



Screening the Obese Patient

Obesity isn't a benign condition!



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Disclosures

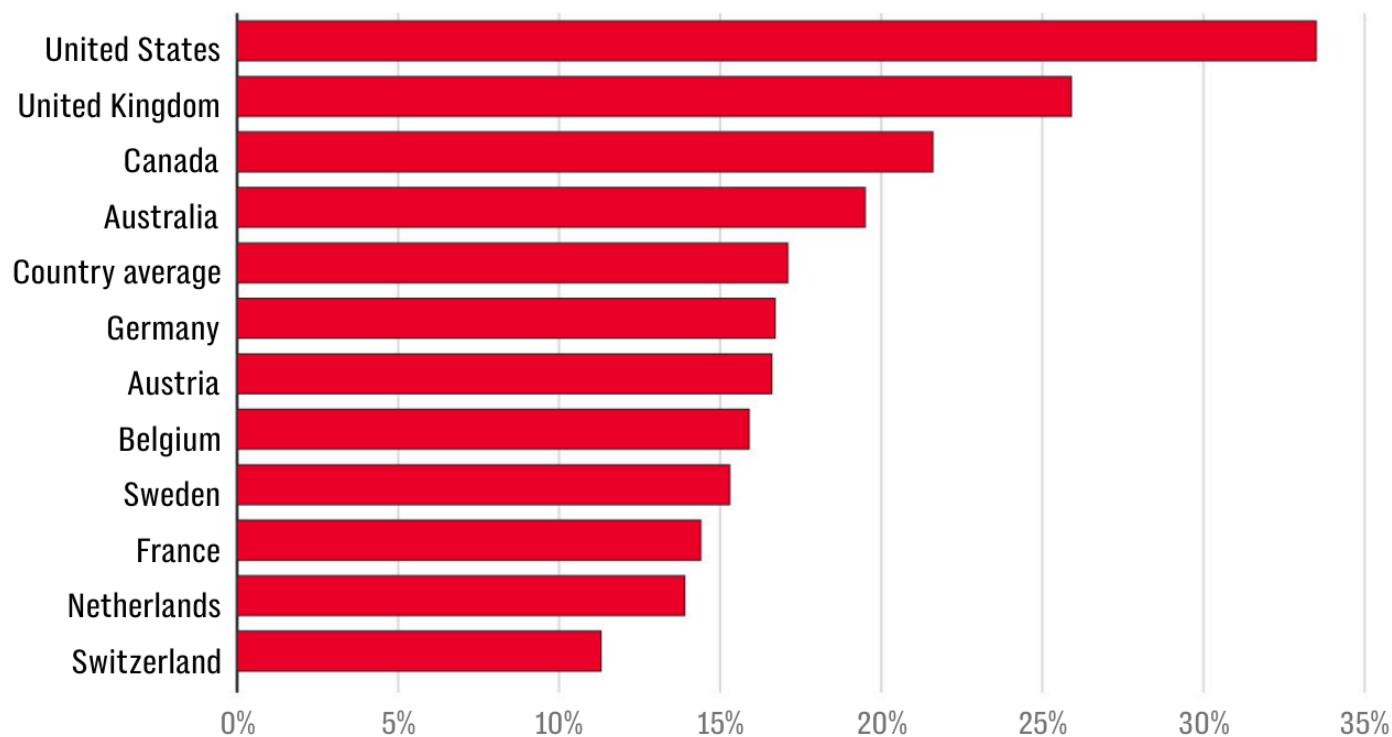
- iNova pharmaceutical
- Johnson & Johnson Medical



Obesity

Obesity high in the US and the UK

Prevalence of obesity (body mass index ≥ 30), age standardised estimates, 2021 or nearest year



Data is self-reported

SOURCE: KFF ANALYSIS OF OECD DATA

- Over 1 billion people are overweight or obese
- Australia has the highest prevalence of obesity for men
- About 1 in 4 people are obese in the UK
- A high prevalence of obesity is a major public health problem
- The prevalence of obesity has increased in all countries over the last 20 years
- Australia has the highest prevalence of obesity for men

most in the world
largest risk factor for heart disease and type 2 diabetes
that's 2 times more likely to die than someone who is not obese
people with obesity are 2 times more likely to die than those without

Obesity Costs

- Obesity is costing the UK \$200bn/year
- 9x greater than previously thought
- \$126bn due to shorter, unhealthier lives (4% GDP)
- Increasing health costs will suck resources from other areas.
- BUT government has shelved plans to restrict junk food advertising and “buy one , get one free” offers.



