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Obesity –

Prevalence

Aetiology

Non-surgical treatment

Hørsholm 11 Nov 2008

# The LEAN outcome of health promotion

- We oxidize less than we consume

The prevalence of obesity has 40-doubled in 50 years and T2D by 4 in 20 years

Official recommendations: 50% follow some - BUT CV mortality is reduced by 50% in 30 years

- Smoking has increased
  - The annual cancer related smoking mortality is 12.000 (20% of all)
  - In 1970 2 of 3 male and 1 of 2 female were smokers, today 22% - but the sales has gone up since 2000.
- Alcohol consumption follow the official recommendation
  - 11-12 l of pure alcohol = 2½ unit daily
- Safety in traffic has improved
- and the lifespan is still increasing by 2 months yearly

# OBESITY

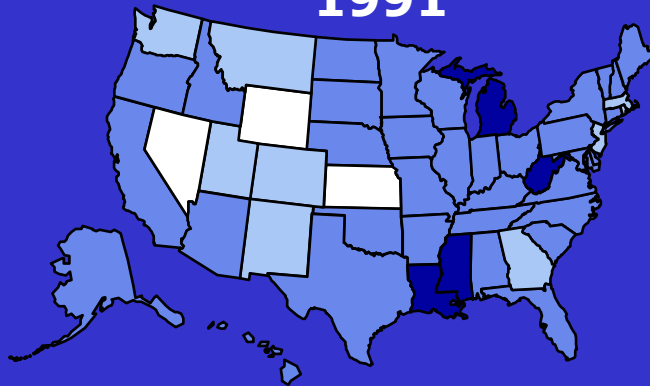
- Prevalence
- Aetiology
- Treatment



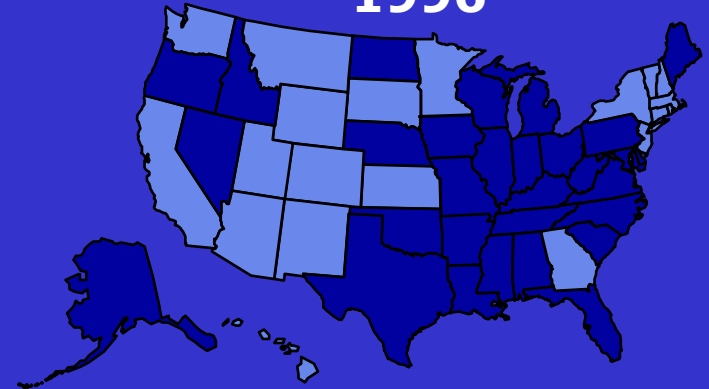
# Obesity Trends\* Among U.S. Adults BRFSS, 1991, 1996, 2004

(\*BMI  $\geq 30$ , or about 30 lbs overweight for 5'4" person)

