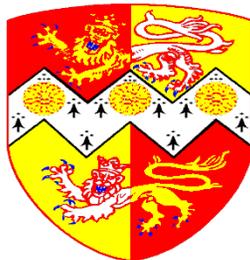


Obesity in Norfolk

Dr Ketan Dhatariya MBBS MSc MD MS FRCP

Consultant in Diabetes and Endocrinology

Norfolk and Norwich University Hospital NHS Trust





Health Profile of England 2008

Executive summary

What the Health Profile of England 2008 shows – the general picture

- there are areas of concern, eg:
 - increasing levels of obesity in adults and children

Health Profile of England 2008

- The prevalence of obesity in England is the highest in the EU-15 countries, and one of the highest in the wider cohort of OECD countries

Trends on Obesity over Time

1 year ago 5 years ago

Physically active children (PE and school sport) (d)	2007/08		90	%	86	62
Obese children (aged 2 to 10) (e) (v)	2007		15.4	%	15.2	13.8
Healthy eating (Five a day) - children (f) (v)	2007		21	%	21	11

11.5 % rise over 5 years

Healthy eating (Five a day) - adult females (f) (h)	2007		31	%	32	26
Healthy eating (Five a day) - adult males (f) (h)	2007		27	%	28	22
Physically active adults - females (g) (h)	2006		28	%	25	24
Physically active adults - males (g) (h)	2006		40	%	37	36
Obese adults - females (h) (i)	2007		24.4	%	24.2	23.0
Obese adults - males (h) (i)	2007		23.6	%	23.7	22.2

People with diabetes - adult females (i) (a)	2006		4.2	%	nd	3.4
People with diabetes - adult males (i) (a)	2006		5.6	%	nd	4.3

23.5 % rise over 5 years in women

30.2 % rise over 5 years in men

EDP – 4th February 2008



EDP – 14th February 2009



Number of patients with weight issues treble in two years

COUNTY FACING OBESITY CRISIS

By SARAH HALL
Health correspondent

Fears of a "massive public health crisis" were raised last night as new figures showed the number of people admitted to hospital in Norfolk because of obesity had almost trebled in the past two years.

In the NHS Norfolk area there were 124 admissions to hospital in 2008/2009, compared to 67 the previous year and 44 in 2006/2007.

It was a similar picture for NHS Yarmouth and Waveney which had 18 admissions in 2008/2009, a rise from 13 the previous year and 11 the year before.

The figures refer to admissions where obesity is a predominant cause of ill health but it is believed hundreds more attend hospital outpatient departments with associated problems.

The news comes as a blow to health authorities which have worked hard to reduce obesity levels through a number of local and national initiatives.

Obesity can cause a wide range of health problems including heart disease, high blood pressure and



NEW APPROACH NEEDED: MP Norman Lamb.

diabetes, as well as some cancers.

North Norfolk MP Norman Lamb said: "This is yet more evidence highlighting this growing problem."

"Obesity is a massive public health crisis, which causes misery to millions of people and has the potential to bankrupt the NHS."

Mr Lamb, health spokesman for the Liberal Democrats, said:

"Tackling this problem is going to mean looking at new approaches like incentives to get people off the sofa."

Earlier this year, a report by NHS Norfolk showed that 18.3pc of 10 and 11-year-olds were classed as obese - a rise from 16.2pc last year.

Obesity is calculated using a formula known as Body Mass Index (BMI) based on height and weight. If it is higher than 25, someone is considered overweight and they are classed obese if it is above 30.

Across England, hospital admissions for obesity have risen on average 60pc in the past year and by 360pc compared to five years ago, according to the statistics released by the NHS Information Centre.

In 2006, beds at the Norfolk and Norwich University Hospital had to be reinforced and mortuary slabs strengthened because of the increasing number of obese patients.

The James Paget University Hospital in Gorleston has had to make similar investments to deal with the obesity crisis and three

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Find out who's won the Community Chest Challenge

PAGE 3

Puzzles 8 pages

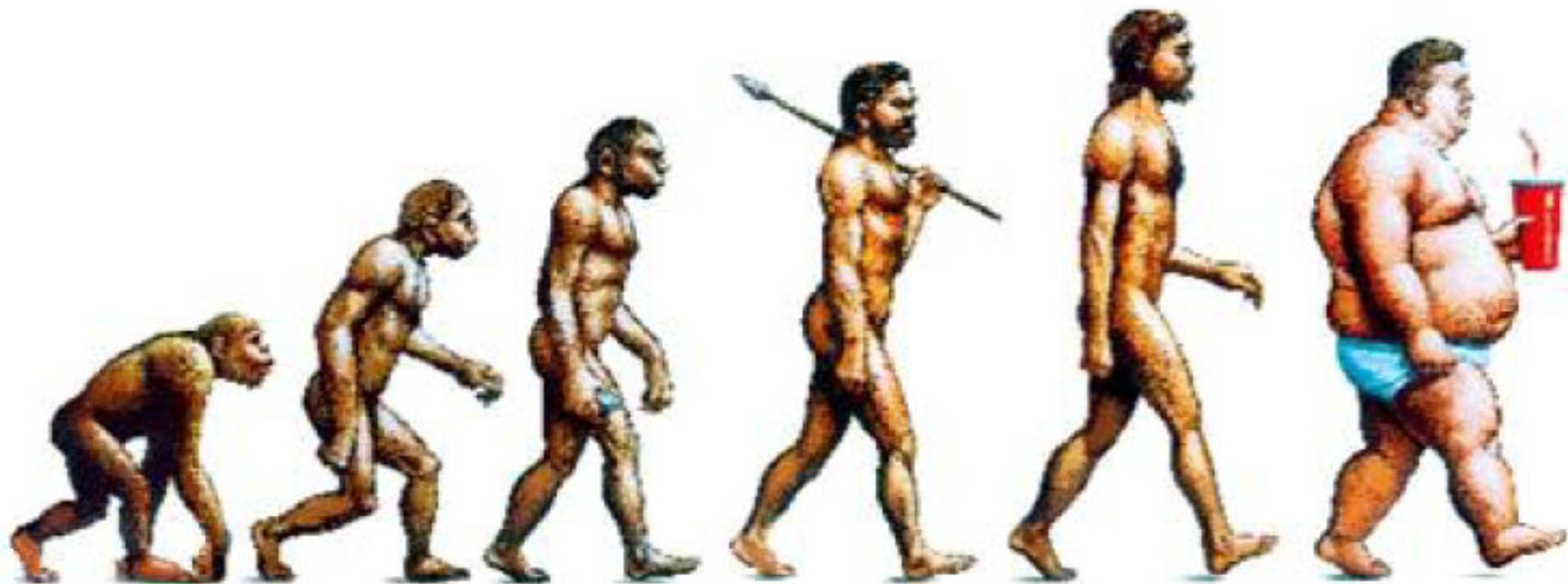


Going the extra mile to help make our children healthier

PAGES 14 - 15



The Shape of Things to Come?



—————▶ Millions of years —————▶ 50 years

H. australopithecus

H. erectus

H. sapiens

H. McDonalds

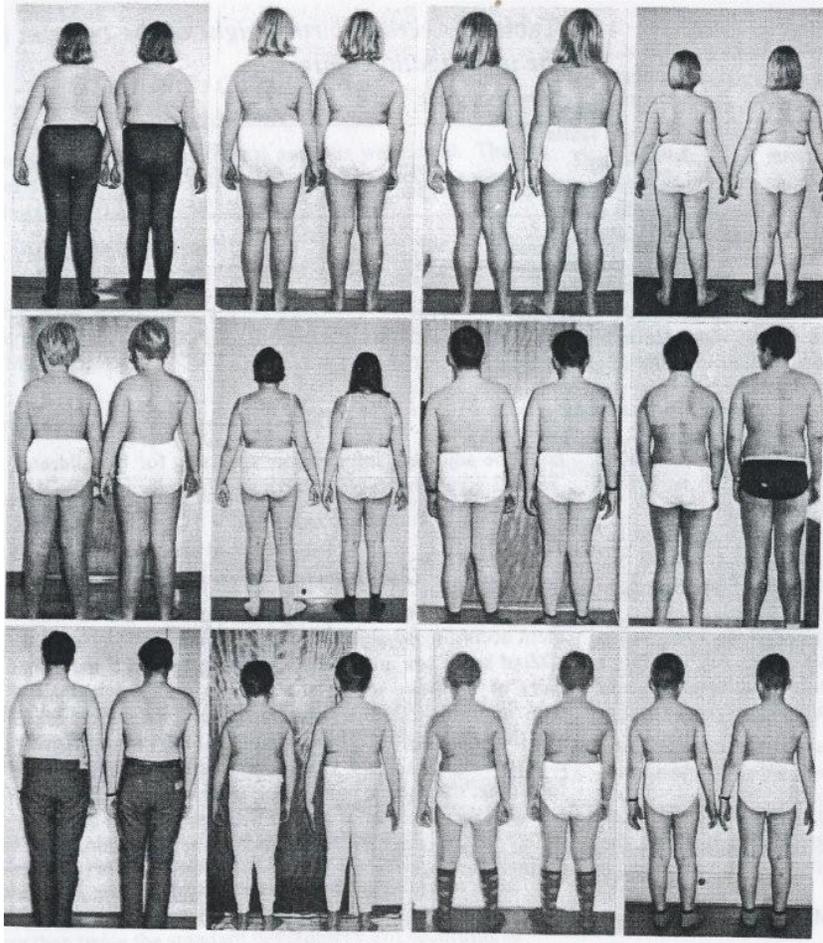
Time Magazine 23rd June 2008



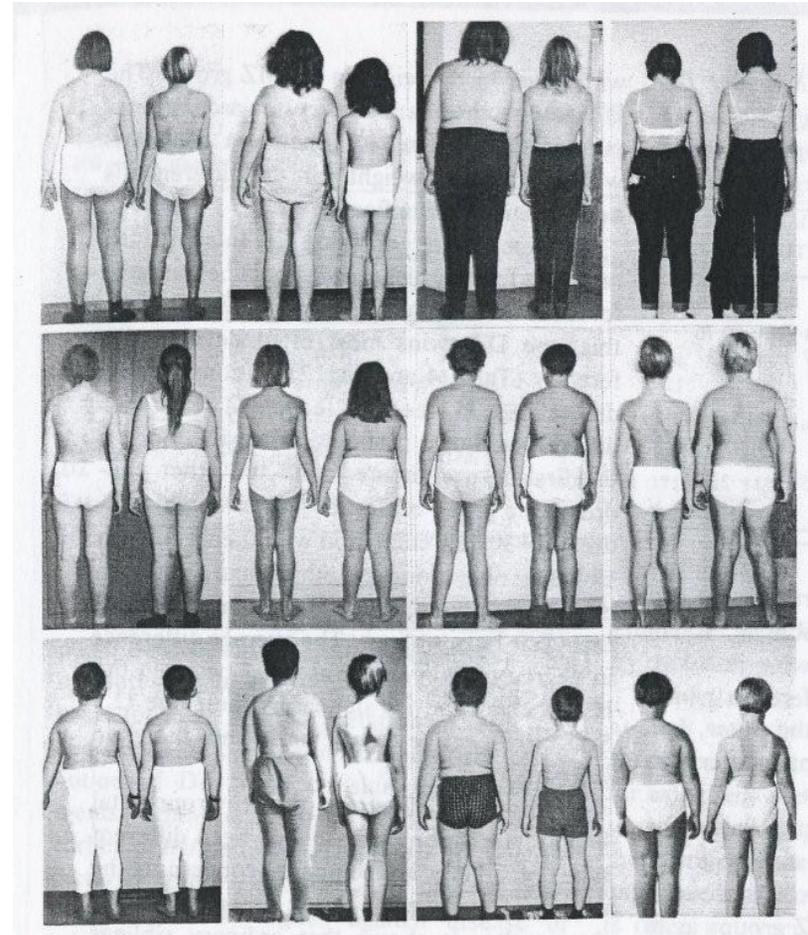
A Few Perceptions

- What causes obesity?
 - Your lifestyle has changed thus you have put on weight – i.e. it's YOUR OWN FAULT!
 - There is an abundance of food being made available 24/7 and no longer any reason or incentive to do physical activity – i.e. it's SOCIETY'S FAULT
 - 'It's my genes' – i.e. it's YOUR PARENTS FAULT

Is it All in The Genes?