Health Service Usage

GP visits
2011-2012

CATEGORY (BMI)	LESS THAN 3 MONTHS AGO	IN LAST YEAR
Not overweight	51.9%	83.1%
Overweight	55.2%	86.2%
Obesity Class 1	57.6%	88.7%
Obesity Class 2	66.8%	90.6%
Obesity Class 3	65.2%	91.8%

ABS 2015

The obese population have 18 to 40 per cent higher allied health visit costs compared to the non-obese. The estimated additional allied health costs in 2011-12 were \$125 million.

PWC 2015



HAES: Health at Every Size

- Taryn Brumfitt, Australian Of The Year 2023.
- Body image activist, director, writer and speaker
- called for doctors not to ask about a patient's weight unless they bring it up.
- “Weight bias is the last remaining legal form of discrimination”.



“Fat but Healthy”

- **20340 individuals followed from 1999-2018**
- BMI>30. No metabolic disorders
- MHO increased from 3.2% to 6.6%
- Improved blood lipids
- Those over 65yrs age had no increased risk of mortality.
- Men >60yrs; white; class 1 obesity; wealthy
- JAMA Network Open 2023.
- **381,363 individuals. Median follow-up period of 11.2 years.**
- BMI>30; BP; Lipids; HbA1C; CRP;
- Metabolically healthy obese (MHO); metabolically healthy non-obese (MHN); metabolically unhealthy non-obese(MUN); metabolically unhealthy obese (MUO).
- MHO: 4.3 times more likely to have T2D, 18% more likely to suffer heart attack or stroke, had a 76% higher risk of heart failure, 28% more likely to suffer respiratory disease and 19% more likely to suffer COPD.
- MHO had a higher risk of heart failure and respiratory disease than MUN.
- 1/3 MHO became MUO in a 3-5 yr period.
- Diabetologia 2021



Children & Adolescents

- 25% of Australian children are over-weight or obese.
- This increases with age, 31% 16-17 yr olds overweight and 11% obese.
- Obese adolescents are at increased risk of type 2 diabetes, OSA, CVD and weight related orthopedic disease.
- Non surgical weight-loss intervention in obese adolescents have poor long term outcomes.
- Australian institute of health and welfare



- In most consultations, physicians do not discuss weight with patients who are obese. Only 22% record BMI; 4% waist measurement.
- Patients estimates of their weight are often incorrect
- Physicians have reported that they were nervous about offering unprompted interventions on weight and that they had often become embroiled in long and fruitless conversations on weight in the past.