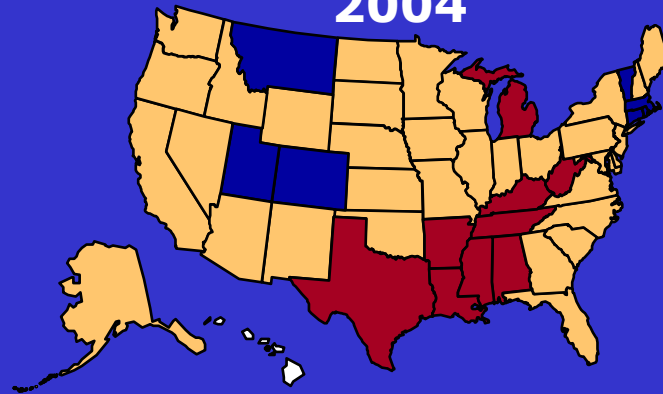
1991



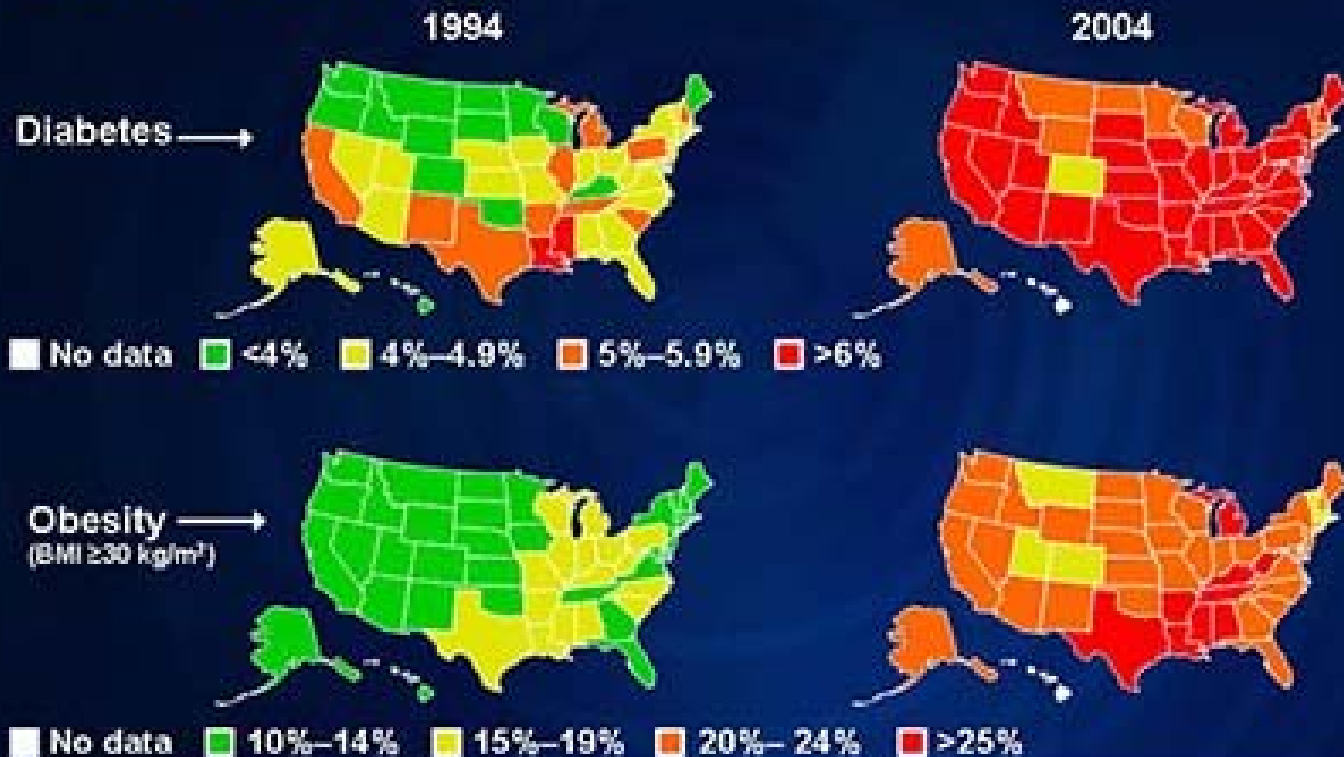
1996



2004



# Parallel Epidemics of Diabetes and Obesity



# Danish numbers – all self informed

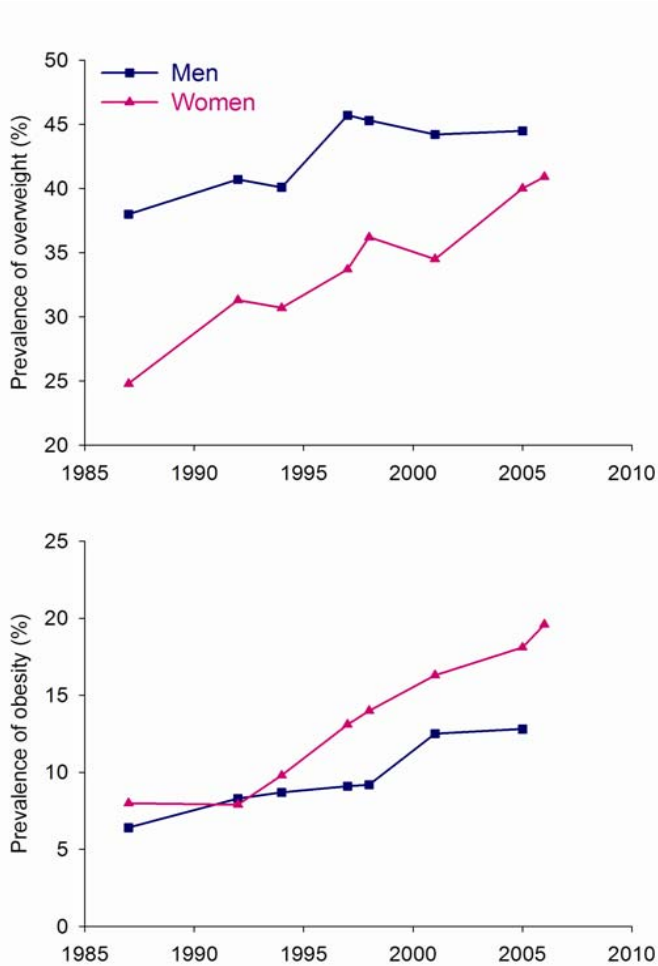


Figure 1. The prevalence of overweight and obesity in men and women in the period 1986-2005/6.

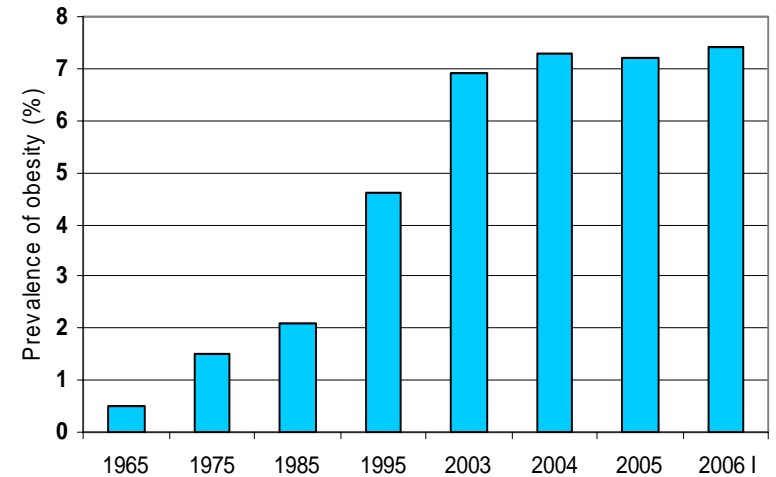
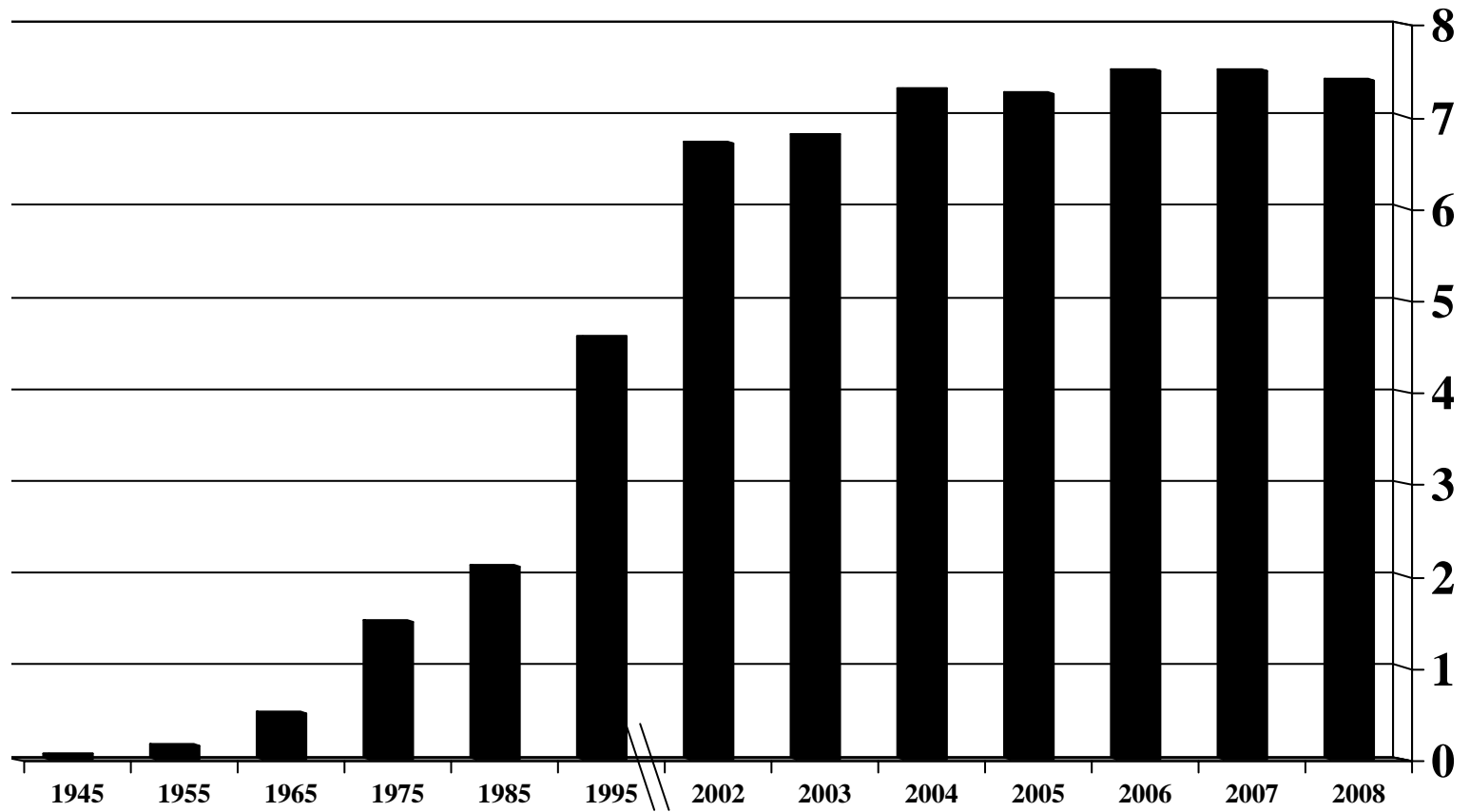


Figure 2. The prevalence of obesity in young Danish men attending draft boards. 2006 I designates the first half of 2006.

