

# Impact of obesity on other long term conditions and provider demand

East of England Clinical Senate Assembly

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How heaviest person have you  
ever come across or heard of?

# Khalid Bin Mohsen Shaari- 2013



2016



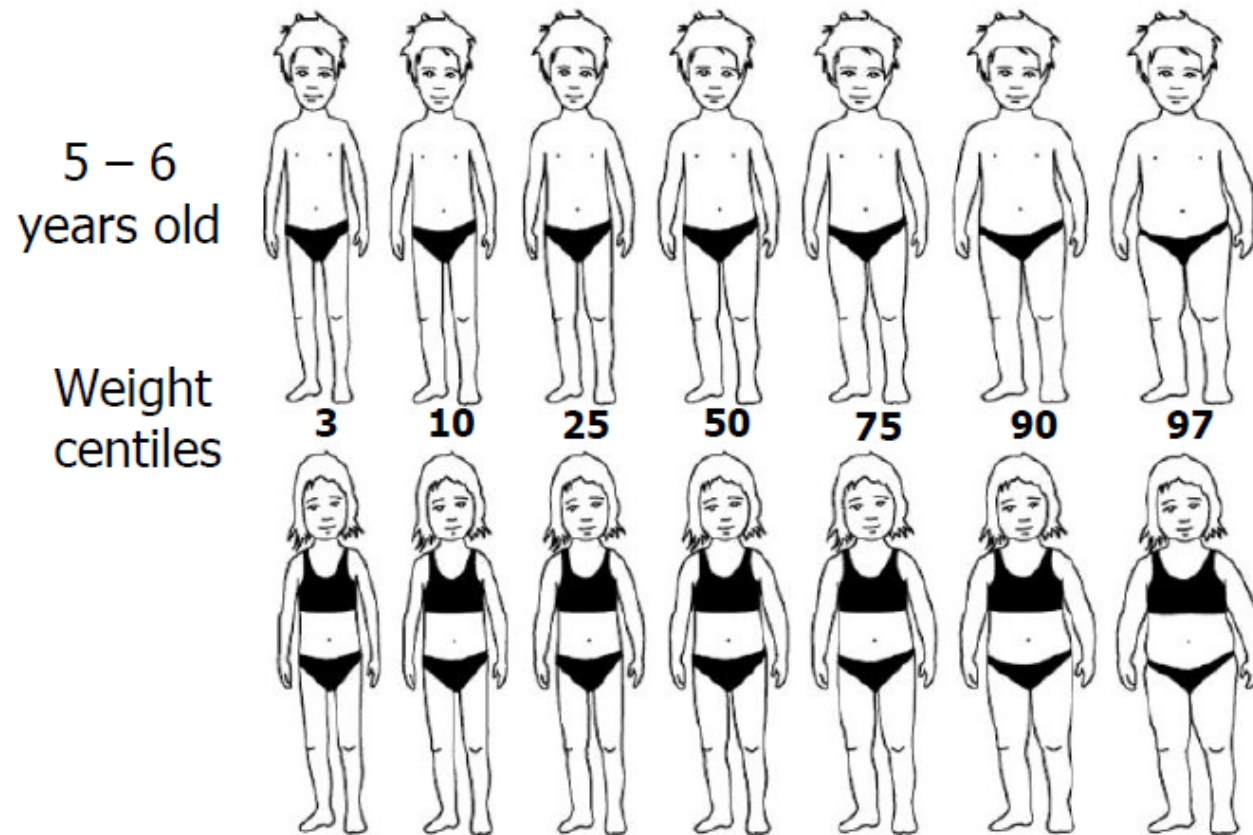
300 kg weight loss

# Parents don't recognise obese children

- 219 mothers with kids of 3-6 year old
- Showed different silhouettes and ask to identify which one are overweight and obese
- Asked to chose which one is more closed representation of their child

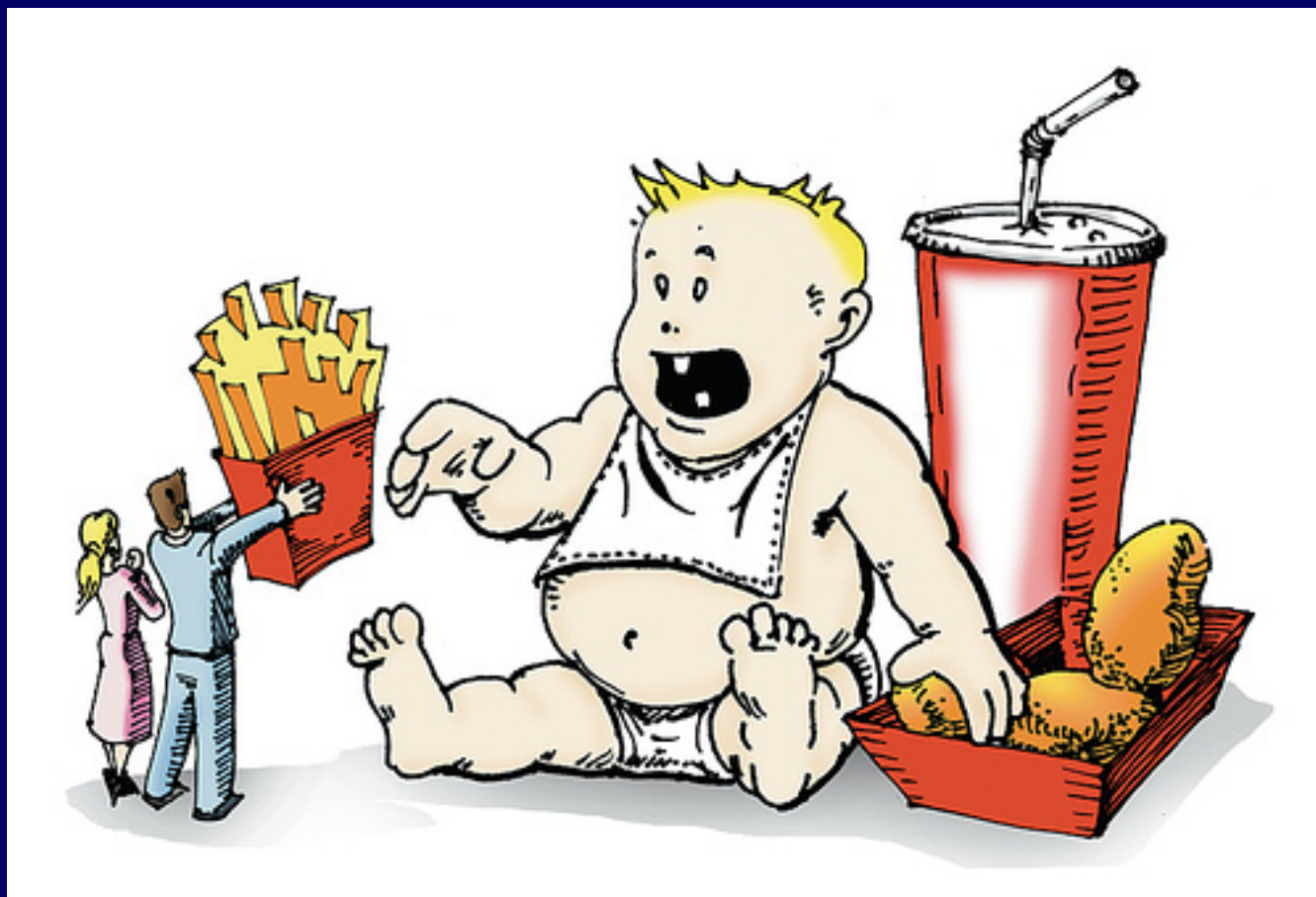
Warschburger P & Kröller K Pediatrics 2009;24(1):e60-e68