Obesity Related Co-Morbidities

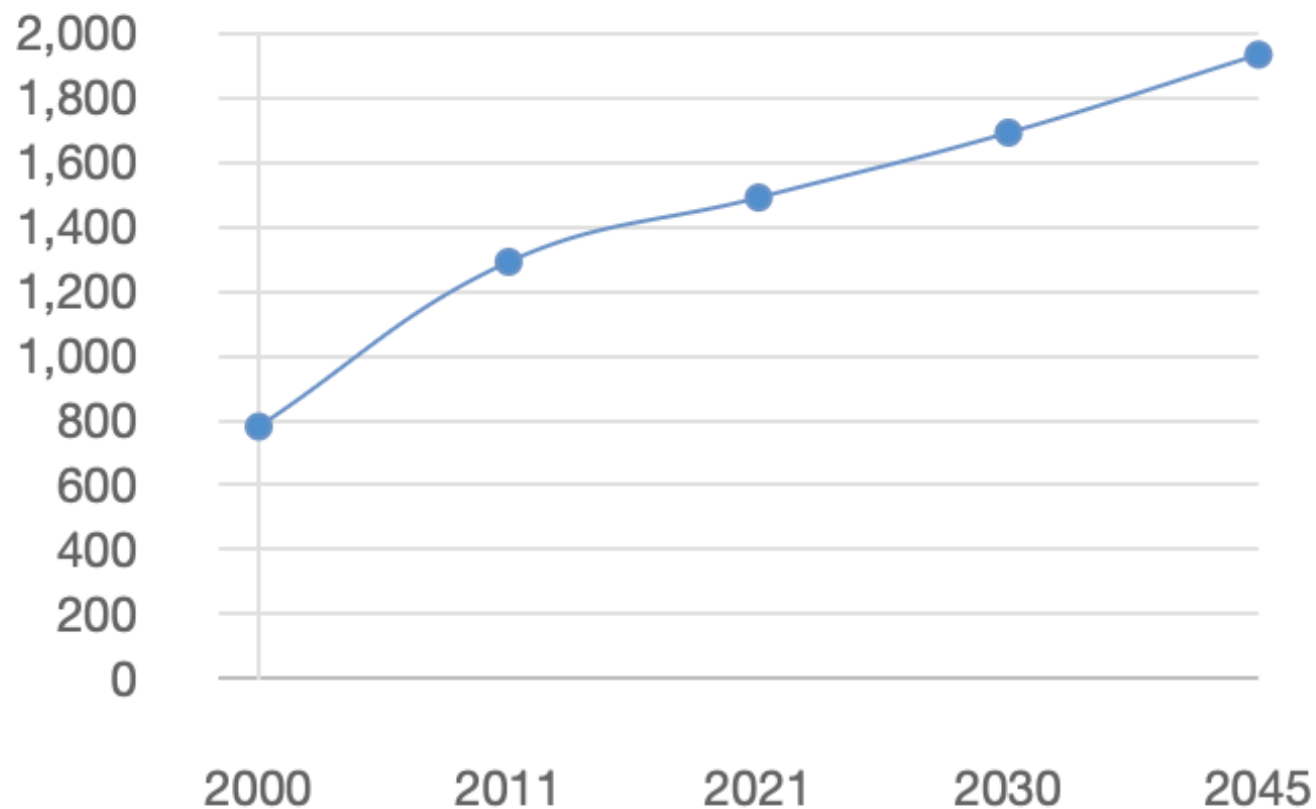
Co-Morbidity	Occurrence in Obese
\$11.8b Cost of Obesity in Aus in 2018 \$6.4b Indirect Community Costs \$5.4b Direct Health Costs	14-20%
	25-55%
	35-53%
Hyperlipidaemia	35-53%
Cardiac disease	10-15%
35% increase in cardiovascular medicine prescriptions and doubling of diabetic management therapies between 2003-2019.	10-20%
	20-25%
Depression	70-90%
Stress incontinence	50%
menstrual irregularity	50%

Diabetes and Obesity

- There is a strong link between obesity and diabetes, hence, “Diabesity”.
- Nurses Health Study: 121,000 ♀ nurses: BMI>31, 40x relative risk DM vs BMI<22.
- Professionals Health Study, 51000: ♂ BMI 35 42x risk DM vs BMI<23.