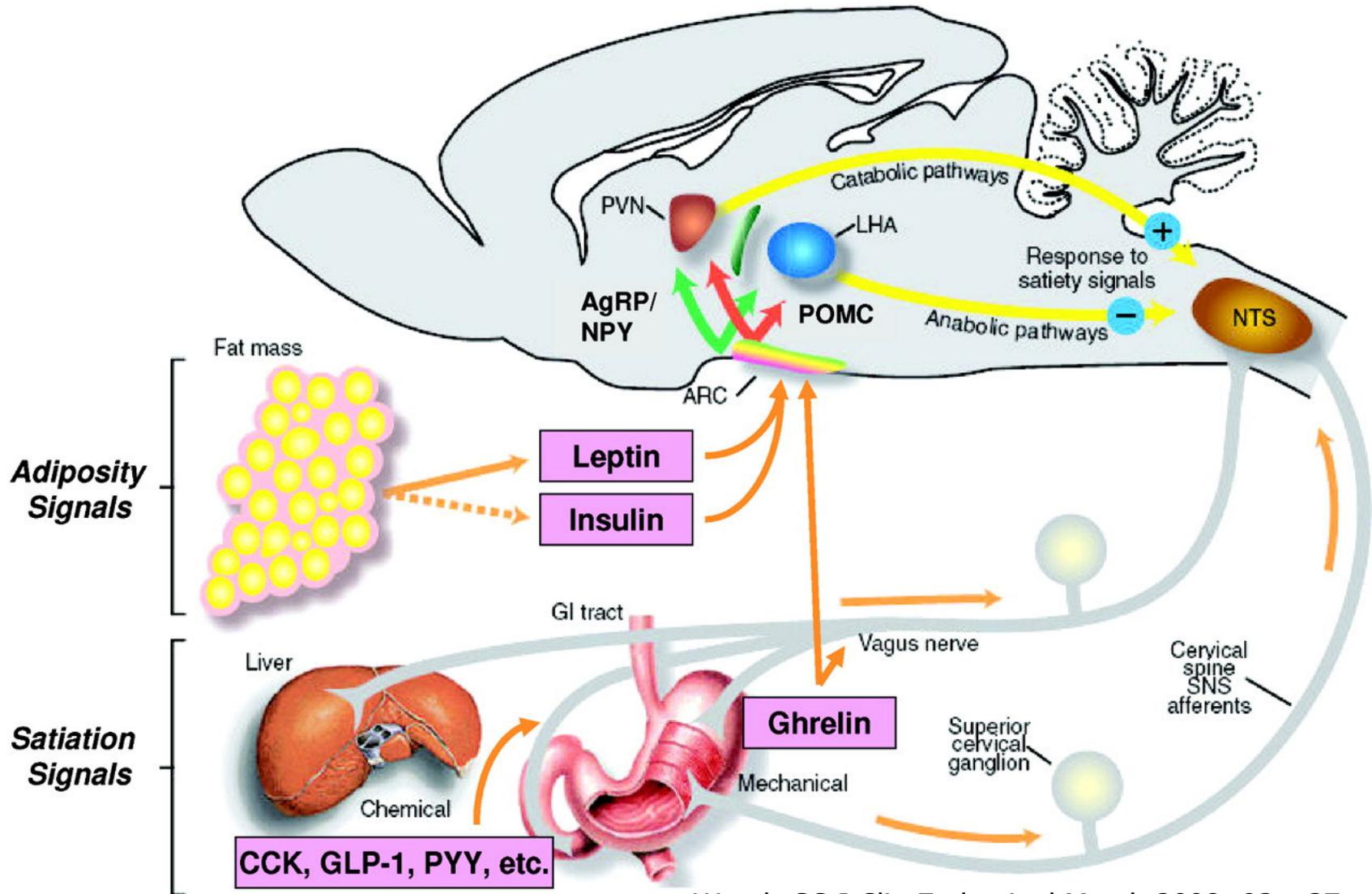
Monozygotic Twins



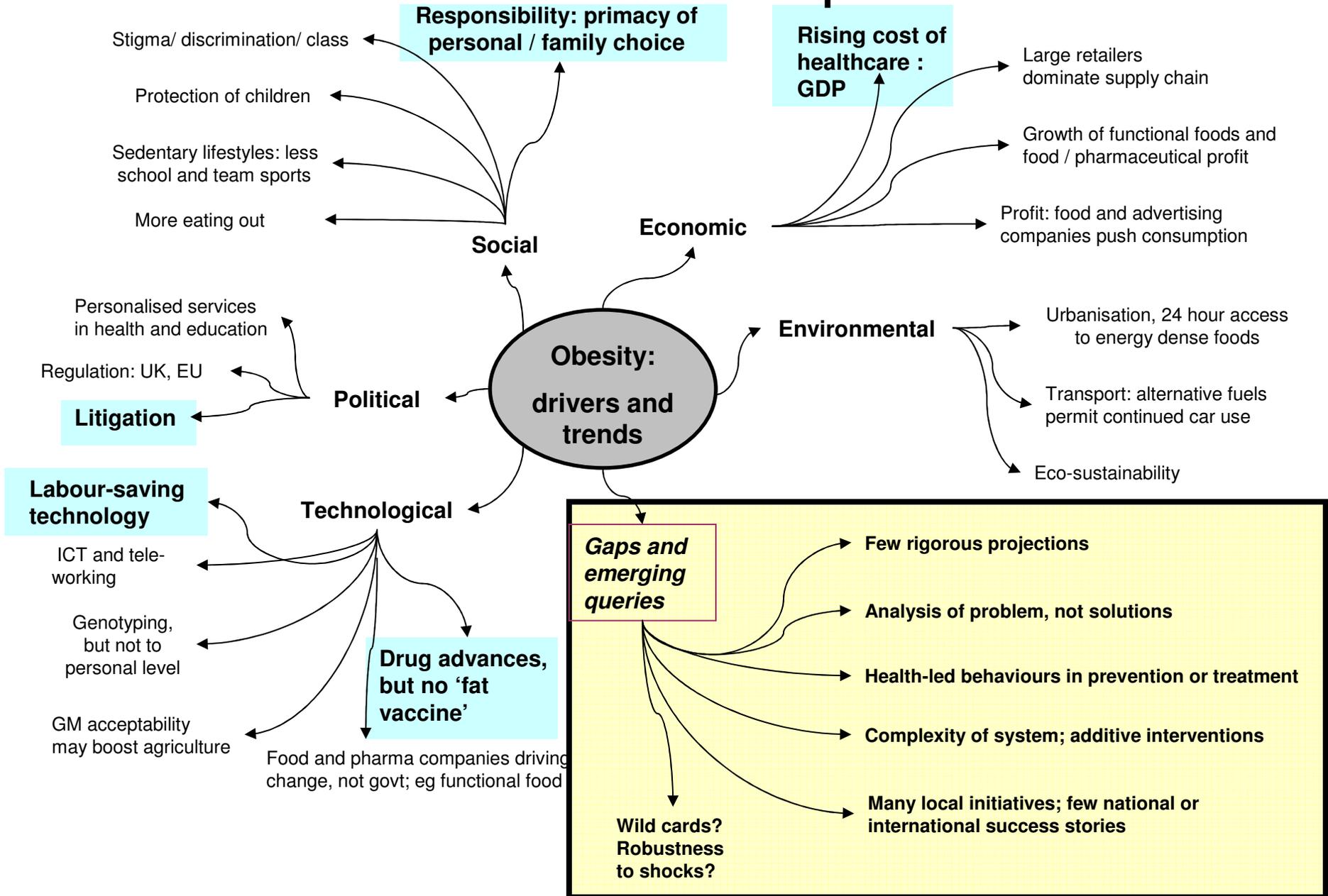
Dizygotic Twins

Borjeson M Acta Paed Scand 1976;65:279-287

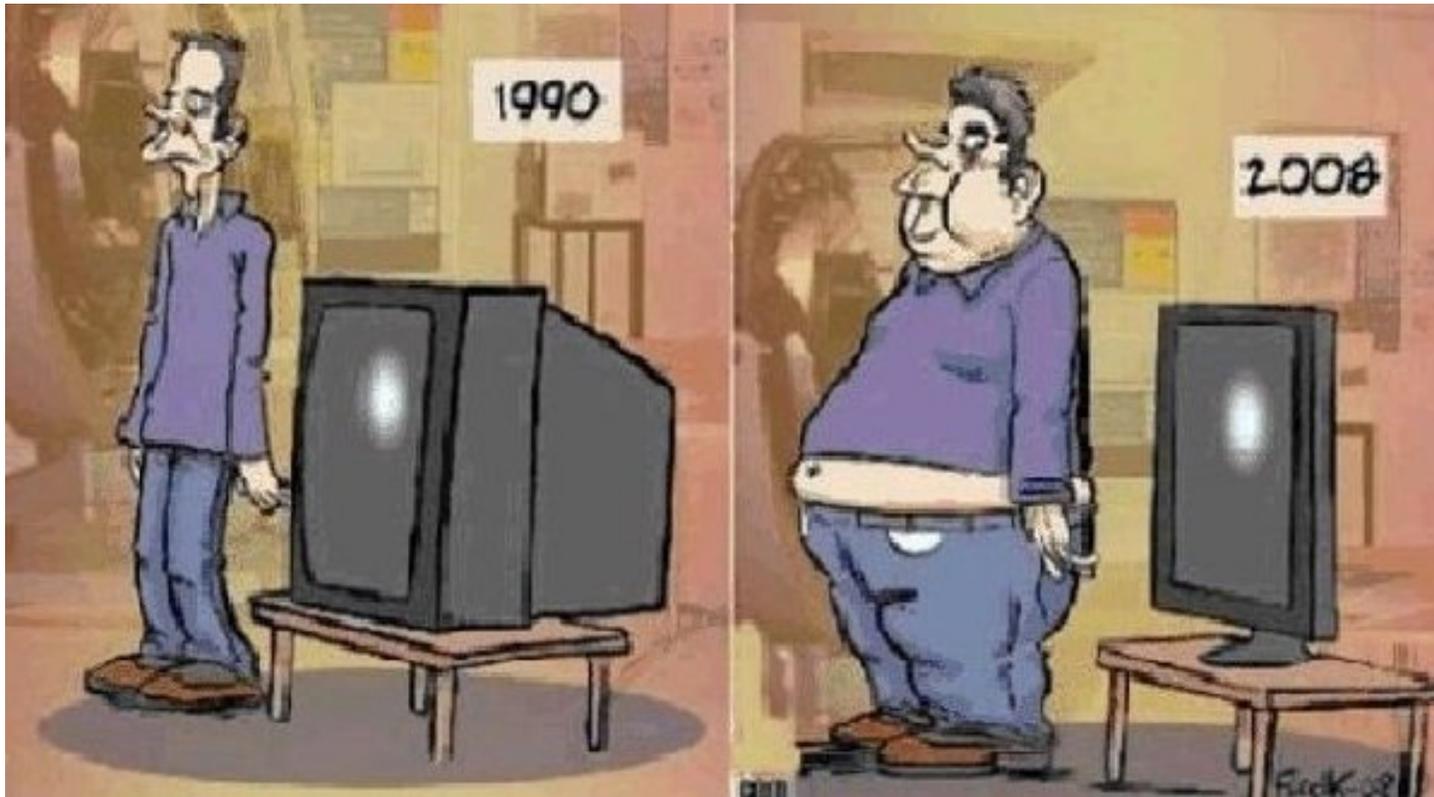
It's My Hormones Doctor



Who or What is Responsible?



Technological Evolution



Lots of Factors



Some Definitions.....

Table 1. Standard BMI classification

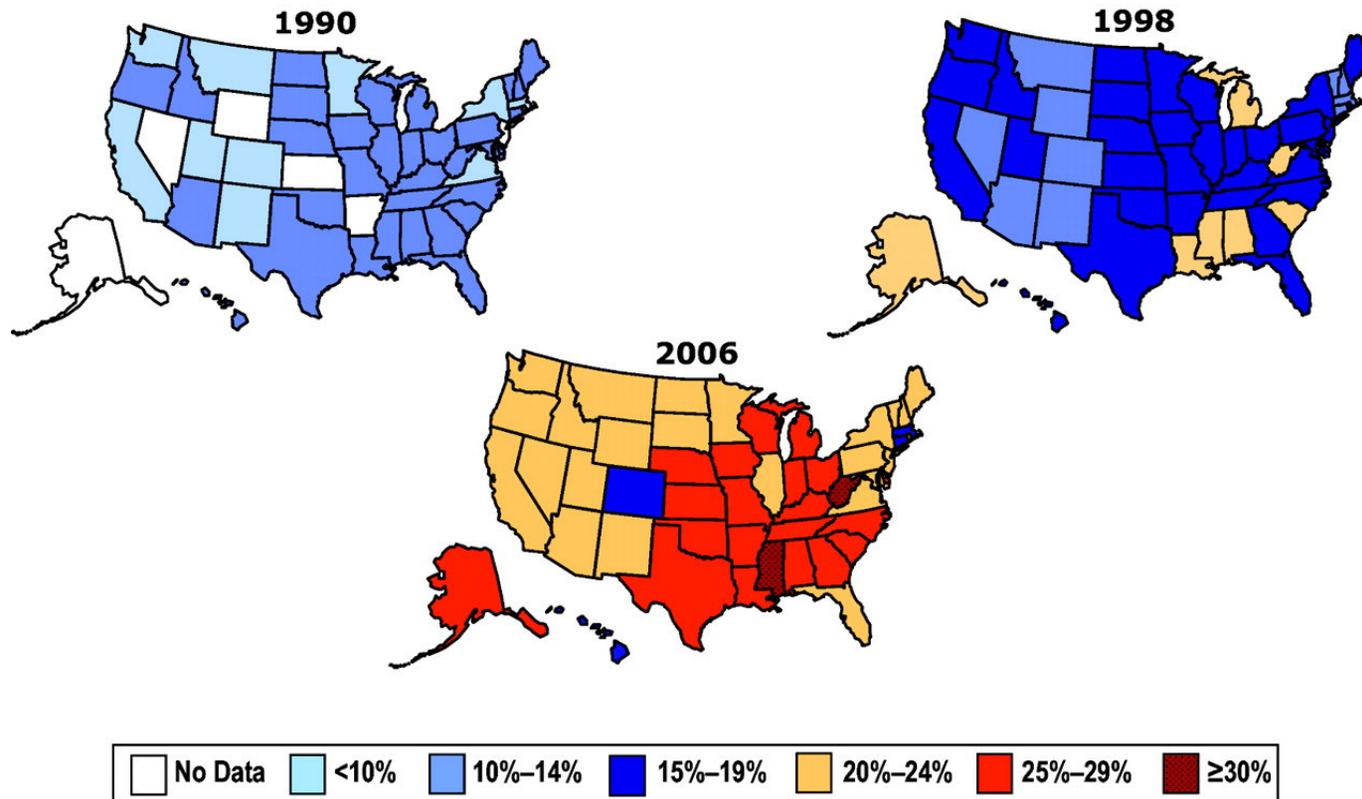
BMI range (kg/m²)	Classification
< 17	Malnourished
17–<20	Underweight
20–<25	Normal weight
25–<30	Overweight
30–<40	Obese
≥ 40	Morbidly obese