# Parents don't recognise obese children



Warschburger P & Kröller K Pediatrics 2009;24(1):e60-e68

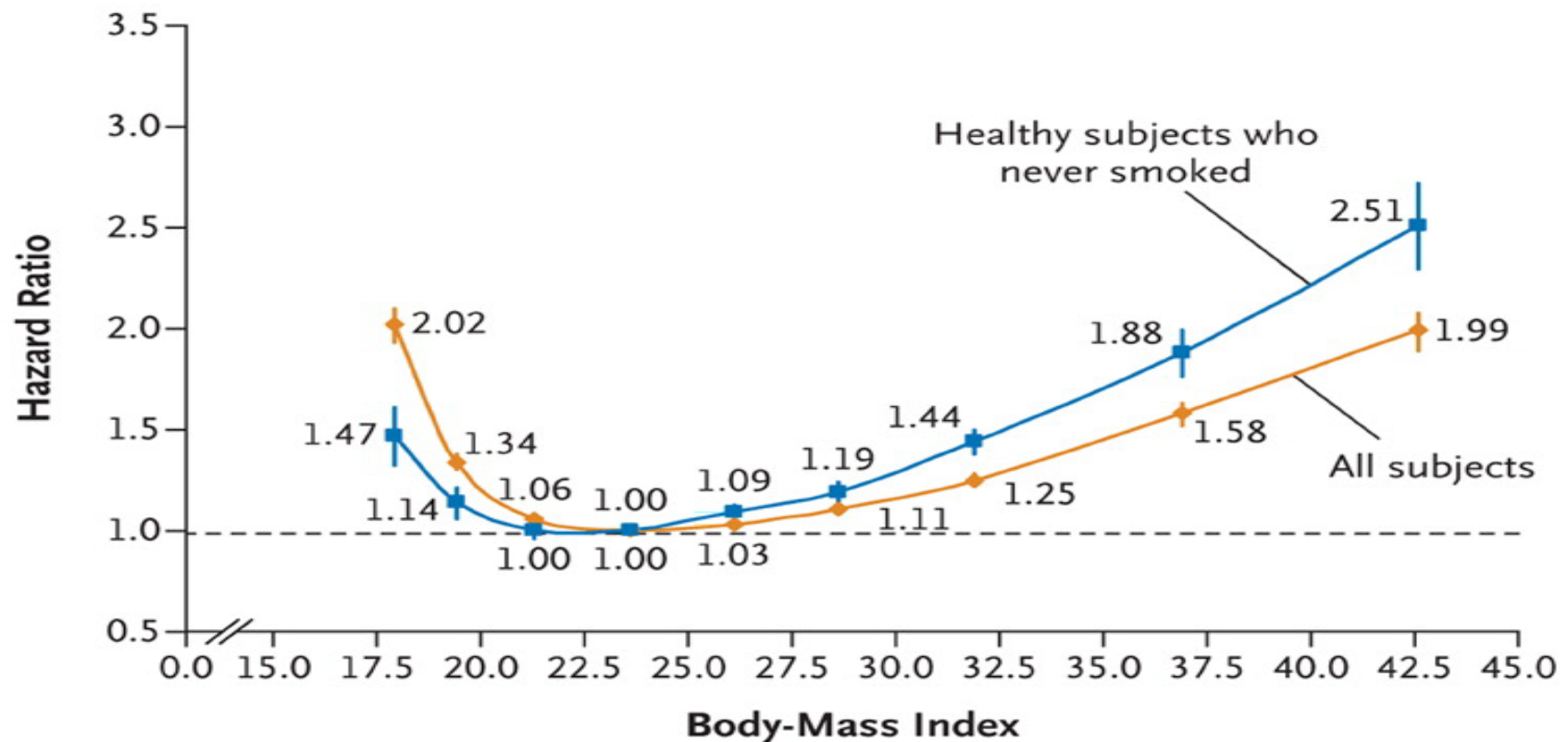
- Only 64.5% recognised the overweight or obese ones
- Only 48.8% knew that being overweight had associated health risks
- Only 38.7% knew that being overweight had associated mental health risks
- Only 40.3% chose the correct silhouette that corresponded to their own child





