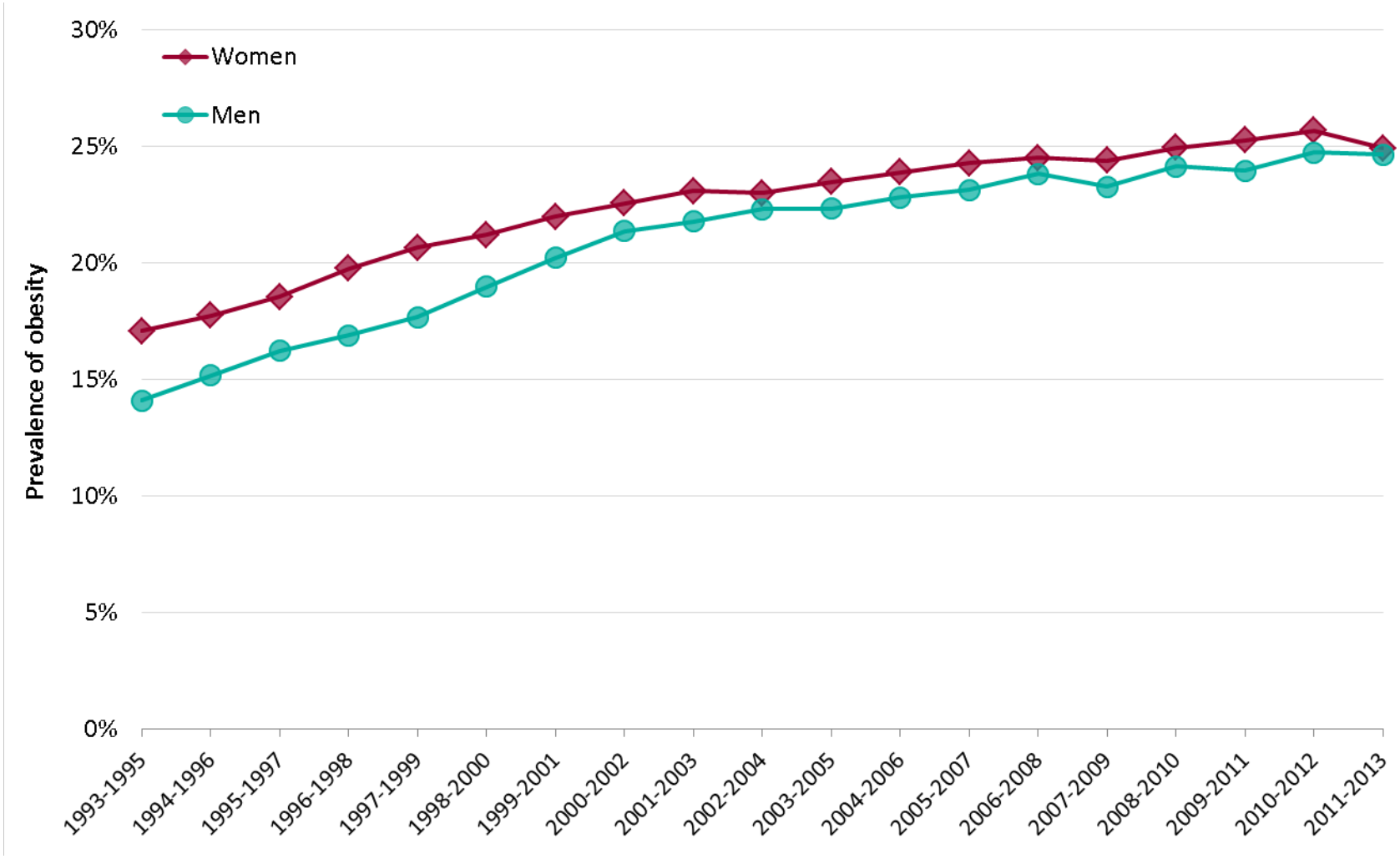
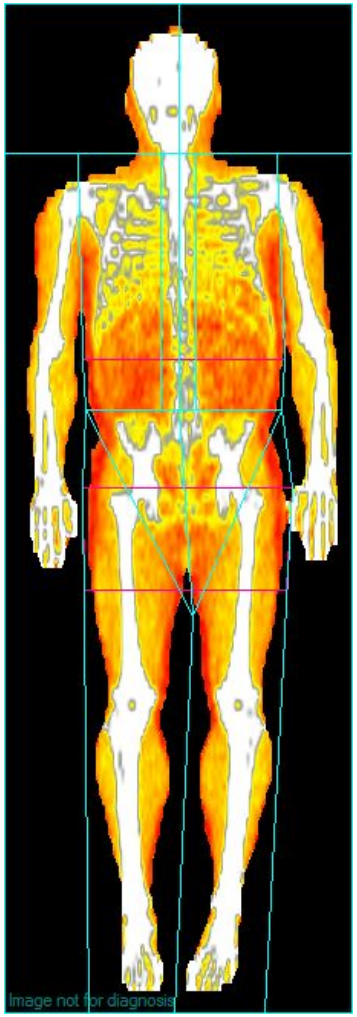
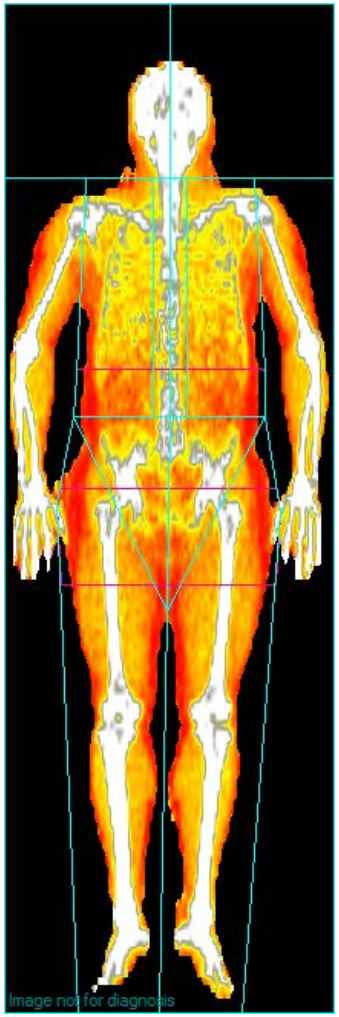


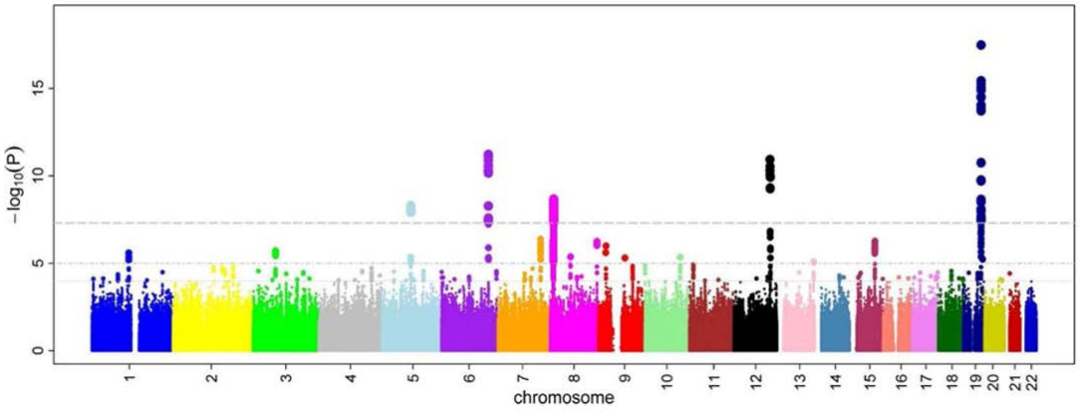
Adult (aged 16+) obesity: BMI ≥ 30kg/m^2