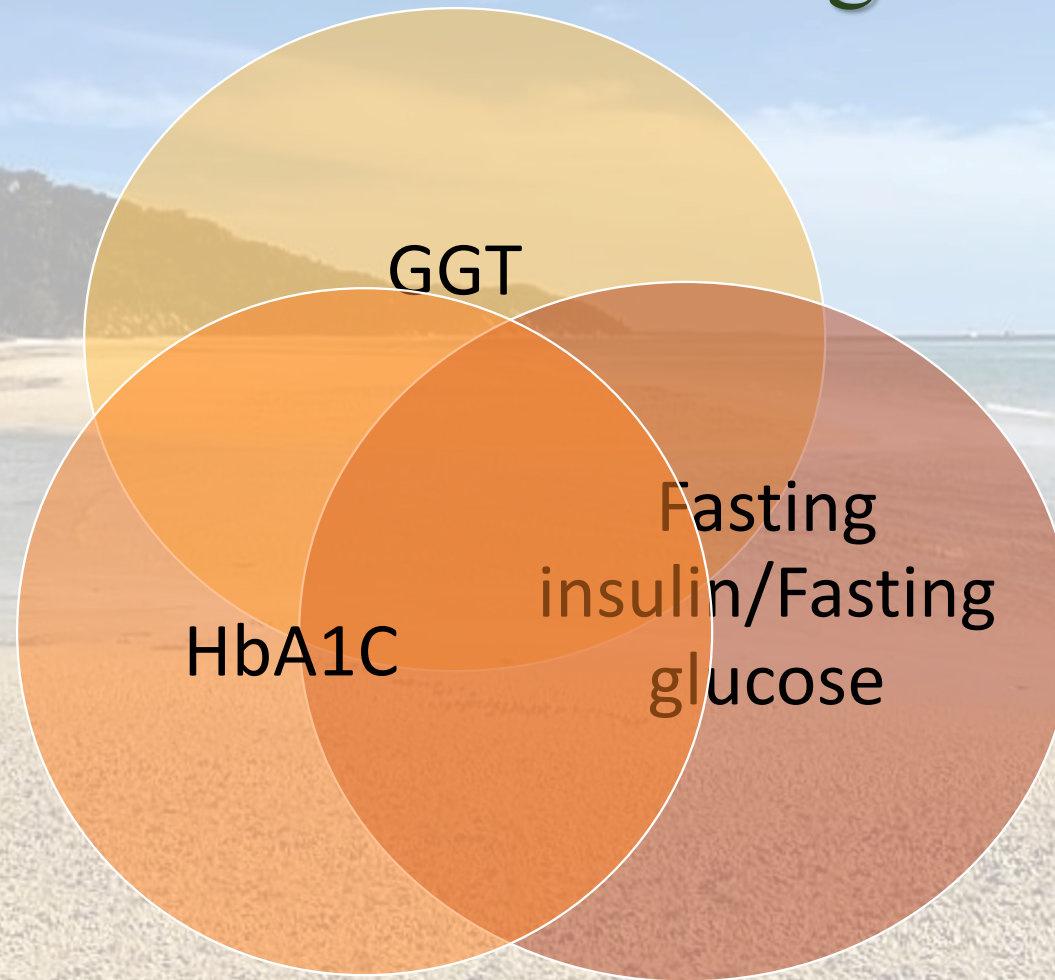


People with diabetes, in 1,000s



diabetes

Diabetic Screening



Preoperative Duration of Type 2 Diabetes Mellitus and Remission after Roux-en-Y Gastric Bypass: A Single Center Long-term Cohort Study



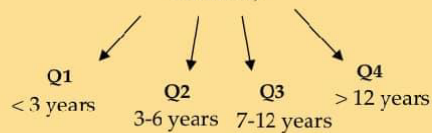
Retrospective study



Primary RYGB 2008-2020



519 patients
(4 quartiles based on preoperative T2DM duration)



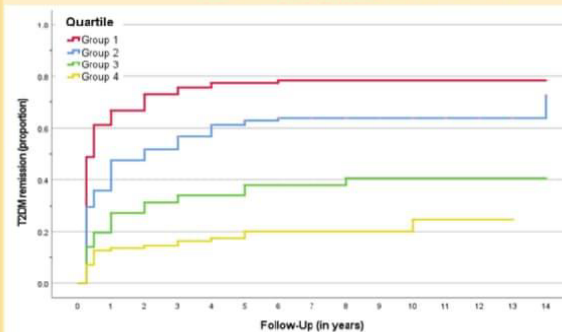
Objective: establish the correlation between duration of T2DM and disease remission while highlighting the importance of early surgical intervention

Overall remission rate

51%



Half the patients in Q1 and Q2 experienced remission after **0.5** and **1.1 years** respectively



Estimated decrease in T2DM remission rates of **7%** for each year of delay since diagnosis

Patients who undergo early RYGB experience earlier and higher T2DM remission rates



Hage K, Abi Mosleh K, Sample JW, Vierkant RA, Mundi MS, Spaniolas K, Abu Dayyeh BK & Ghanem OM



INTERNATIONAL JOURNAL OF SURGERY

Haematological investigations

- Iron deficiency. Ferritin <100 or 100-300 and sat <20%
- Linked to depression; Link to mortality in HF patients.
- Use IV iron rather than oral.
- Vit D: commonly deficient in the obese pt.
- Linked to higher all cause mortality
- Has been shown to be associated with impaired glucose tolerance in hypertensive pts.
- Improved muscle strength and decreased risk of falls in pts>65
- Obese pts require 2-3x normal supplementation to treat deficiency.

