

Obesity

New treatments and opportunities for insurers

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June 2025



Agenda

- 01 Obesity: background
- 02 Obesity: treatments
- 03 Potential impacts: general population
- 04 Potential impacts: life insurers
- 05 Opportunities for insurers

Obesity

Background



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Obesity: Global Epidemic

Insights – Impacts – Imperatives



Obesity: “excess or abnormal fat (adipose tissue) accumulation that presents a risk to health” WHO

$$\text{Body Mass Index (BMI)} = \text{Weight (kg)} / \text{Height}^2 \text{ (m)}$$

Body Size Category	BMI range (kg/m ²)
Underweight	<18.5
Healthy (normal)	18.5 to 24.9
Overweight	≥25.0 to 29.9
Obese	≥30
Class I	30.0 to 34.9
Class II	35.0 to 39.9
Class III (severe)	≥40 kg/m ²



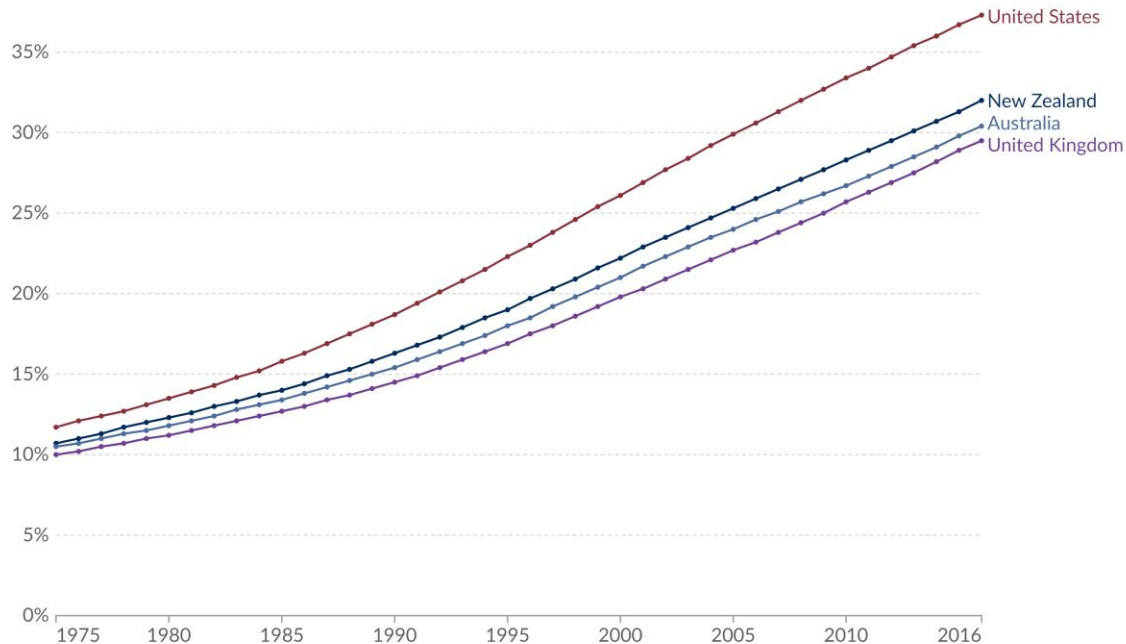
Obesity: Prevalence

Insights – Impacts – Imperatives

Obesity in adults, 1975 to 2016

Estimated prevalence of obesity¹, based on general population surveys and statistical modeling. Obesity is a risk factor² for chronic complications, including cardiovascular disease, and premature death.

Our World
in Data



Data source: World Health Organization - Global Health Observatory (2024)