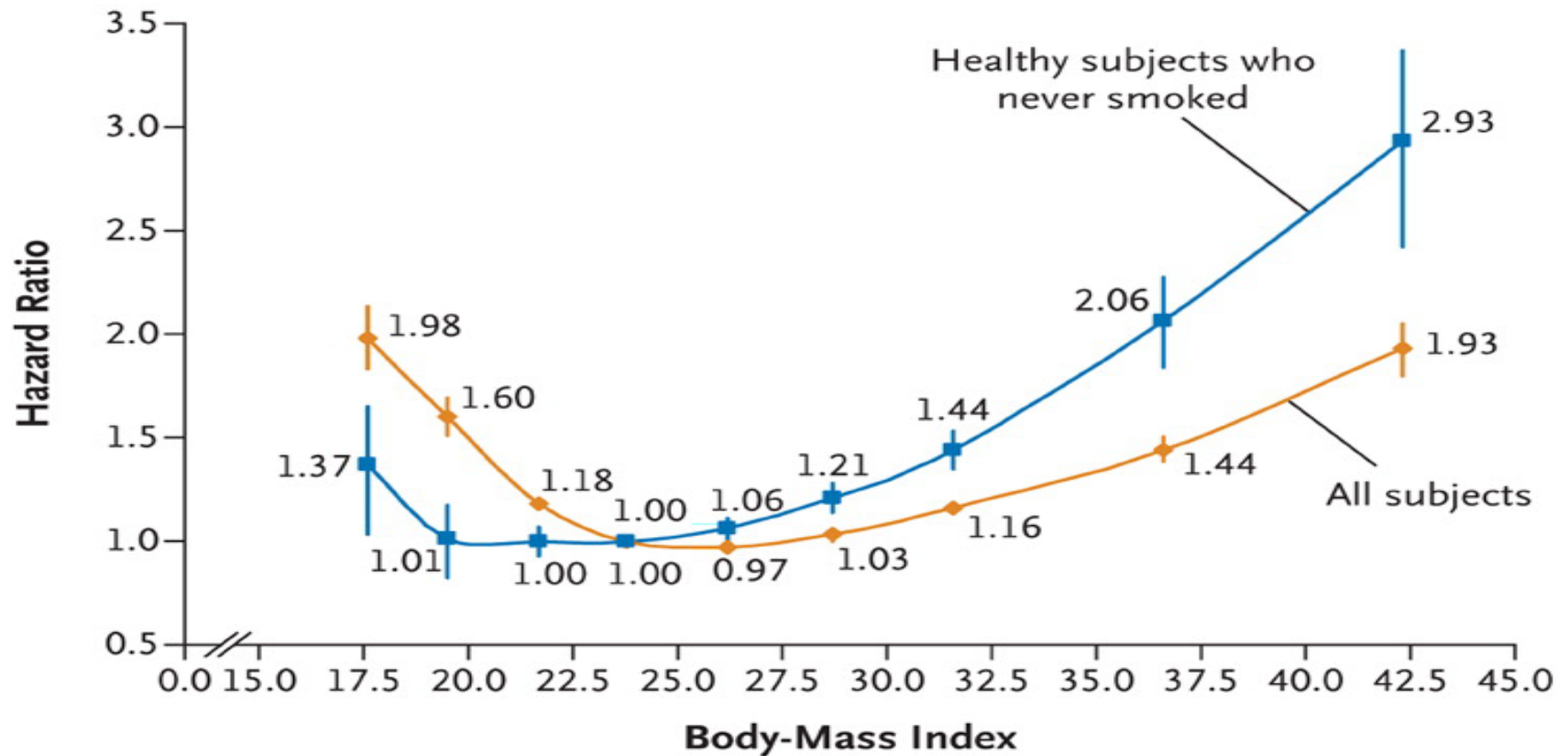
# BMI and all Cause Mortality

A White Women

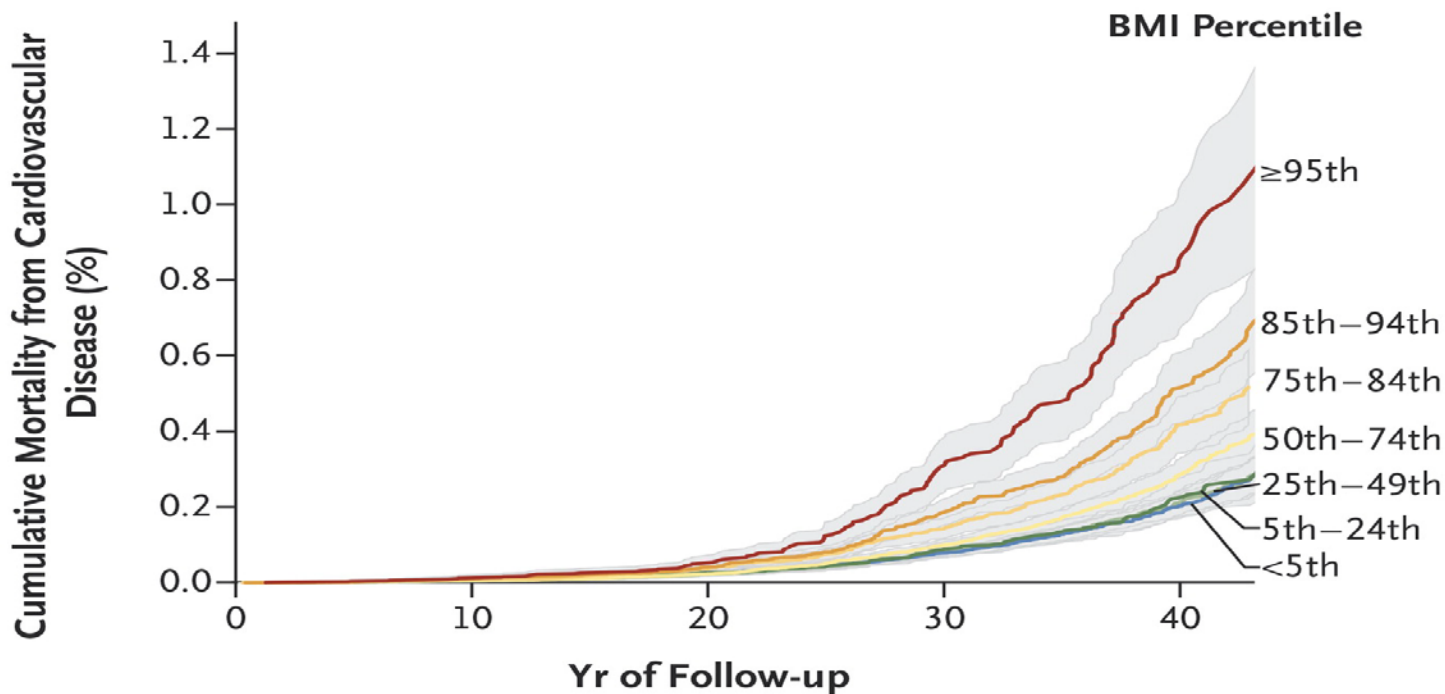


# BMI and all Cause Mortality

**B White Men**



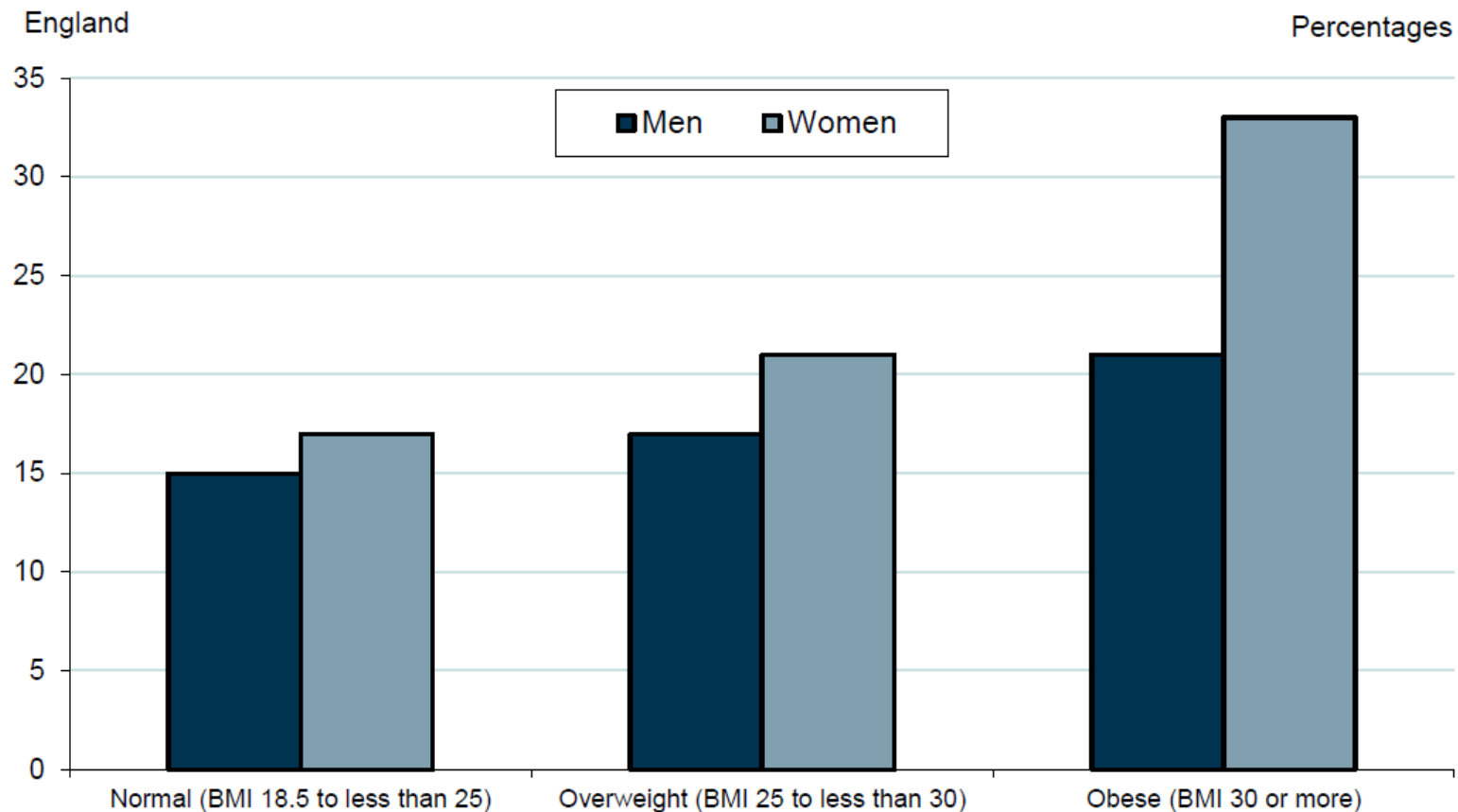
# BMI in Adolescence and Cardiovascular Mortality (2.3 million)



## No. at Risk

|                                  |            |            |            |            |
|----------------------------------|------------|------------|------------|------------|