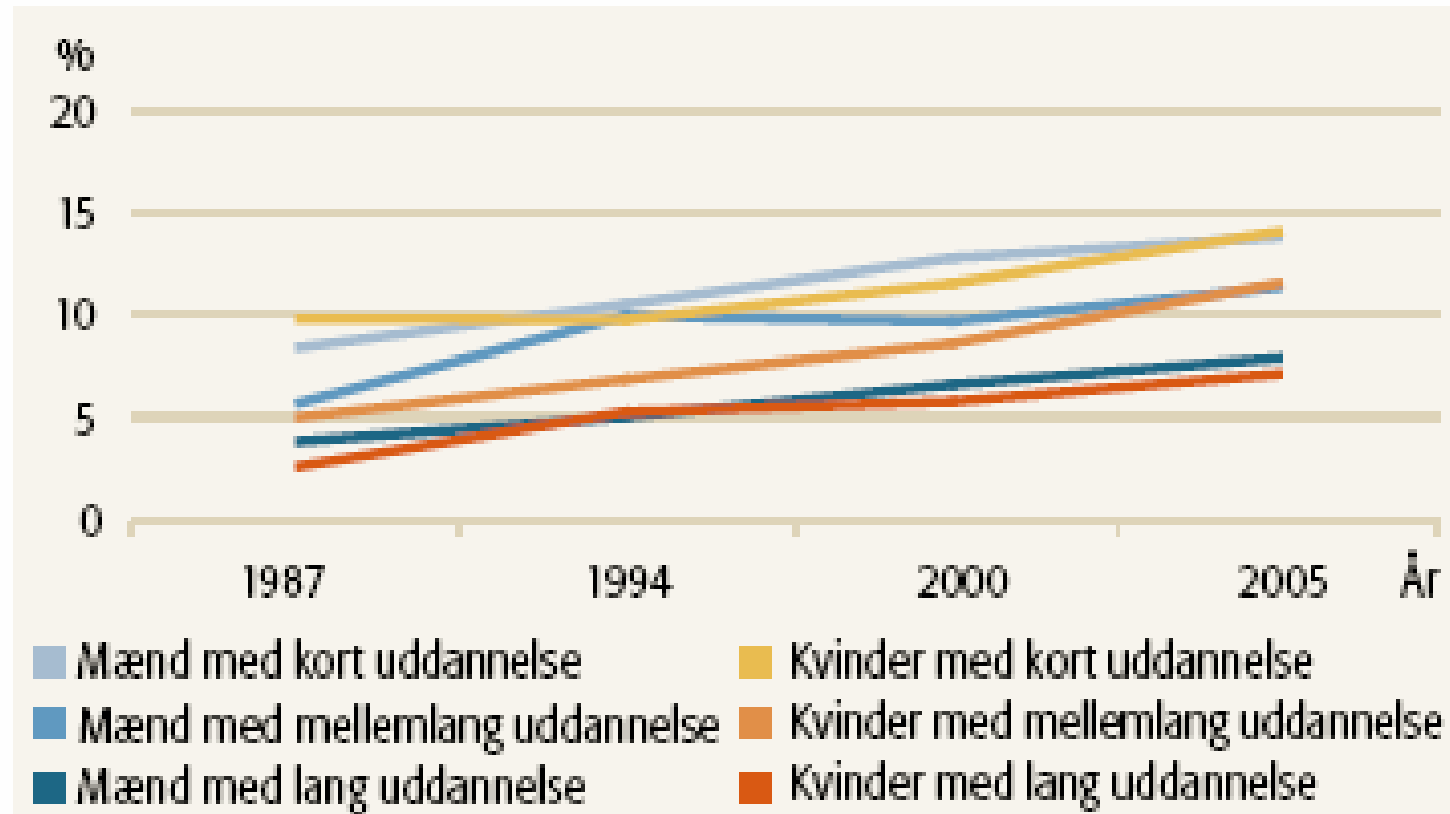
FIGUR 1. Prevalence among young men (%)



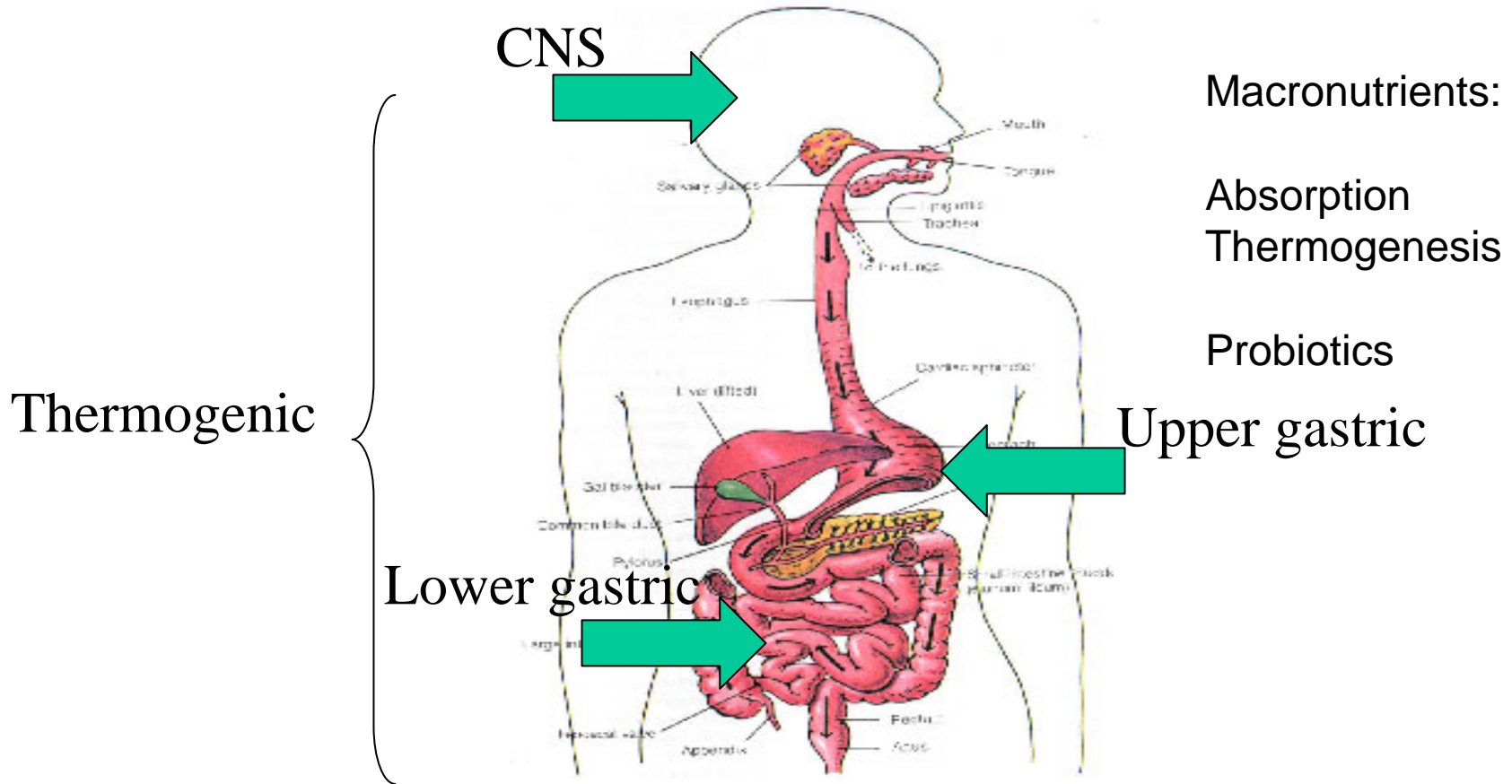
Astrup & Kondrup, Med.Komp. 2008 (in print)