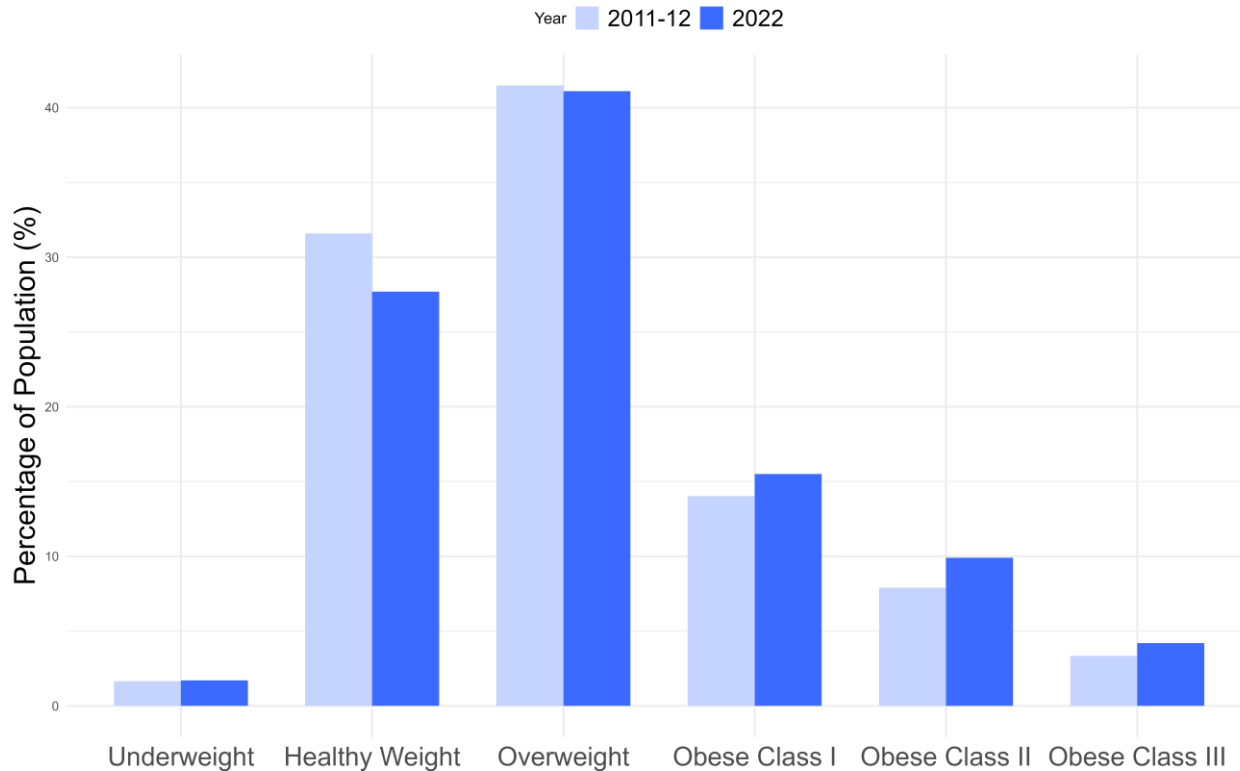
OurWorldinData.org/obesity | CC BY



Obesity: Prevalence

Insights – Impacts – Imperatives

Distribution of BMI among persons aged 18 and over in Australia 2011-12 vs 2022



Data source: Australian Institute of Health and Welfare

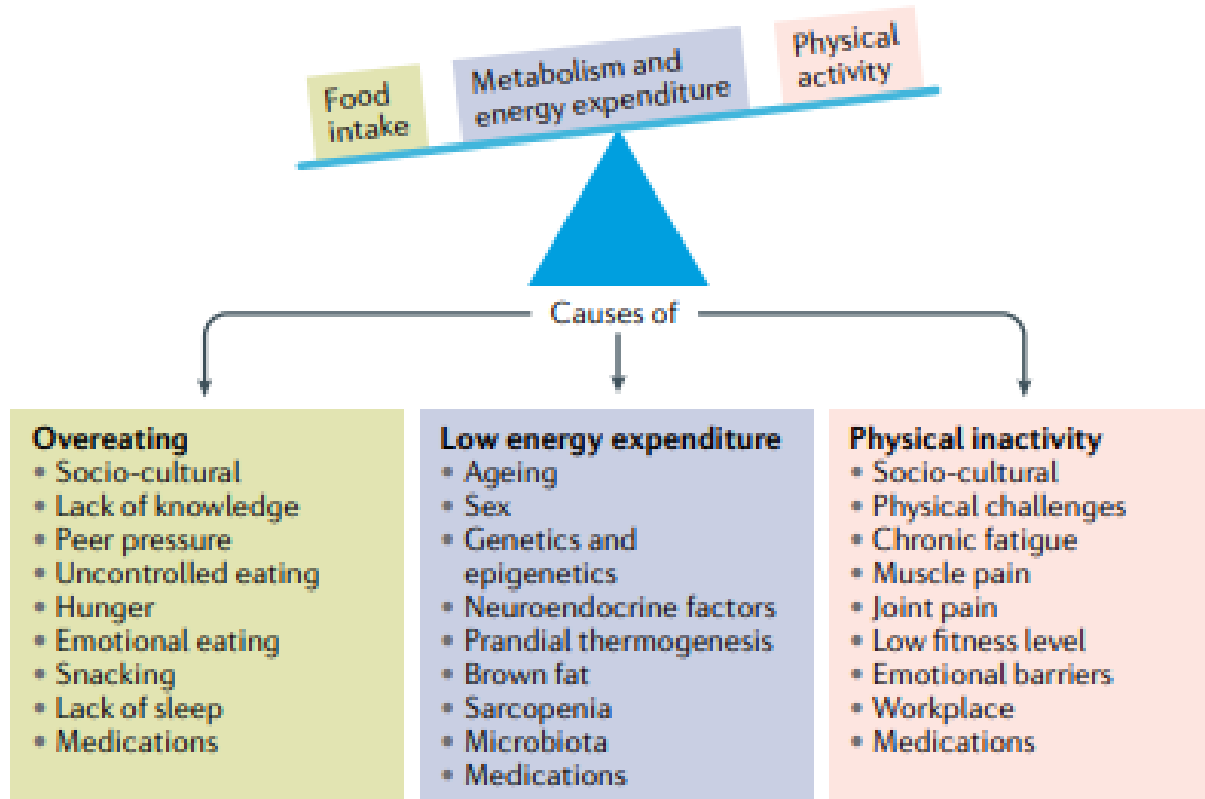
Note that mapping of BMI into weight class is approximate due to data limitations.