| Participants at risk             | 1,712,018  | 1,042,018  | 540,636    | 160,145    |
| Cumulative person-yr             | 17,201,301 | 30,718,320 | 38,472,521 | 41,926,636 |
| Cumulative cardiovascular deaths | 185        | 609        | 1,577      | 2,676      |

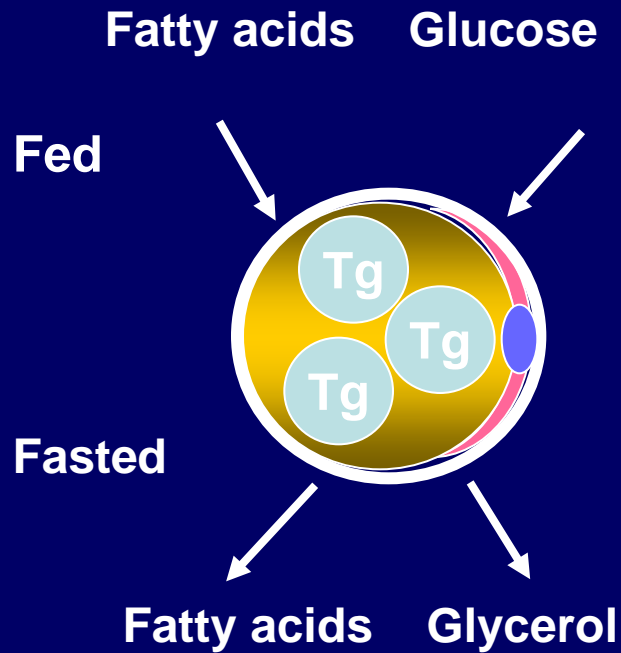
# Long term illness by BMI and gender 2012



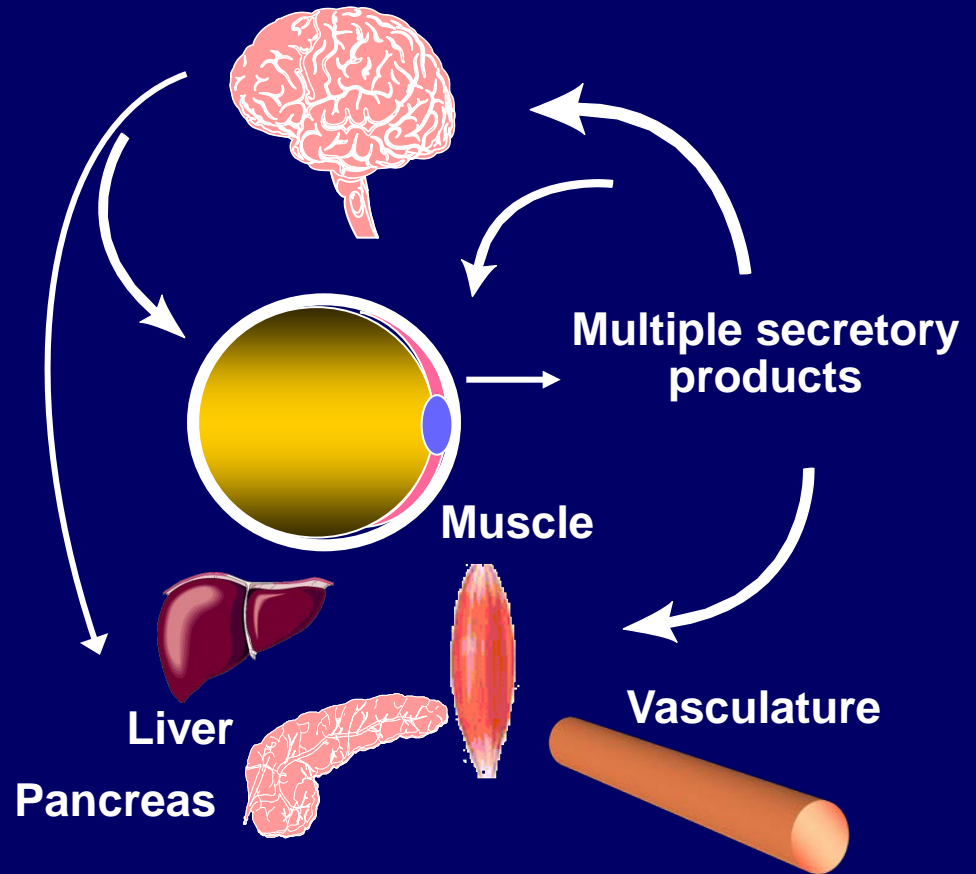
Source: Health Survey for England 2012. Health and Social Care Information Centre

