



Healthy Weight and Treating Obesity- NENC ICS



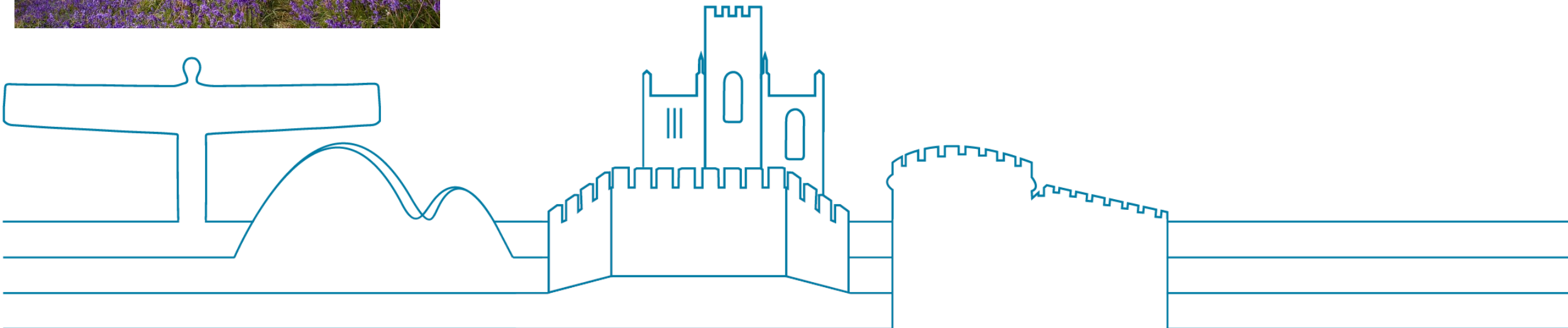
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Clinical Lead

Consultant in Diabetes, Obesity and Endocrinology

The James Cook University Hospital

Middlesbrough



Obesity Service

The Science The Art The Reality

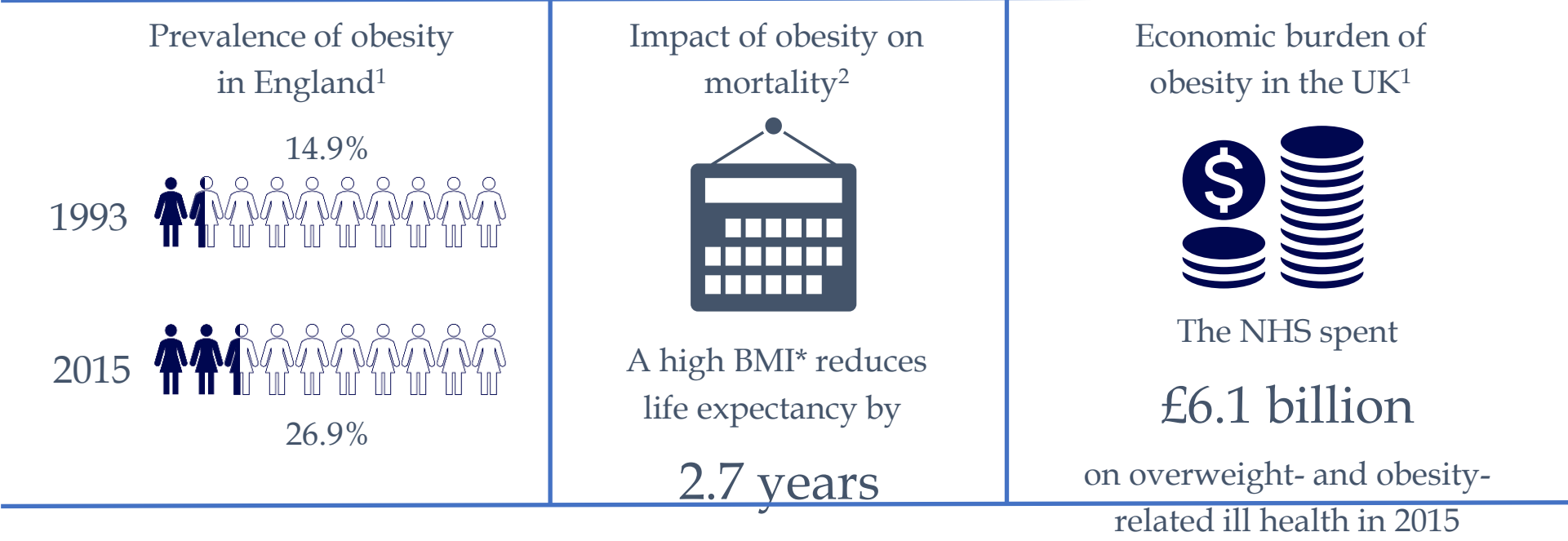


Dr Arutchelvam Vijayaraman
James Cook university hospital, Middlesbrough- UK
Strategic Lead : **Healthy weight and Treating obesity**
North East and North Cumbria ICS

Patient Story

- 31 year old SH
- Weight 399 kg, BMI 151
- Admitted as fire services broke in to the house
- Stayed in hospital
- Planned bariatric surgery

The prevalence of obesity is increasing in the UK, affecting patients' health and healthcare resources



Hazlehurst et al. Curr Obes Rep 2020;9:530-43

*High BMI = ≥ 25 kg/m²
BMI, body mass index; NHS, National Health Service
1. PHE. Health matters: obesity and the food environment – 2017. www.gov.uk/government/publications/health-matters-obesity-and-the-foodenvironment/health-matters-obesity-and-the-food-environment%2D%2D2; 2. OECD. The Heavy Burden of Obesity – 2019. www.oecd.org/health/health-systems/Heavy-burden-of-obesity-Policy-Brief-2019.pdf

Coco colonisation





Obesity: identification, assessment and management

Clinical guideline [CG189]

Obesity Classification

- Healthy weight: BMI 18.5 kg/m² to 24.9 kg/m²
 - Overweight: BMI 25 kg/m² to 29.9 kg/m²
 - Obesity class 1: BMI 30 kg/m² to 34.9 kg/m²
 - Obesity class 2: BMI 35 kg/m² to 39.9 kg/m²
 - Obesity class 3: BMI 40 kg/m² or more.
-
- **People with a South Asian, Chinese, other Asian, Middle Eastern, Black African or African-Caribbean family background are prone to central adiposity and their cardiometabolic risk occurs at a lower BMI, so use lower BMI thresholds as a practical measure of overweight and obesity:**
 - **overweight: BMI 23 kg/m² to 27.4 kg/m²**
 - **obesity: BMI 27.5 kg/m² or above.**

The world thinks its a choice!



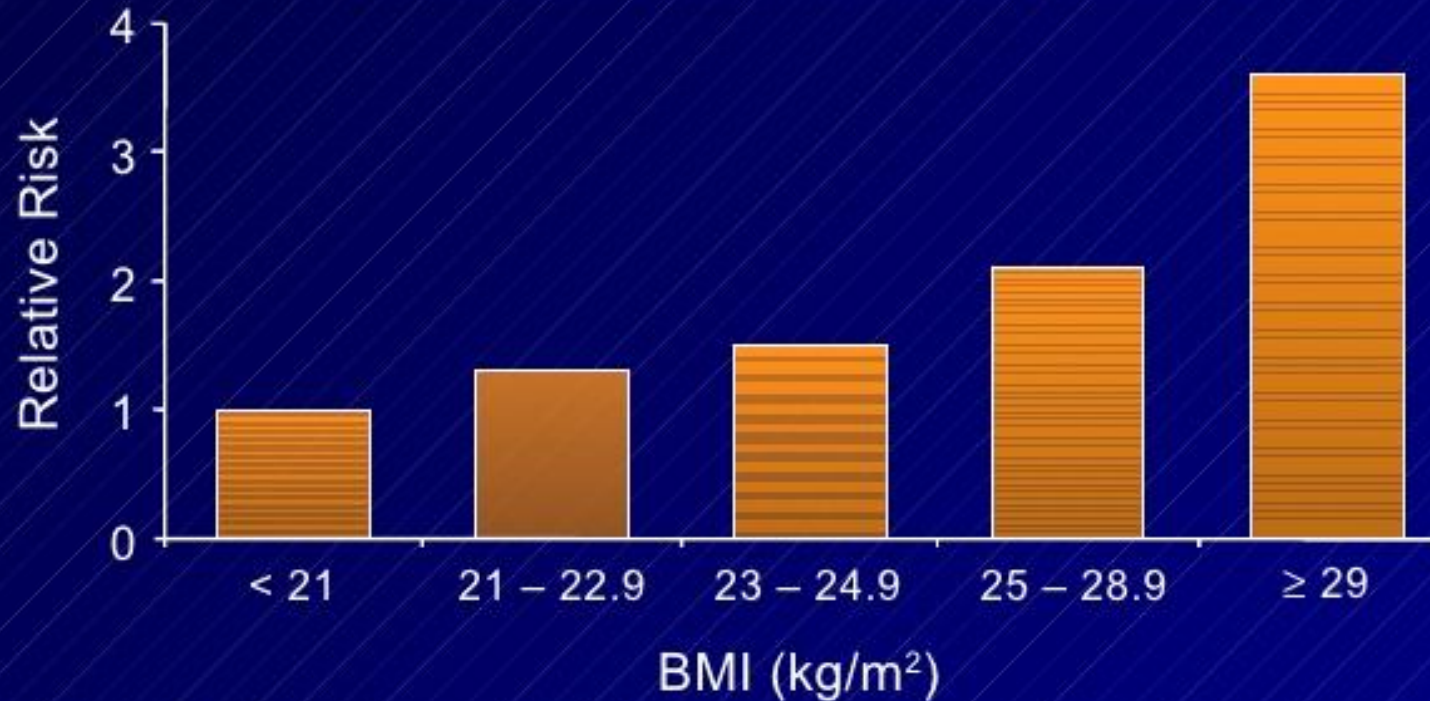
What do YOU think?