The USA is Getting Heavier

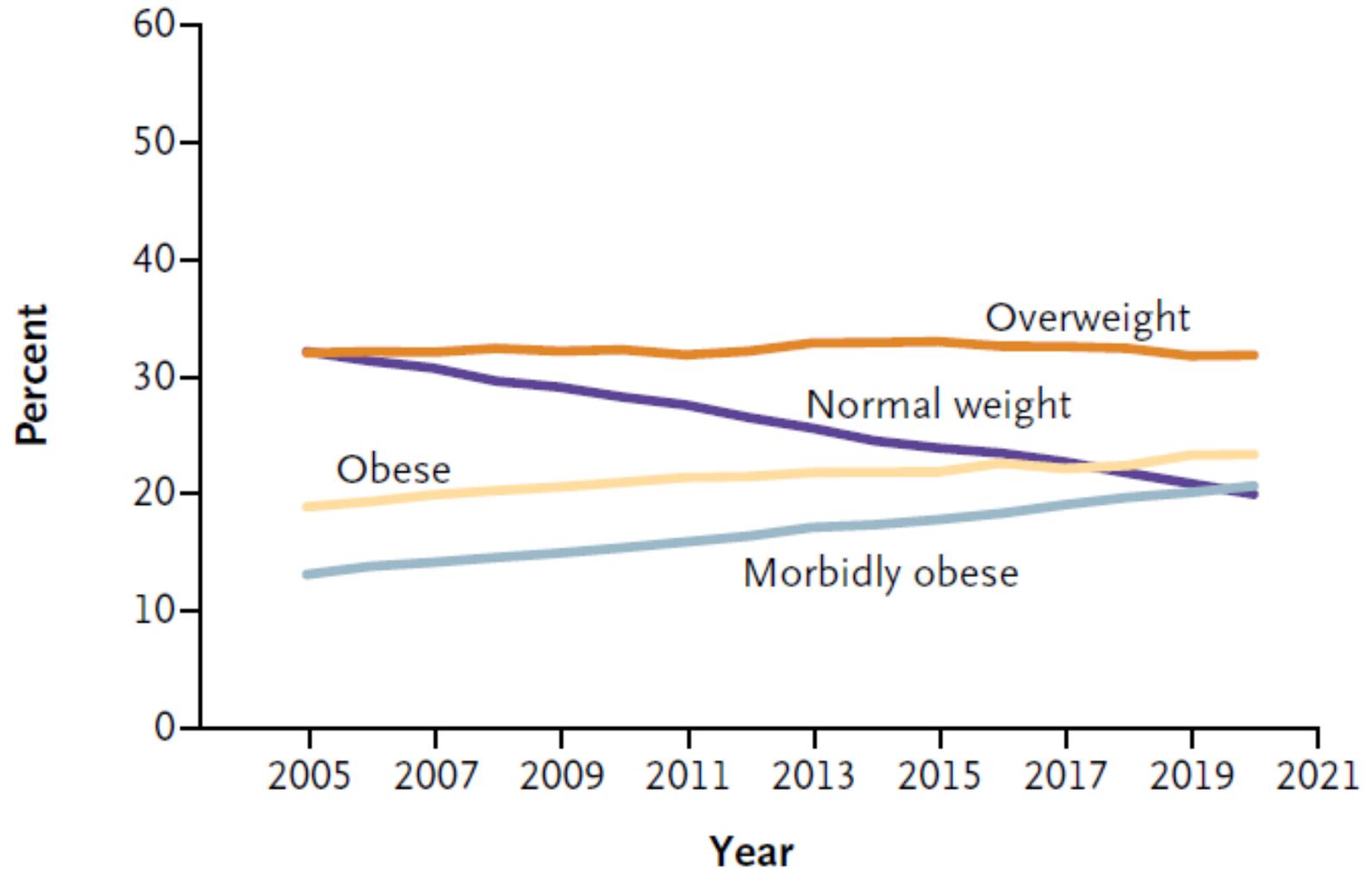
Obesity Trends* Among U.S. Adults

BRFSS, 1990, 1998, 2006

(*BMI ≥ 30 , or about 30 lbs. overweight for 5'4" person)



US Trends



UK Trends

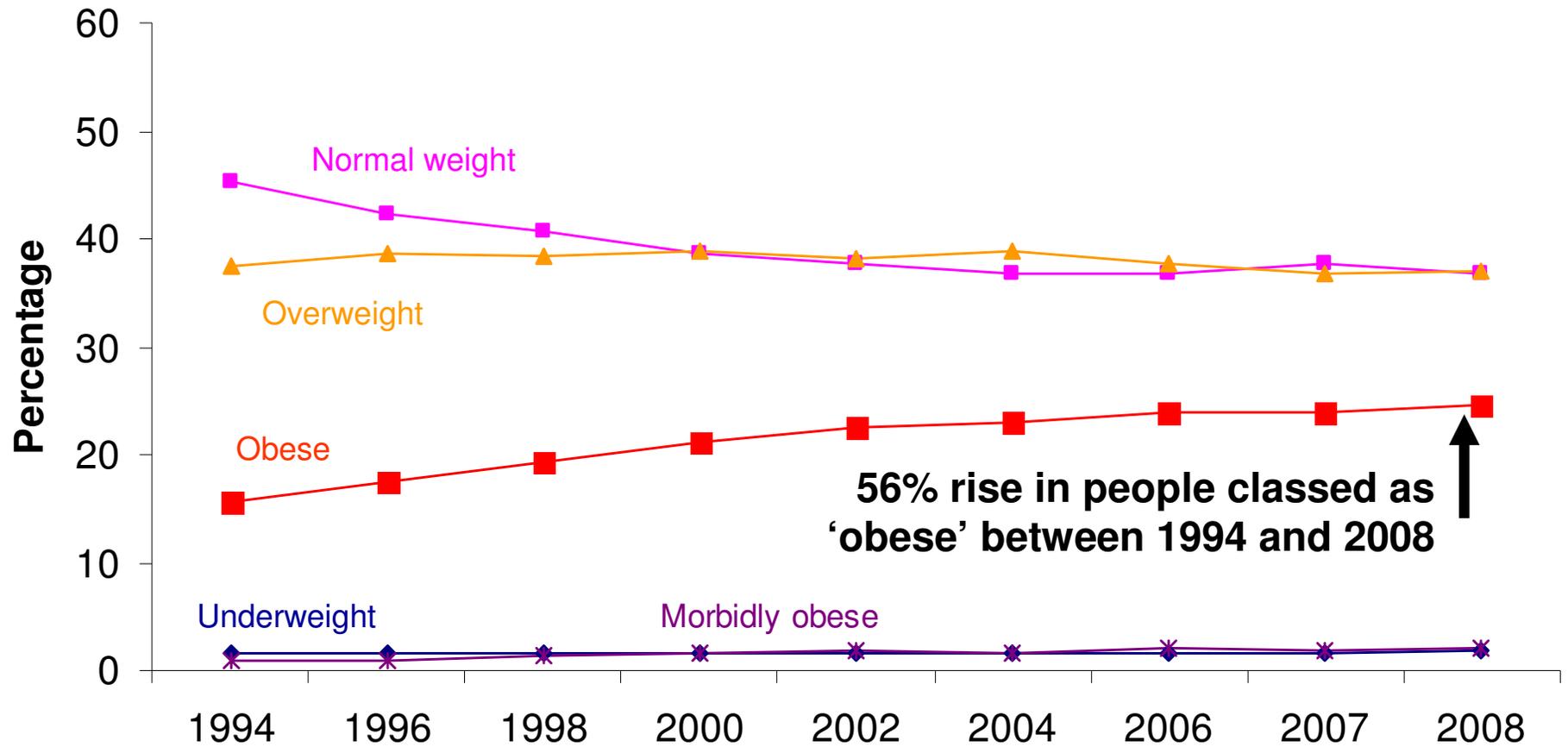
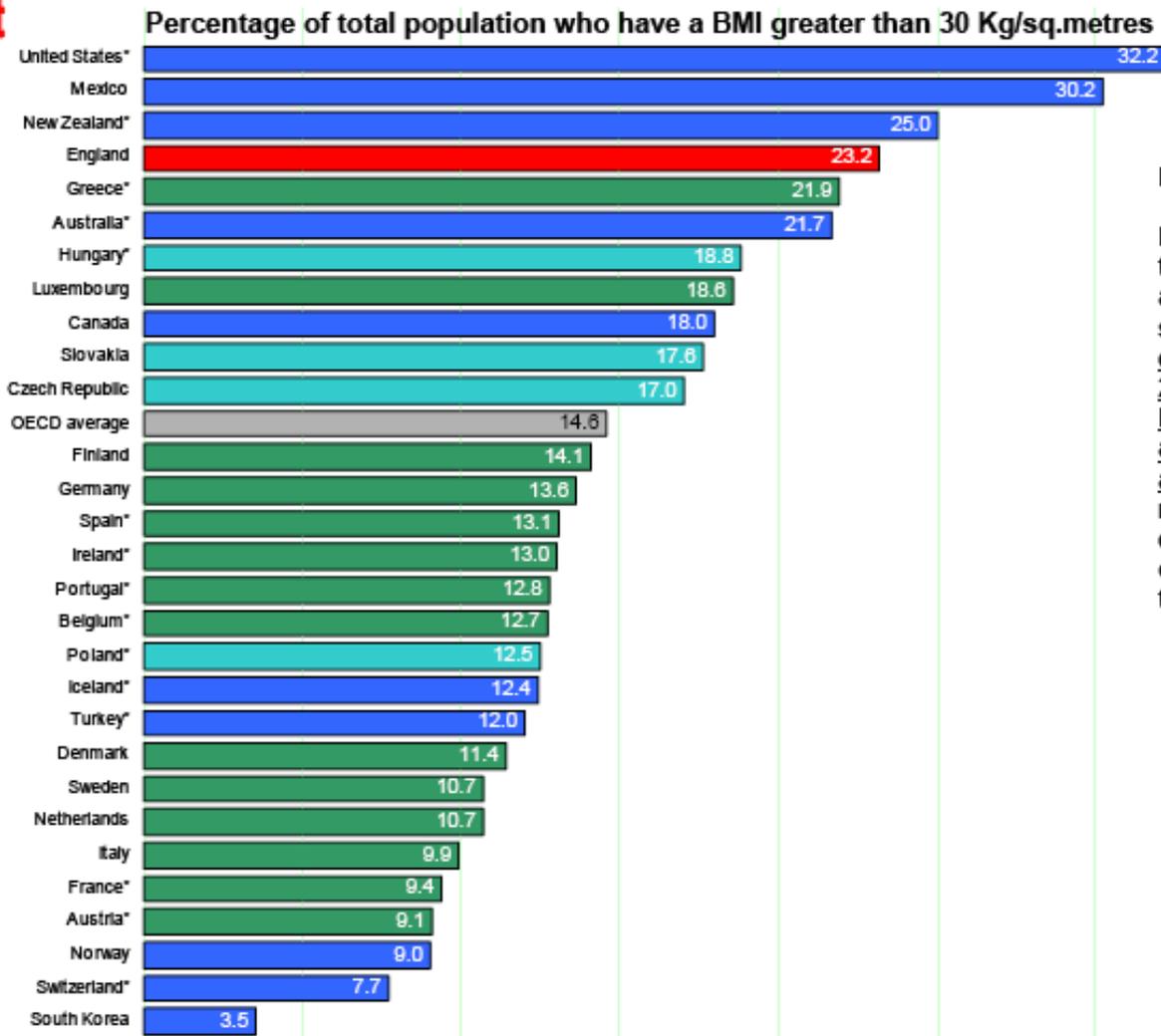


Chart 3.34: Adult obesity

Aged 16 and over, England and selected OECD countries, latest data (2005*), ranked



DEFINITION:

Estimates relate to the adult population (normally the population aged 15+ unless otherwise stated) and are based on national health interview surveys for most countries (self-reported data), except for Australia, the Czech Republic (since 2005), Luxembourg, New Zealand, the United Kingdom and the United States where estimates are based on the actual measurement of weight and height. This difference in survey methodologies limits data comparability, as estimates arising from the actual measurement of weight and height are significantly higher than those based on self-report.

Source: OECD Health Data 2008

- OECD weighted average
- EU-15 (member countries before 2004)
- EU-12new (member countries from 2004)
- Other OECD countries
- England

* Australia, Austria, Portugal -1999, Iceland, Ireland, Switzerland -2002, Greece, Hungary, New Zealand, Spain, Turkey - 2003, Belgium, France, Poland, USA - 2004

Source: (1) England – Weighted average of male and female data for 2005 from 'Health Survey for England 2006 - updating of trend tables to include 2006 data'. The Information Centre <http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles/obesity/statistics-on-obesity-physical-activity-and-diet-england-2006>
 (2) All other countries - OECD Health Data 2008. Web link http://www.oecd.org/document/16/0,3343,en_2649_34631_2085200_1_1_1_1,00.html

What About Norfolk?