# The evolving view of adipose tissue: an endocrine organ

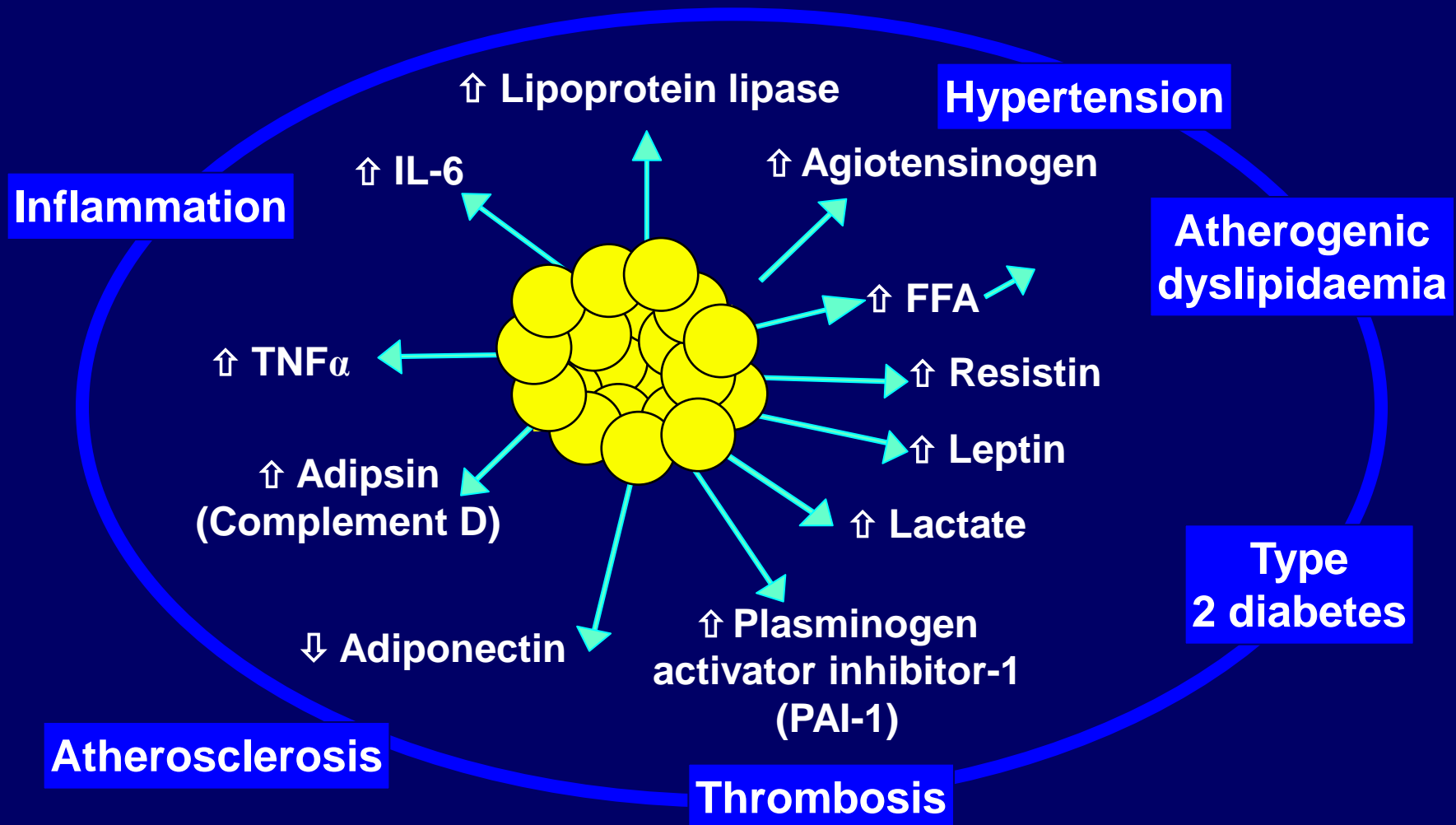
## Old View: inert storage depot



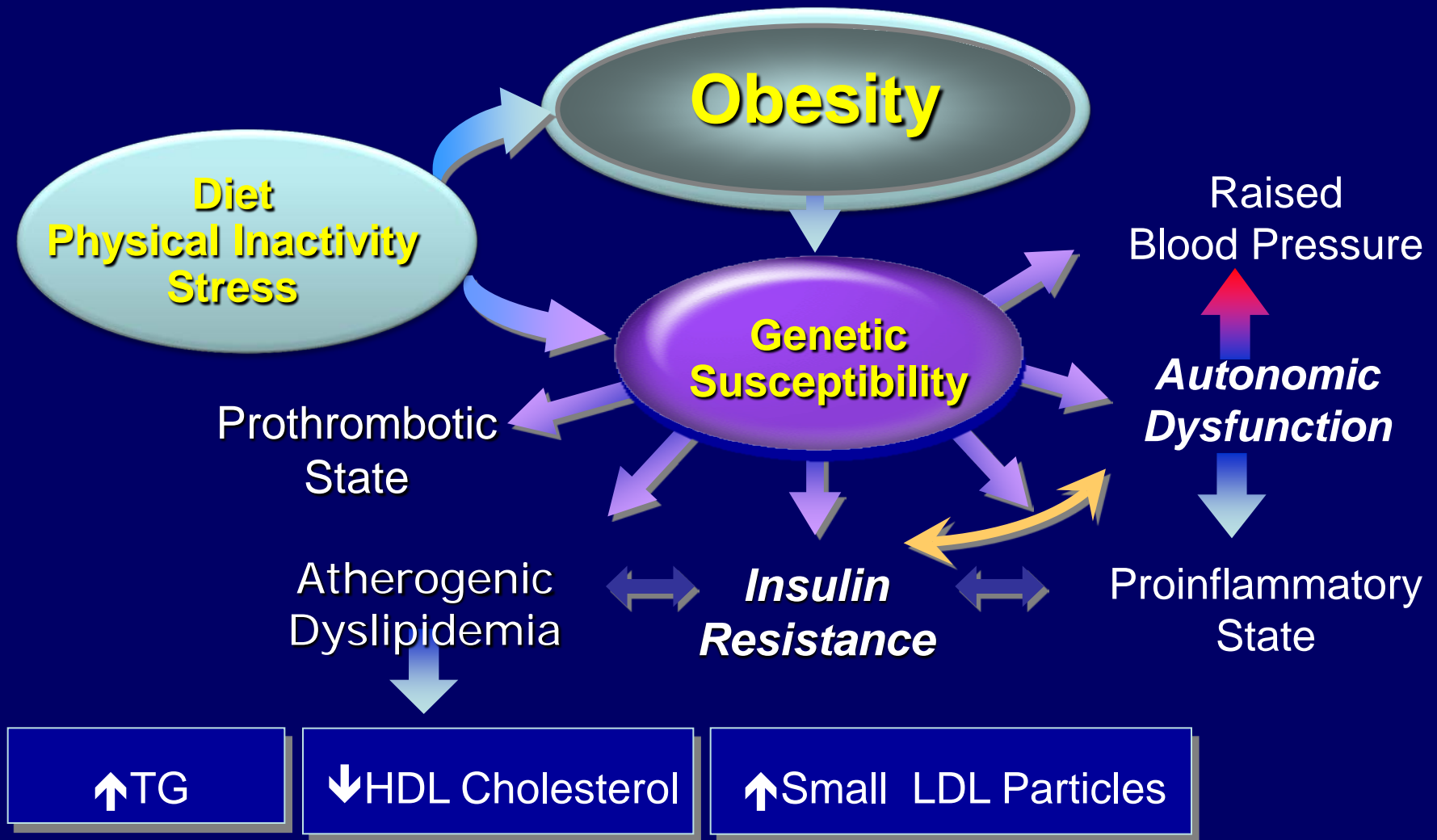
## Current View: secretory/endocrine organ