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Obesity: Risk factors and causes

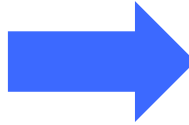
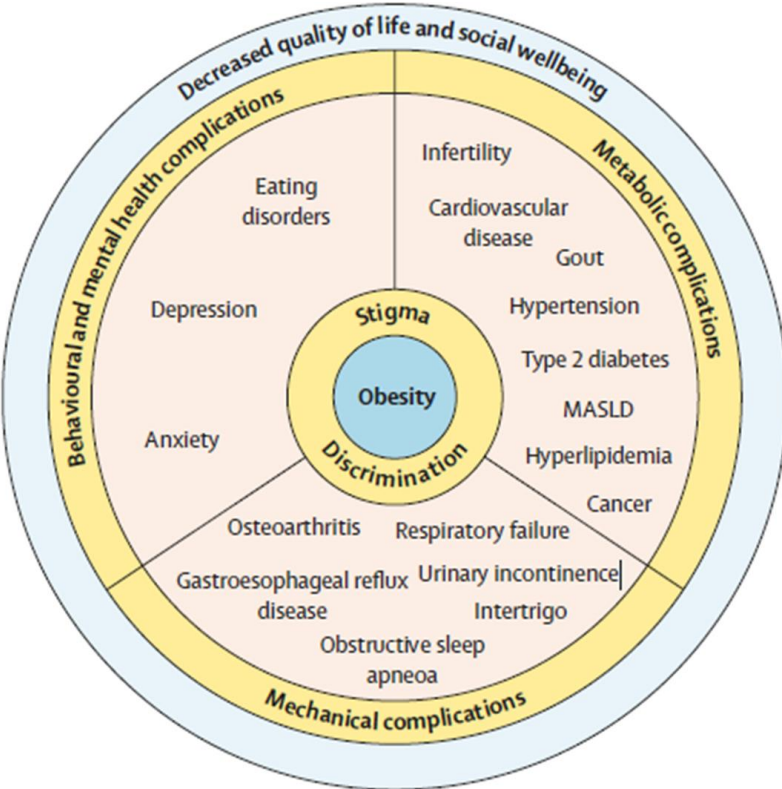
Insights – Impacts – Imperatives