# Hjertestatistik 2008

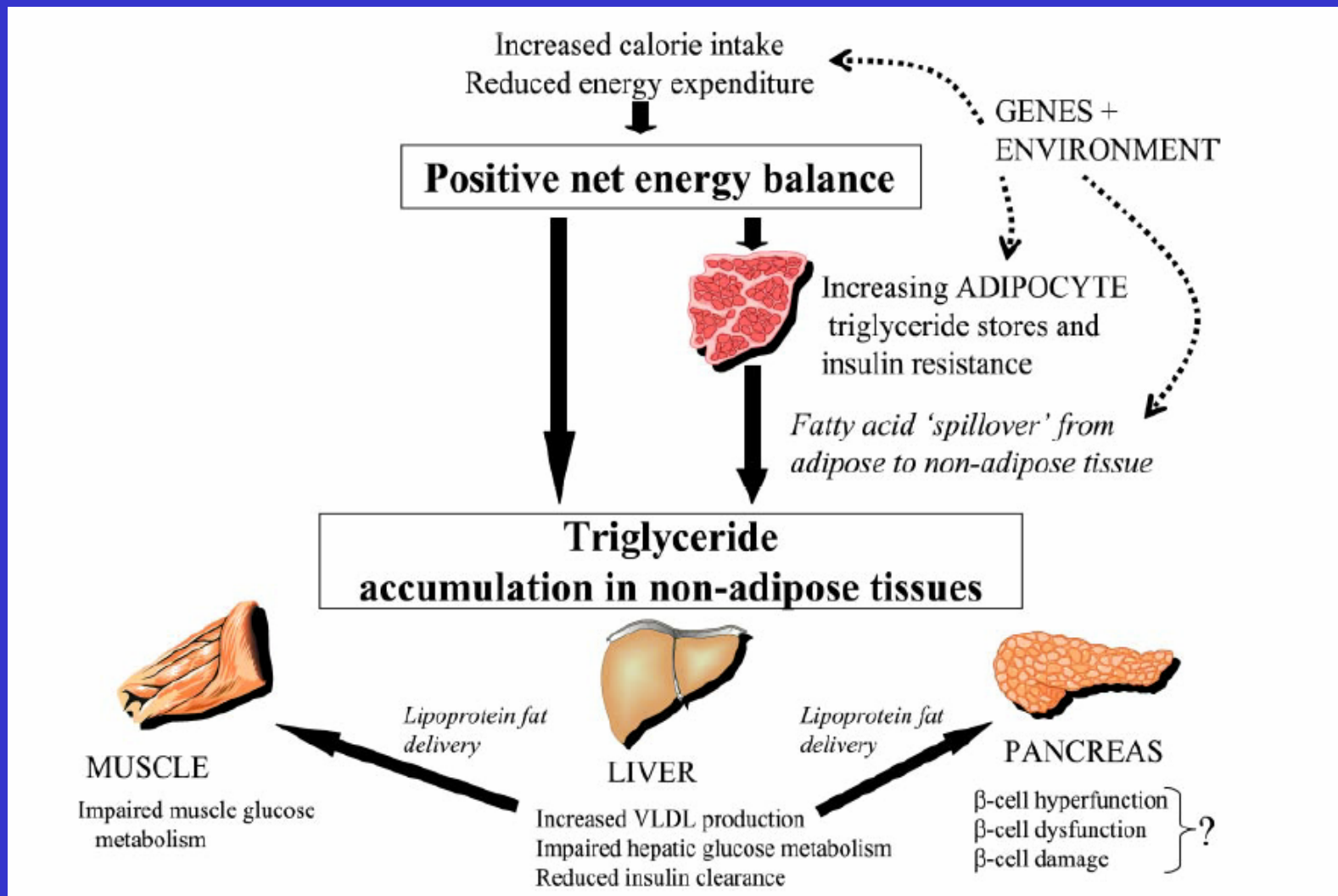
Figur 1.12 Udviklingen i andelen af svært overvægtige fordelt på uddannelse og køn, 1987-2005



# Nutrition physiology

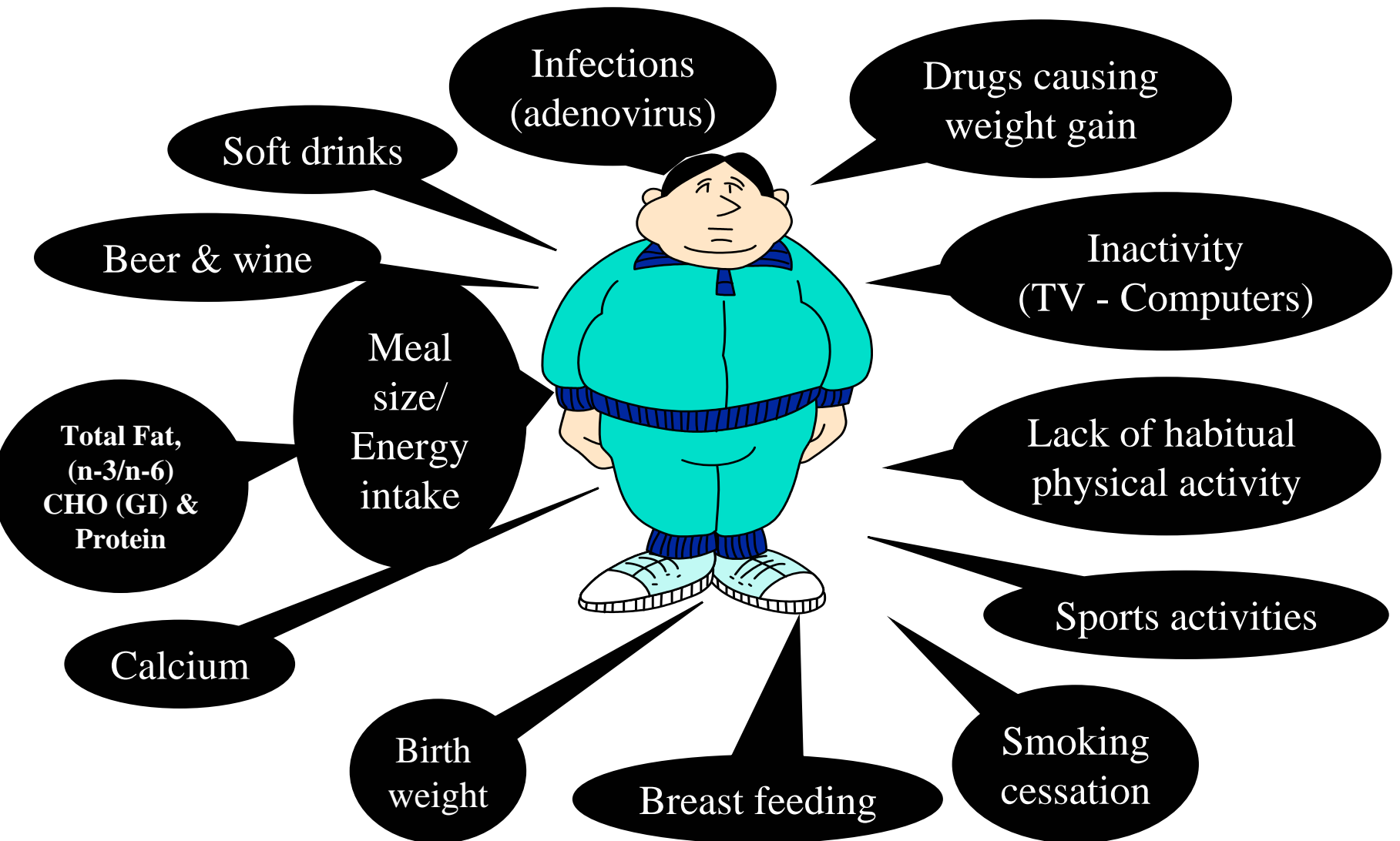


# Adverse effects of Ectopic fat deposition



Lewis GF et al. Disordered fat storage and mobilization in the pathogenesis of insulin resistance and type 2 diabetes. *Endocr Rev.* 2002 Apr;23(2):201-29.