Measuring differences in where people store fat

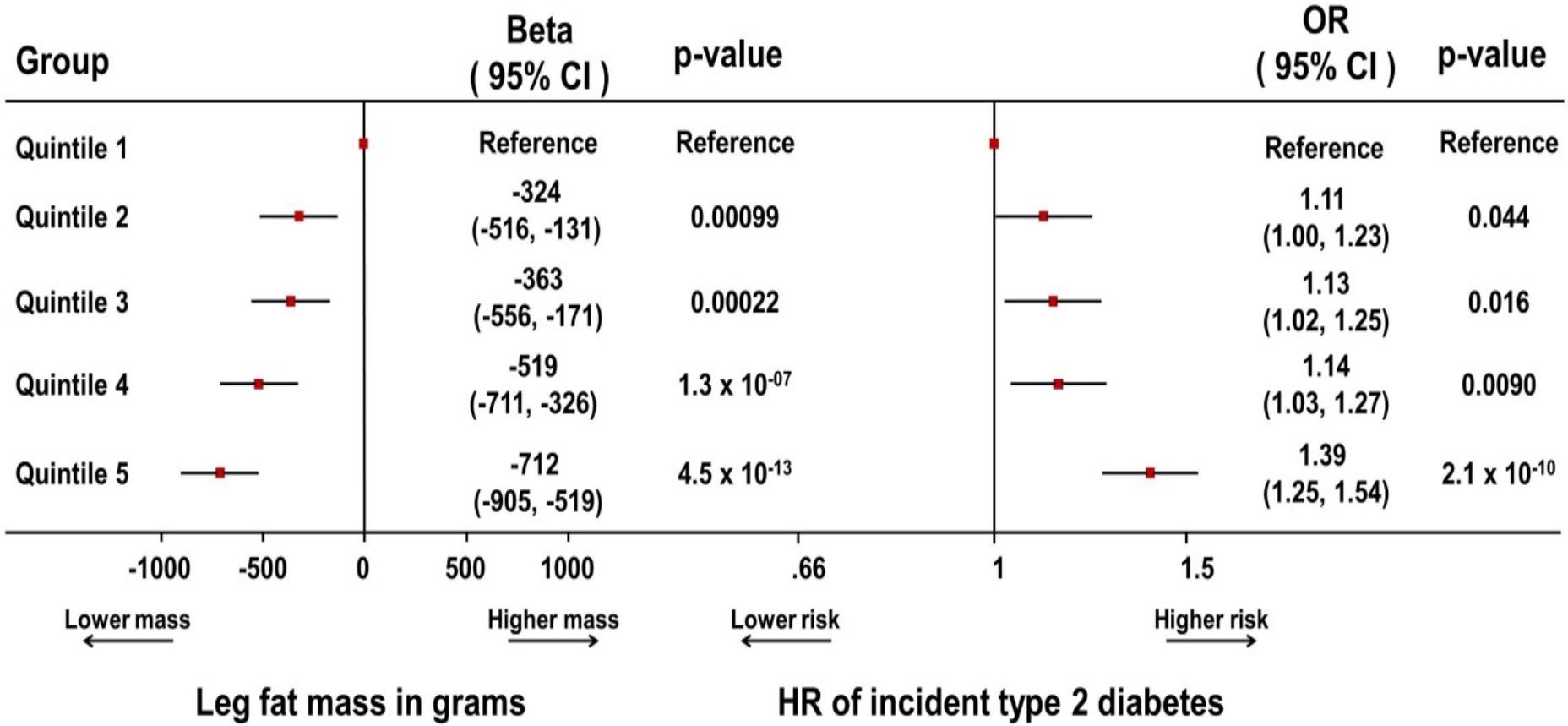




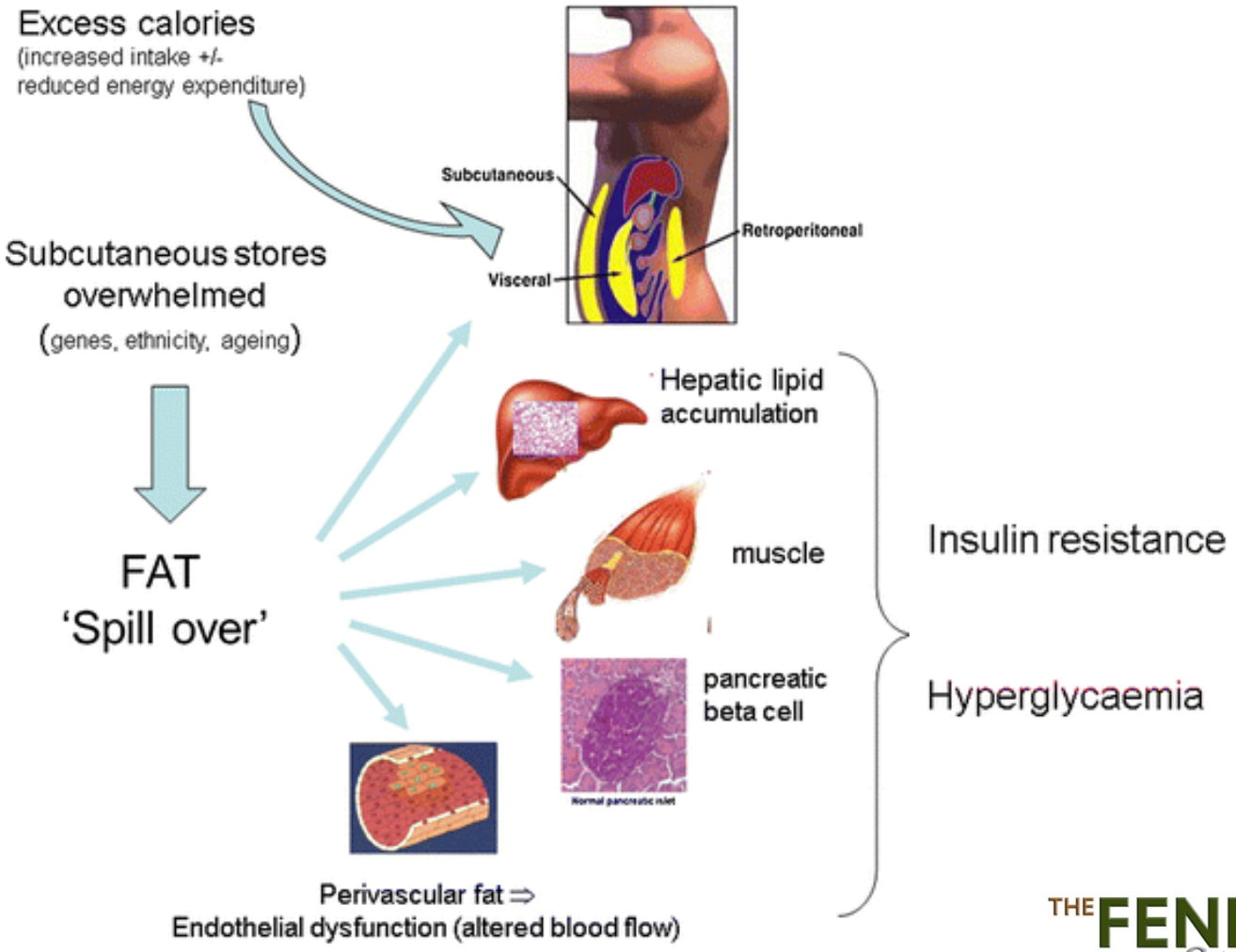
Advances in technology have enabled discovery of genetic susceptibility to diabetes



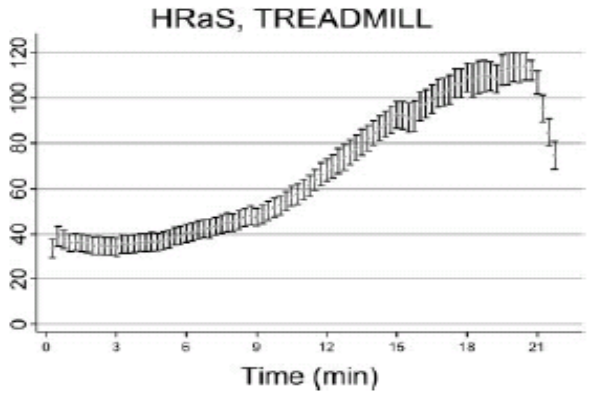
Genetically driven insulin resistance, capacity to store fat and diabetes risk

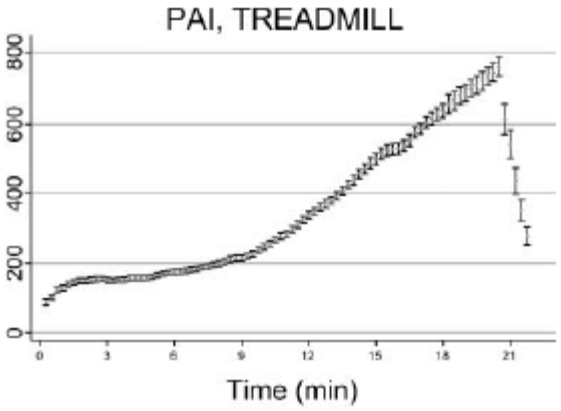


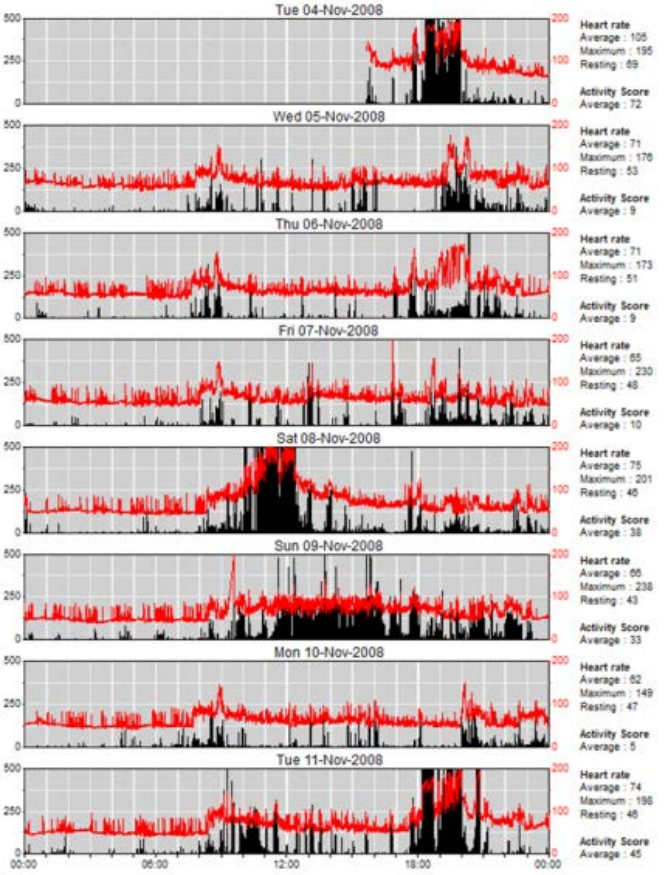
The fat “overspill” hypothesis that links obesity with insulin resistance