Haematological investigations

- Women with PCOS have higher levels homocysteine, which is linked to the higher rates of insulin resistance, infertility, and cardiovascular disease.
- Certain treatments common among PCOS women, such as metformin and oral contraceptives, may also result in higher homocysteine levels.
- Folate and B12 supplementation are effective in reducing homocysteine levels.
- There is little to no downside to recommending a multivitamin with adequate levels of folic acid (5mg) and vitamin B12 to women with PCOS

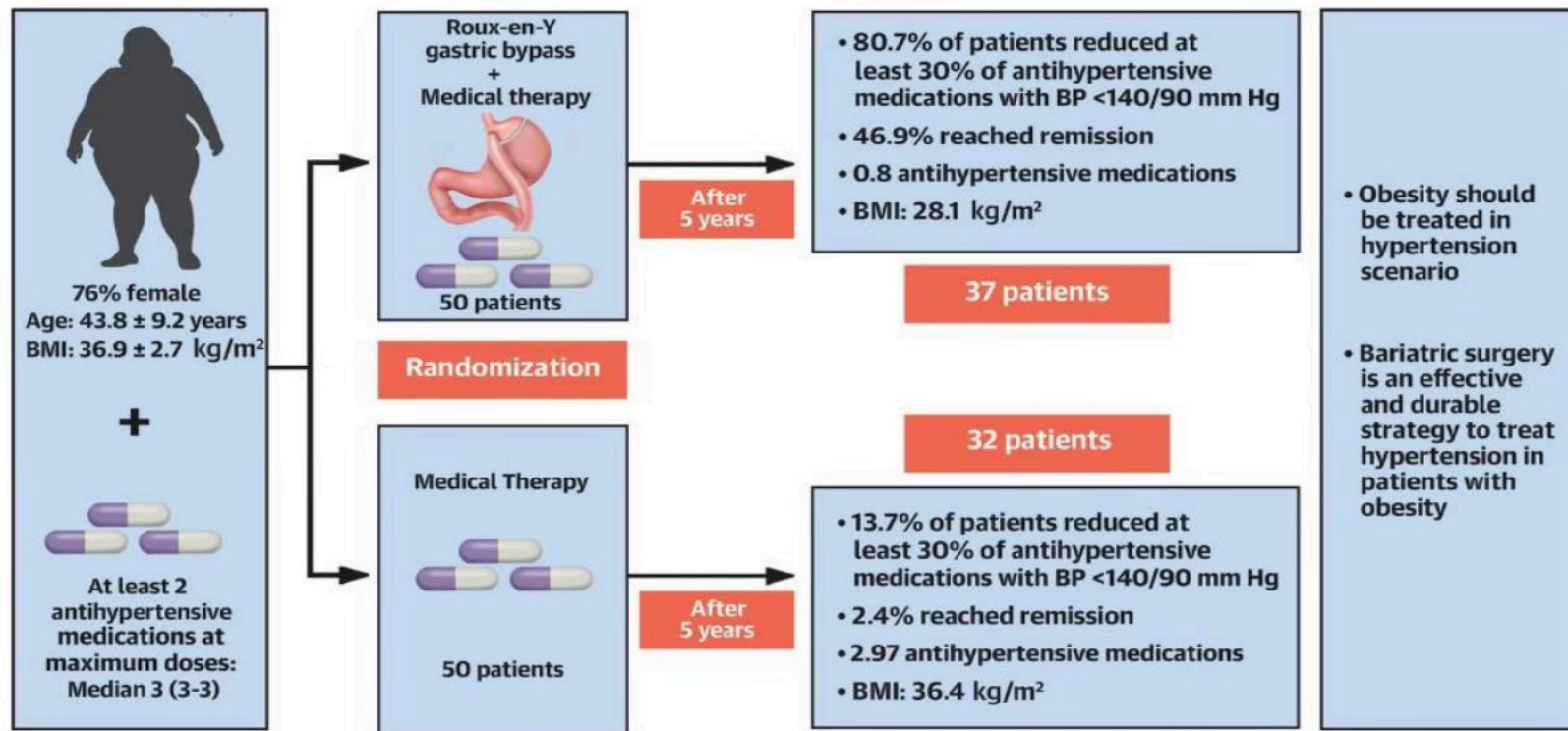


Cardiovascular Disease

- Risk of death from cardiovascular disease x5 in morbidly obese (Poirier 2004).
- Linear correlation between BMI and mortality (Calle 1999).
- Atrial fibrillation (AF) is associated with an increased risk of stroke, heart failure and death. AF increased by 13% for every 5% gain in weight.
- Longstanding obesity is a risk factor for heart failure (Wison 2002). 95% EPCF with 25yrs of obesity
- Consider a CT calcium score for accessing risk



CENTRAL ILLUSTRATION: Bariatric Surgery Effect on Weight and Blood Pressure



Schiavon CA, et al. J Am Coll Cardiol. 2024;83(6):637-648.

Sleep Apnoea Screening Result V.2.2

Study Date: 15/12/2023

Referring Doctor: Dr P. Lockie

Patient Height: 160 cm
OSA50: 8 / 10

Patient Weight: 110 kgs
STOPBANG: 6 / 8

BMI: 43.0 kg/m²
ESS: 4 / 24

CLINICAL HISTORY

History includes Hypertension, Type II Diabetes, Snoring, Witnessed apnoeas. Complaints of Daytime sleepiness. Medications include Metformin, Amitriptyline, Simvastatin, Propanolol.

SUMMARY OF RESULTS

Recording Start time	9:30:00 PM	Total recording time	541.0 mins