Obesity: Impacts on Health

Insights – Impacts – Imperatives



Cancer: 13 types of cancer

Ischaemic heart disease

Cerebrovascular disease: stroke

Sleep disorders: sleep apnoea

Diabetes type 2

Musculoskeletal disorders

Mental health disorders

Obesity

Treatments



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Available Treatments

Lifestyle & behavioural interventions



Pharmacotherapy



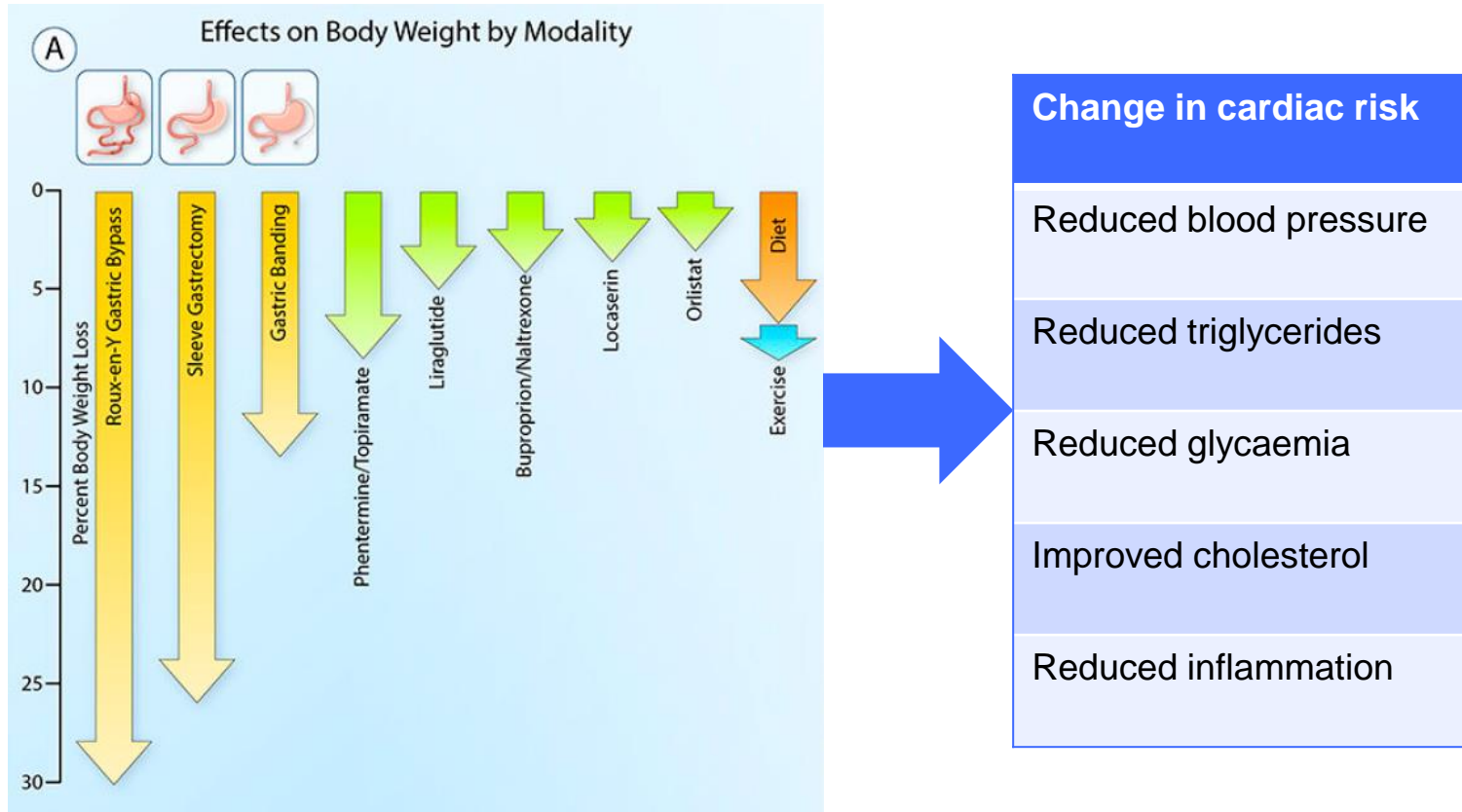
Bariatric surgery





Impact of treatments on body weight and cardiac risk

Insights – **Impacts** – Imperatives





New obesity treatments

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Incretin hormones:

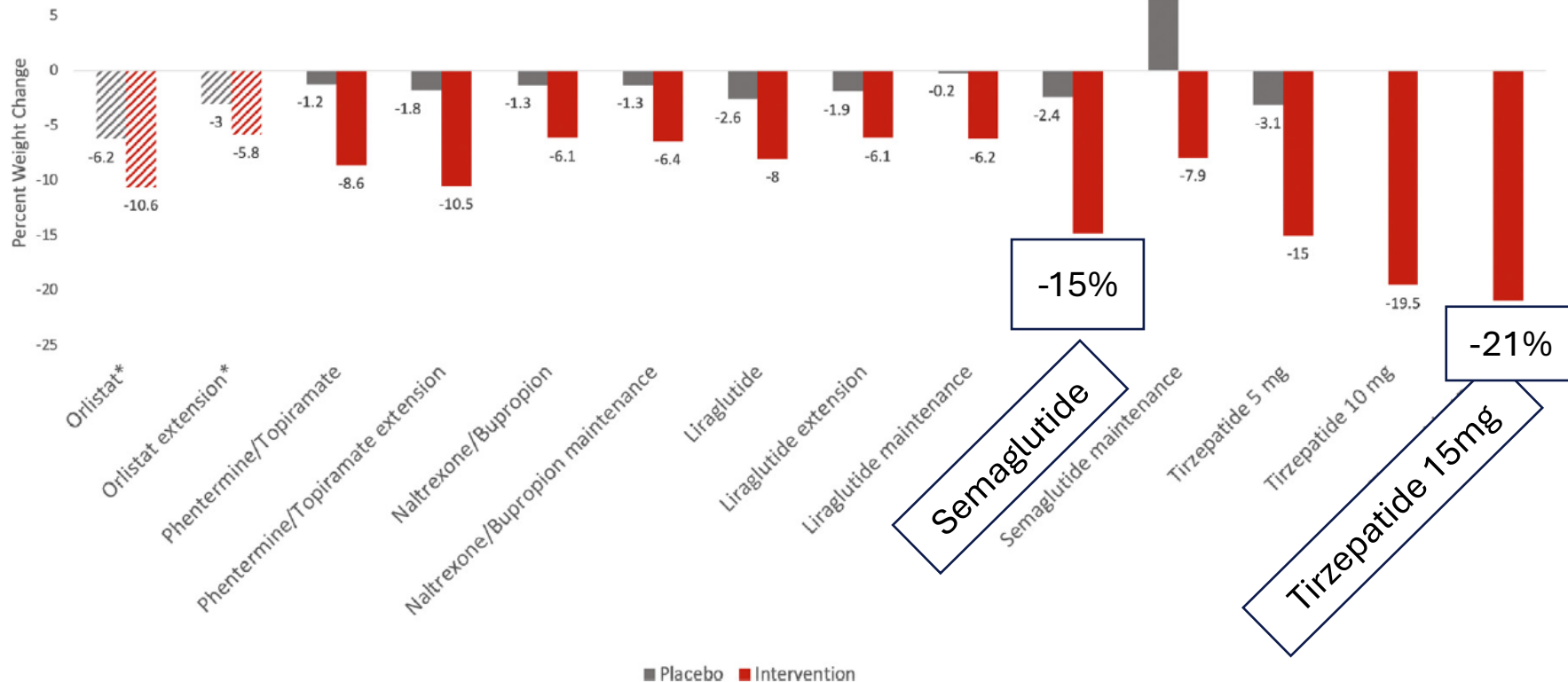
- GLP 1 (glucagon like peptide)
- GIP (glucose-dependent insulinotropic polypeptide)