# Adverse cardiometabolic effects of products of adipocytes



# Obesity and Metabolic Syndrome: A Cluster of Coronary Heart Disease Risk Factors



# Main Obesity Complications

Hypoventilation  
Obstructive Sleep Apnoea  
Central Apnoea

Hirsutism  
Sweating

Gall Stones  
Non Alcoholic Fatty Liver  
Colon Cancer

Other Cancers

Sex Hormone disorders  
Pituitary Hormone abnormalities  
Impaired Immunity



Stroke  
Mood / Self Esteem

Hypertension  
Ischaemic Heart Disease  
Thromboembolism

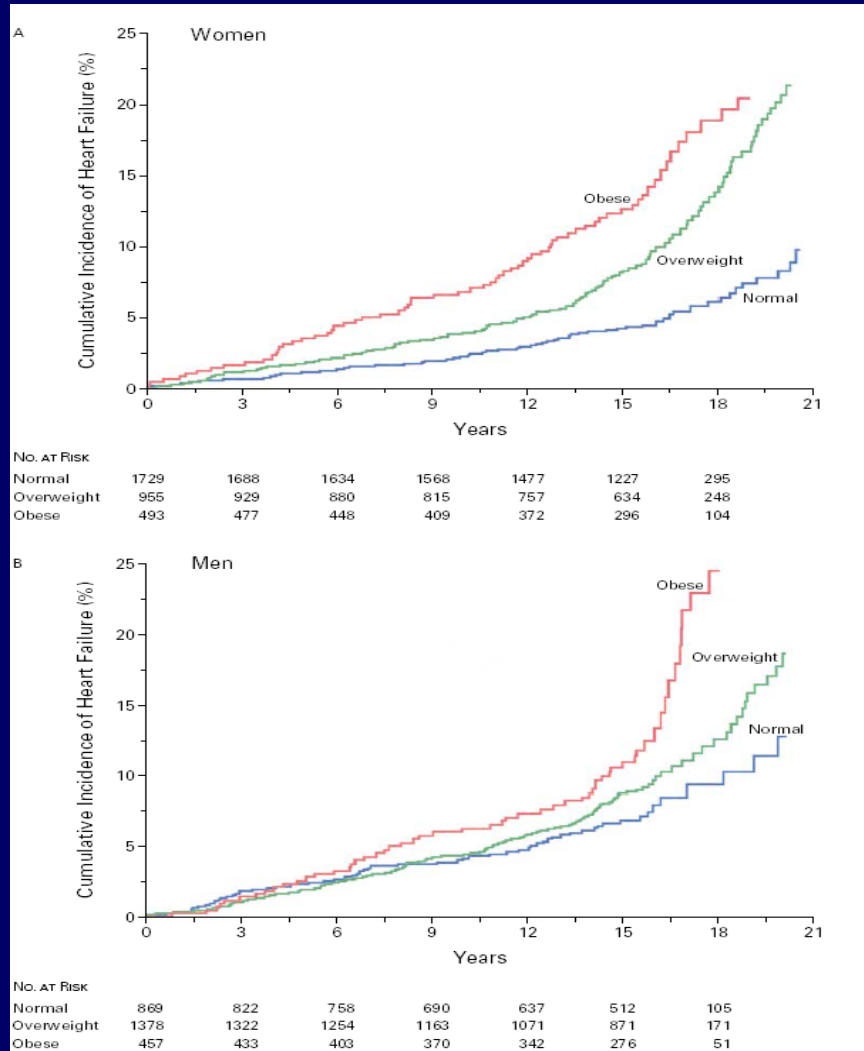
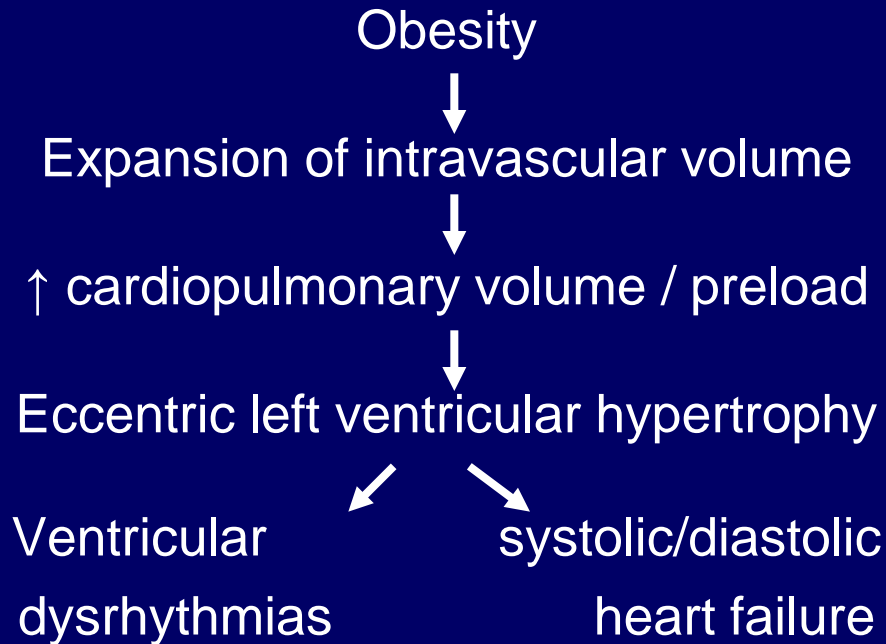
Infertility  
Menorrhagia  
Hypogonadism

Osteoarthritis  
Gout

Diabetes  
Dyslipaemia  
Hyperinsulinaemia



# Obesity and Heart Failure



Lavie CJ et al: *Med Clin North Am* 2004;88(5):1273-94

Kenchiah S et al: *N Engl J Med* 2002 August 1;347(5):305-13.