Recording End time	6:31:00 AM	Monitoring time [^]	516.0 mins

[^]Monitoring time reflects the time period used to determine the Respiratory Event Index

	Total	Supine	Non-Supine	Normal
Respiratory Event Index (REI)*	21.5	18.2	22.14	0 - 5
Hypopnoea Index	20.8	16.0	10.24	
Obstructive Apnoea Index	0.7	2.2	0.35	
Central Apnoea Index	0.0	0.0	0.00	
Mixed Apnoea Index	0.0	0.0	0.00	
Oxygen Desaturation Index (ODI)	29.7	30.6	13.98	0 - 5
Average SpO₂ (% saturation)	90 %			≥ 92%
Lowest SpO ₂ (% saturation)	74 %			
Highest SpO ₂ (% saturation)	100 %			

*REI is derived without EEG arousal identification or sleep staging and may not be concordant with PSG AHI

Oximetry Profile		
	Duration (mins)	% TMT
<95 %	504.20	97.71 %
<90 %	200.90	38.93 %
<88 %	104.30	20.21 %
<85 %	13.20	2.56 %
<80 %	1.80	0.35 %

Total snoring time (mins)	19.8
Mean Heart Rate (bpm)	64.8
Highest HR	91
Lowest HR	48

NAFLD/MAFLD

- MAFLD is defined as >5% hepatic steatosis plus; overweight/ obesity or presence of type 2 diabetes or evidence of metabolic dysregulation (e.g. metabolic syndrome).
- Increased bidirectional risk with NIDDM.
- 50-90% prevalence in obese individuals, 60-75% in NIDDM
- MAFLD can lead to NASH (64%), 20% NASH cases will develop cirrhosis.
- MAFLD increasing cause of HCC. (x7 higher risk)
- Prevalence of HCC predicted to increase by 66% between 2020 and 2030.



Cancer

- Obesity is associated with an increased risk of at least 13 different cancers.
- 40% cancers attributed to obesity
- Obesity increases risk of cancer death by 52% in men; 62% in women
- Obesity will soon pass smoking as the leading preventable cause of cancer.