Physical activity and fitness assessment







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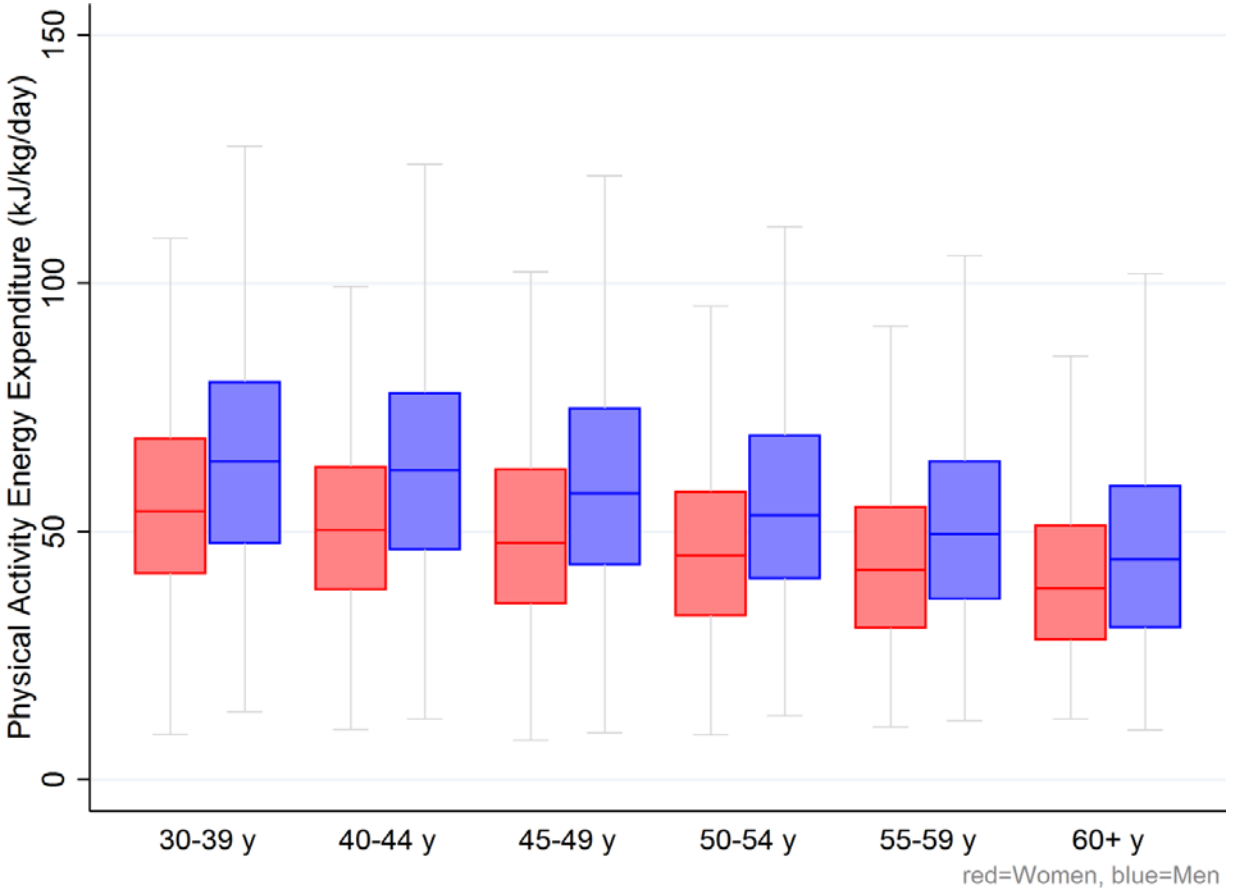
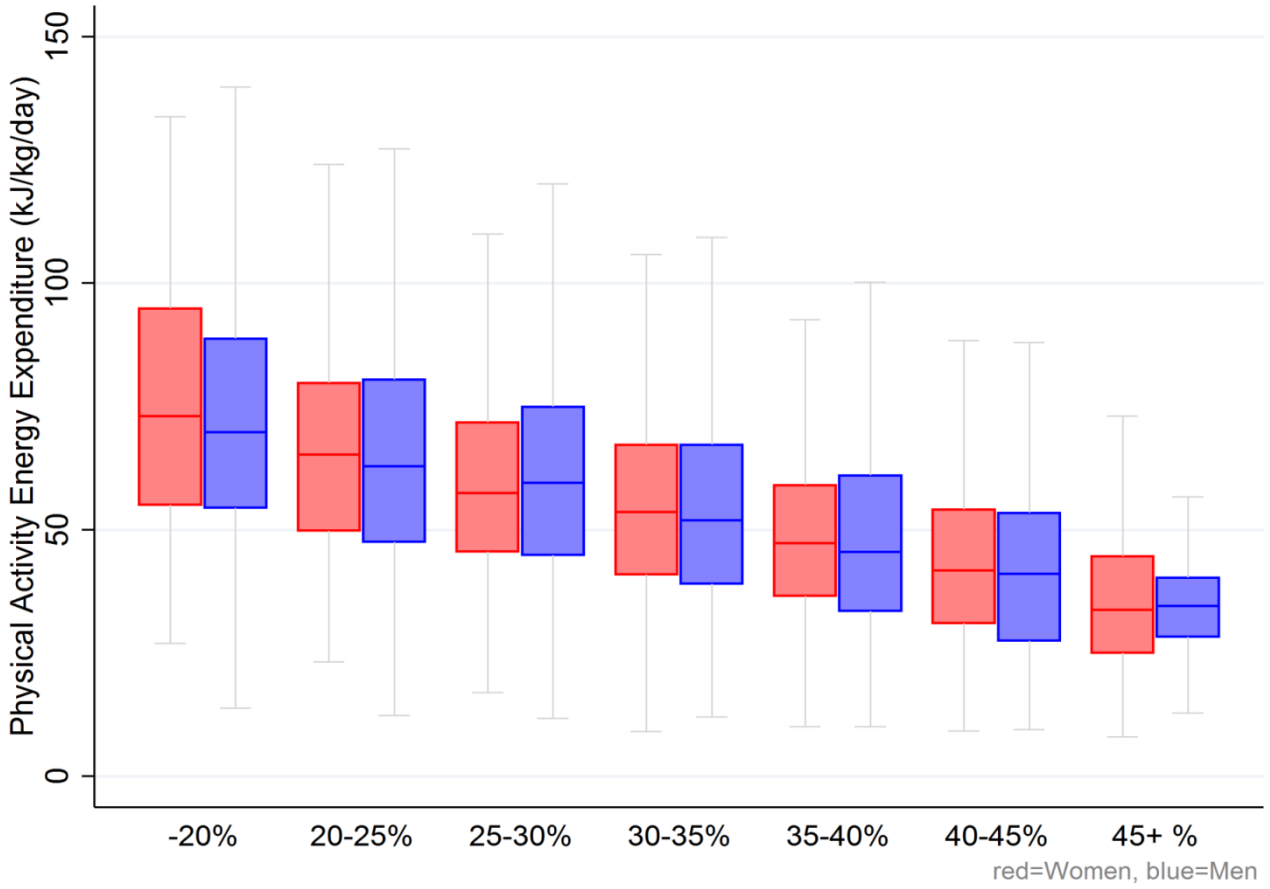
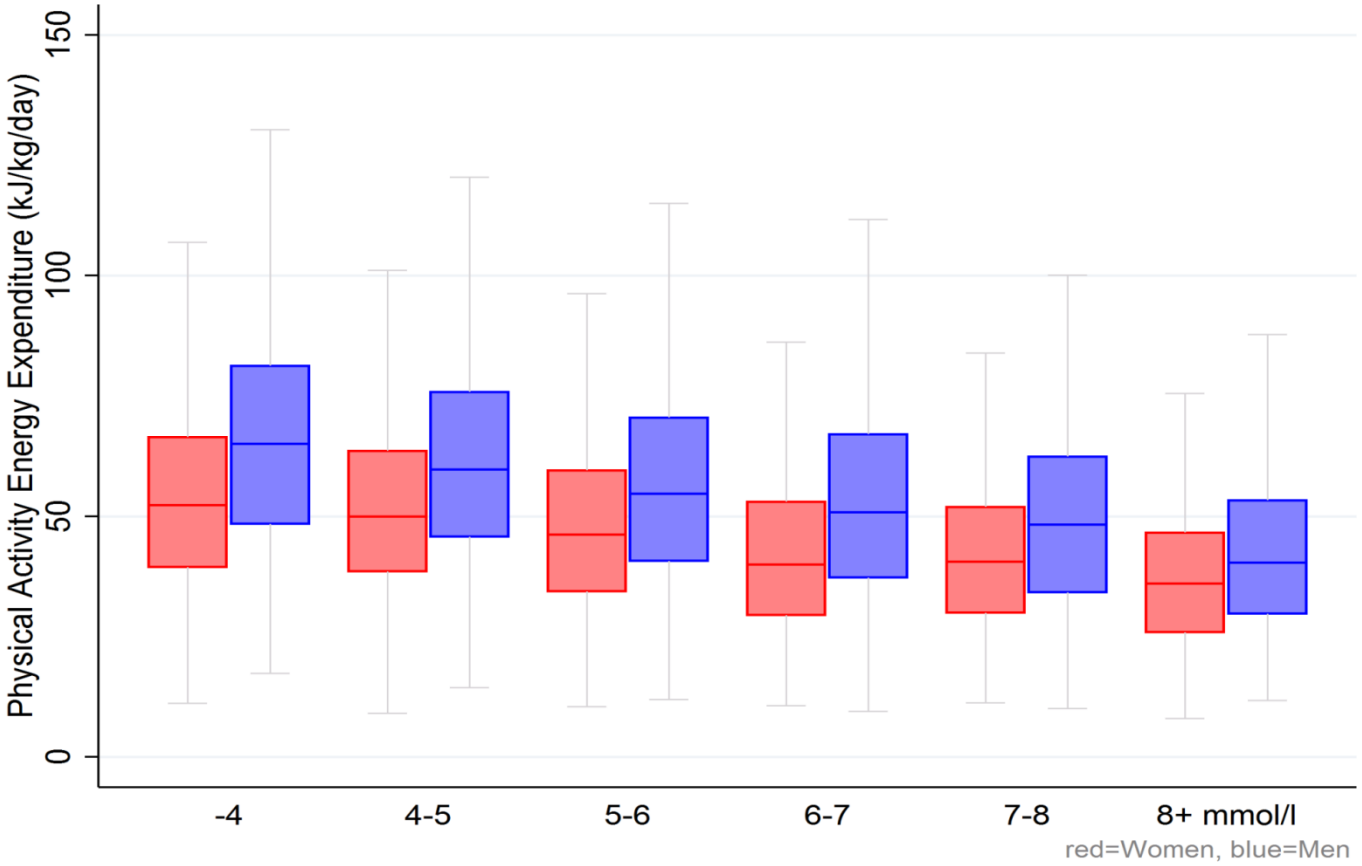
Physical activity by age and sex