Compound	Brand Name	Class	Use	Dose	Route	Manufacturer
Semaglutide	Ozempic	GLP1ra	Diabetes type II	1mg/week	Sub Cutaneous	Novo Nordisk
Semaglutide	Wegovy	GLP1ra	Obesity	2.4mg/week	Sub Cutaneous	Novo Nordisk
Semaglutide	Rybelsus	GLP1ra	Diabetes type II	14mg/day	Oral	Novo Nordisk
Tirzepatide	Mounjaro	GLP1ra + GIPra	Diabetes type II	5mg/week	Sub Cutaneous	Eli Lilly
Tirzepatide	Zepbound	GLP1ra + GIPra	Obesity	15mg/week	Sub Cutaneous	Eli Lilly



Weight loss potential of medications

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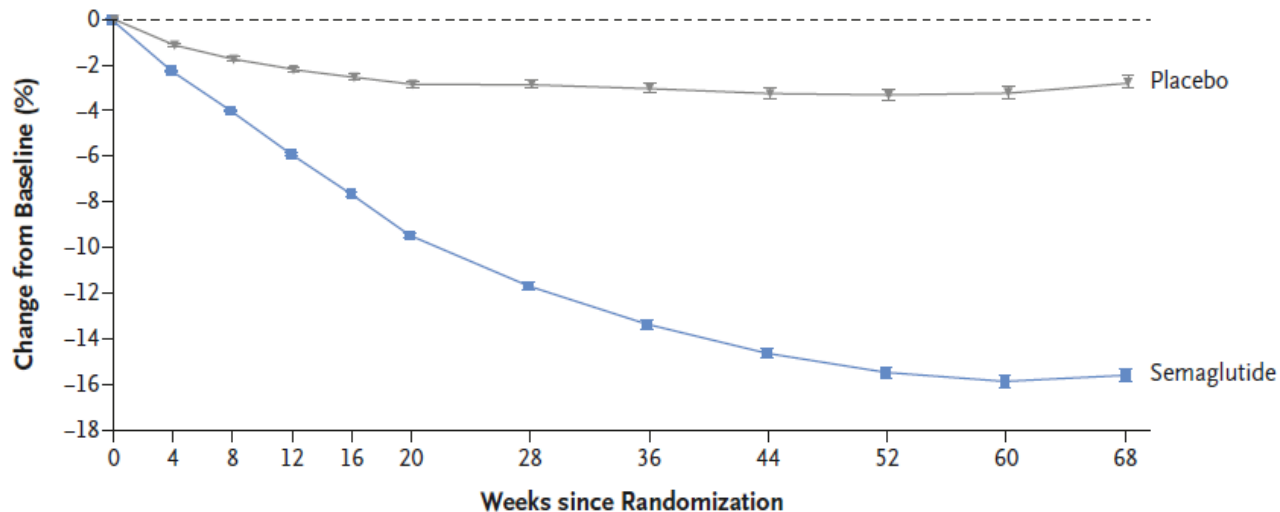


Mean percent (%) weight change reported in the main phase 3 and extension trials of the FDA approved anti-obesity medications. Orlistat: XENDOS trial (years 1 and 4). Phentermine/topiramate: CONQUER and SEQUEL trials. Naltrexone/bupropion: COR-I and COR-II trials. Liraglutide: SCALE Obesity, SCALE Obesity and Prediabetes Extension, and SCALE maintenance trials. Semaglutide: STEP 1 and STEP 4 trial.