Why we are passionate about developing Obesity Treatment Services?



Obesity and Cardiovascular Disease

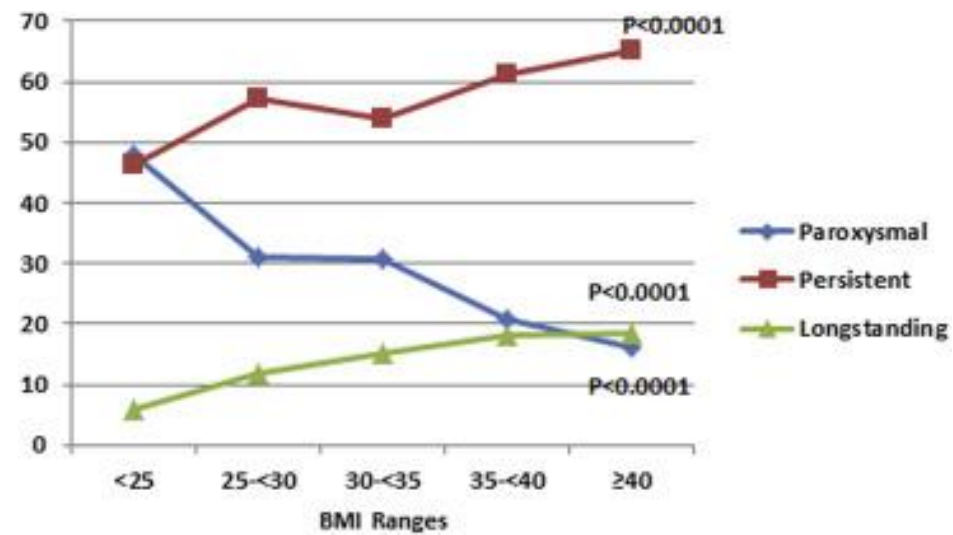
**Relative Risk of Nonfatal MI and Fatal CHD
(Combined) Based on BMI (Women)**



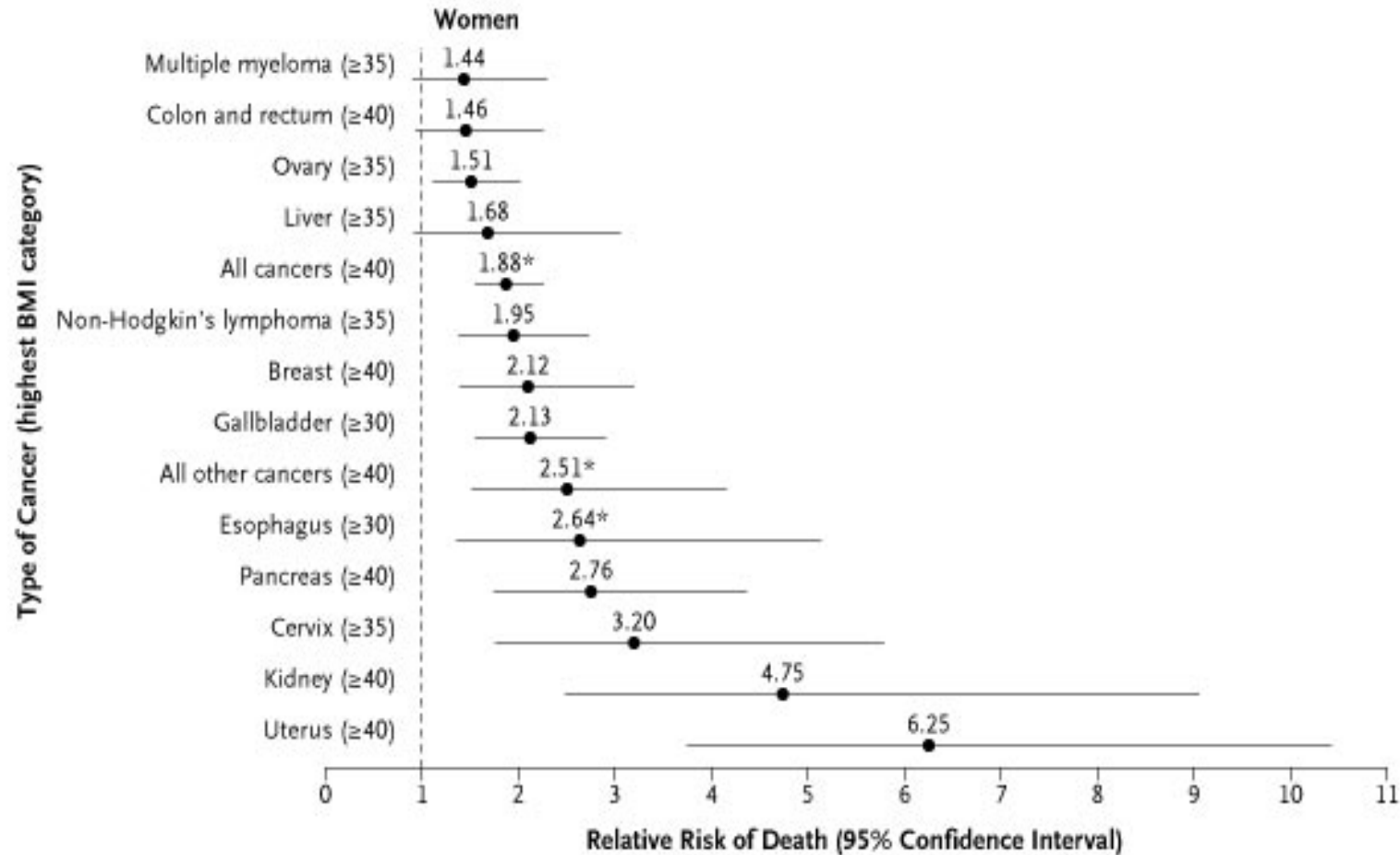
MI = myocardial infarction.

(Adapted with permission from Willett WC, et al. *JAMA*. 1995)