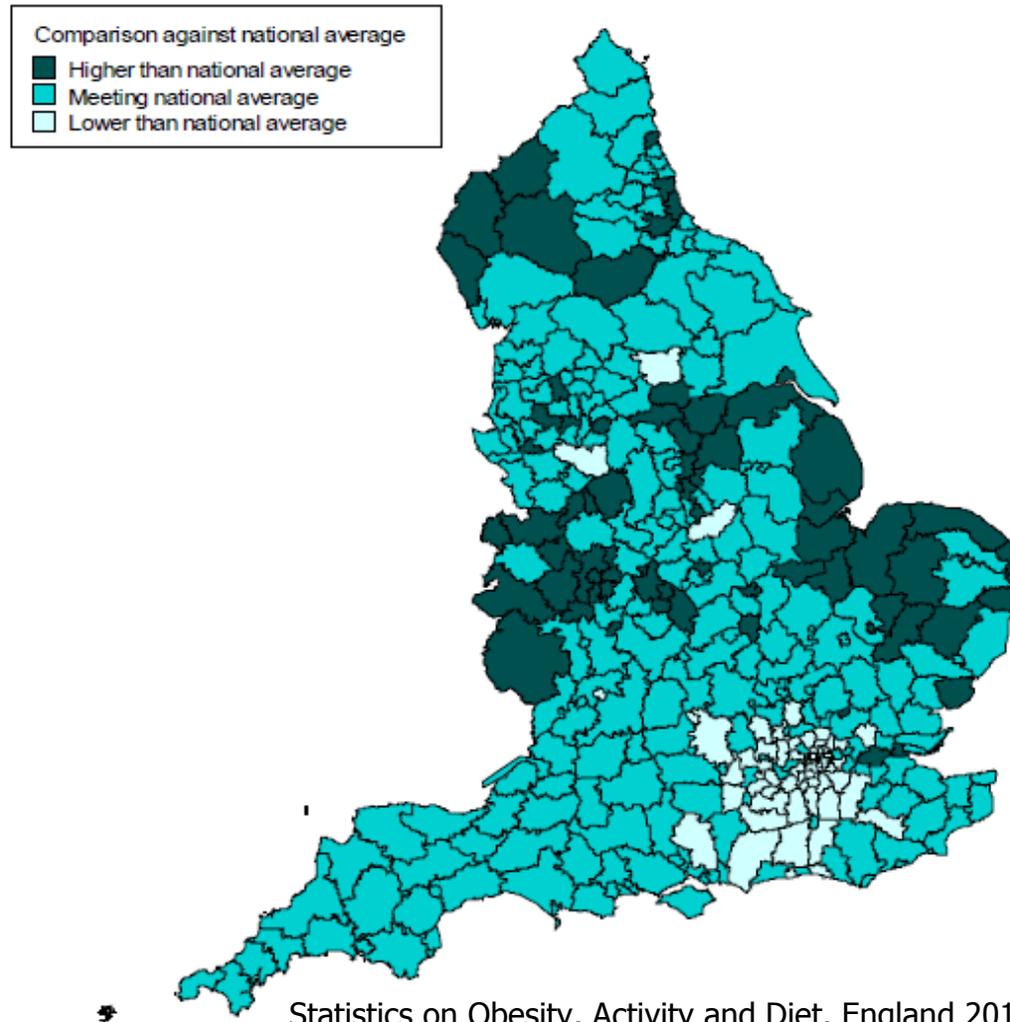
- The calculated prevalence of obesity from self-reported height and weight is 14%
- This is known to be an underestimate, given that the regional prevalence of obesity from directly measured height and weight is 23% in men and 26% in women (Health Survey for England 2007)
- Nevertheless, for a self-reported survey the prevalence is high and patterns across the region are likely to be representative

Revised 2008 Lifestyle Survey summary for Norfolk PCT

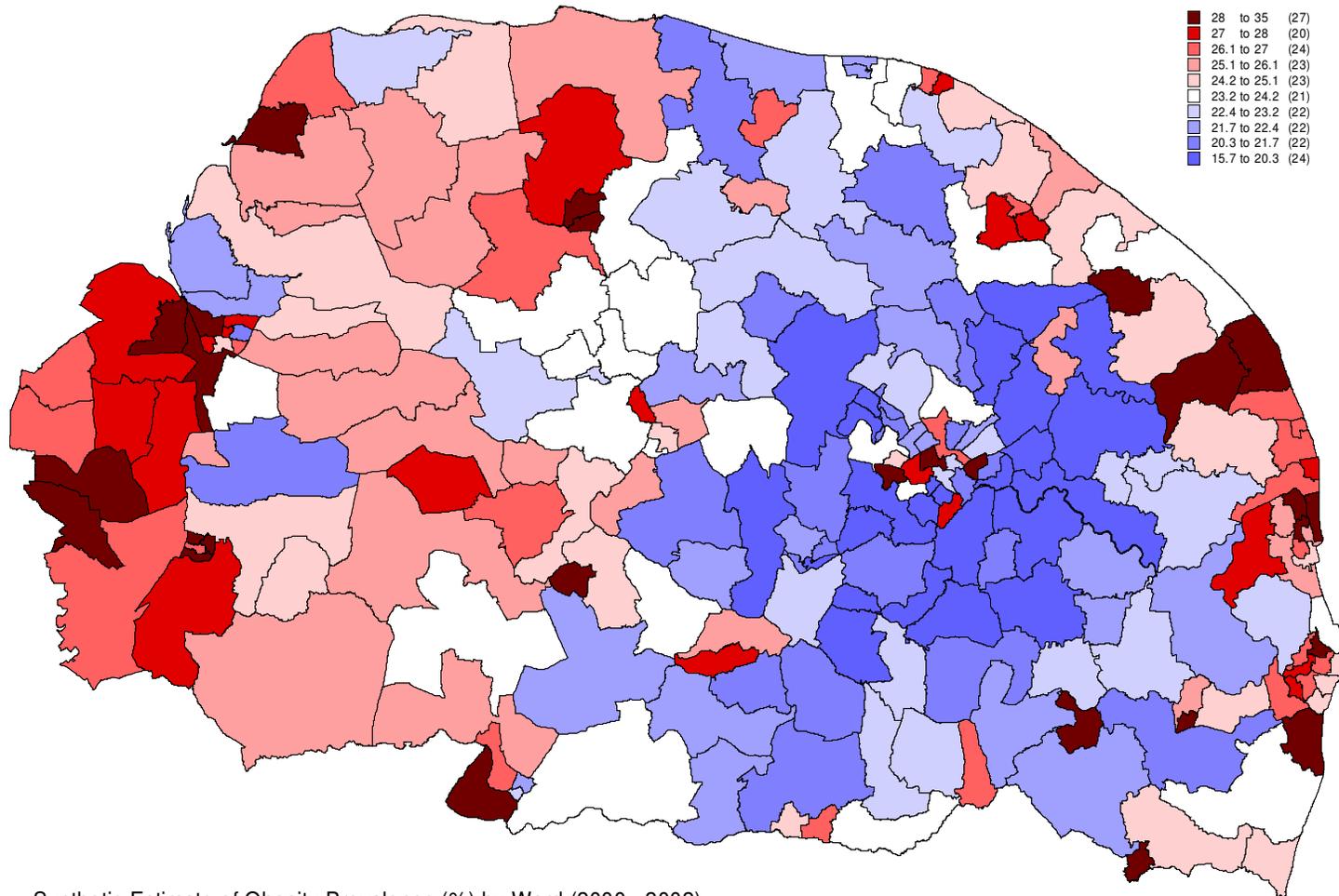
<http://www.erpho.org.uk/Download/Public/18634/1/Norfolk%20REVISED%202008%20LifeSurv%20profile%20FINAL.pdf>

Accessed 27th May 2010

What About Norfolk?

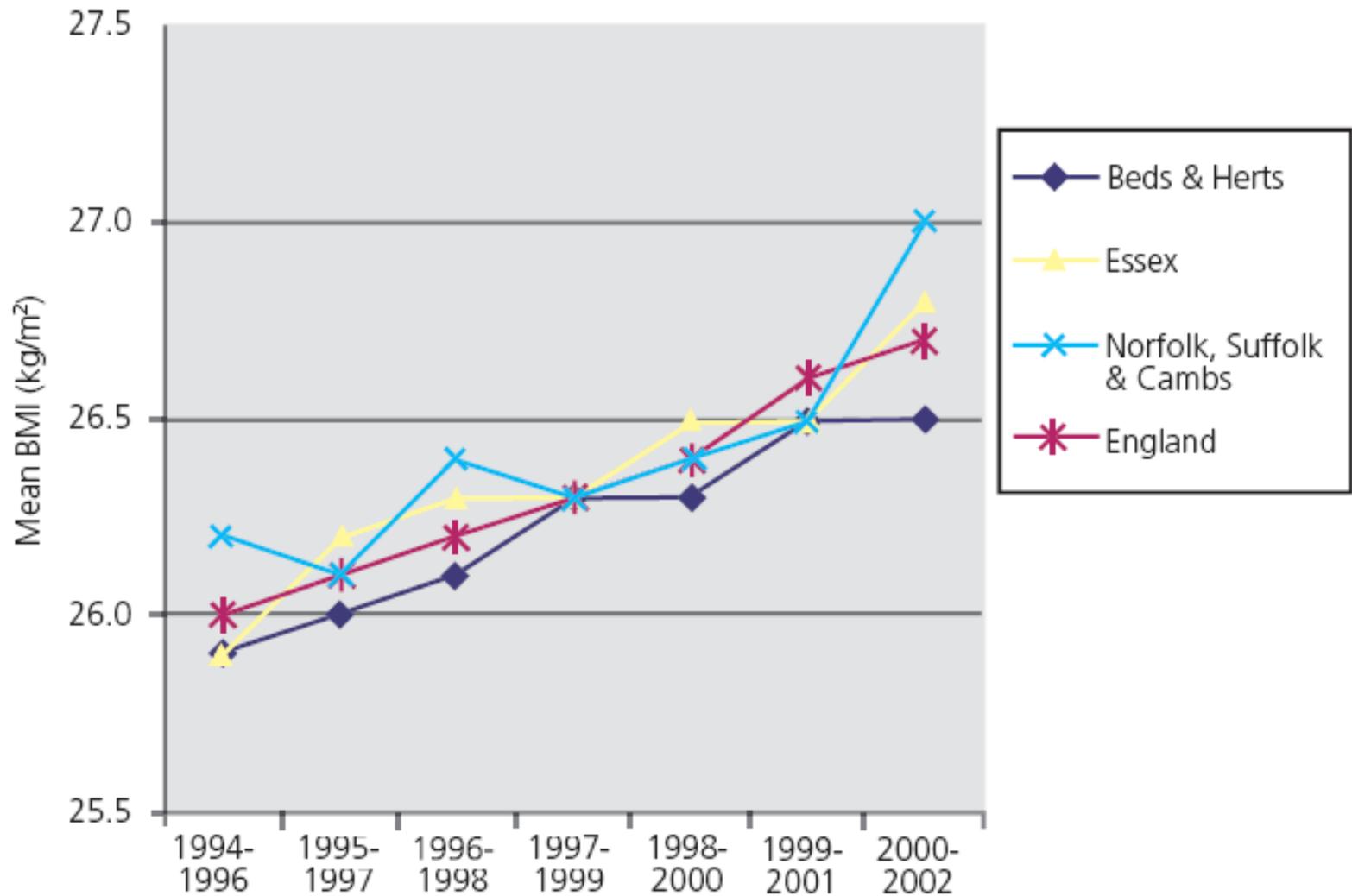


In a Little More Detail



Synthetic Estimate of Obesity Prevalence (%) by Ward (2000 - 2002)

Mean BMI Over Time





Cartoons @ info.net
Gaglecartoons.com



CHILDHOOD OBESITY EPIDEMIC..

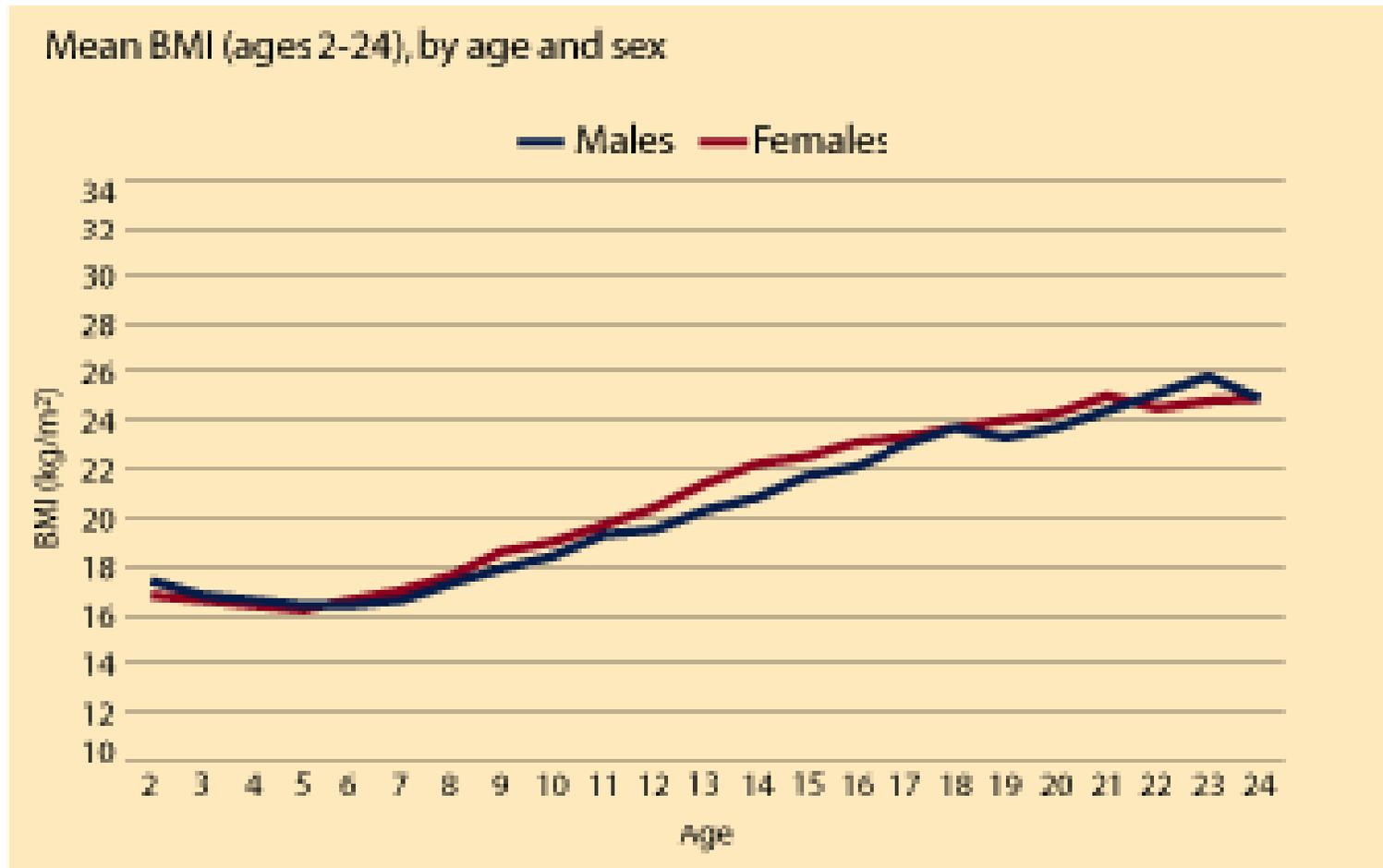
In Detail

- 22% of boys and 27% girls aged 2 – 15 are overweight or obese in the east of England
- For adults this is 22% of men and 23% of women (25,000 obese people per old PCT)