Semaglutide: Efficacy and safety – STEP-1 Trial

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No. at Risk

Placebo	655	649	641	619	615	603	592	571	554	549	540	577
Semaglutide	1306	1290	1281	1262	1252	1248	1232	1228	1207	1203	1190	1212

Wilding J. et al: "Once-Weekly Semaglutide in Adults with Overweight or Obesity",
N Engl J Med 2021;384:989-1002

Common Side Effects

Nausea

Vomiting

Diarrhoea

Constipation

Uncommon Serious

Pancreatitis

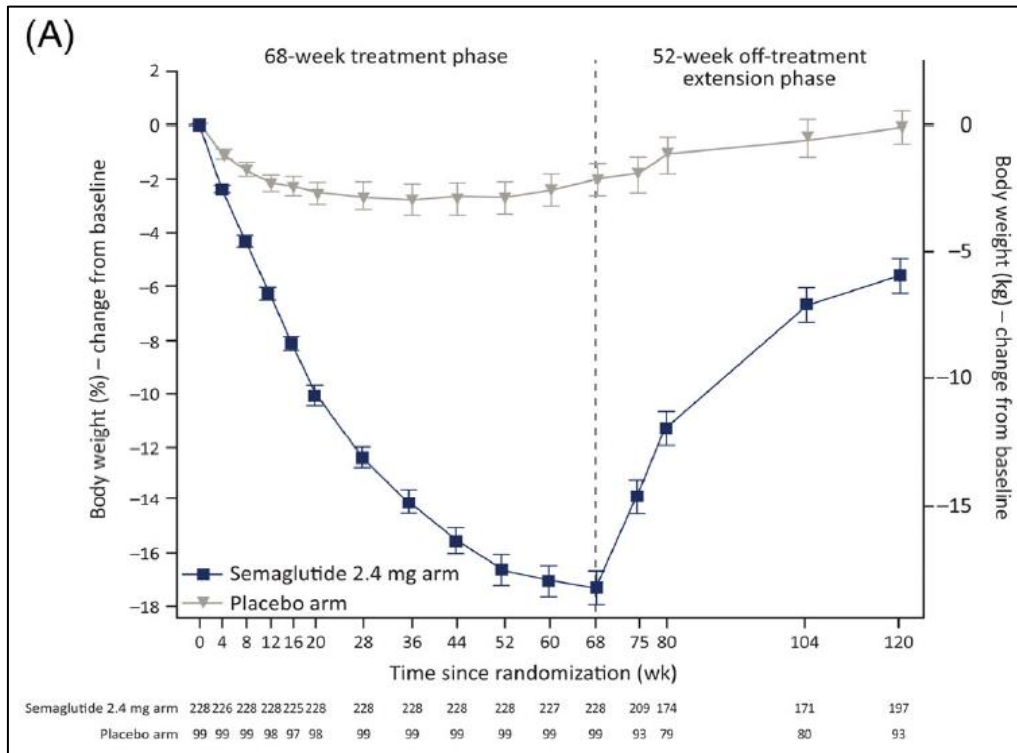
Gastric paresis

Bowel obstruction



Semaglutide: Maintenance of weight loss and adherence

Insights – **Impacts** – Imperatives



July 11, 2023



Real-World Analysis of Glucagon-Like Peptide-1 Agonist (GLP-1a) Obesity Treatment One Year Cost-Effectiveness and Therapy Adherence

Joseph Leach, MD, Chief Medical Officer, Prime Therapeutics; Marci Chodroff, MD, Vice President, Medical Affairs, MagellanRx; Yang Qiu, MS; R. Scott Leslie, Ph.D.; Ben Urlick, PharmD, Ph.D.; Landon Marshall, PharmD, Ph.D.; Patrick Gleason, PharmD

All authors are employees of Prime Therapeutics and MagellanRx

No external funding was provided for this analysis

Introduction: Glucagon-like peptide-1 agonist (GLP-1a) products to treat type 2 diabetes mellitus (T2DM) have been on the market since 2005. In 2014, the FDA approved the first GLP-1a product, liraglutide injection (Saxenda), for weight loss, followed by semaglutide injection (Wegovy) in 2021.

In the fall of 2022, social media influencers expounded on the weight loss attributes associated with GLP-1a therapies. This resulted in some employers experiencing a substantial increase in GLP-1a utilization and costs during the first half of 2023.

At an annual wholesale acquisition price \$11,500 to \$14,000, the Institute for Clinical Economic Review (ICER) cost-effectiveness analysis identified that GLP-1a weight loss therapies are two-fold over-priced to their expected value in weight loss-associated reduction in cardiovascular events and diabetes development avoidance over a lifetime. The clinical trial data used by ICER to create their cost-effectiveness findings of GLP-1a drugs reported a medication adherence rate of 95%.