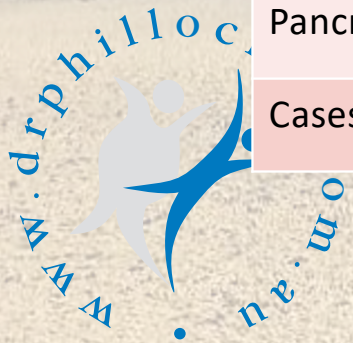
- Recent European Study
- Colorectal cancer remains the second leading cause of cancer deaths and is the first cause of cancer deaths in non-smokers.
- While there has been a decrease in mortality rates across all ages and sexes, more recently there has been an upward trend in young adults aged between 25 and 49.
- Analysis suggests that the rate of colorectal cancer deaths could rise by as much as 40% in women under the age of 50 and in men by 26%.
- The authors of this study believe that the increase in cancer mortality can be linked to **increasing rates of obesity** and high alcohol intake.
- Colon cancers in younger age groups are more on the right side of the colon.

Cancer: 30-39yr olds 1991-2021

Daffodil Centre, University of Sydney

Australian Cancer incidence rates Linked to Obesity 30-39yr olds

Cancer Type	1991	2021	% increase
Gallbladder	0.1	0.3	200
Uterine	1.9	5.1	168
Colorectal	6.0	15.2	153
Kidney	1.9	3.6	89
Pancreas	0.6	1.1	83
Cases per 100,000 Source Daffodil Centre			



Psychological Co-Morbidity

- Low self-esteem common
- Depression very common
 - normal weight 20–25%
 - moderately obese 60%
 - morbidly obese 90%
- Increased incidence of a history of child sexual abuse in obese females.



The Post Bariatric patient

- FBC;E/LFTS; Vit A; Vit D; Calcium; PTH; Zinc; Selenium; Mg; Lipids; iron Studies; INR; B12/Folate; fasting insulin
- Bone density scan every 2-3 yrs : item number 12315
- Sleeve gastrectomy pts>3 yrs, consider endoscopy



The 30 sec question

- Lancet 2016 UK randomised GP study:
- GPs took 30secs at the end of consult to offer to refer pts to a 12 week weight management group (Slimming World UK) or just advised patients that their health would benefit from some weight loss.
- 40% of pts took up offer to attend group and were 5 times more likely to have taken action to lost wt and lost 1.43kg more wt than control gp.
- 81% of pts across both groups reported that the intervention was helpful and appropriate. Only 1% were offended.

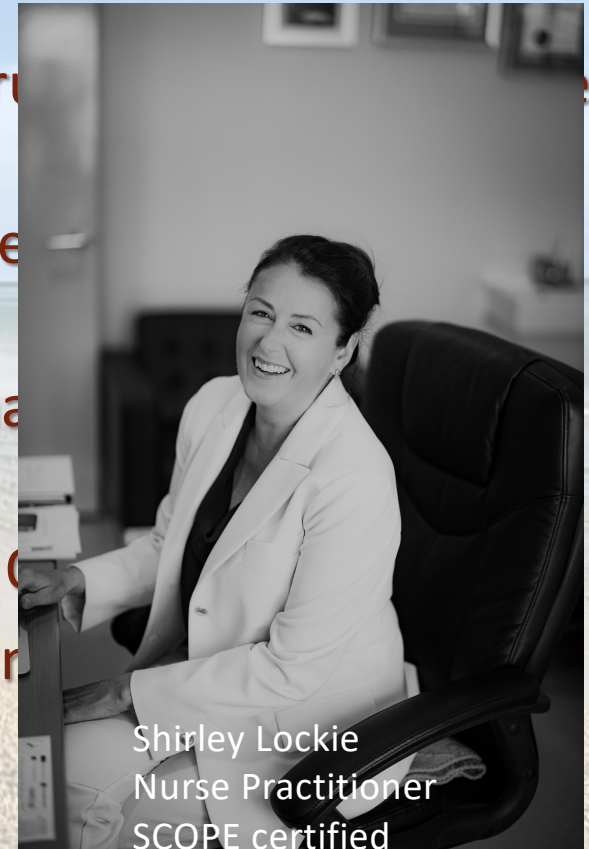
Every little bit helps

- Post menopausal women who lost 5% body weight had 12% reduction in risk of breast cancer over a 3 yr period.
- Women who gained weight did not have an overall increase in risk of breast cancer but were more likely to develop triple negative breast cancer.
- *Chlebowski RT et al. Cancer 2018*