Obesity Associated Adverse Outcomes in Children

- Metabolic
 - Type 2 diabetes mellitus
 - Metabolic syndrome
- Orthopaedic
 - Slipped capital femoral epiphysis
 - Blount's disease
- Cardiovascular
 - Dyslipidaemia
 - Hypertension
 - Left ventricular hypertrophy
 - Atherosclerosis
- Psychological
 - Depression
 - Poor quality of life
 - Neurological
 - Pseudotumor cerebri
- Hepatic
 - Non-alcoholic fatty liver disease
 - Non-alcoholic steatohepatitis
- Pulmonary
 - Obstructive sleep apnoea
 - Asthma (exacerbation)
- Renal
 - Proteinuria

Mean BMI in UK Children in 2002



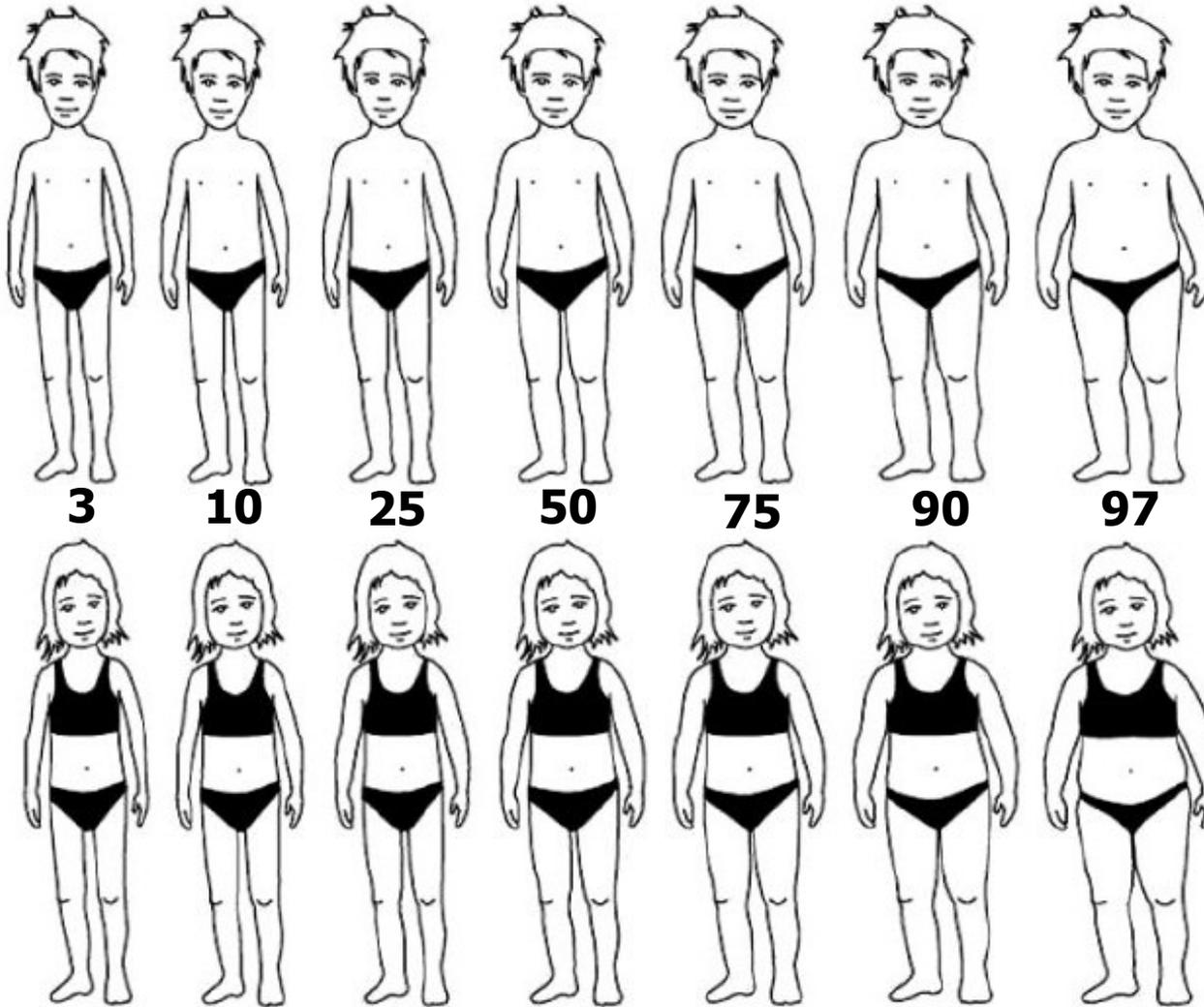
Parents Don't Recognise Obese Children

- 219 mums with kids aged 3-6 years old
- Shown various silhouettes and asked to say which ones were overweight or obese
- Asked to choose which one most closely represented their own child

Parents Don't Recognise Obese Children

5 – 6
years old

Weight
centiles



Parents Don't Recognise Obese Children

- Only 64.5% recognised the overweight or obese ones
- Only 48.8% knew that being overweight had associated health risks
- Only 38.7% knew that being overweight had associated mental health risks
- Only 40.3% chose the correct silhouette that corresponded to their own child

Obesity Associated Adverse Outcomes in Adults

- Cardiovascular diseases, diabetes, and related conditions
 - Coronary heart disease (CHD)
 - Type 2 diabetes
- CHD risk factors
 - Type 2 diabetes
 - Hypertension
 - Dyslipidaemia
 - Inflammation
 - Hypercoagulability
 - Autonomic nervous system dysfunction
- Heart failure
- Stroke
- Deep venous thrombosis
- Pulmonary disease (including obesity hypoventilation syndrome, obstructive sleep apnoea)
- Increased unwanted pregnancies
- Other outcomes*
- Absenteeism from work
- Alzheimer's disease
- Asthma
- Cancer (including breast [postmenopausal], endometrial, oesophageal, colorectal, kidney, and prostate)
- Disability, physical
- Erectile dysfunction
- Fertility and pregnancy complications
- Gallstones/cholecystitis
- Gastro-oesophageal reflux disease
- Gout
- Healthcare costs
- Impaired quality of life
- Kidney stones
- Liver (spectrum of non-alcoholic fatty liver disease)
- Mortality
- Obesity-related glomerulopathy
- Osteoarthritis
- Psychological disorders (e.g., depression, aggressive behaviours)
- Surgical complications

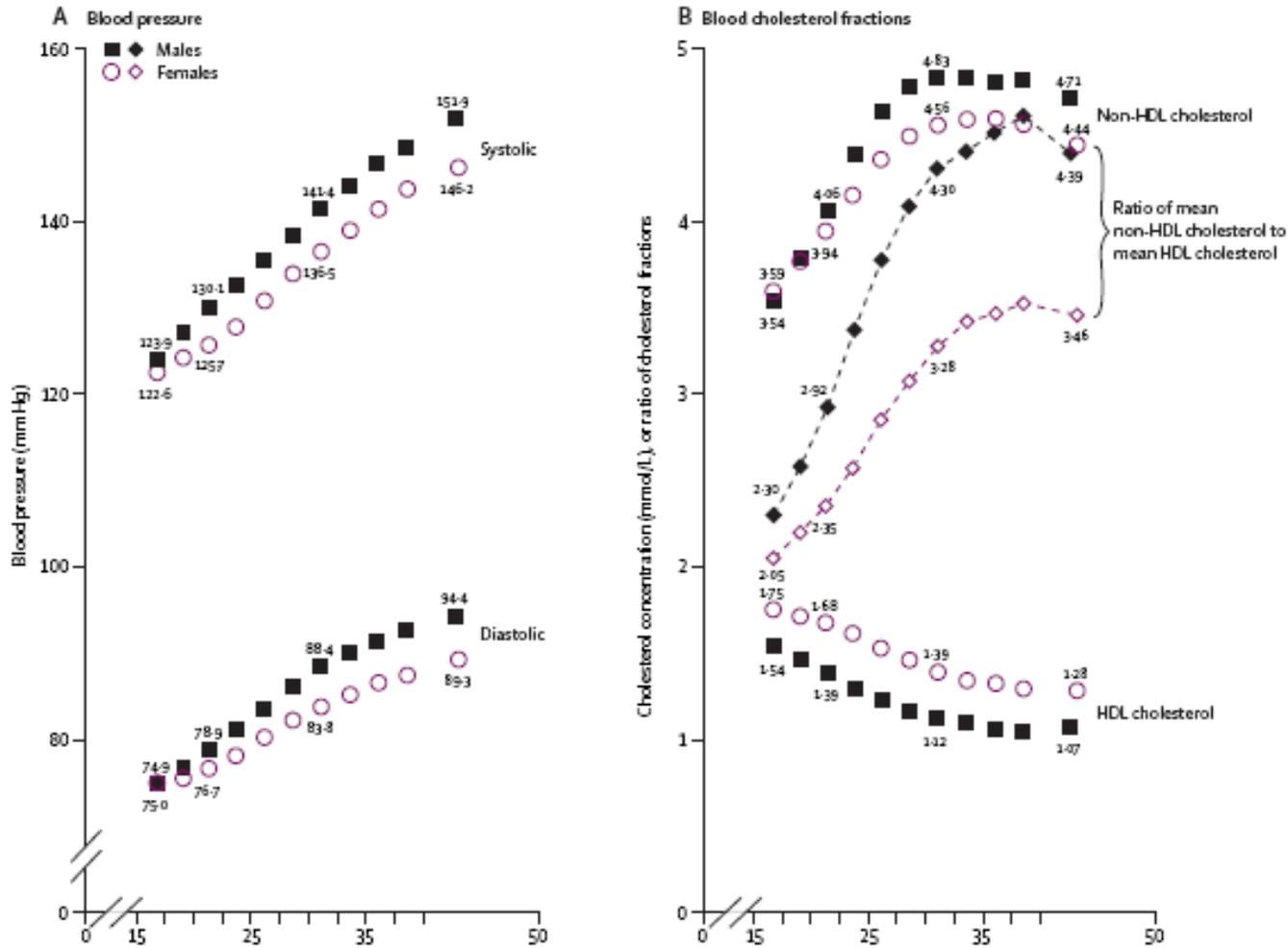
Increasing Risk of Cancer - Men

- A 5 kg/m² increase in BMI is strongly associated with the following cancer risk
 - oesophageal adenocarcinoma (RR 1.52)
 - thyroid (1.33)
 - colon (1.24)
 - renal (1.24)
 - rectal cancer (<1.2)
 - malignant melanoma (<1.2)

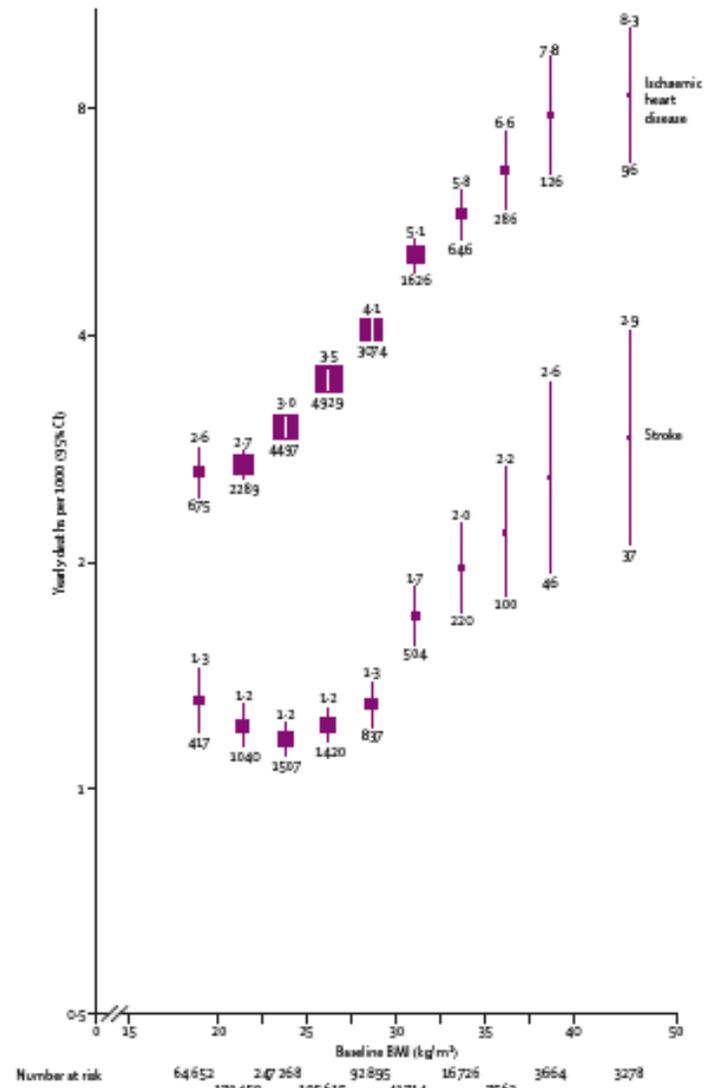
Increasing Risk of Cancer - Women

- A 5 kg/m² increase in BMI is strongly associated with the following cancer risk
 - endometrial (1.59)
 - gallbladder (1.59)
 - oesophageal adenocarcinoma (1.51)
 - renal (1.34)
 - postmenopausal breast (<1.2)
 - pancreatic(<1.2)
 - thyroid (<1.2)
 - colon cancers (<1.2)