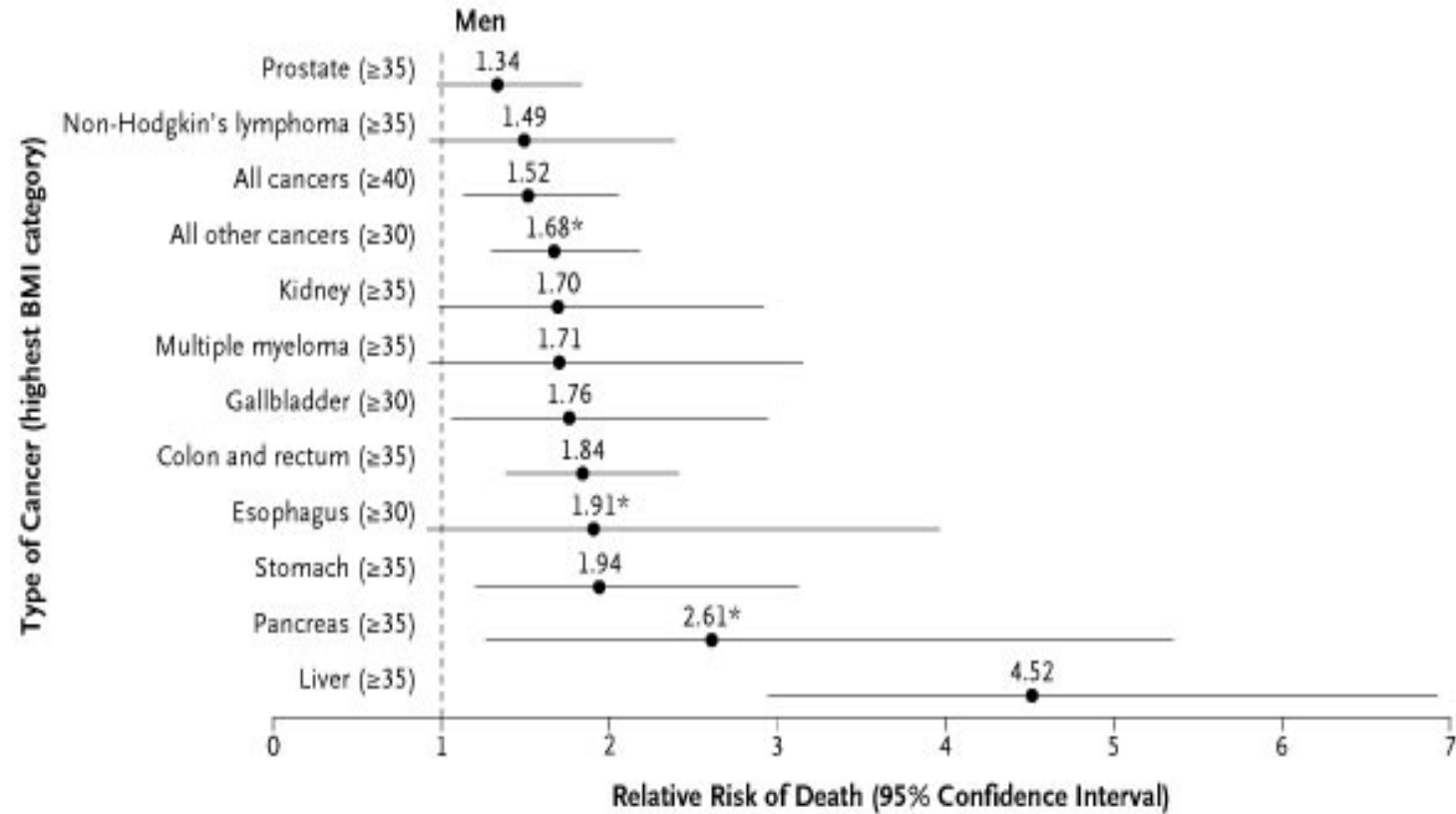
Atrial fibrillation and obesity



Type of Cancer in Obesity-Women



Type of Cancer in Obesity-Men

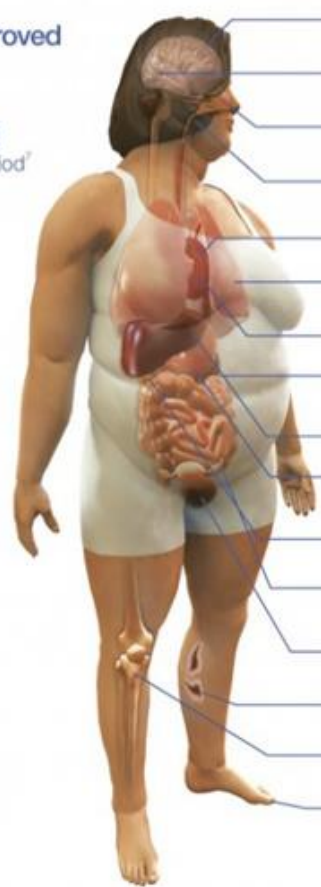


Weight loss curing diseases

Resolution of Comorbidities after Bariatric Surgery

Quality of Life Improved
in 95% of patients²

Relative Risk of
Mortality Reduced
by 89% in a five-year period⁷



- Migraines
57% resolved²
- Depression
47% reduced²
- Pseudotumor cerebri
84% resolved⁸
- Obstructive sleep apnea
74% to 98% resolved^{2,5}
- Hypercholesterolemia
63% resolved²
- Asthma
69% improved²
- Hypertension
62% to 70% resolved^{1,2}
- Nonalcoholic fatty liver disease
37% resolution of steatosis⁶
- Metabolic syndrome
80% resolved⁴
- GERD
72% to 95% resolved^{2,3}
- Type 2 diabetes
82% to 98% resolved^{2,5,9}
- Polycystic ovarian syndrome
75% resolution of hirsutism¹⁰
100% resolution of menstrual dysfunction
- Urinary stress incontinence
44% resolved²
- Venous stasis disease
95% resolution of venous stasis ulcers⁴
- Osteoarthritis/Degenerative joint disease
41% resolved²
- Gout
72% resolved²

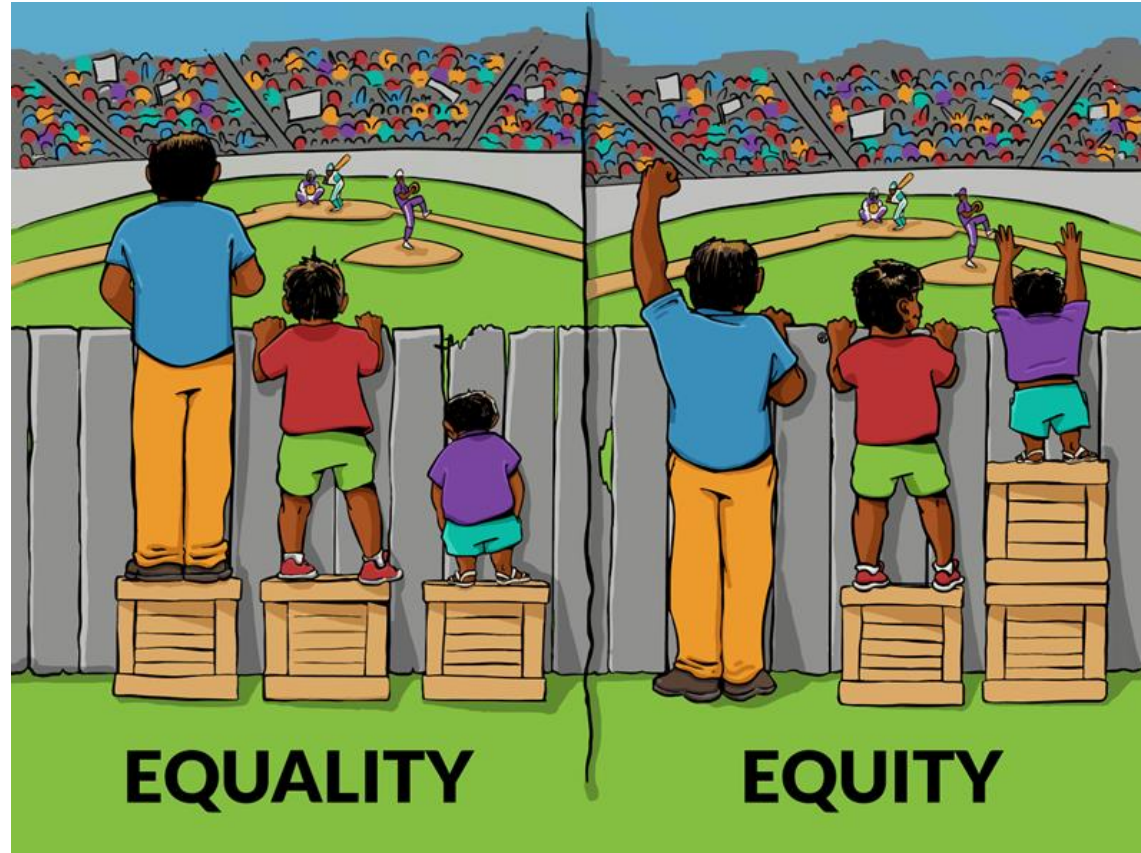
Is obesity a disease?

- Which other disease is associated with such a high mortality, cancer incidence, hypertension, Diabetes...?
- Evidence is mounting with benefits of losing weight

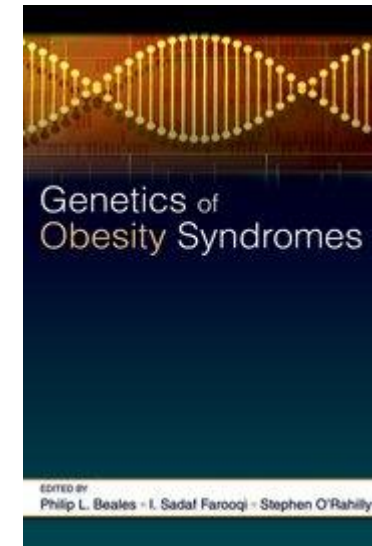
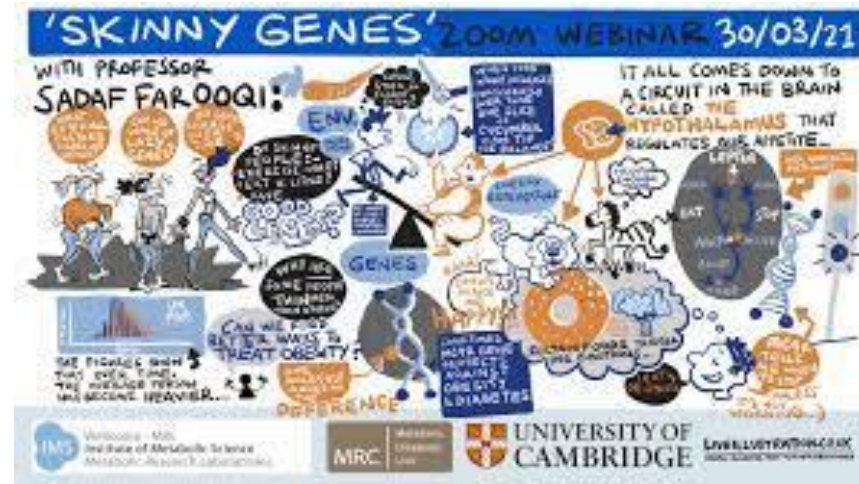
International stance

- USA recognised in 2013
- Canada in October 2015

Obesity- The world of Inequality...



The science



Obesity and hormones

- Leptin
- Ghrelin
- Adiponectin

Patient population by weight category in Primary Care

Key findings

Recorded on Primary Care Clinical systems, there are 2,169,349 (76%) individuals (age 15+) across the NENC classified as being of over weight or obese . 52% are male and 48% Female.

1,008,294 individuals are recorded as obese (BMI >30). Within this cohort, females account for the greatest proportion (53%).

The percentage classified as underweight varies from 3% in South Tyneside to 8% in North Tyneside and the inverse is true for over weight or obese with 68% in North Tyneside to 79% in South Tyneside.

75% (755,787) of those recorded as obese were aged between 35 years and 64 years. There is gender differences within that. Generally females were shown to have a greater rate of obesity per 1,000 registered population, with males demonstrating a greater rate aged 45 – 64.

There are almost three times as many people recorded as obese residing within the most deprived areas than within the least deprived.