Metabolic and Medical Weight loss Clinic

- Metabolic and medical weight loss clinic, run by a qualified professional.
- World Obesity Federation: The Strategic Centre for Professional Education (SCOPE)
- SCOPE Certification is the only international certification in obesity management.
- International Faculty with Best Practice in Obesity Management
- Initially qualifying examination and then annual recertification.
- 100 individuals in Australia



Shirley Lockie
Nurse Practitioner
SCOPE certified



Weight Loss Surgery: Improved Life Expectancy

175,000 patients with 1.2 million person-years— weight loss surgery (WLS) is associated with greater longevity and lower risk of all-cause mortality, especially in people with concomitant obesity and type 2 diabetes.

In people with obesity plus diabetes: WLS cuts mortality rate by ~70% and adds 9.3 life-years to the median life-expectancy.

In people with obesity w/o diabetes: WLS cuts mortality rate by ~30% and increases median life-expectancy by 5.1 years

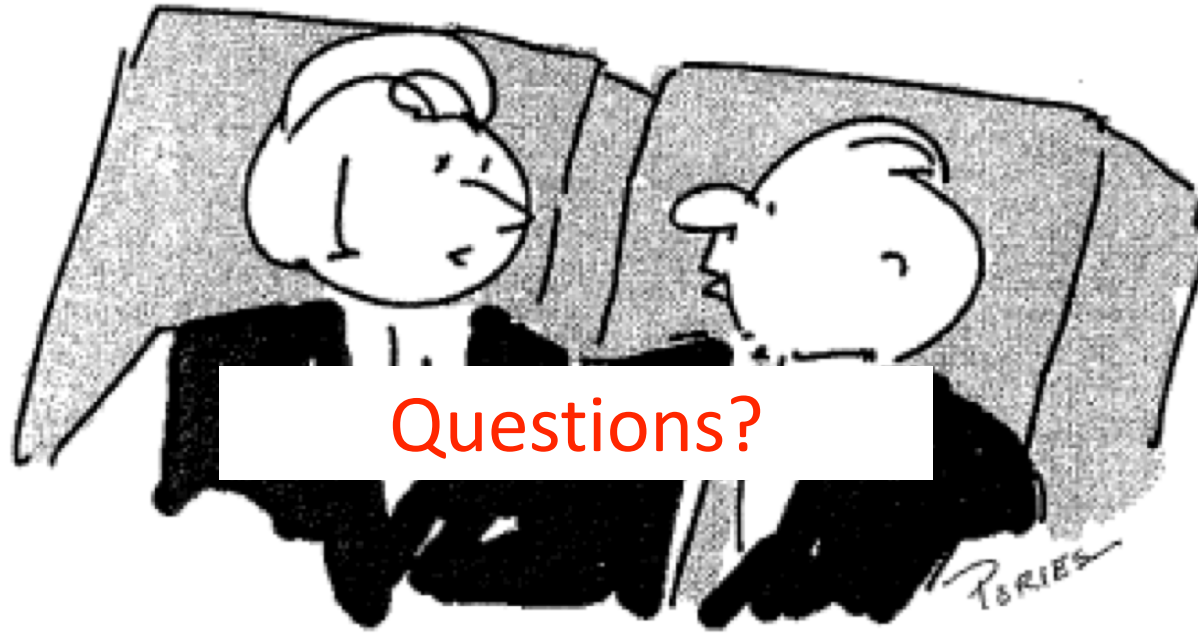


Lancet 2021



6yrs post sleeve; 50kg wt loss





"What do you do?"

"I'm a bariatric surgeon."

"Oh, you make people thin?"

"No, I make people well."