# Statistics for obesity and cancer risk

## 2009 AICR Expert Report (Proportion of cancers that are caused by obesity)

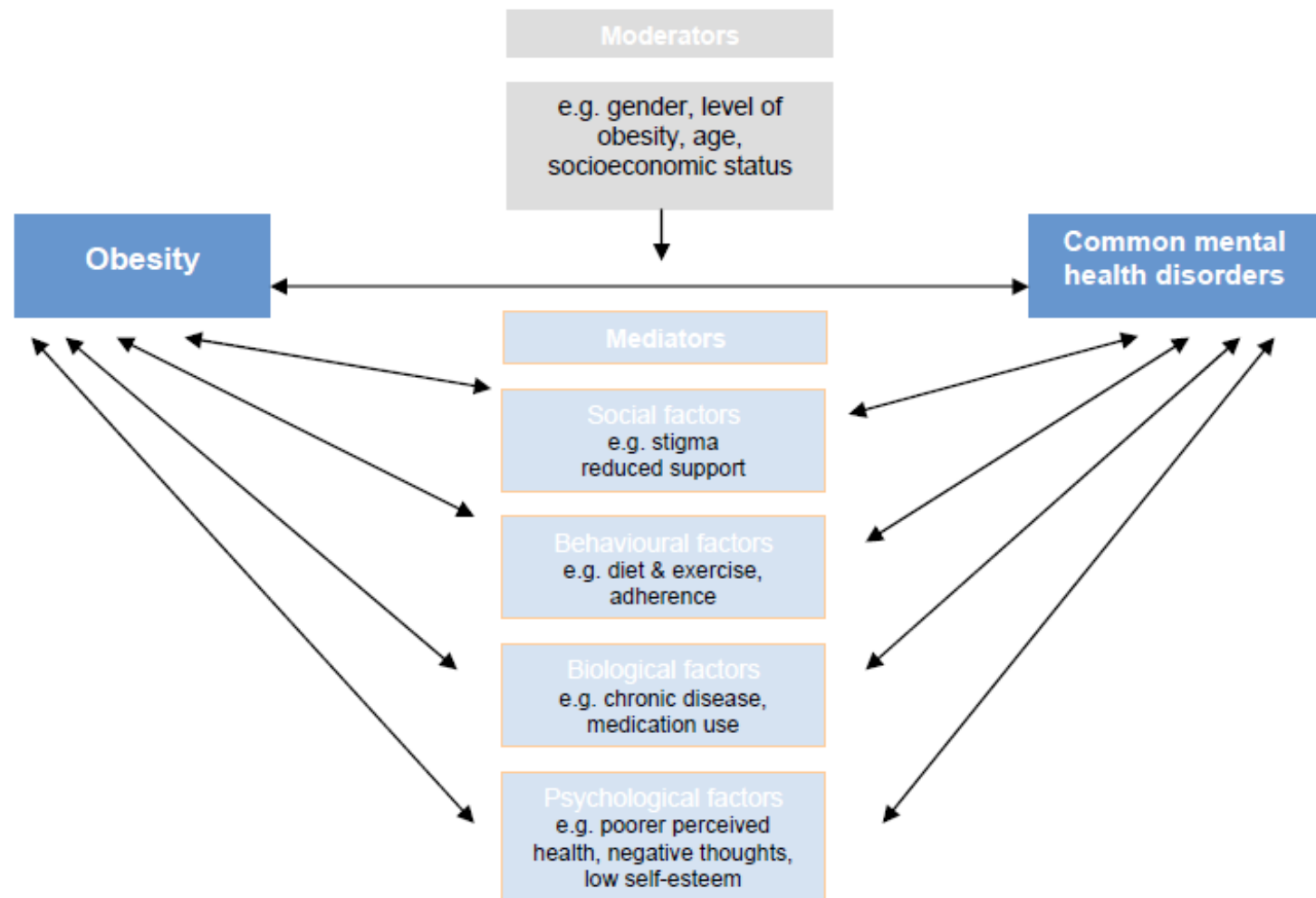
- 49% Endometrial cancers
- 35% Oesophageal cancers
- 28% pancreatic cancers
- 24% kidney cancers
- 17% breast cancers
- 9% colorectal cancers



# Obesity and mental Health

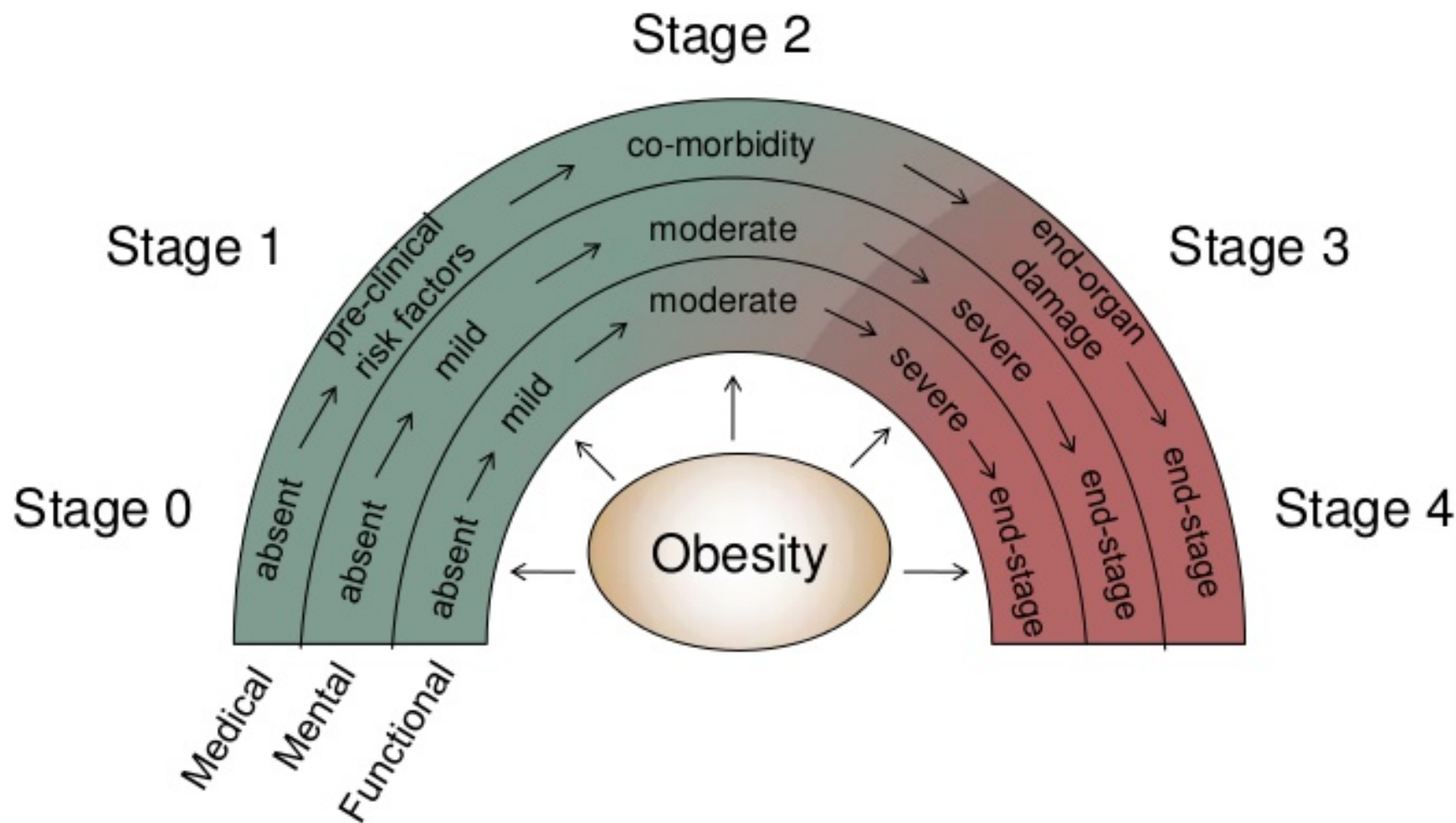
- Obesity may trigger depression, eating disorder, distorted body image, and low self-esteem.
- Weight stigma increases vulnerability to depression, low self-esteem, poor body image, maladaptive eating behaviours and exercise avoidance.