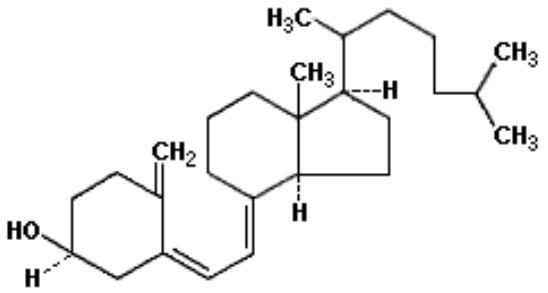
Physical activity by body fatness



Physical activity by 2-hr glucose

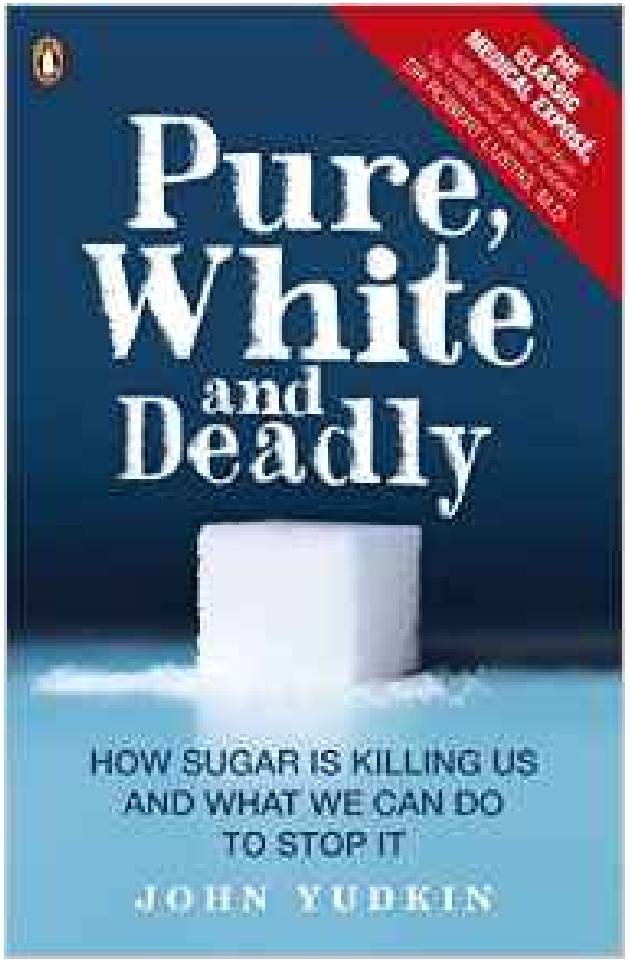


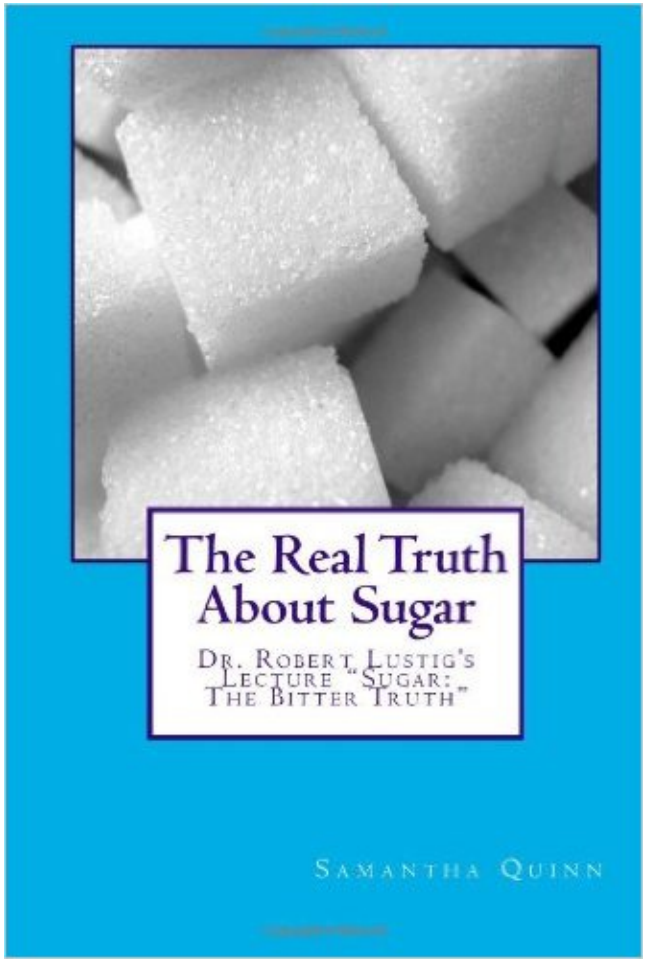
Assessment of diet and nutrient intake



FOODS AND AMOUNTS	AVERAGE USE LAST YEAR								
DRINKS	Never or less than once/month	1-3 per month	Once a week	2 - 4 per week	5-6 per week	Once a day	2-3 per day	4-5 per day	6+ per day
Low calorie or diet fizzy soft drinks (glass)									
Fizzy soft drinks, eg. Coca cola, lemonade (glass)									

Controversies: Sugar and type 2 diabetes





Major food sources of free and non-free sugar

Free sugars

44%

25%

13%

10%

Non-free sugars

50%

28%

11%

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Major food sources of sugar from liquids and solids