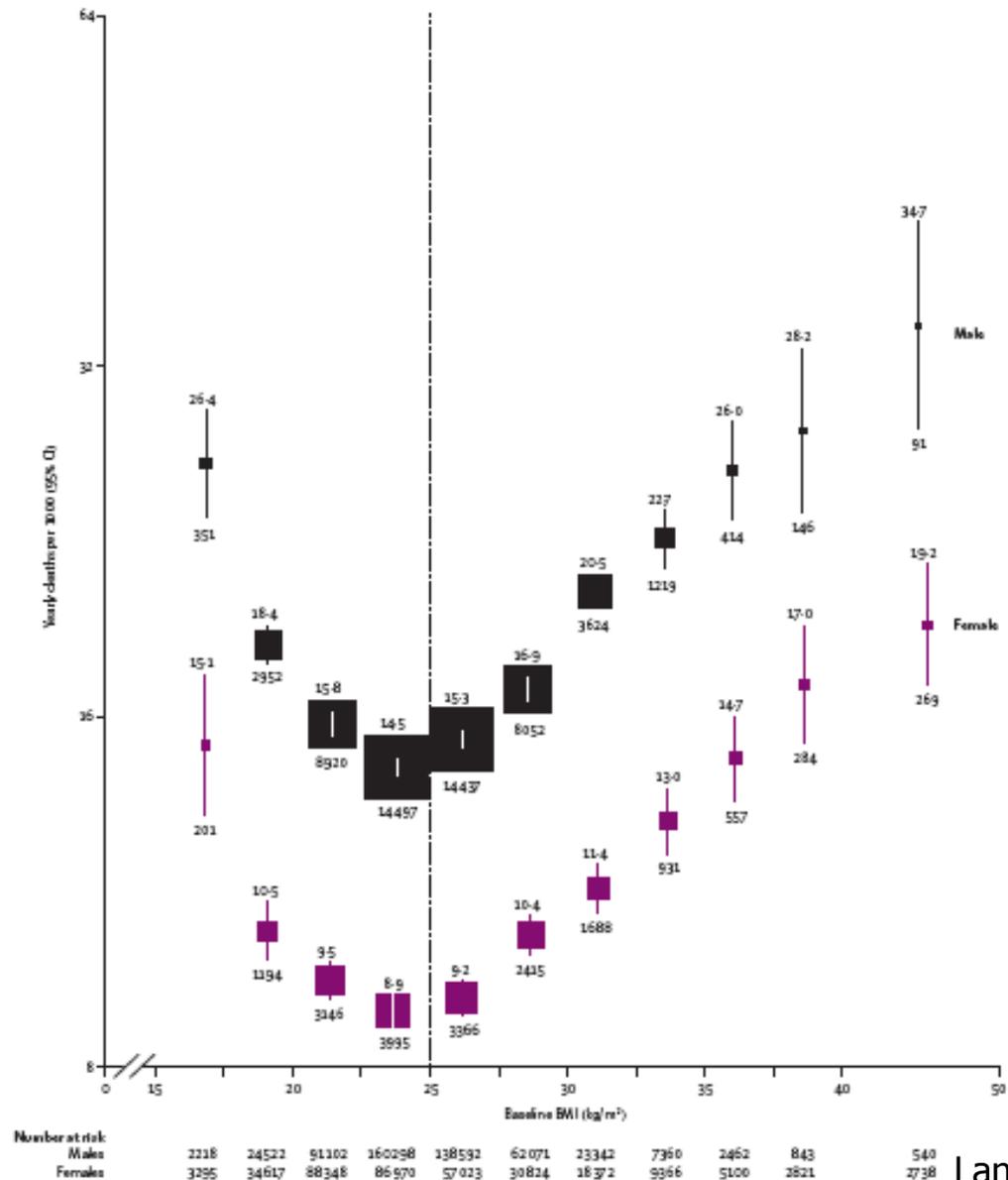
BP and Lipids



IHD and Stroke Mortality and BMI



All Cause Mortality and BMI



After 2 Years in the USA,
Michelangelo's David is Returning to
Italy..

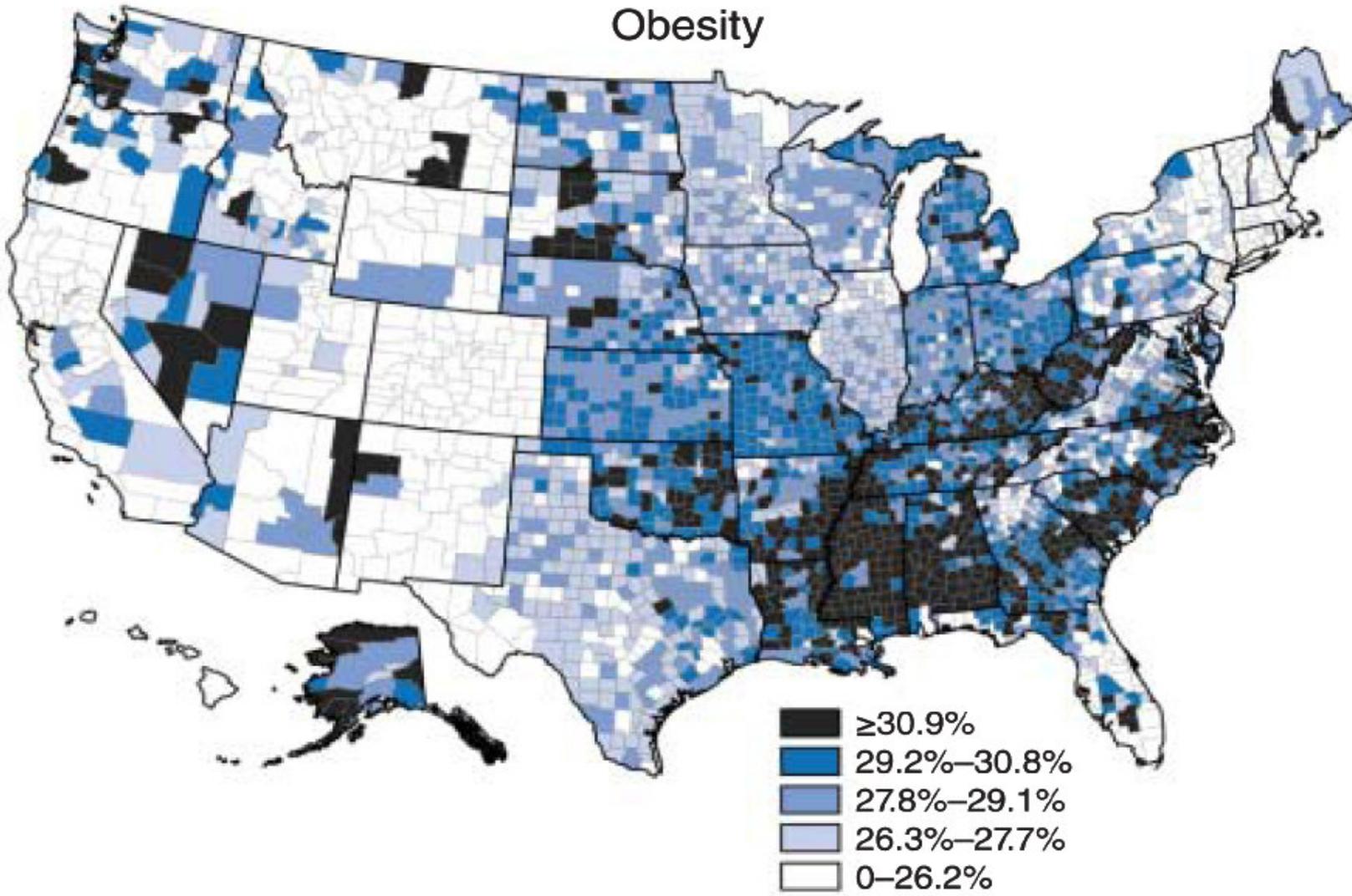


Before



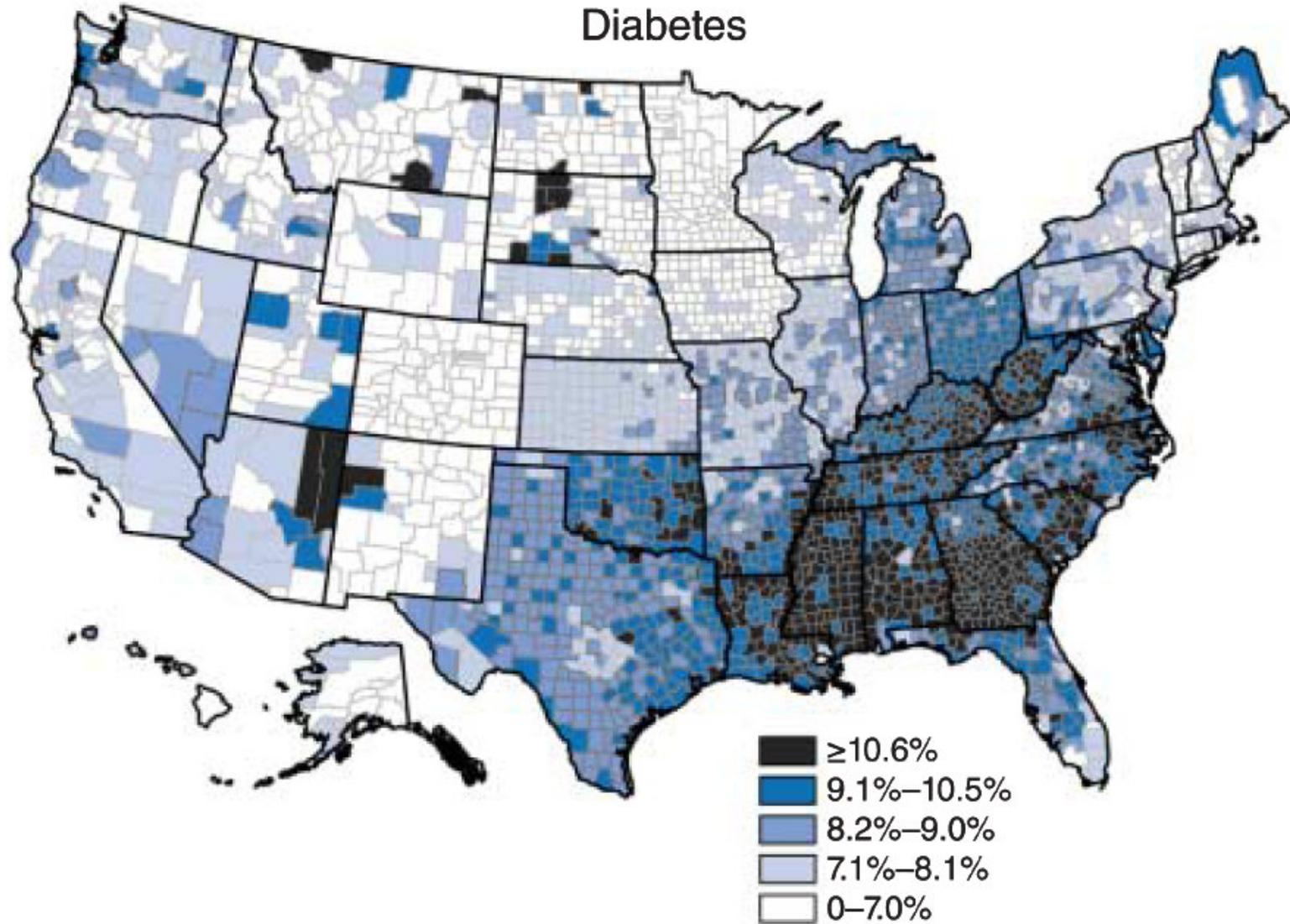
After

Prevalence of Obesity USA 2007



CDC JAMA 2010;303(10):933-935

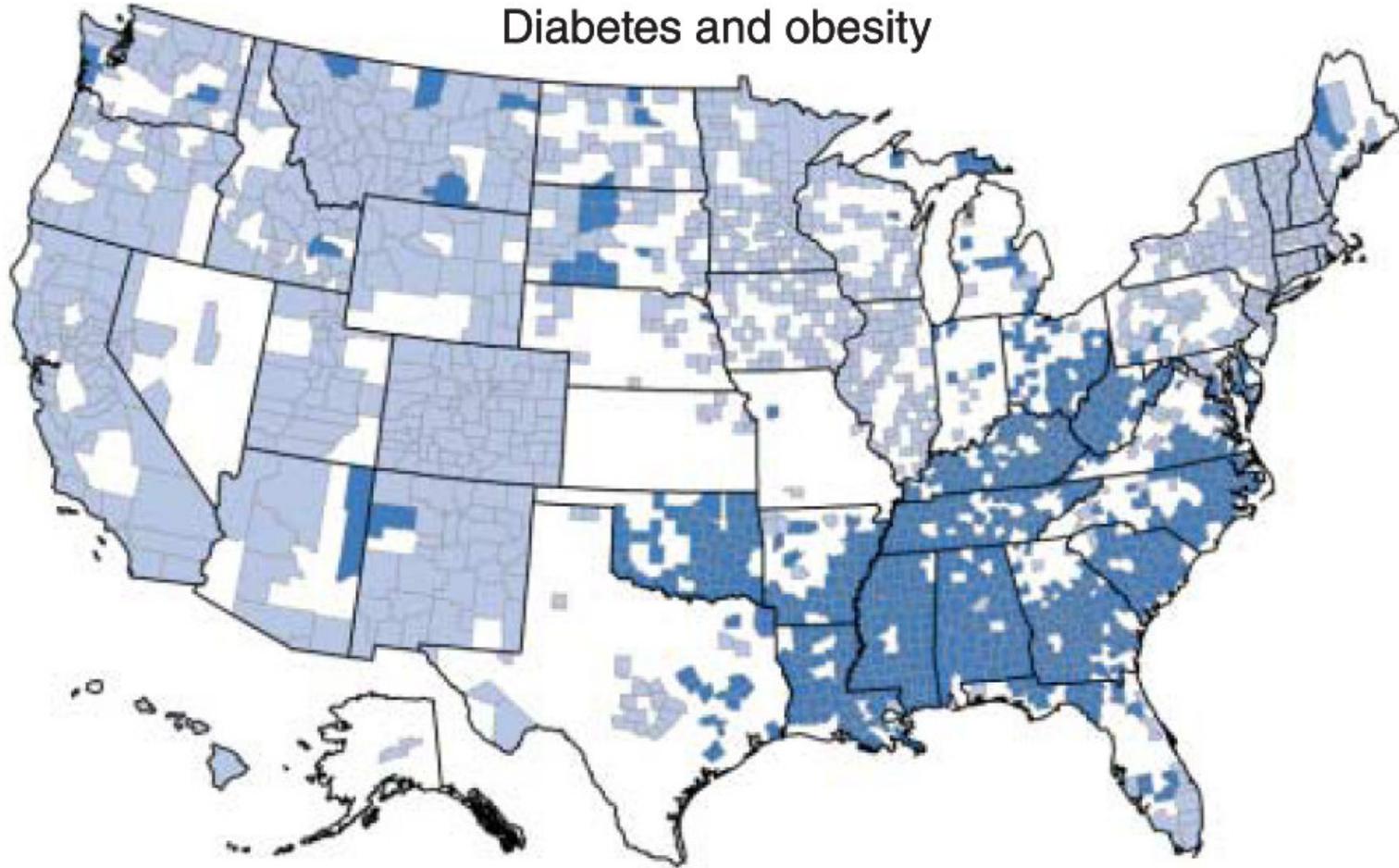
Prevalence of Diabetes USA 2007



CDC JAMA 2010;303(10):933-935

Prevalence of Both USA 2007

Diabetes and obesity



-  Counties in top two quintiles for both diabetes and obesity
-  Counties in bottom two quintiles for both diabetes and obesity