Figure 9 - Rate of patients who are 'obese' by age and gender per 1,000 registered population

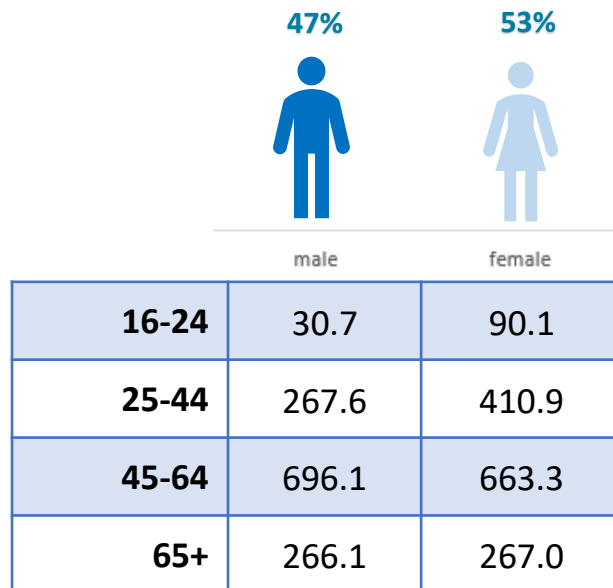


Figure 11 - Percentage of NENC population classified as being 'Obese' by IMD

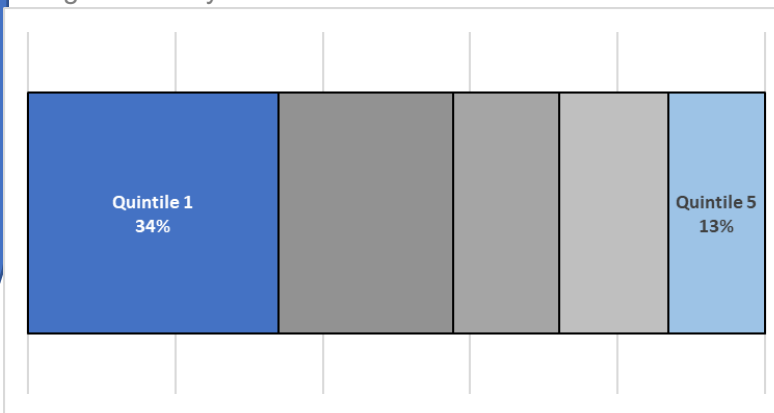
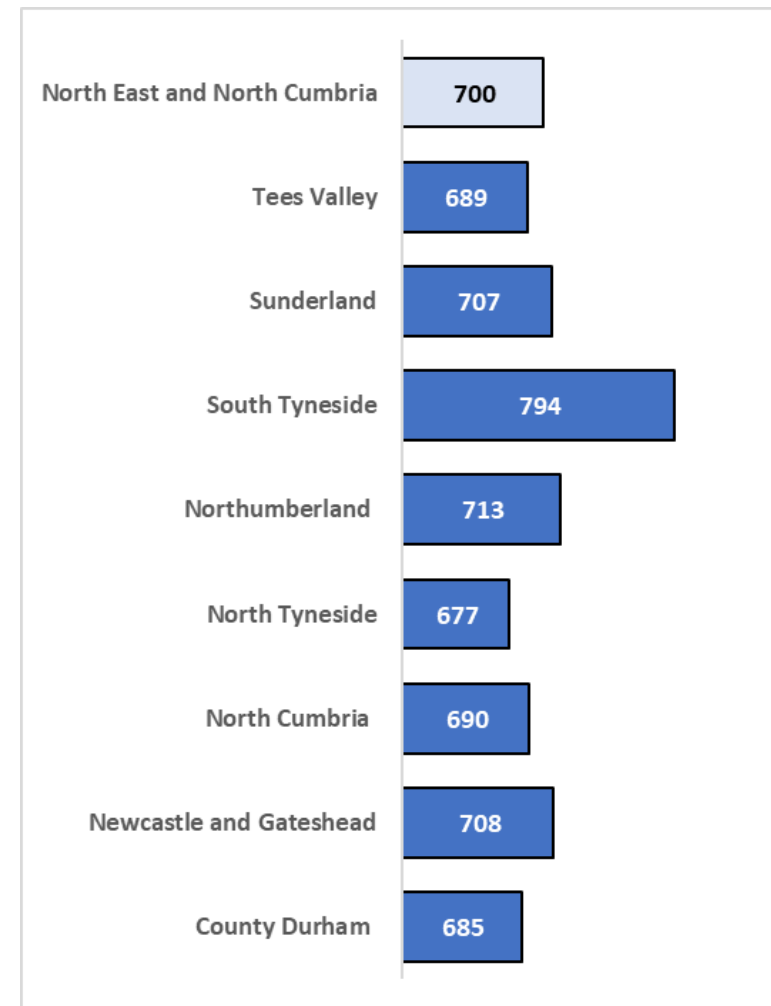


Figure 10 - Rate of over weight or obese patients per 1,000 registered population



Weight and Co-morbidities

Key findings

There are currently over 80,000 individuals in NENC classified as obese who have 4+ long term conditions and 68,000 who are over weight with 4+ long term conditions

Figure * shows the prevalence of conditions within individuals who are overweight or obese (unhealthy weight). If we adjust the figures to focus upon obese patients only, the prevalence of diabetes increased from 8% to 24%

Similar is seen with hypertension. Those with 'unhealthy weight' are shown to have a rate twice that of those with a recorded 'healthy weight' (20% vs 10%). When limited to those recorded as obese, with an actual BMI recorded, this increases to 45% vs 25%.



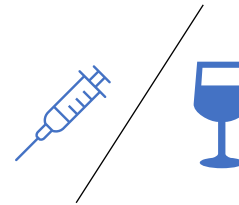
2% have a SMI diagnosis



18 % are smokers



8% have a 4 or more Long Term Conditions

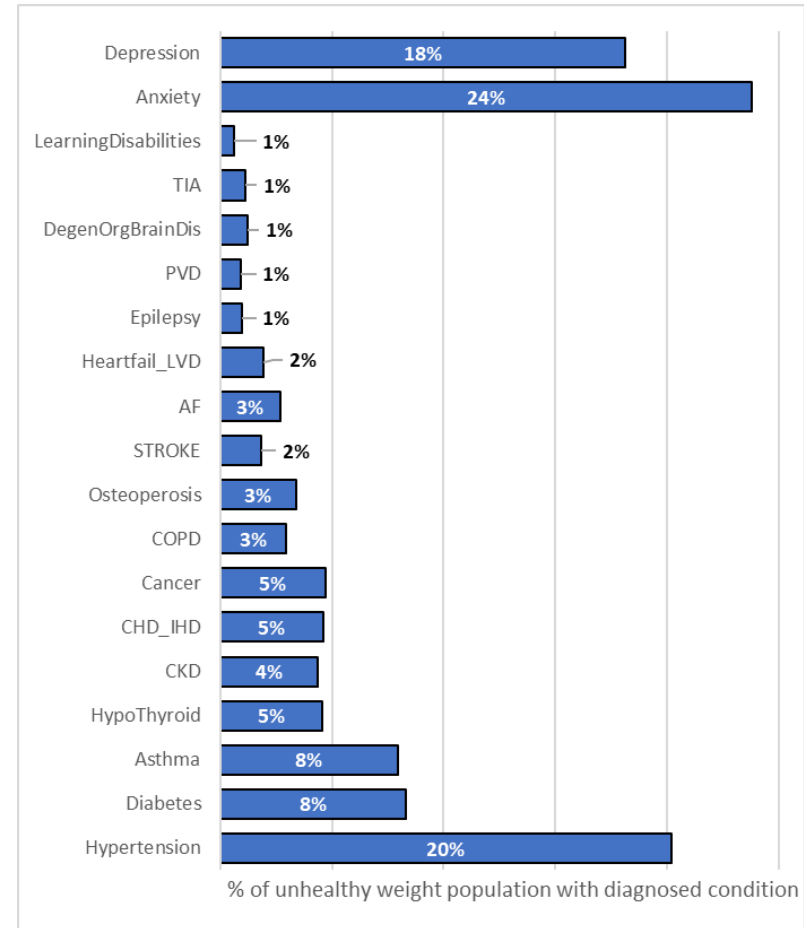


12% have high risk drug or alcohol use recorded



2% have a Learning Disability diagnosis

Figure 13 - Percentage of unhealthy weight patients who have co-morbidities



Modelled Data

Estimated demand by Tier

NENC ICS
725,993

T2 607,122
DWMP 210,358
T3/4 151,101

Estimated prevalence	County Durham 130,824	Newcastle Gateshead 119,339	North Cumbria 77,692	North Tyneside 52,765	Northumberland 66,420	South Tyneside 37,412	Sunderland 66,838	Tees Valley 162,898
T2	111,326	95,447	58,729	43,600	56,363	30,586	56,359	140,056
DWMP	29,481	27,293	17,820	11,728	18,691	7,904	15,361	37,414
T3/4	25,622	23,881	19,499	11,172	14,558	8,063	13,443	33,022

The modelled data suggests there are 725,993 individuals across North East and Cumbria with a BMI equal to or greater than 30. The grouping for the tier categories are as follows;

- BMI =30-35 with co-morbidities (T2 or DWMP if co-morbidity is diabetes or hypertension) (source - % on clinical systems applied to overall estimated modelled prevalence)
- BMI = 30 - 35 without co-morbidities (T2) (source - % on clinical systems applied to overall estimated modelled prevalence)
- BMI = 35-40 with co-morbidities (T3/4 and DWMP if co-morbidity is diabetes or hypertension) (source - % on clinical systems applied to overall estimated modelled prevalence)
- BMI = 35-40 without co-morbidities (T3/4) (source - % on clinical systems applied to overall estimated modelled prevalence)
- BMI = >40 (T3/4) - (BMI >40 is taken from ICS modelled figures from HSE)