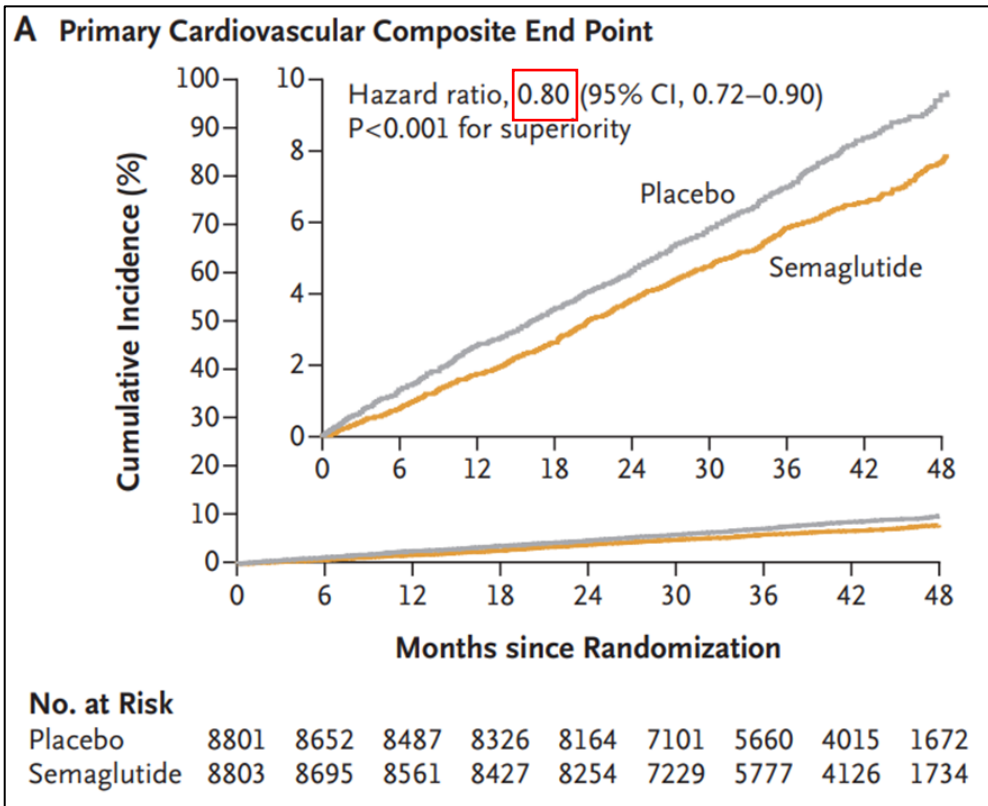
GLP-1a persistency and adherence to therapy was poor, with 32% of members remaining persistent at one year

From: Wilding J. et al: "Weight regain and cardiometabolic effects after withdrawal of semaglutide: The STEP 1 trial extension", Diabetes Obes Metab. 2022;24:1553–1564.



Semaglutide: Morbidity impacts – SELECT-Trial (RCT)

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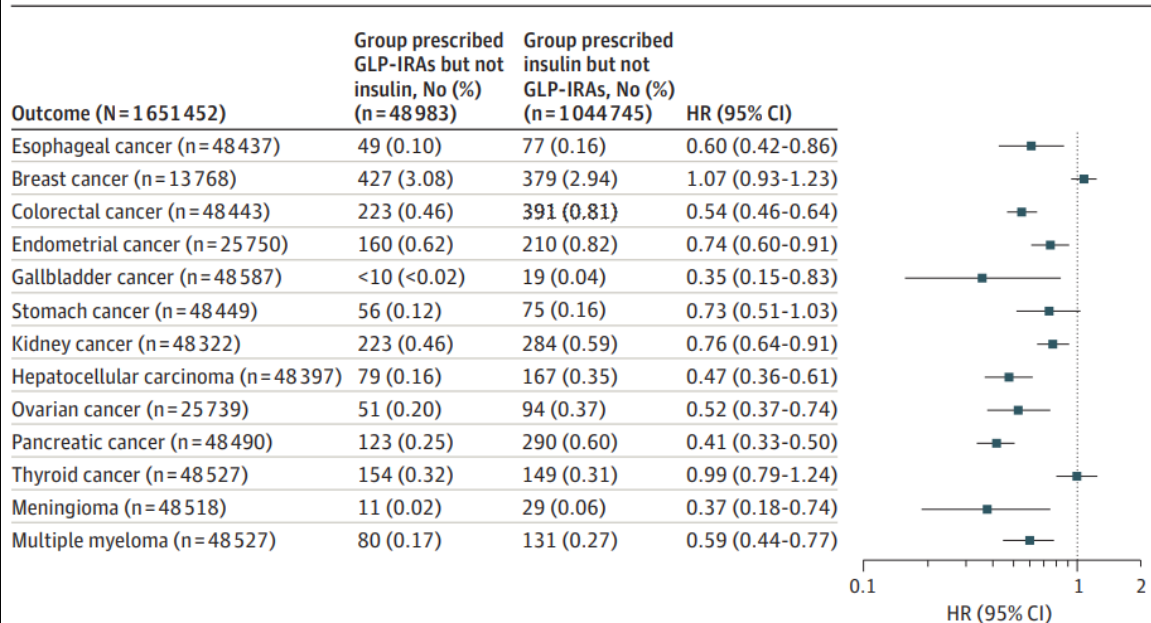
20% reduction in risk of major cardiovascular outcomes in treatment group vs placebo