Costs – in the US

- Indirect costs attributed to Diabetes

Cost Component	Total (\$ billions)	Proportion of costs (%)
Absent from work	2.6	4
Reduced work performance	20.0	34
Reduced productivity	0.8	1
Permanent disability	7.9	14
Mortality	26.9	46
TOTAL	58.2	100

Moderate Weight Loss is Beneficial (10% Weight Loss from 100 kg Bodyweight)

Mortality ↓ 20-25% total
 ↓ 30-40% diabetes related
 ↓ 40-50% obesity-related cancer

Blood pressure ↓ 10 mmHg systolic & diastolic

Diabetes ↓ 50% in diabetes risk
 ↓ 30-50% in fasting glucose
 ↓ 15% in HbA_{1c}

Lipids ↓ 10% total cholesterol
 ↓ 15% LDL cholesterol
 ↓ 30% triglycerides
 ↑ 8% HDL

+ psychological, physical and other metabolic benefits

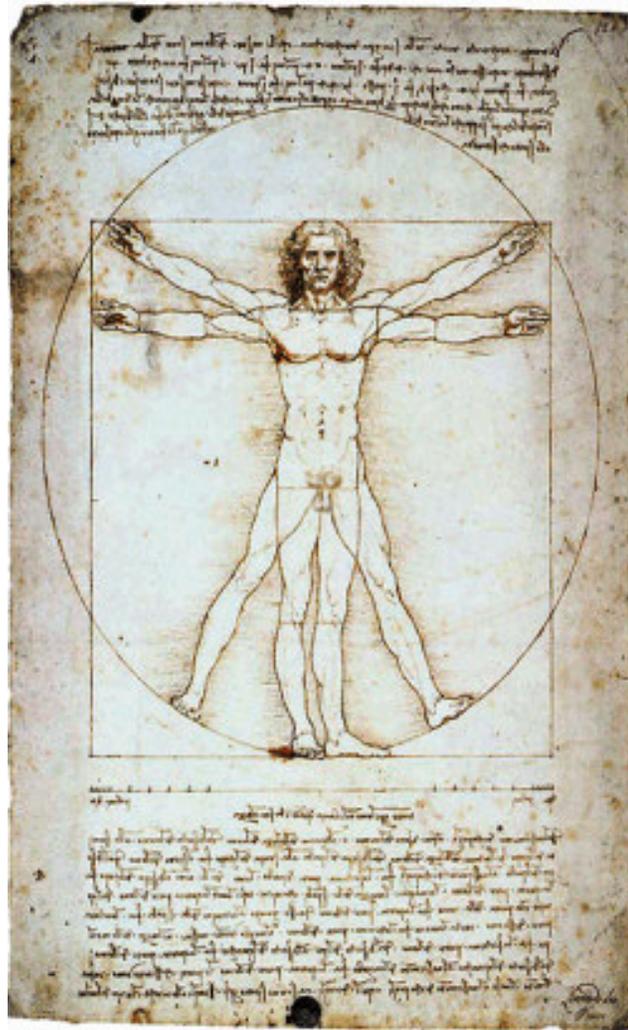
Some Simple Maths

- 1 Kg of fat = 9,000 kcal
- Realistic sustainable weight loss is about 1 pound per week
- 1 lb ~ 4,200 kcal
- $4,200/7 = 600$ kcal per day
- This means about 300 kcal doing more and 300 kcal eating less

Or, To Put it Another Way

- Average dietary intake 2,500 Calories per day
- $\times 365 = 912,500$ per year
- 1% too little expenditure = 9125 calories kept on board = 1Kg weight gain per year

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Caglecartoons.com



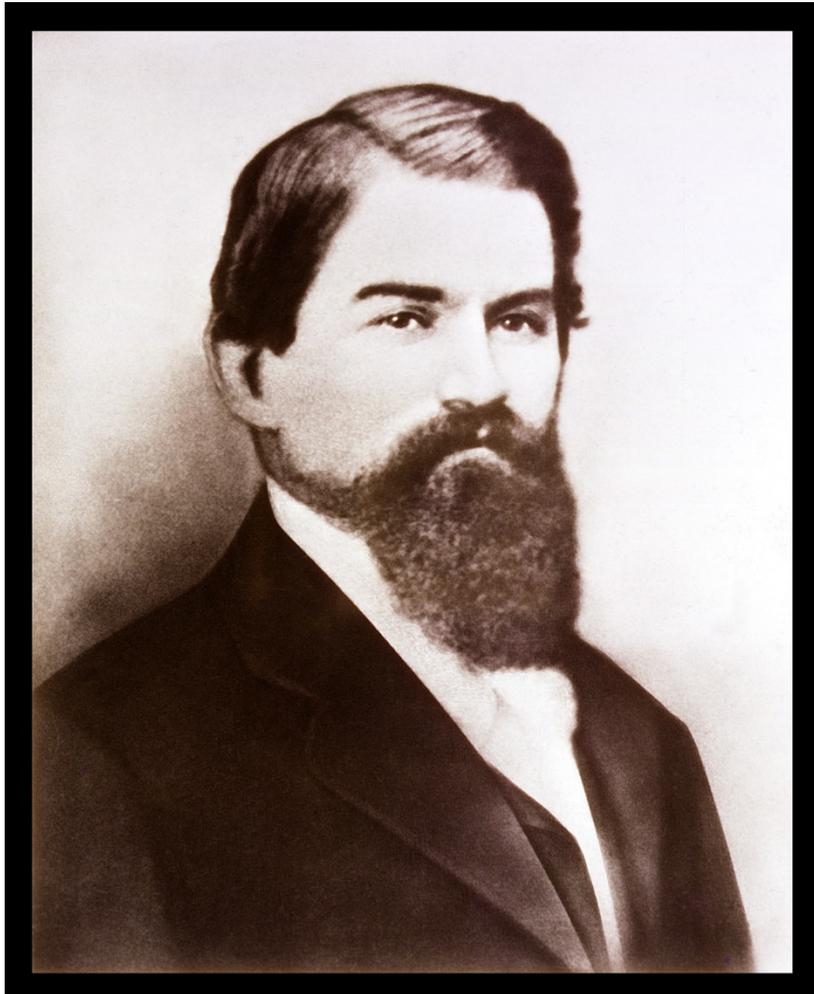
THEN..



apologies to Leonardo Da Vinci

NOW..

Who is This?