# Environmental factors causing weight gain and obesity



# Poor sleepers tend to be overweight

NATURE | Vol 443 | 21 September 2006

NEWS FEATURE



## SLEEP IT OFF

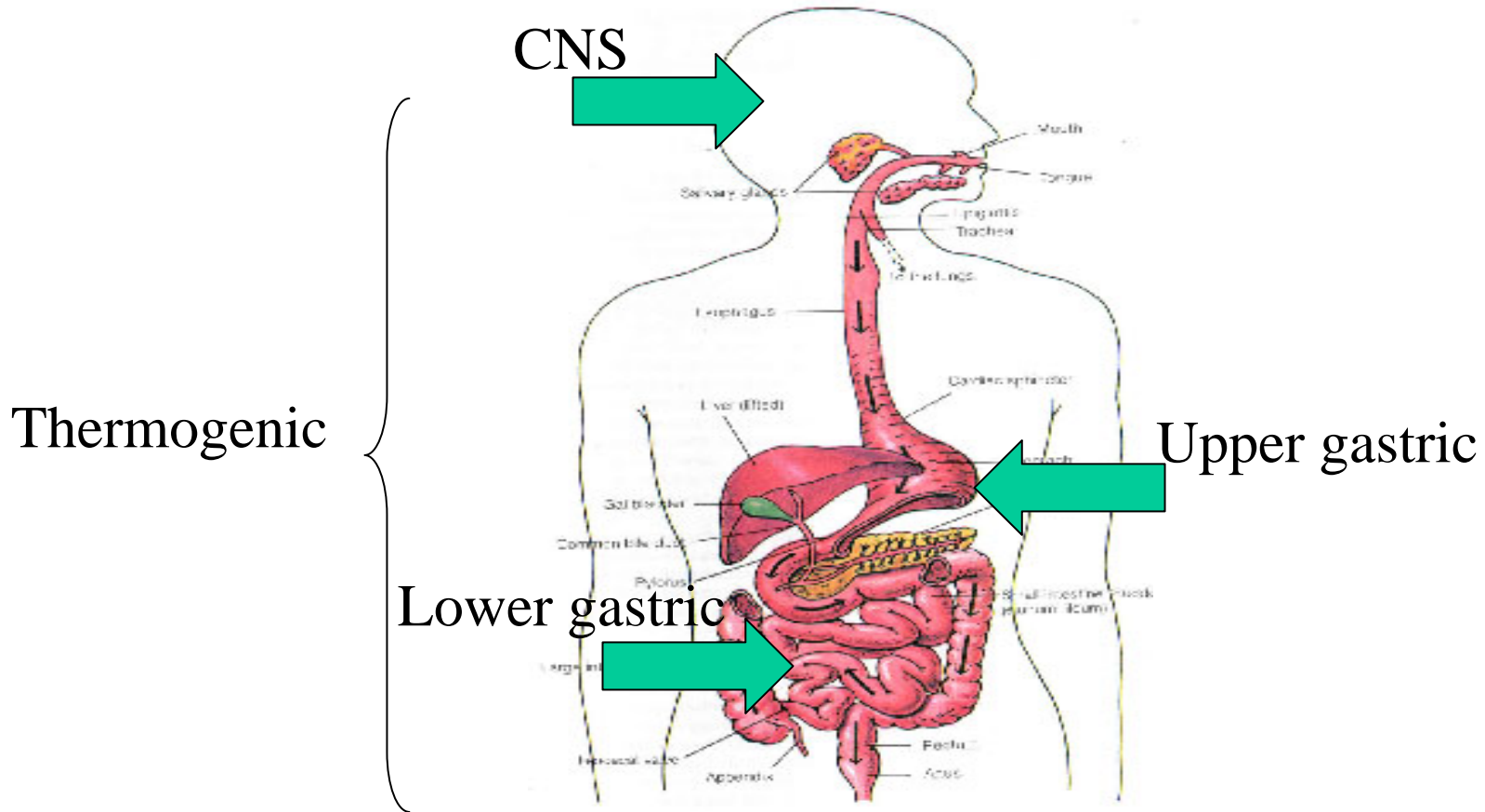
We've been told to eat less and move more to battle the growing obesity epidemic. But could getting more shuteye also be a way to fight the fat? **Helen Pearson** investigates.

- a) obese tend to sleep badly because they are obese and unhealthy
- b) people who are awake for longer simply have more time to eat
- c) tired, irritable people lack the motivation to eat healthy or exercise

## Summary of strength of evidence on factors that might promote or protect against weight gain and obesity<sup>a</sup>

Evidence	Decreases risk	No relationship	Increases risk
<b>Convincing</b>	Regular physical activity		Sedentary lifestyles
	High dietary intake of NSP (dietary fibre) <sup>b</sup>		High intake of energy-dense micronutrient-poor foods <sup>c</sup>
<b>Probable</b>	Home and school environments that support healthy food choices for children <sup>d</sup>		Heavy marketing of energy-dense foods <sup>d</sup> and fast-food outlets <sup>d</sup>
	Breastfeeding		Sugar-sweetened soft drinks and fruit juices
<b>Possible</b>	Low glycaemic index foods	Protein content of the diet	Adverse social and economic conditions <sup>d</sup> (in developed countries, especially for women)
			Large portion sizes
<b>Insufficient</b>	Increased eating frequency		High proportion of food prepared outside the home (developed countries)
			"Rigid restraint/periodic disinhibition" eating patterns
			Alcohol