**Figure 1:** Model for the mediator/moderator relationship between obesity and common mental health disorders



Source: Adapted from Markowitz et al. 2008 and Napolitano et al, 2008<sup>4,5</sup>

# Edmonton Obesity Staging System (EOSS)



# Model of Care

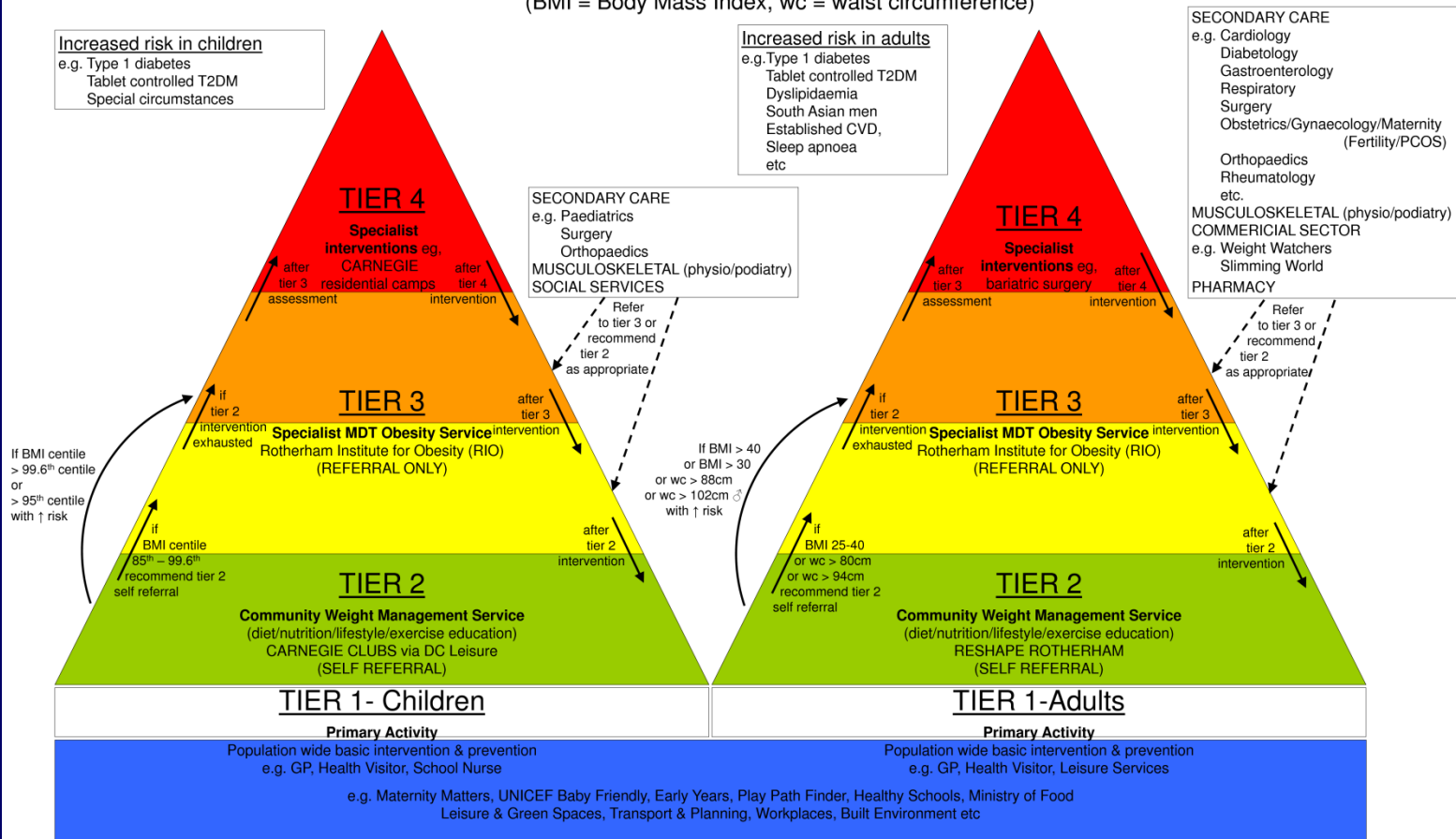
- Tier 4 - Specialised Complex Obesity Services (including bariatric surgery)
- Tier 3 - A primary/community care based multi-disciplinary team (MDT) to provide an intensive level of input to patients.
- Tier 2 - Primary Care with Community Interventions
- Tier 1 - Primary Care and Community Advice

# Model of Care

## NHS ROTHERHAM OBESITY MODEL

(July 2009)

(BMI = Body Mass Index, wc = waist circumference)



Any TIER 3 patient requiring pharmacotherapy will be treated in TIER 3, and this will be reflected in the GP prescribing data for whom the patient is registered

**NB** If patients are considered unsuccessful at any given tier, they automatically progress to the next tier of intervention

After intervention, patients progress down through the tiers and back to primary activity (TIER 1) of monitoring and education (every 6-12 months)







### **The CT imaging systems of yesterday:**

- 160KG Table weight allowance
- 50KW power
- 70cm bore



### **The CT imaging systems of today:**

- Up to 300KG Table weight allowance
- 2 x 120 KW power
- 80cm bore



## Ambulances being made wider and stronger to deal with rising numbers of obese housebound patients weighing more than 50 STONE

- Now more than 800 ambulances in UK equipped to deal with obese patients
- The specialist ambulances have cost £100,000 and include wider doors
- They also have a stretcher for extra heavy patients weighing 56 stone
- Paramedics say now common to treat patients housebound by their weight

# Obesity- Conclusions

- a major public health crisis with an impact on many aspect of NHS care
- estimated to be 4<sup>th</sup> largest risk contributing to death in England
- Costs associated with treating long term conditions e.g., diabetes are significant and likely to increase as levels of population obesity rise
- Costly social provision – housing adaptation, carer provision