John Pemberton

1831-1888

Pharmacist

Inventor Of Coca Cola

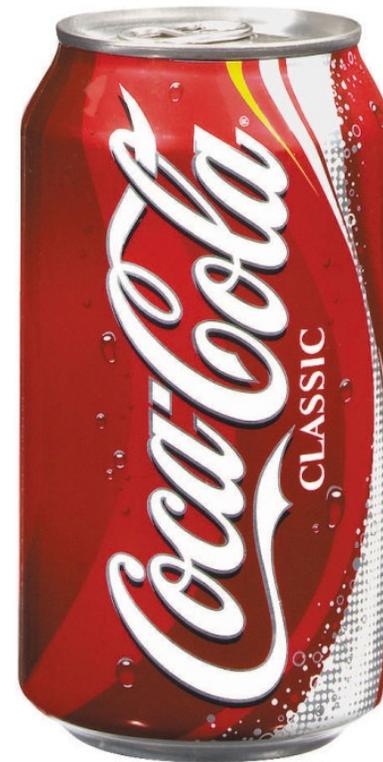
How to Consume Less



500 mls = 215 kcal

330 mls = 142 kcal

A saving of 73 kcal

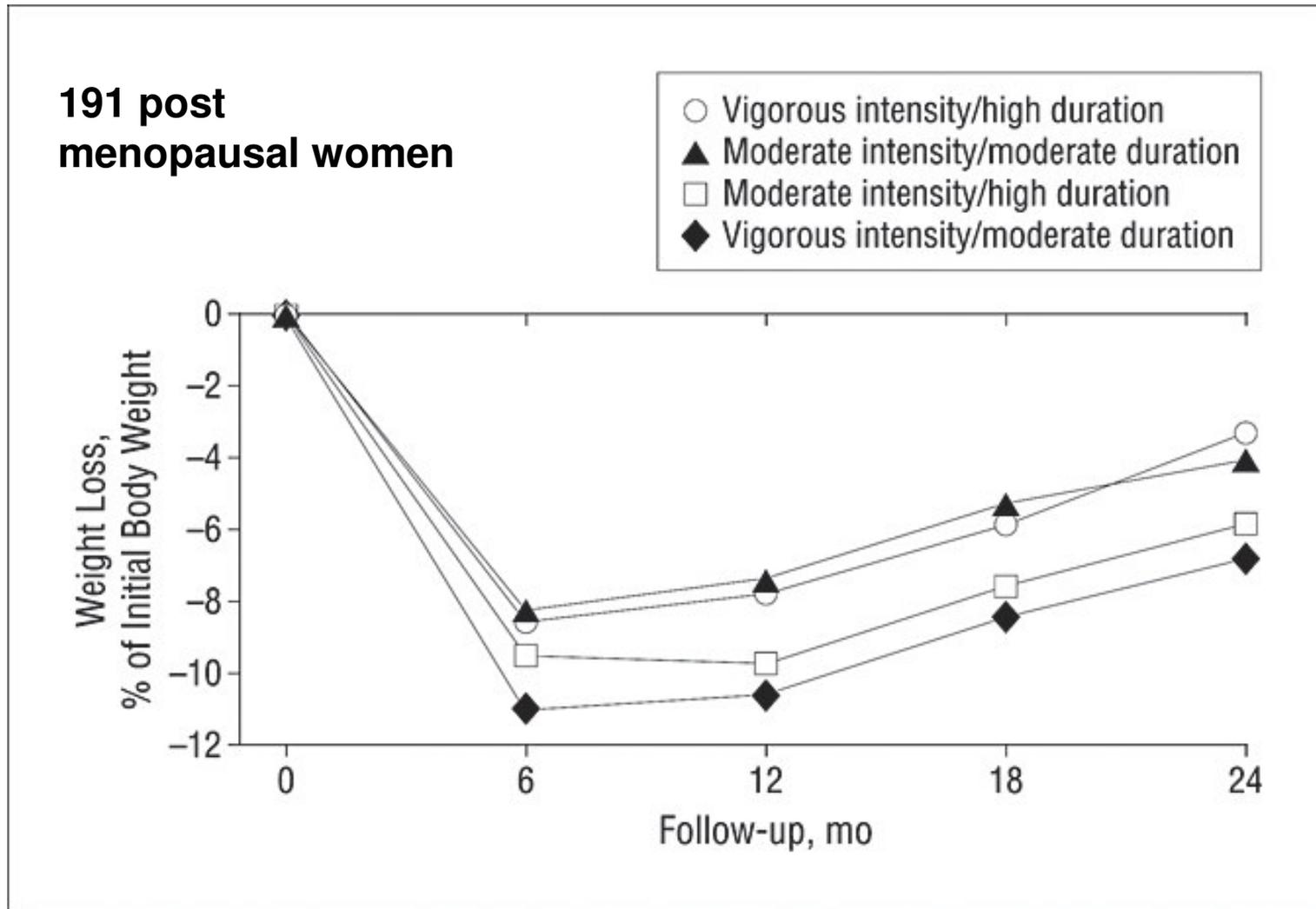


Milk per 200 mls

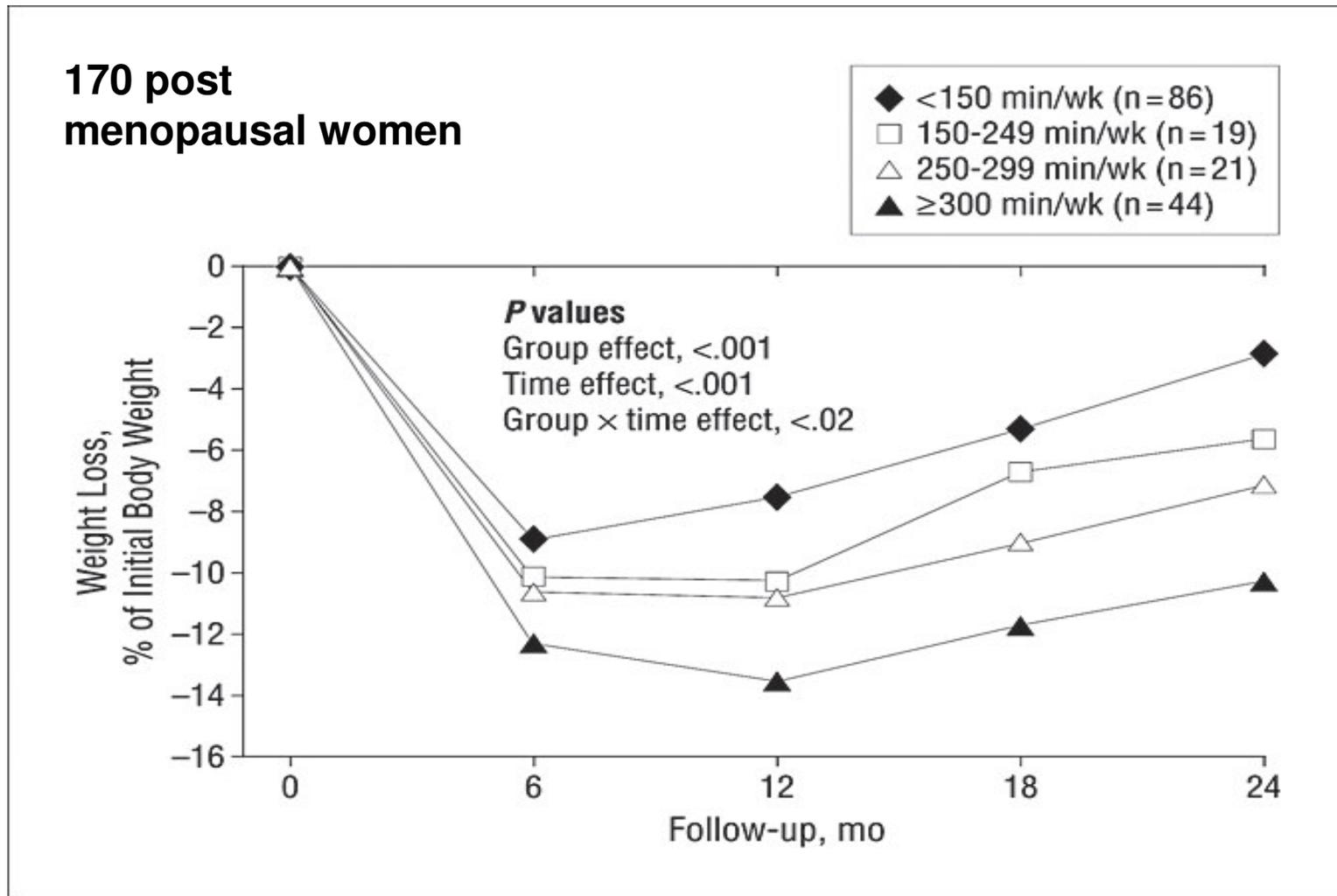
- Jersey 160 kcal
- Whole 130 kcal
- Semi skimmed 100 kcal
- Skimmed 75 kcal



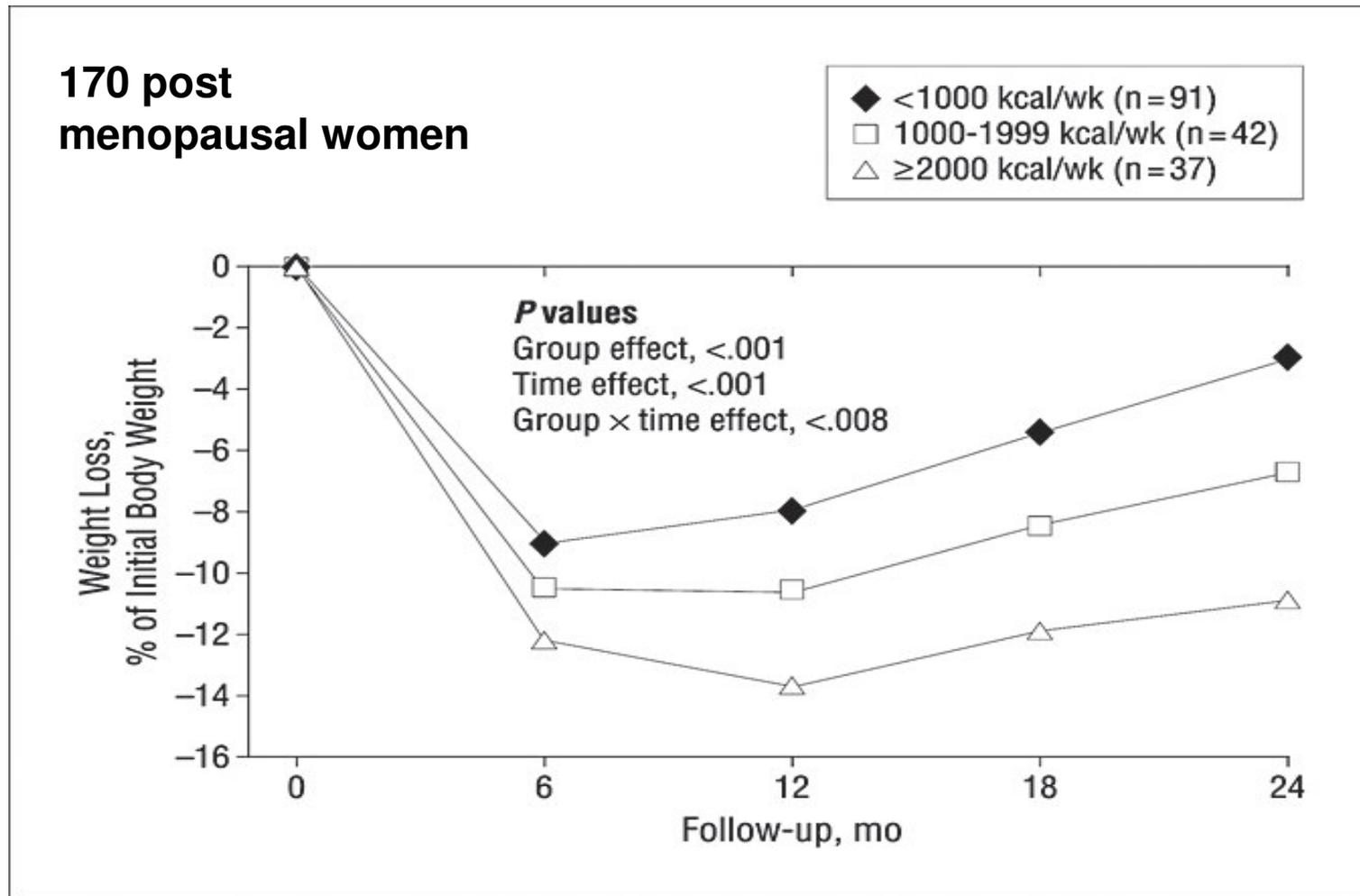
But Weight Loss is HARD WORK!



But Weight Loss is HARD WORK!



But Weight Loss is HARD WORK!



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NEW APPROACH NEEDED: MP Norman Lamb.

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Find out who's won the Community Chest Challenge

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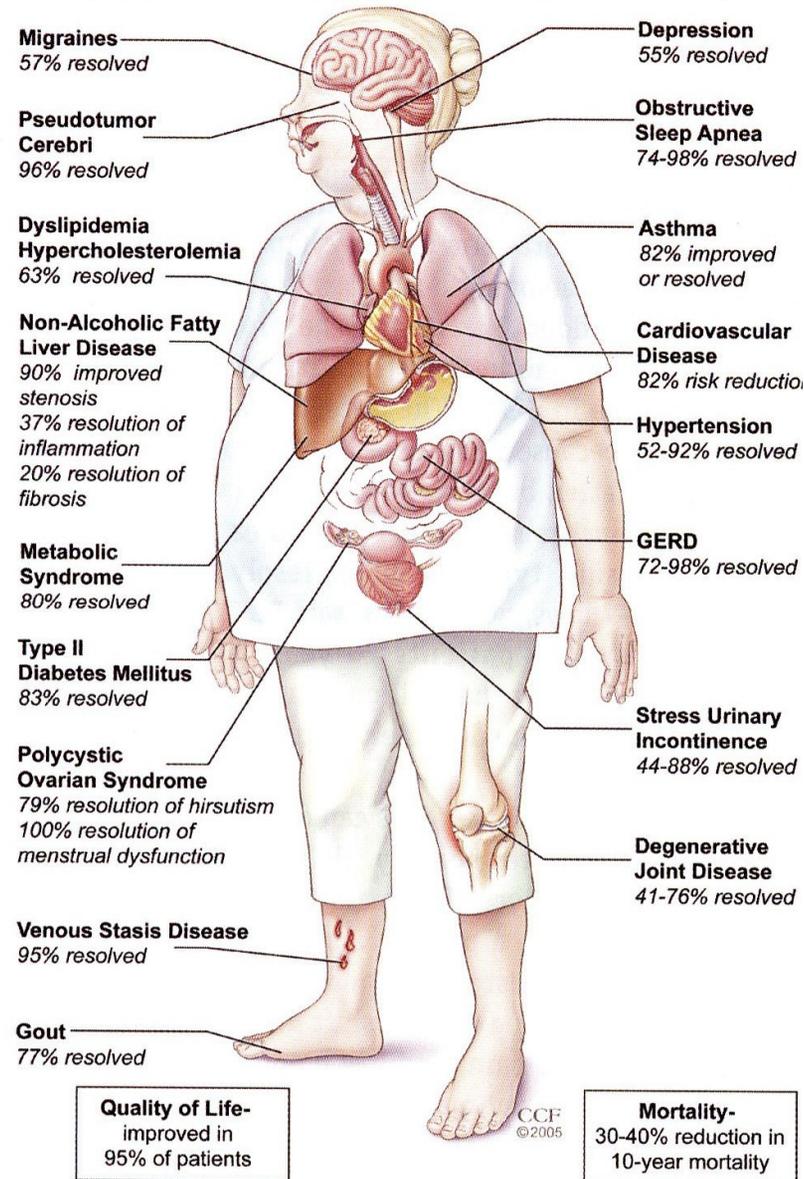
Going the extra mile to help make our children healthier

PAGES 14 - 15

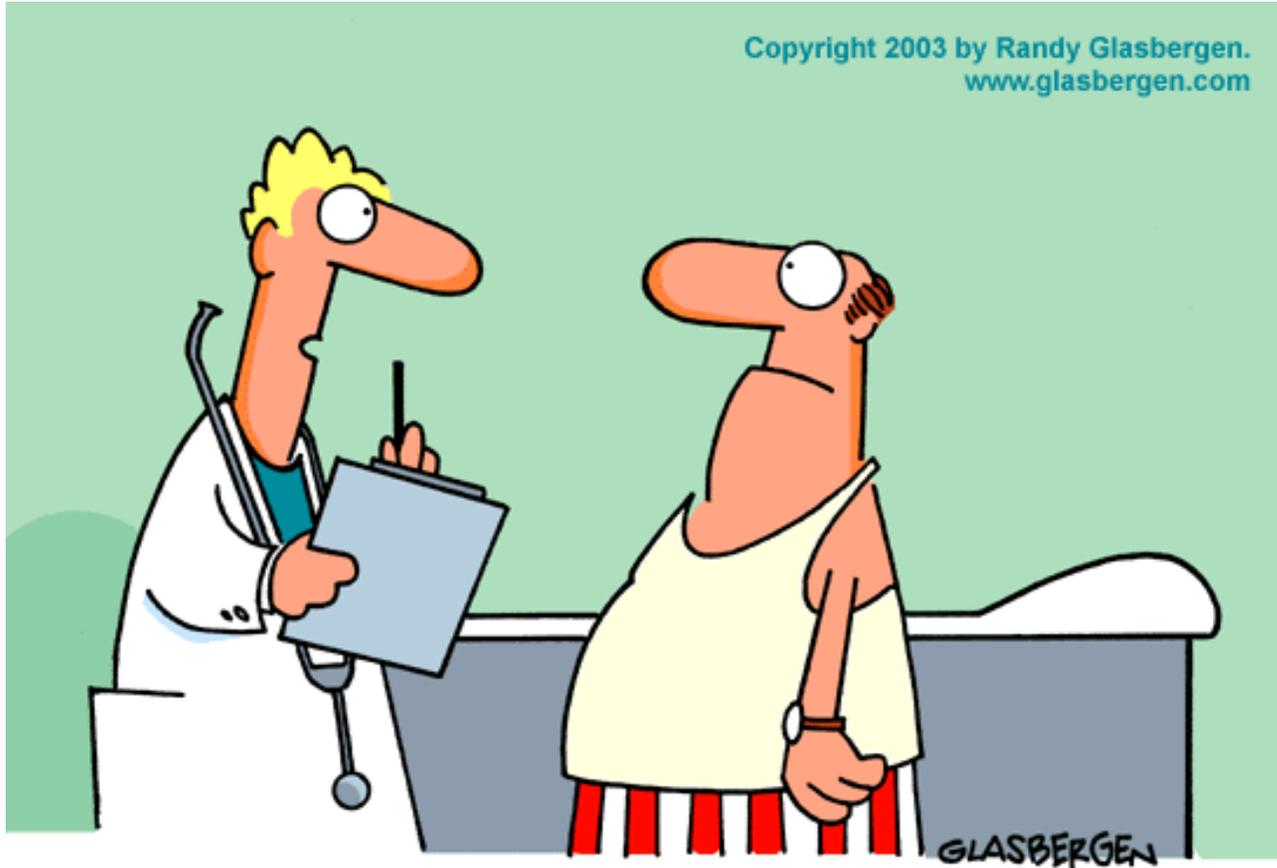


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Things That Improve with Surgery



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“What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?”

Any Questions?