# Can obesity be predicted?



LEPTIN  
MC4  
FTO



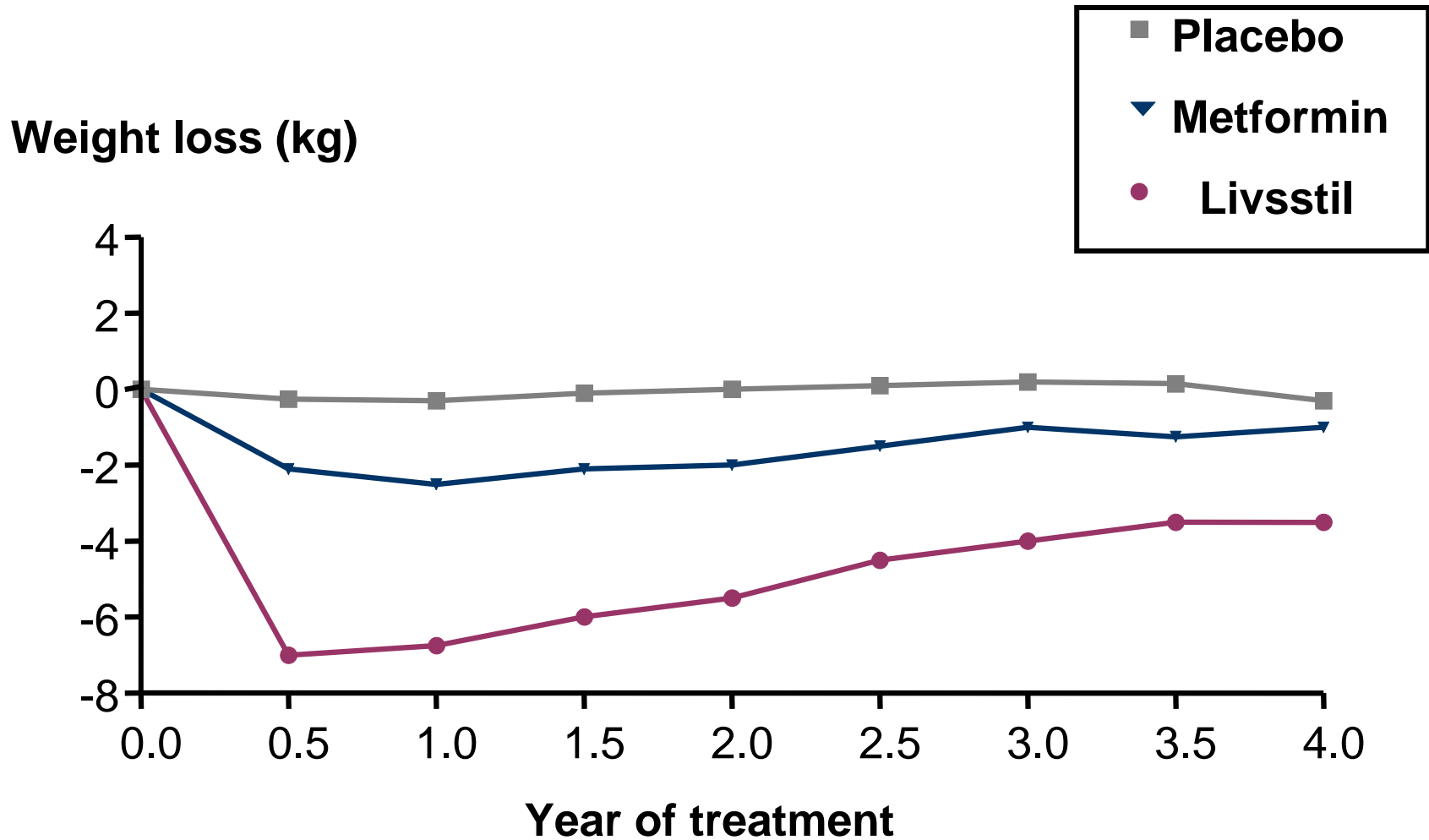
GENETICS?

# Treatment modalities

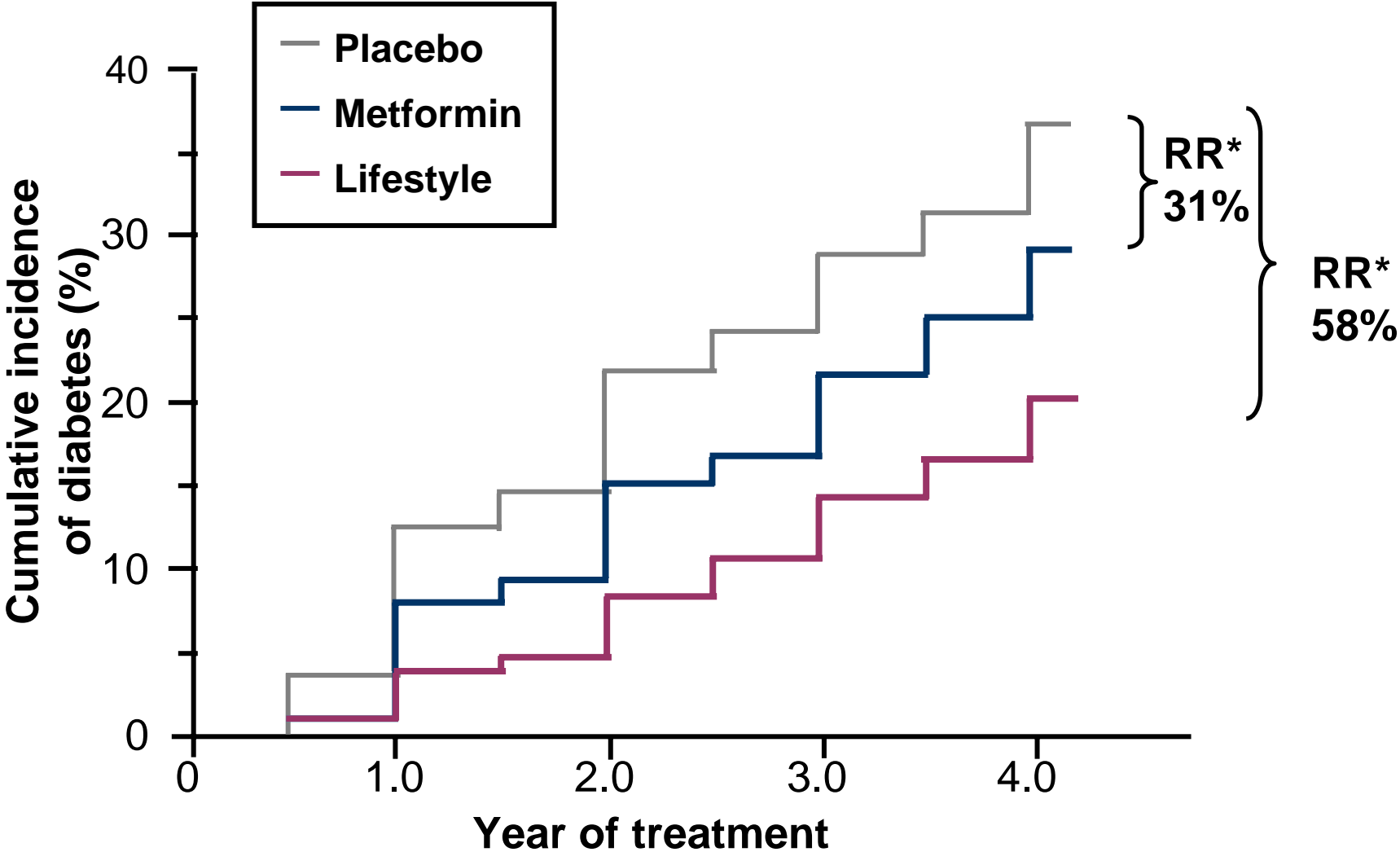
Lifestyle in combination with:

- Drugs
- Surgery

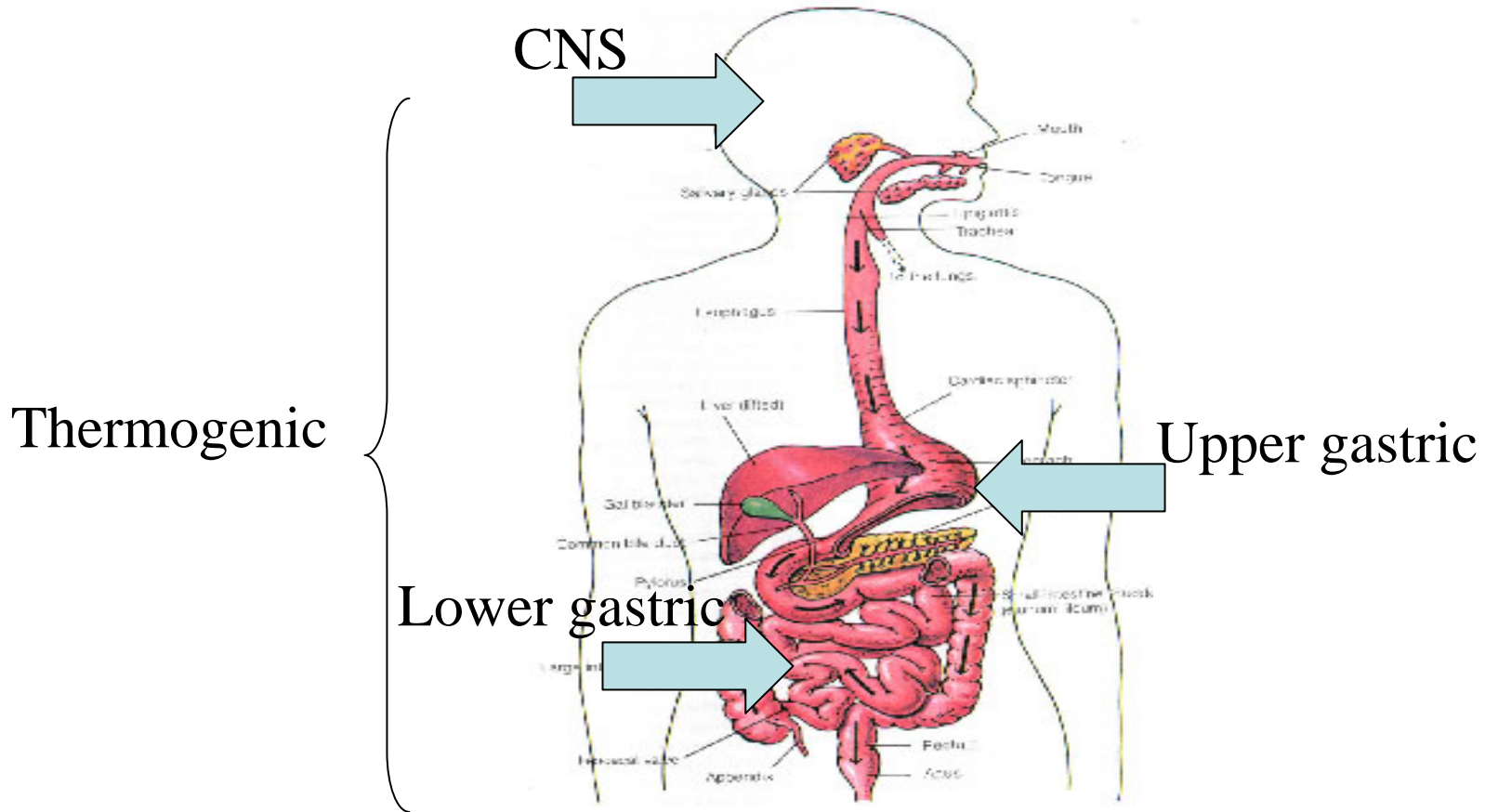
# *Effect of lifestyle changes (n=3234) DPS*



# Reduction in new T2D cases



# Where to attack with pharma?

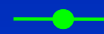


# Orlistat among IGT subjects

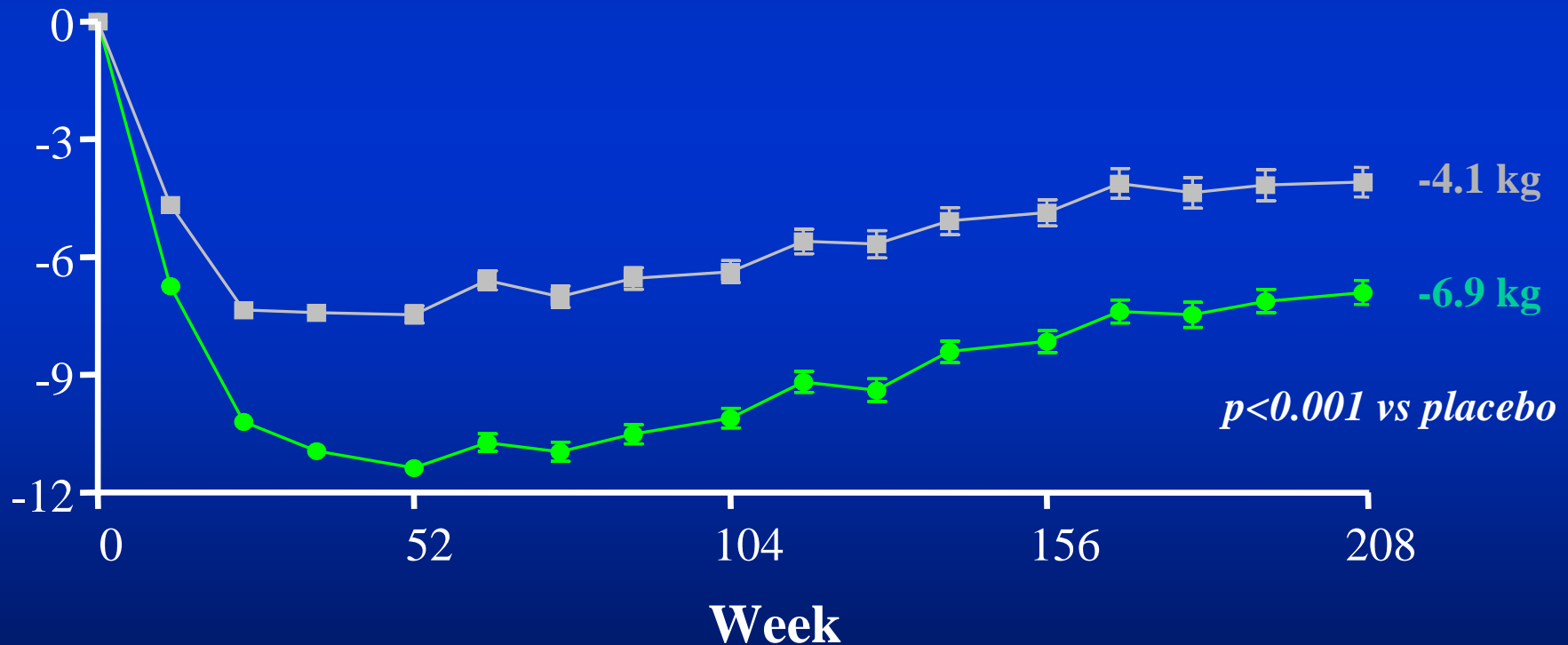
Change in  
weight (kg)