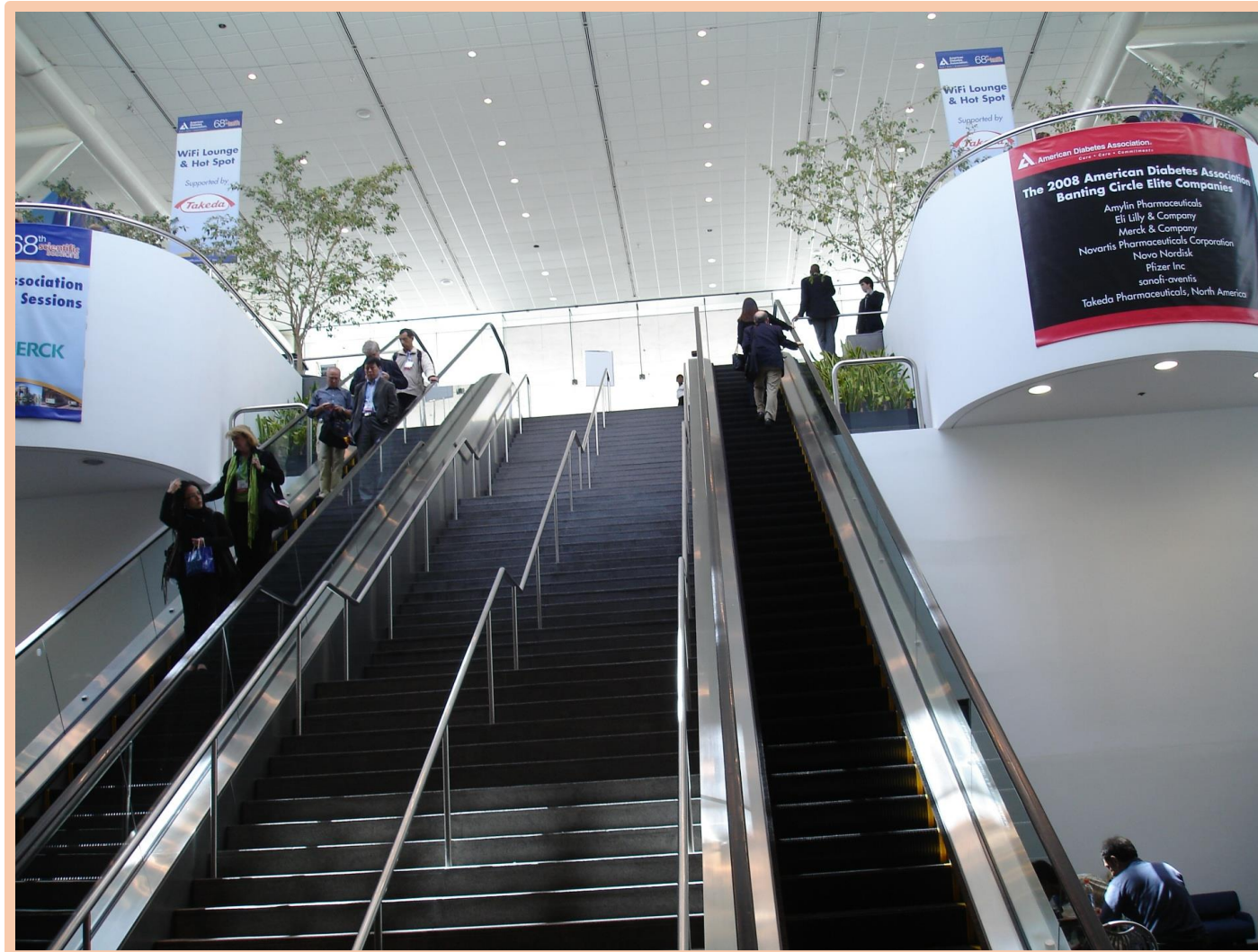
COMPLIANCE



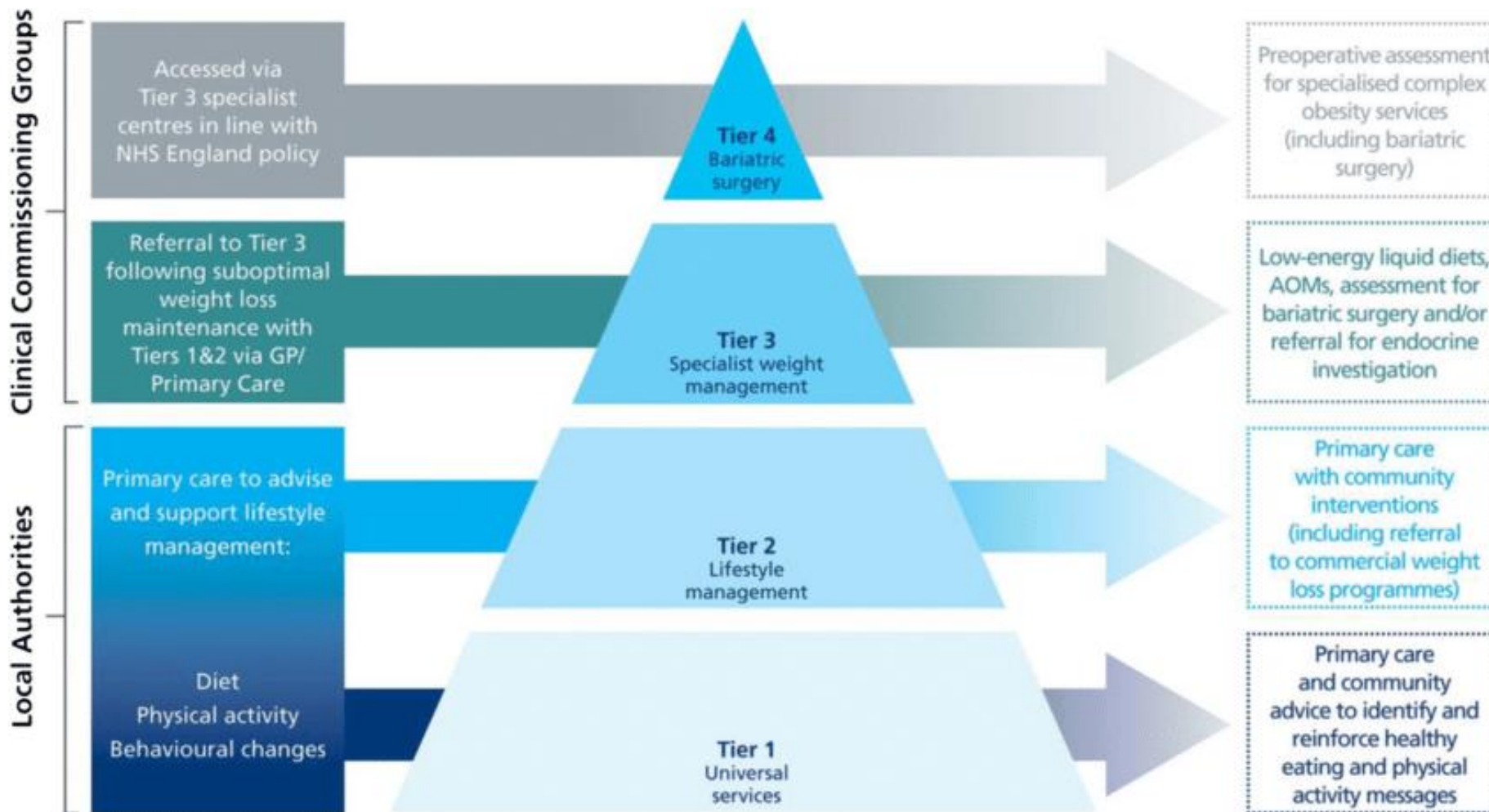
Physical activity...?



Physical activity...?