Sugars from liquids

33%

33%

20%

13%

Sugars from solids

29%

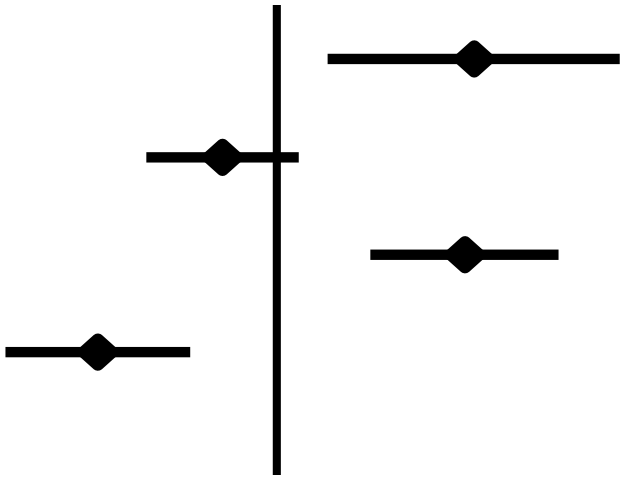
29%

21%

15%

Sugar intake and insulin resistance

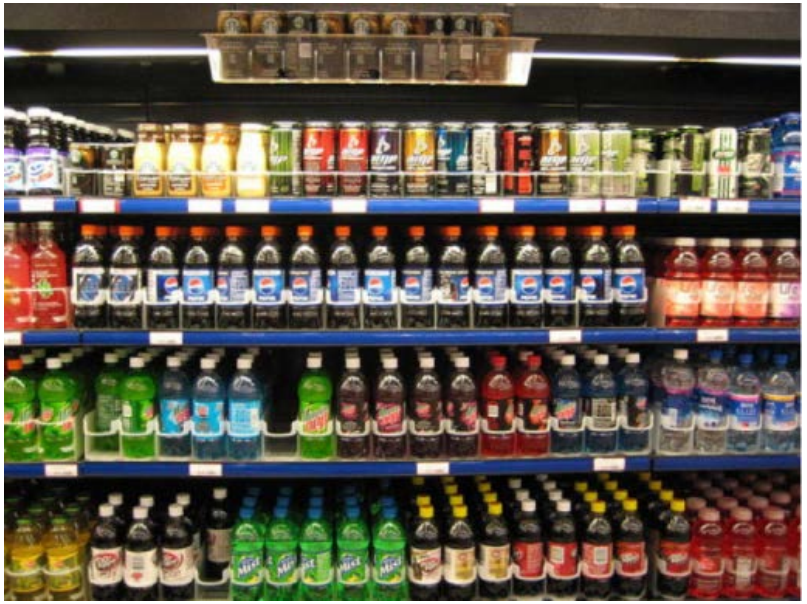
Sugars from liquids
Sugars from solids
Free sugars
Non-free sugars



Association between sugary drinks and future diabetes

Consumption of sweet beverages and type 2 diabetes incidence in European adults: results from EPIC-InterAct

The InterAct consortium



Impact of research findings

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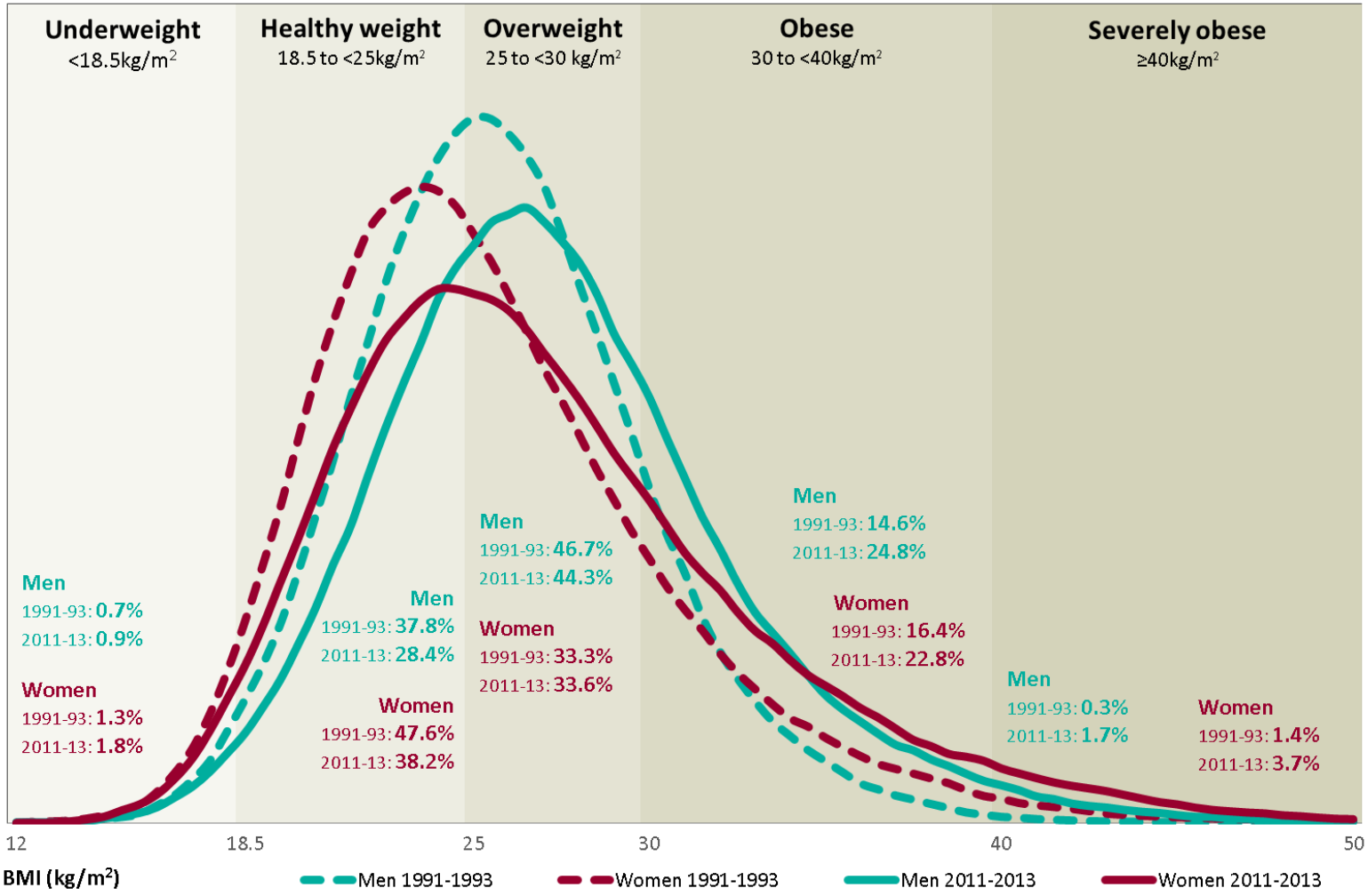
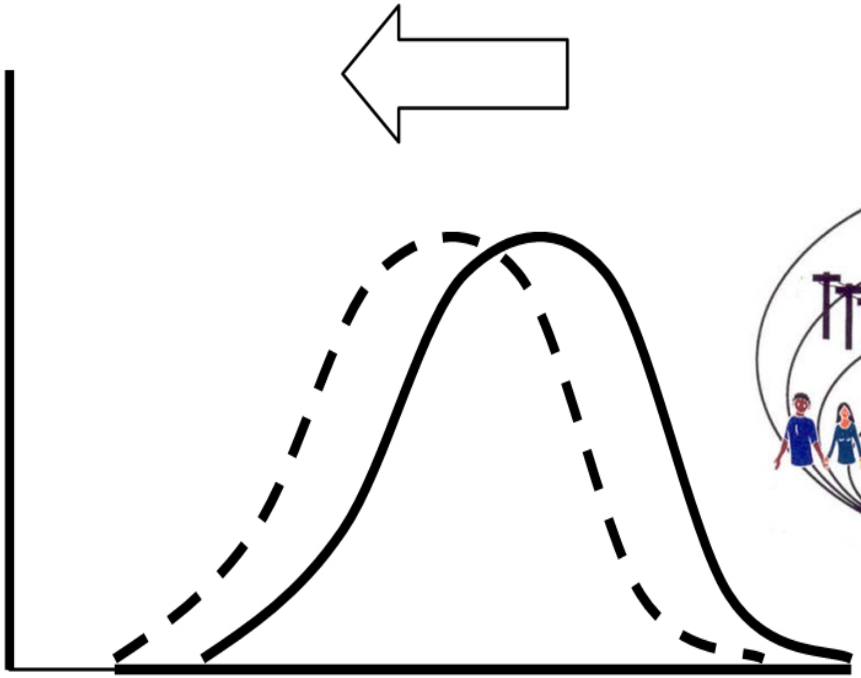
Change in the adult BMI distribution

Health Survey for England 1991-1993 and 2011-2013



Adults aged 18+ years (population weighted)