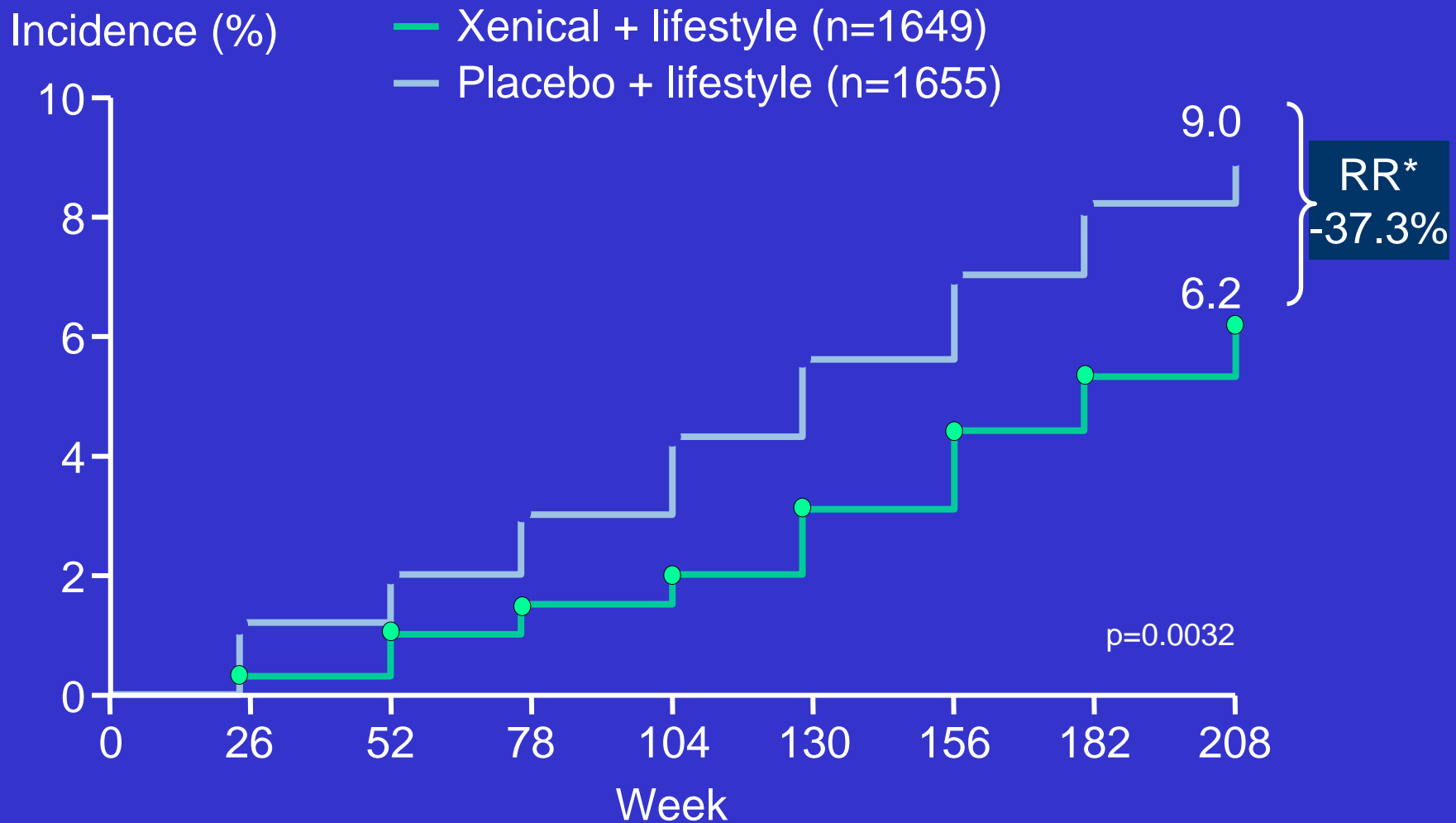
Placebo + lifestyle



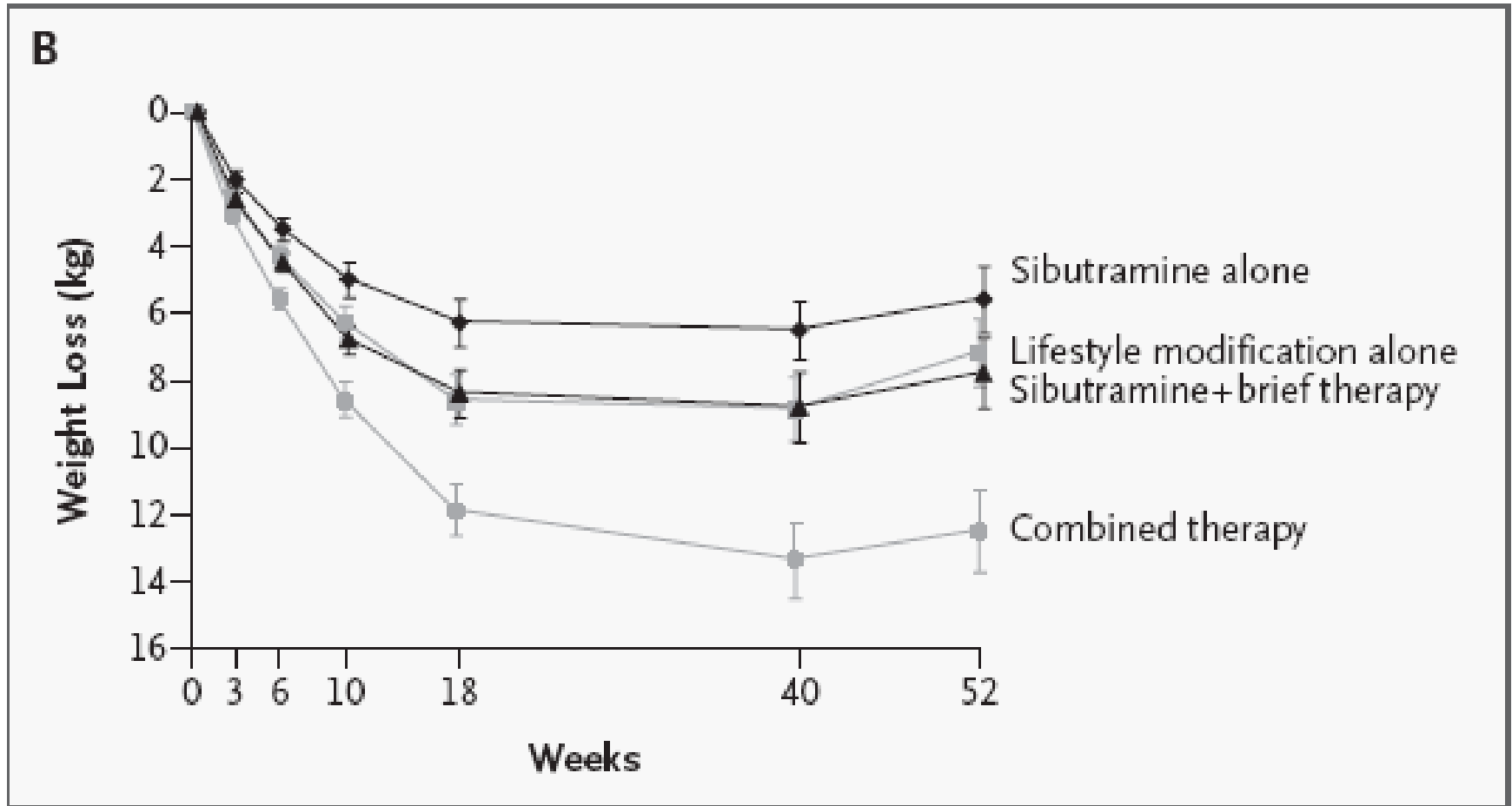
Xenical + lifestyle



# Reduction in incidence T2D during follow-up



## Medical treatment with or with-out lifestyle treatment



# Weight loss and method



**LCD:** 1 – 2 kg/w first 8 water approx. kg/w

**Diet:** ½ kg/w

**Exercise:** ½ kg/w

**Pharmacy:** 5 – 10 kg/w (additional to the secondary loss)

**Surgery:** 20 – 30 kg/w depending of method

# Treatment outcome

Data from intervention studies > 2 year :

	Lifestyle (3-5 kg)	Surgery(>20 kg)
<b>Mortality</b>	?	+
<b>T2D</b>	+	+++
<b>Arteriosclerosis</b>	+	++
<b>Hypertension</b>	+	+
<b>Dyslipidemia</b>	+	++
<b>Sleep apnea</b>	+	++

# Relevant homepages

## **Danish:**

- <http://www.dsaf.dk>

## **International:**

- European Association for the Study of Obesity (EASO)  
<http://www.easoobesity.org>
- International Association for the Study of Obesity (IASO)

<http://www.iaso.org>

## **Specialist Certification of Obesity Professional Education (SCOPE)**

- International Obesity Taskforce  
<http://www.ioft.org>

Thank you for your attention