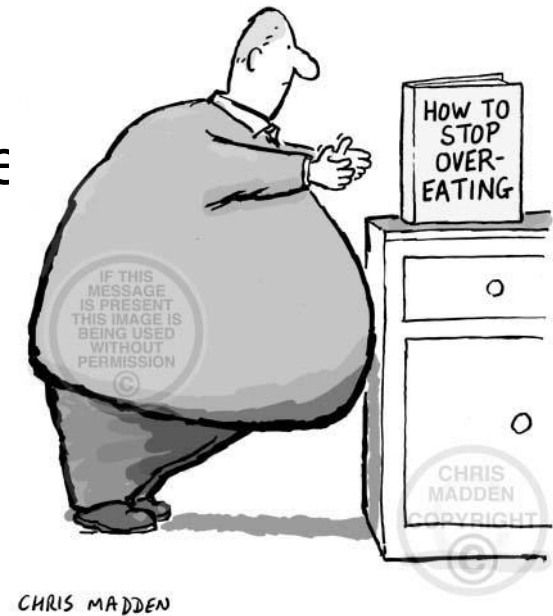


Obesity Practice- UK

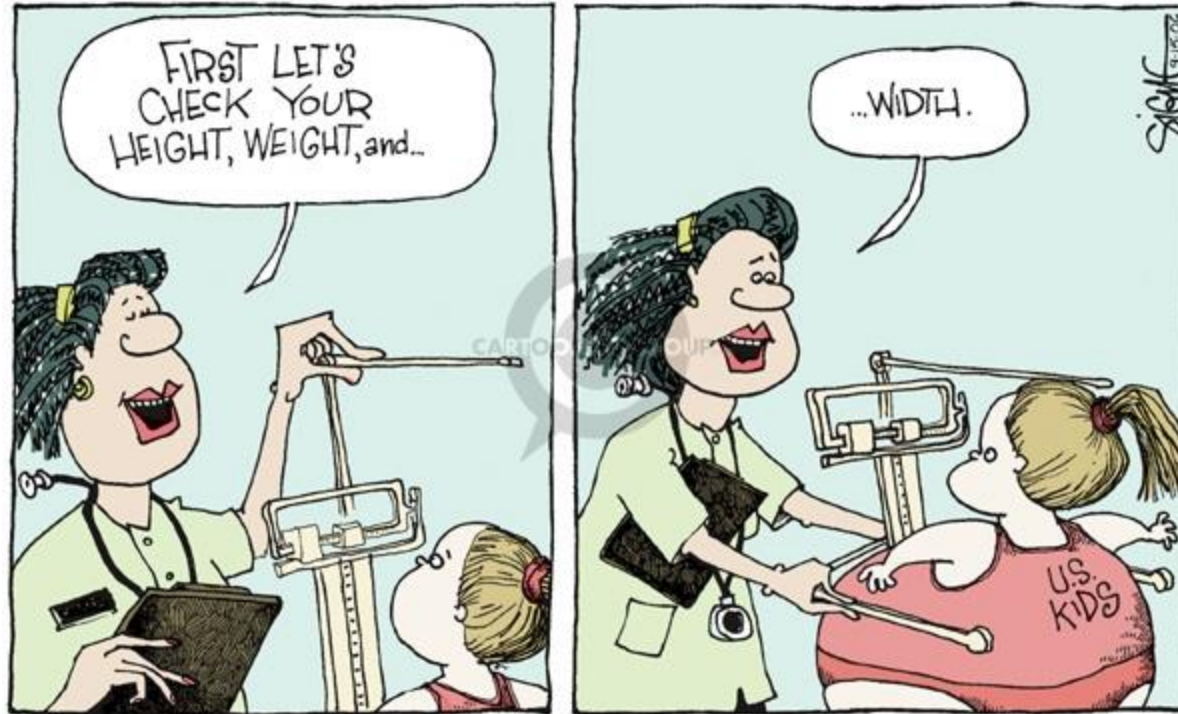


Specialist weight management Multi disciplinary Team

- Physician led
- MDT
- Psychologist, Dietician, physiotherapist, care worker
- 45 minutes to 1 hour initial MDT
- Individualised care plan
- Secondary causes investigated
- Co-morbidities addressed
- Cardio metabolic risks addressed
- Work for 1 year

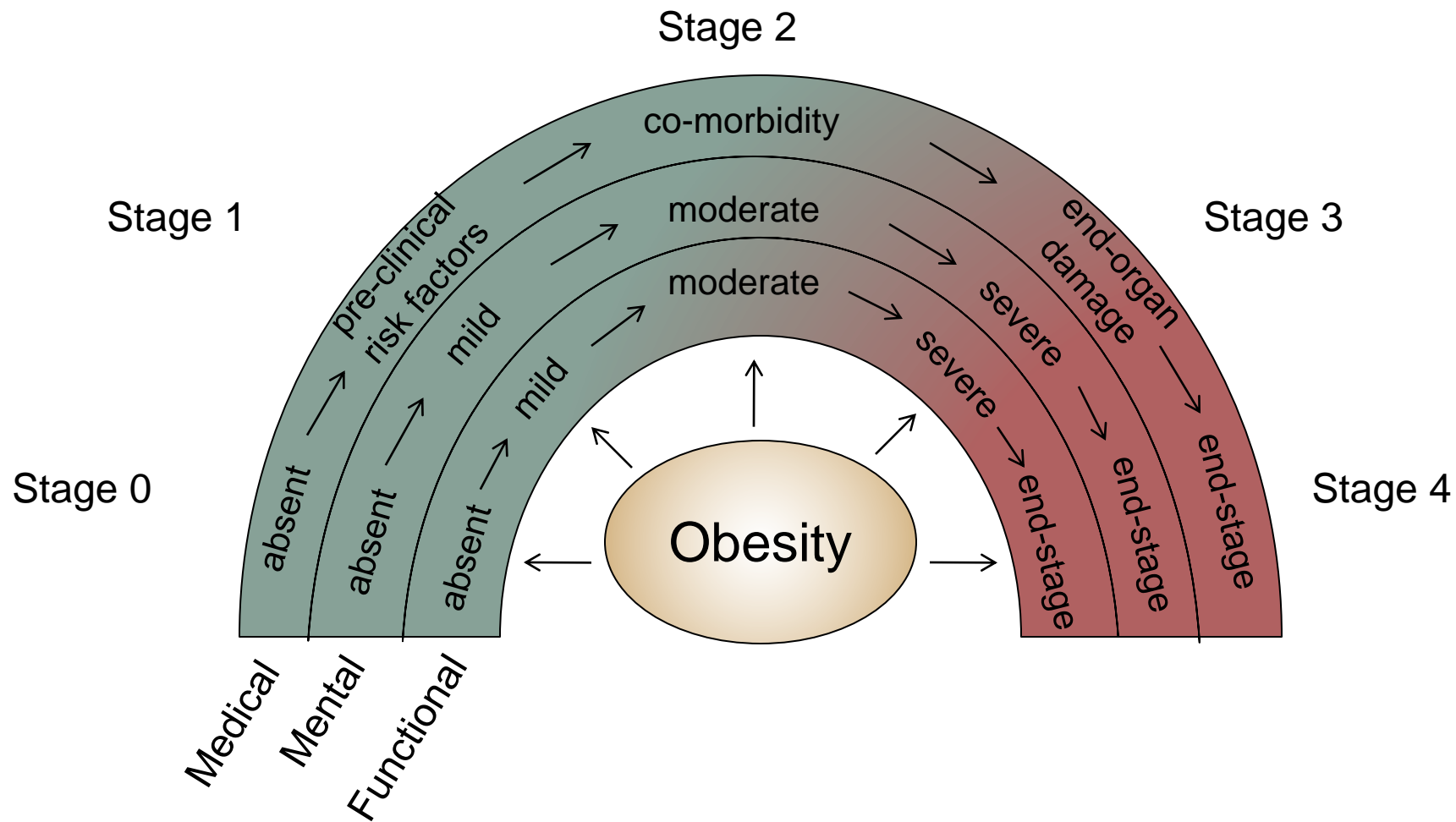


Assessment of obesity



Copyright by Signe Wikinson

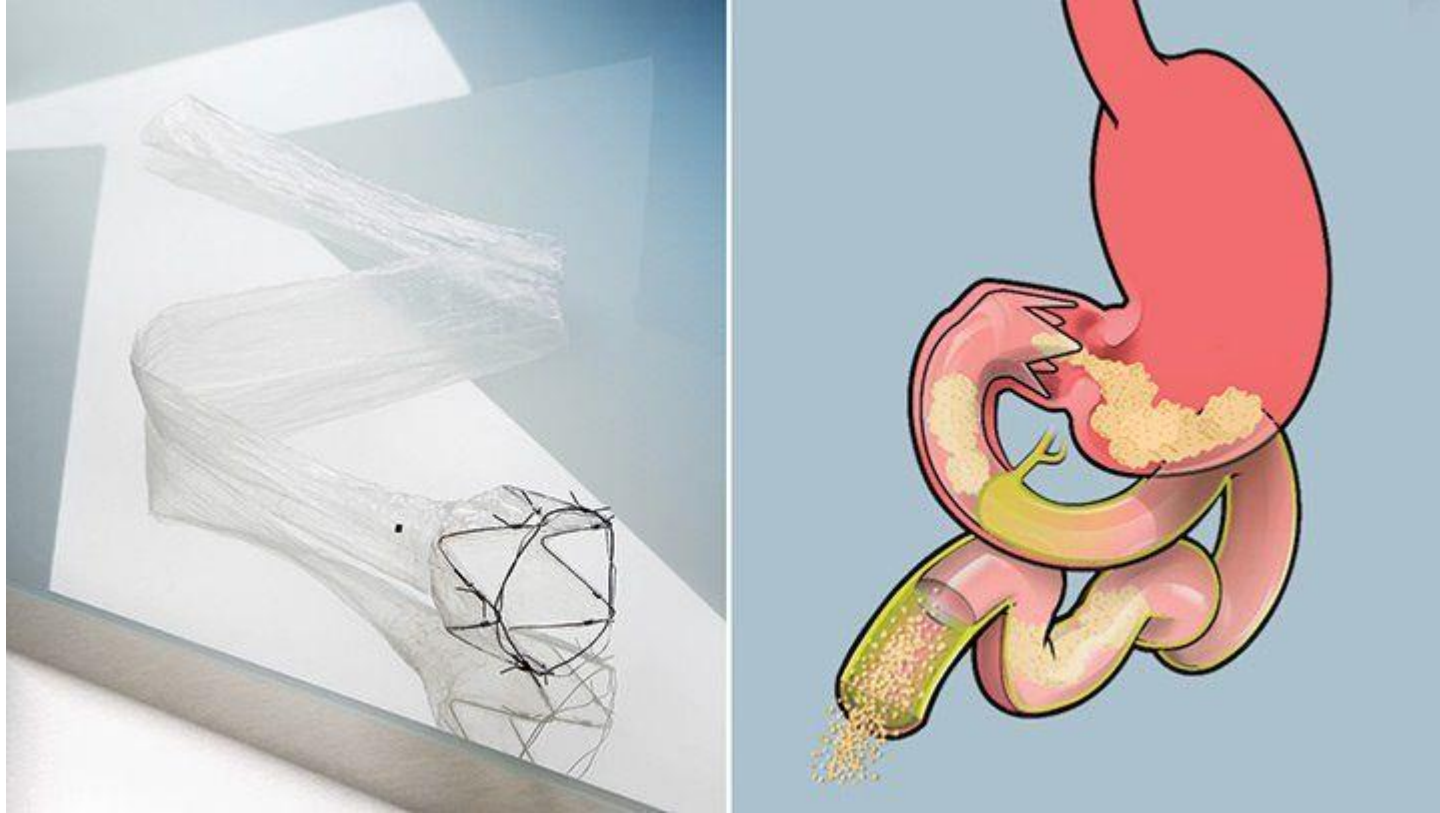
Edmonton Obesity Staging System (EOSS)