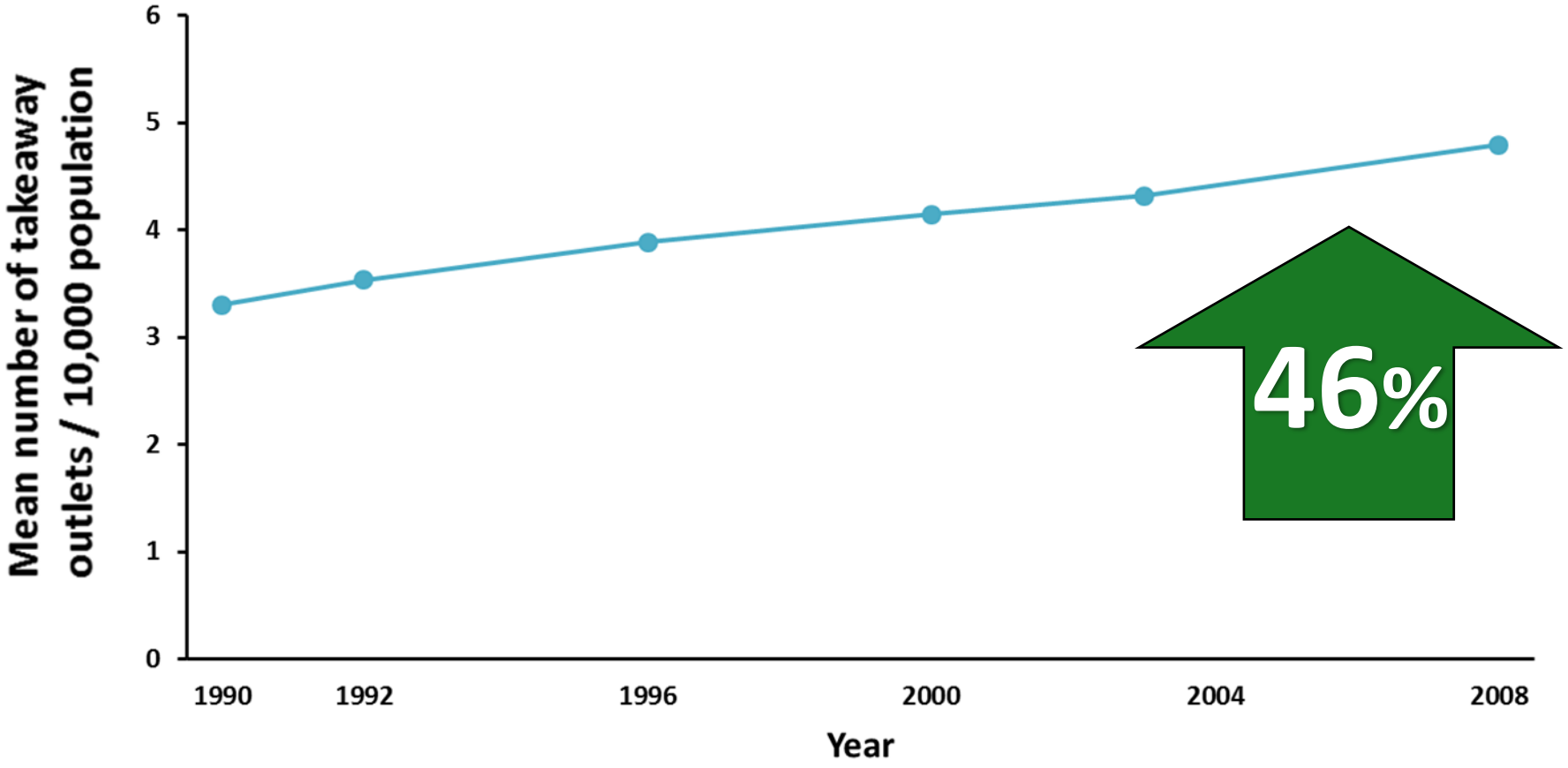
- transport policy
- foot/cycle paths

- school characteristics
- workplace layout

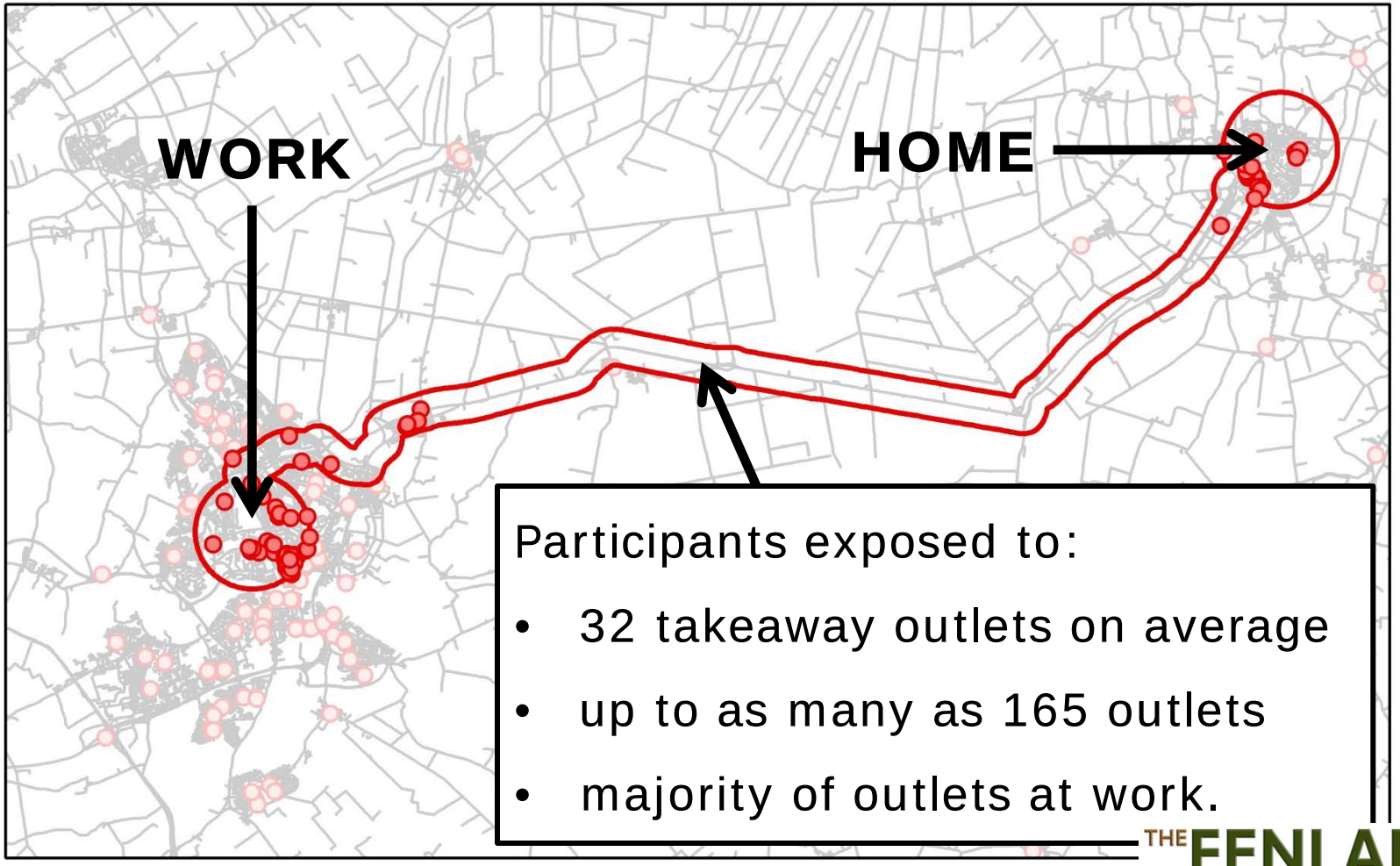
- family activity levels

- attitudes
- preference

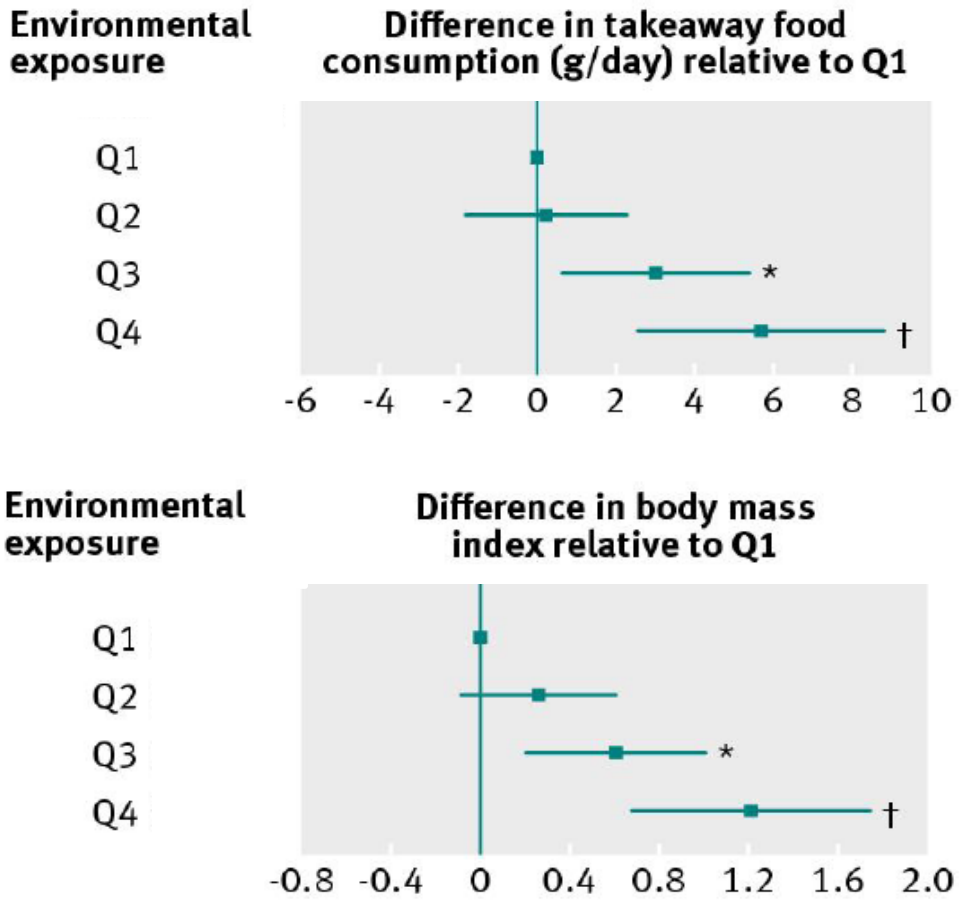
Takeaway food outlet proliferation



Non-home takeaway food exposure



Evidence for environmental effects on obesity



Phase 2 of the Fenland Study