Medications

- Saxenda Liraglutide 3 mg daily
 - SWMS
 - Reduced calorie Diet
 - Non diabetic hyperglycaemia With HbA1c 42-47
 - secondary care consultant
 - available now
- Wegovy Semaglutide 2.4 mg weekly
 - NICE Appraisal- Finalised
 - Agreed price reduction
 - multi disciplinary specialist weight management service
 - not exclusive to tier 3 or tier 4
 - no mention of consultant

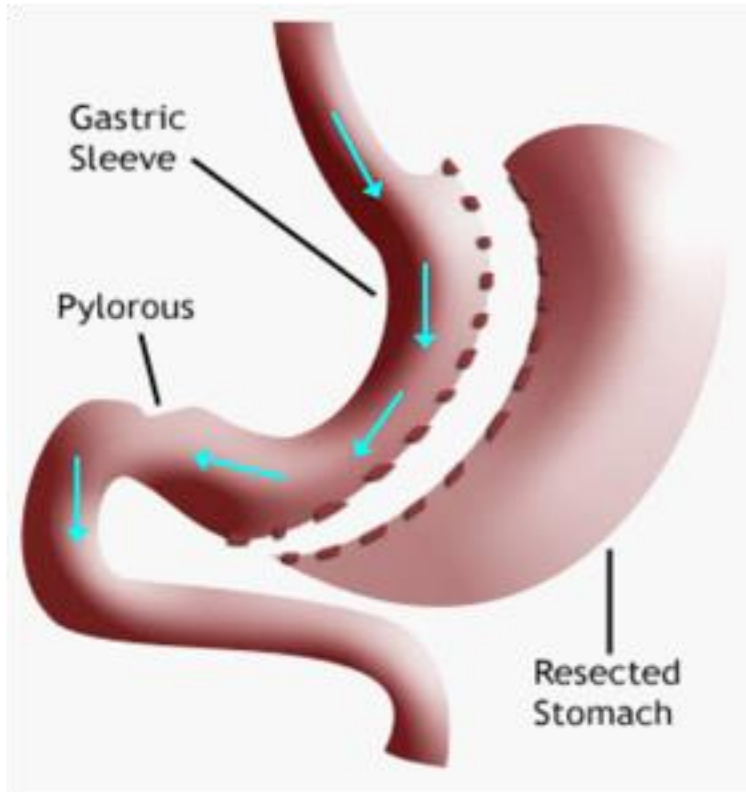
Non surgical procedures



Tier 4- Bariatric Surgery

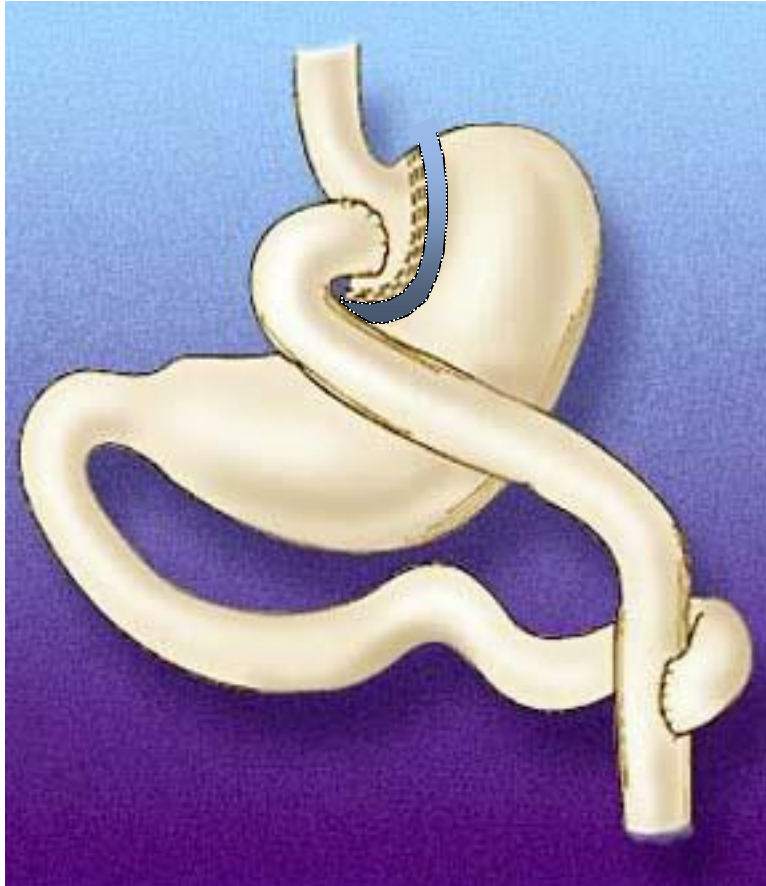
- BMI >35 with co-morbidities or BMI >40
- Work with Tier 3 for 1 year
- Sleep assessment
- Target weight reduction of >10% EBW
- Stop smoking
- Commit to 2 year follow up
- No surgery apron and loose skin

Sleeve Gastrectomy



- Part of stomach removed
- Restrictive
- Close results as RYGB

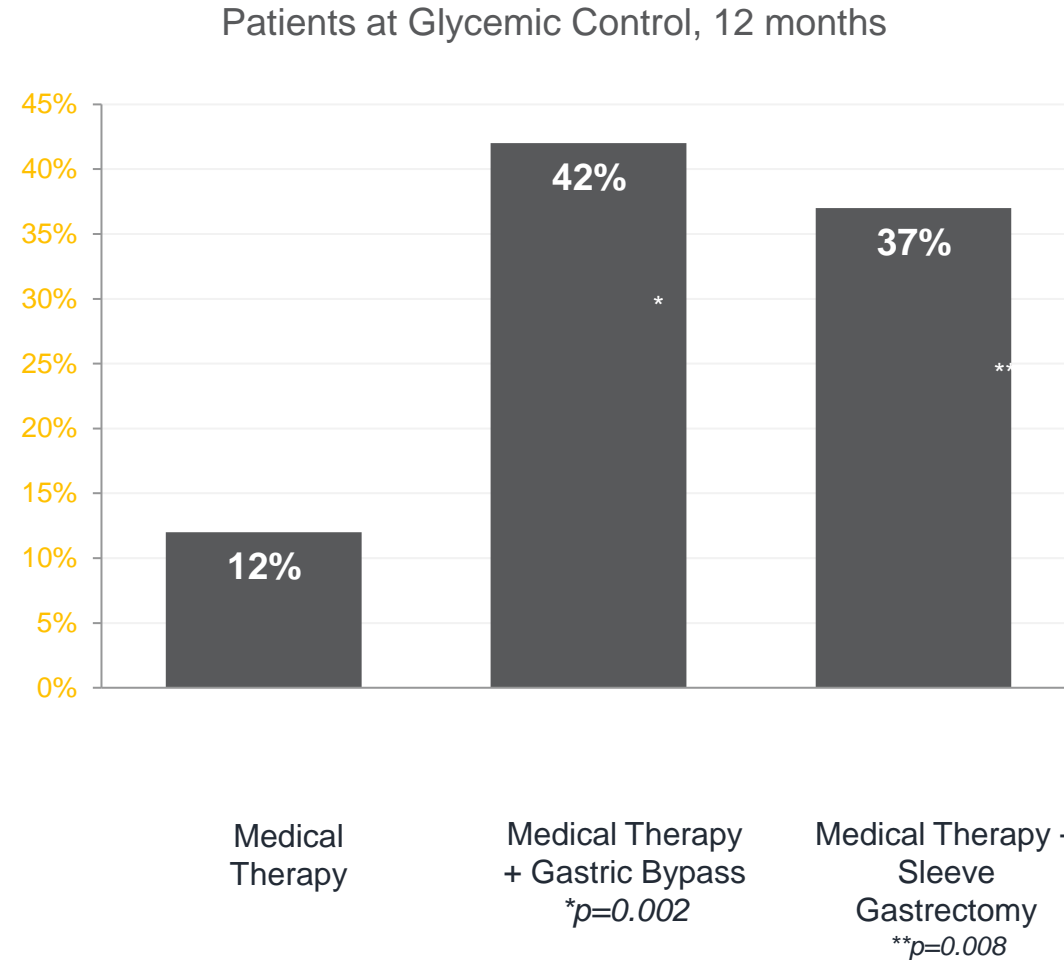
Roux-en-Y Gastric Bypass (RYGBP)



- General Features
 - Pouch size: 1 oz
 - Pouch opening: 0.5 in
 - Roux-en-Y limb
 - Standard: 2 ft
- Average Weight Loss
 - 70 % of excess weight

STAMPEDE

Results: Significantly More Diabetic Patients at Glycemic Control with Bariatric / Metabolic Surgery



Glycemic control: HbA1c < 6.0% with or without diabetes medications, 12 mo after randomization. Figures adapted from study data.

Quality of Life

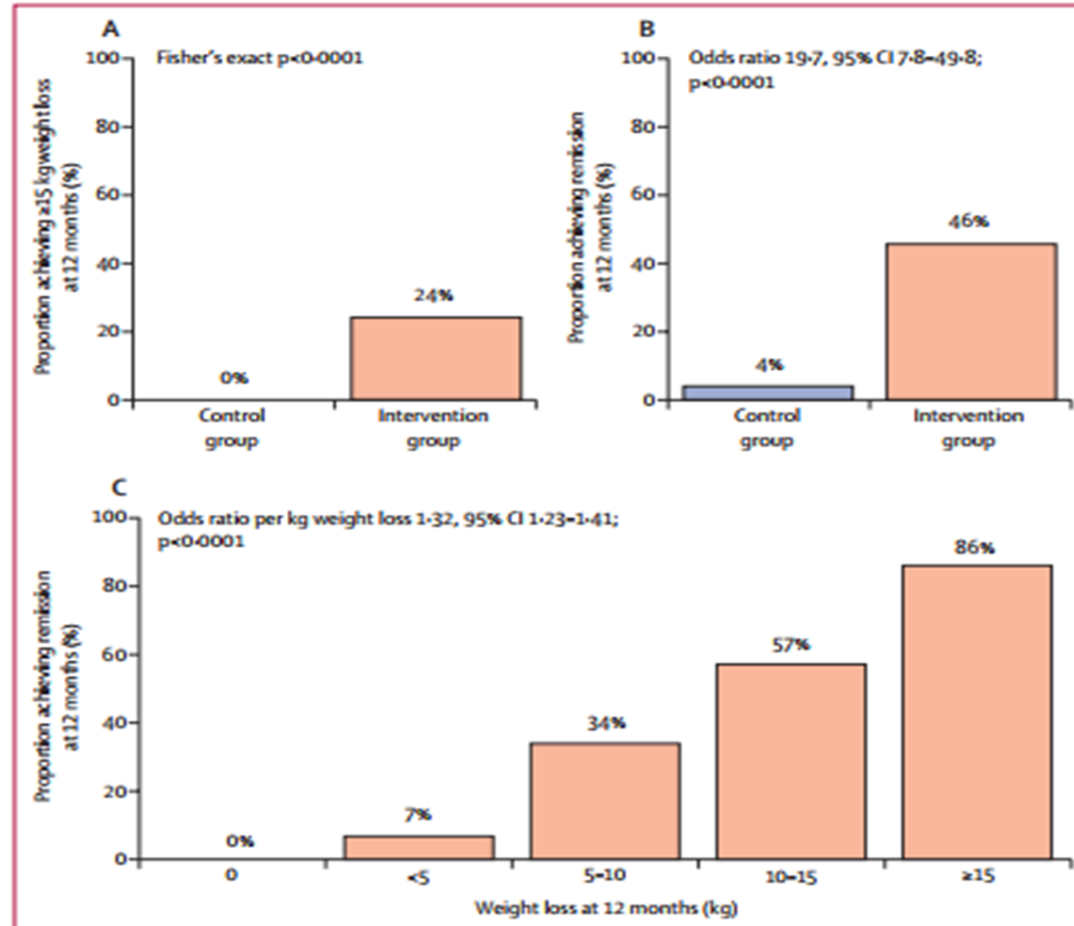
Table 5. PREOPERATIVE AND POSTOPERATIVE SF-36 SCORES

SF-36 Category	Preoperative		1 Month		3 Months		U.S. Norms (n = 2,474)
	Lap. (n = 70)	Open (n = 73)	Lap. (n = 60)	Open (n = 65)	Lap. (n = 54)	Open (n = 42)	
Physical Functioning	46.5 ± 21.3*	40.0 ± 24.4*	60.9 ± 24.7*	46.3 ± 24.7*	80.2 ± 19.1	67.8 ± 26.6*	84.2 ± 23.3
Role-Physical	47.2 ± 40.2*	37.5 ± 37.9*	29.7 ± 39.2*	18.5 ± 32.3*	80.7 ± 32.5	76.8 ± 33.3	81.0 ± 34.0
Bodily Pain	51.0 ± 22.7*	48.7 ± 24.1*	59.2 ± 21.5*	45.1 ± 24.1*	75.1 ± 24.7	68.1 ± 25.6	75.2 ± 23.7
General Health	54.5 ± 21.6*	52.9 ± 22.3*	71.3 ± 18.0	64.0 ± 18.1*	77.2 ± 15.7	72.4 ± 16.5	72.0 ± 20.3
Vitality	38.5 ± 20.0*	36.6 ± 19.9*	45.4 ± 20.5*	39.1 ± 18.9*	65.8 ± 17.7	73.1 ± 95.2	60.9 ± 21.0
Social Functioning	64.4 ± 26.3*	61.6 ± 29.5*	67.6 ± 24.5*	51.9 ± 29.1*	87.3 ± 17.9	74.1 ± 30.0	83.3 ± 22.7
Role-Emotional	49.1 ± 24.4*	45.5 ± 27.2*	78.5 ± 28.2	69.5 ± 33.5*	83.0 ± 29.6	74.6 ± 40.7	81.3 ± 33.0
Mental Health	73.0 ± 15.1	71.9 ± 17.3	76.8 ± 17.4	70.8 ± 19.4	82.9 ± 14.2	75.0 ± 19.2	74.7 ± 18.1

Data are presented as mean ± standard deviation.

* $P < .05$ vs. U.S. norms (two-sample t test).

Nguyen et al. *Laparoscopic Versus Open Gastric Bypass: A Randomized Study of Outcomes, Quality of Life, and Costs.* Ann Surg. 234, 2004. 279-91.



Patient Story- 1

- 31 year old SH
- Weight 399 kg, BMI 151
- Admitted as fire services broke in to the house
- Stayed in hospital
- Planned bariatric surgery
- 342nd day- Complication
- Died after 348 days of hospital stay
- Had 24 hospital visits in last 5 years for different reasons!
- 18 GP visits!

Patient story 2

- 46 year old gentleman
- Weight 148 kg BMI 48
- Could not undergo bowel replacement surgery
- 6 months in weight management
- Weight 104 kg
- Transplant done
- Remains well
- Similar stories with heart surgery, Renal transplants

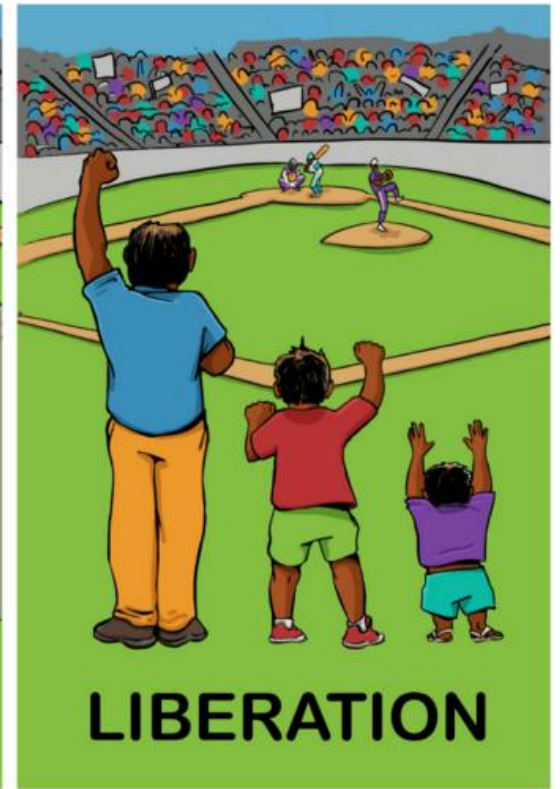
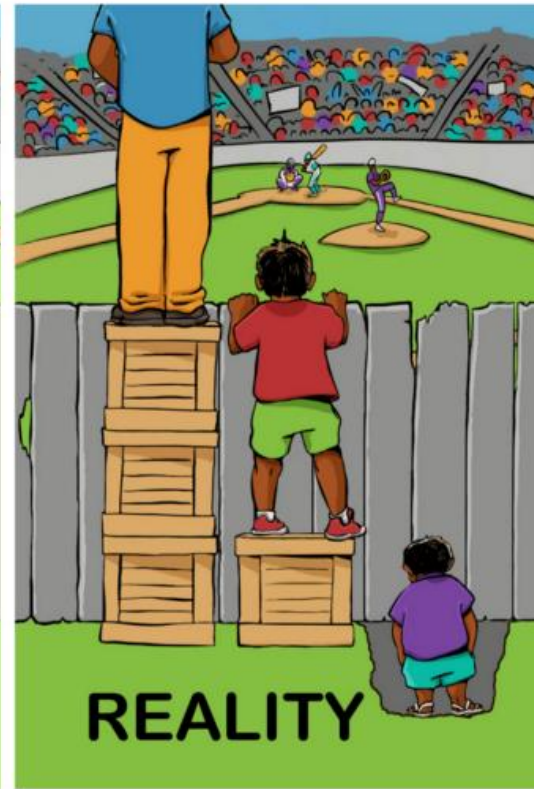


Patient Story 3

- 28 year old RM
- 218 KG
- Type 2 Diabetes, Hypertenstion, Sleep apnoea, Osteoarthritis
- EOSS Stage 3
- SF 36-Poor score in QOL
- Tier 3- achieved 48 kg weight reduction
- Bariatric surgery
- Now 72 kg
- Scaled Roseberry topping!



What we want to achieve by working together





Take home

To champion for a a paradigm shift towards treating obesity