Re-invitation to screening in Phase 2 for all participants from Phase 1

Focus on studying change in metabolic risk factors and their determinants over time

To date 2,178 people have participated in Phase 2

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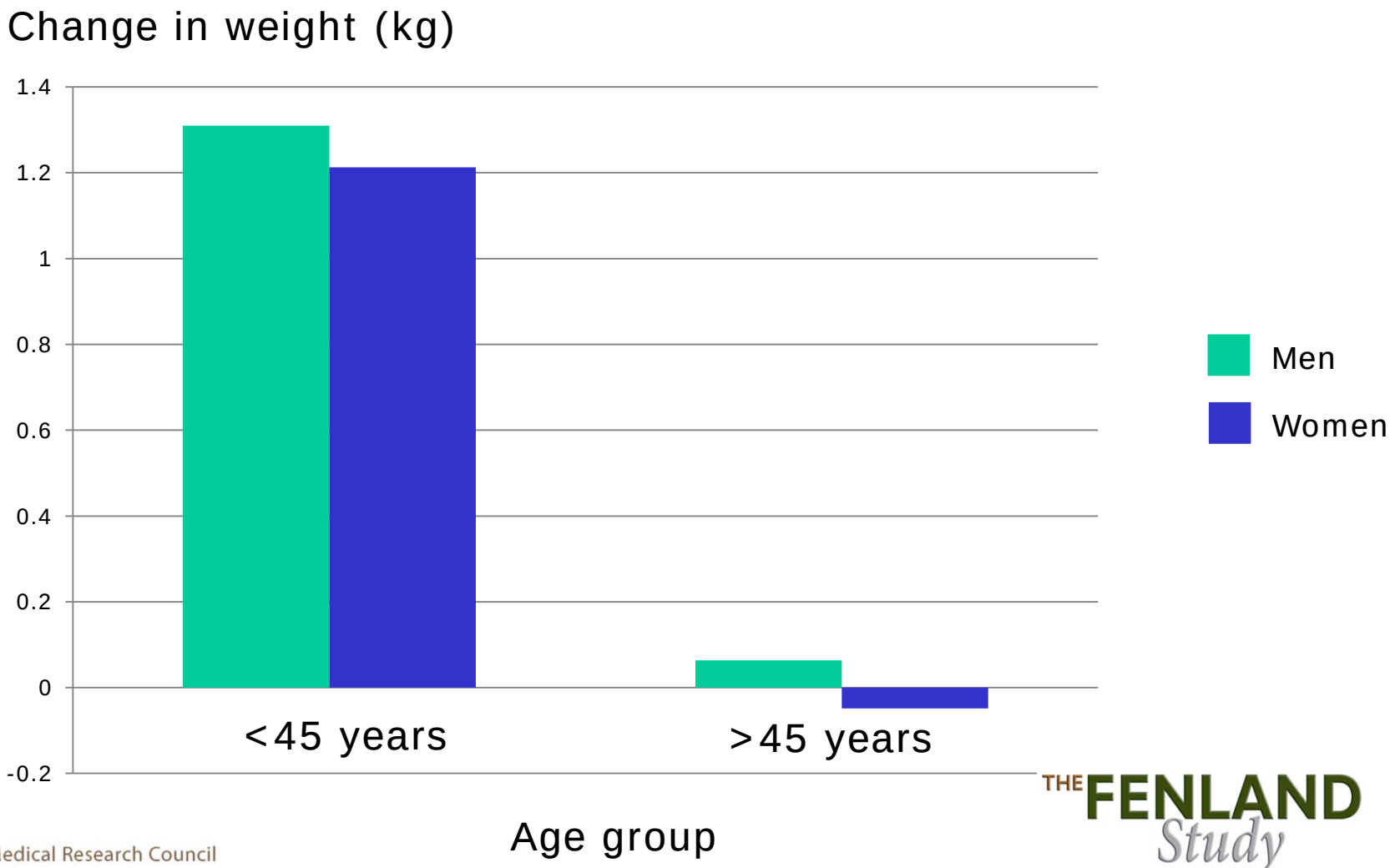
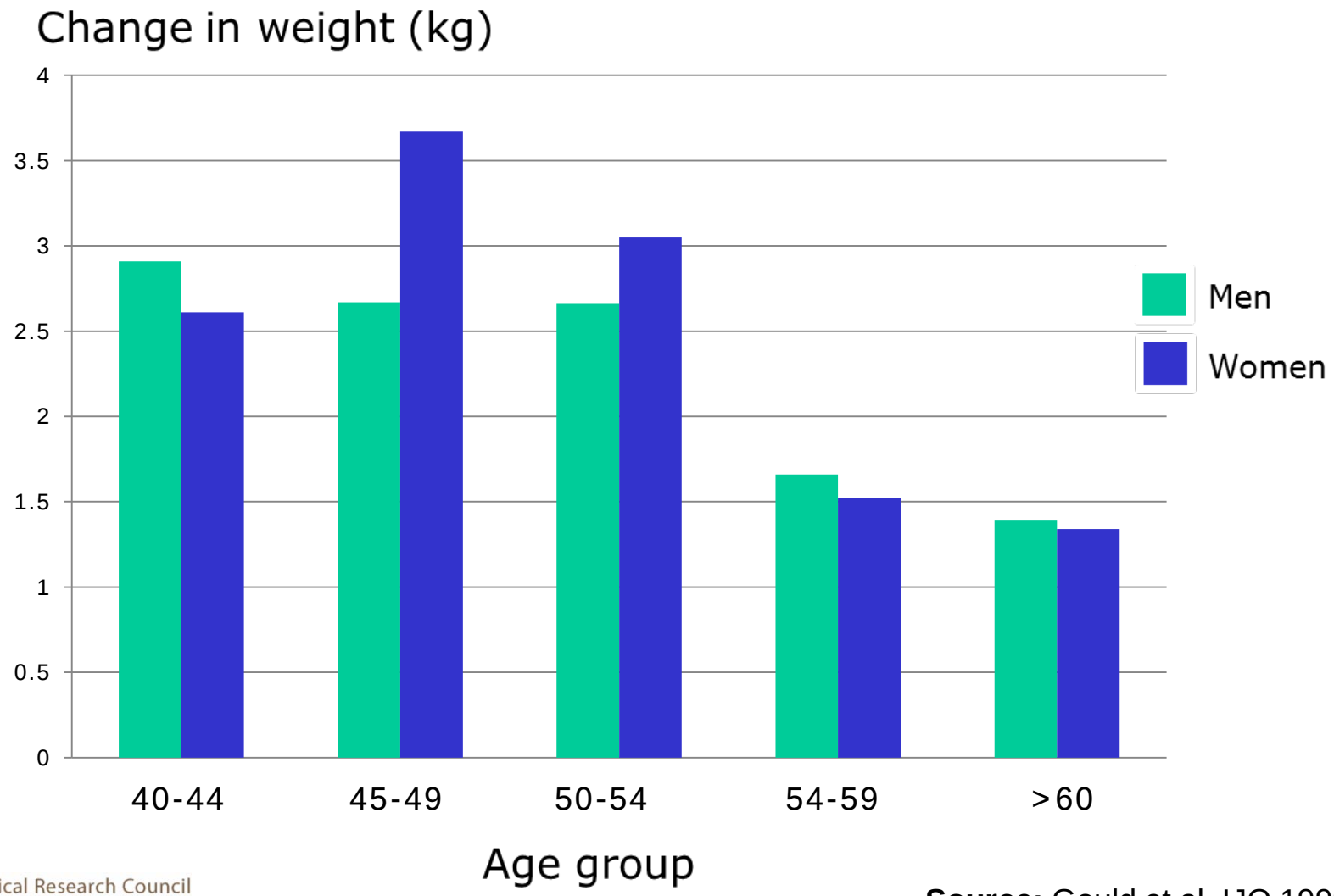
Change in weight between baseline and follow up by age and sex



Change in weight between baseline and follow up by age and sex: the Ely Study 1990-96



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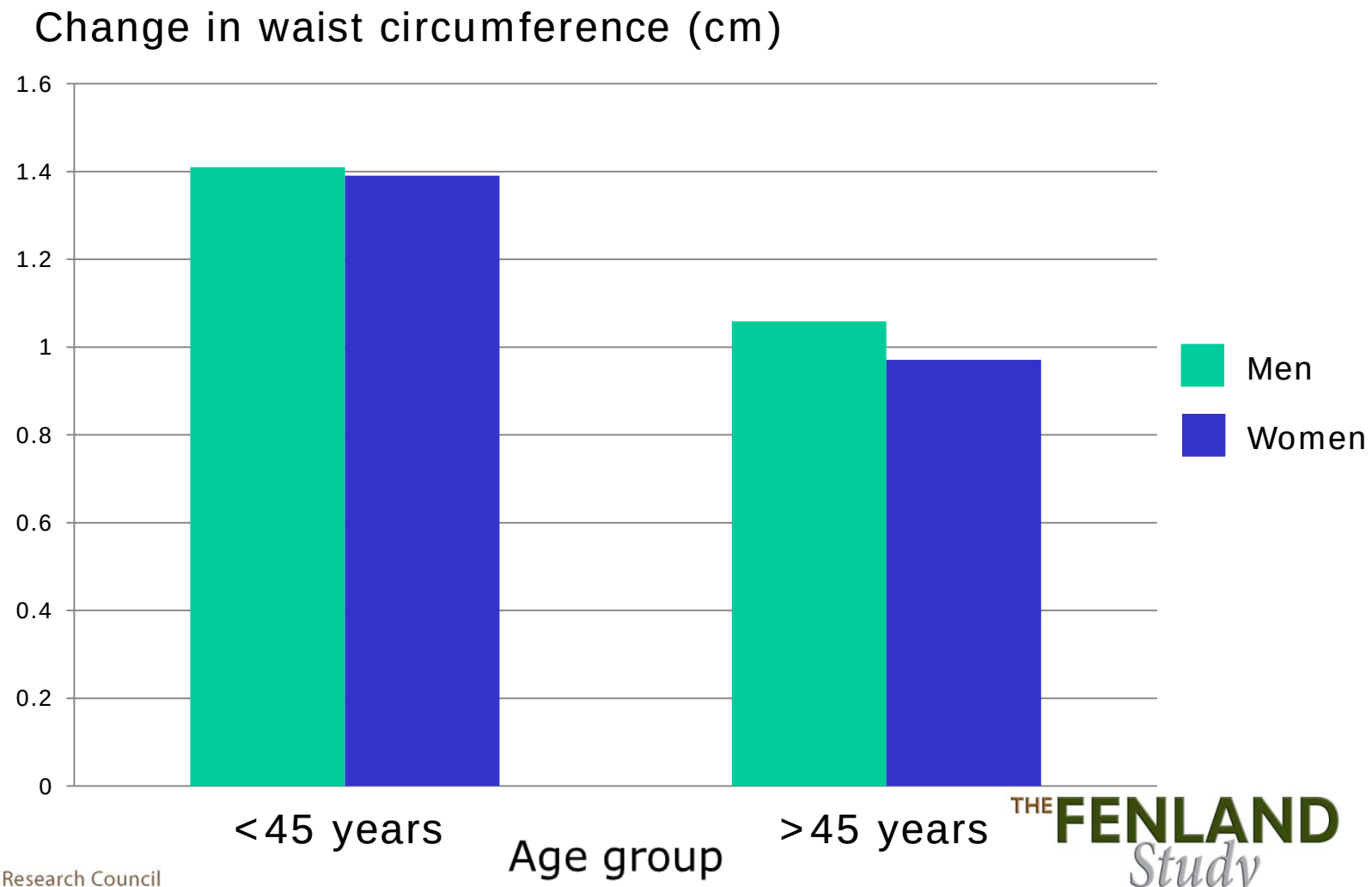
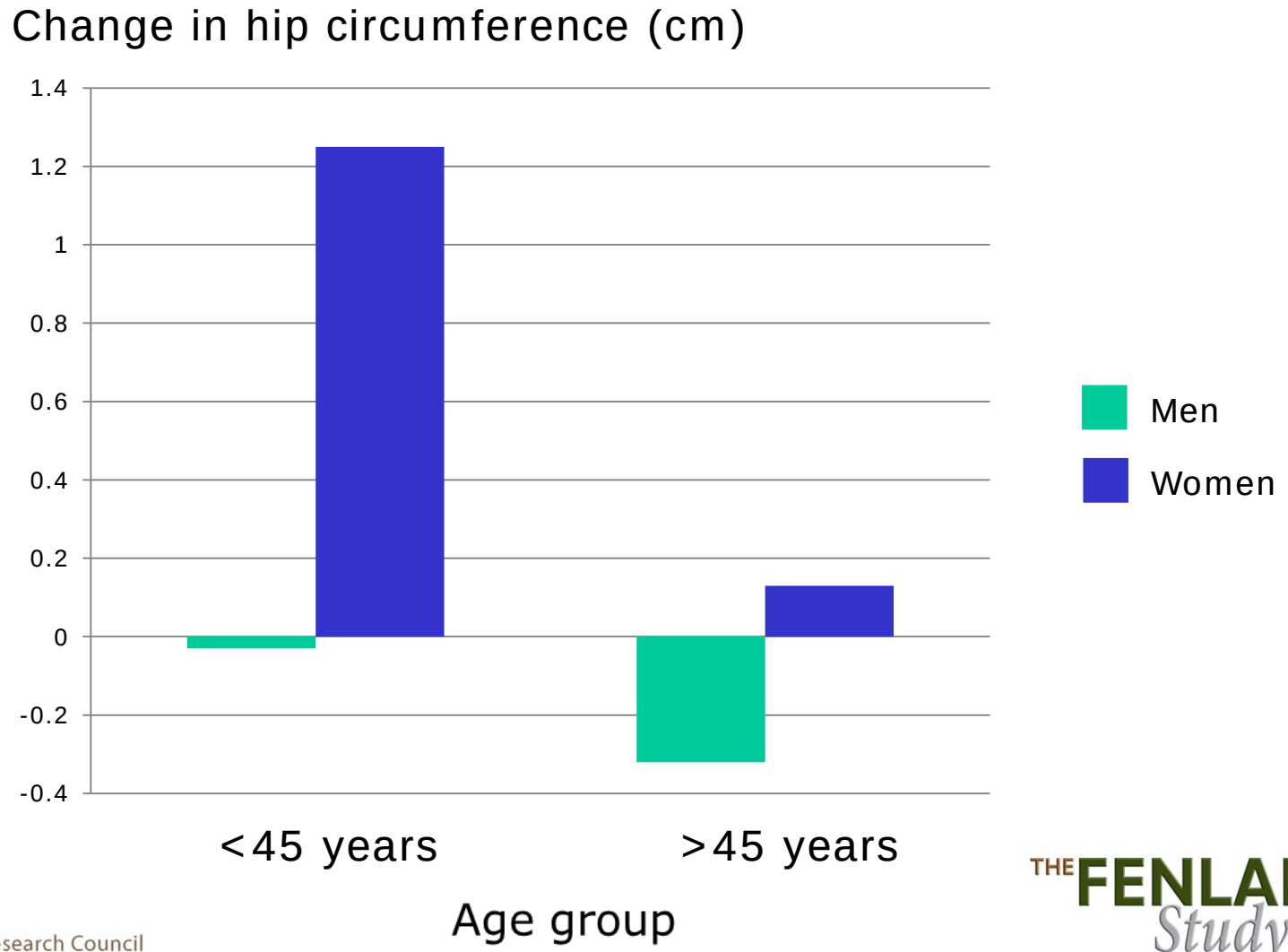
Source: Gould et al, IJO 1999

Change in waist circumference between baseline and follow up by age and sex



Change in hip circumference between baseline and follow up by age and sex



Thanks

To all the participants who have helped with the Fenland study

QUESTIONS