Semaglutide: Morbidity impacts – observational data

Insights – **Impacts** – Imperatives

Figure 2. Risk of 13 Obesity-Associated Cancers Among Patients Receiving Glucagon-Like Peptide 1 Receptor Agonists (GLP-IRAs) vs Those Receiving Insulins

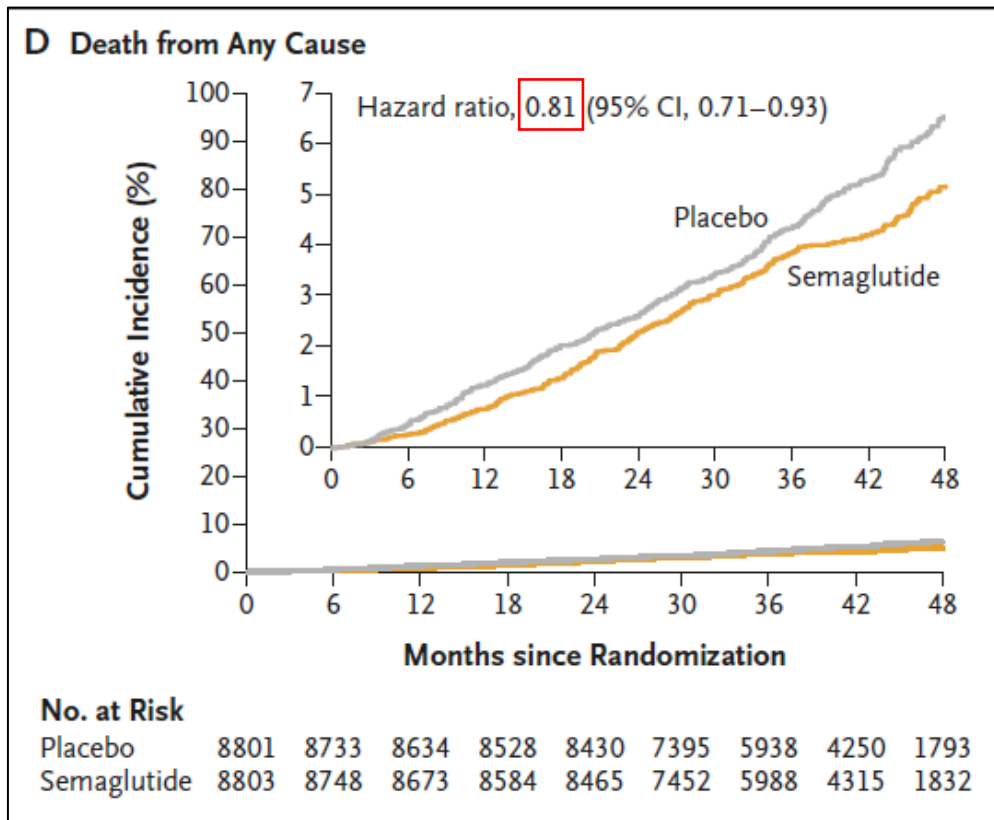


Observational data: promising reductions in risk for many obesity related cancers



Semaglutide: Mortality impacts – SELECT-Trial (RCT)

Insights – **Impacts** – Imperatives



19% reduction in
risk of death in
treatment group
vs placebo

Lincoff, M. et al. Semaglutide and Cardiovascular Outcomes in Obesity without Diabetes. NEJM Nov 2023

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Obesity

Potential impacts:
general population



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Estimating Impact on Population Mortality

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% of Adult Population Obese



Takeup Rate



Hazard Ratio



Estimating Impact on Population Mortality

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34% overweight (25-30 BMI)

32% obese (>30 BMI)

Source: Australian Institute of Health and Welfare

% of Adult Population Obese



Takeup Rate



Hazard Ratio

Ease of use

Cost

Access schemes

Side effects

Supply

Regulation

Lower bound: 10%

Upper bound: 50%



Estimating Impact on Population Mortality

Insights – **Impacts** – Imperatives



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34% overweight (25-30 BMI)

32% obese (>30 BMI)

Source: Australian Institute of Health and Welfare

% of Adult Population Obese



Lower bound: 10%

Upper bound: 50%

Takeup Rate



81%

Source: SELECT-trial

Hazard Ratio

Lifestyle factors

Validity of Study Result

New Gen Improvement

Demographics



Estimating Impact on Population Mortality

Insights – **Impacts** – Imperatives



34% overweight (25-30 BMI)

32% obese (>30 BMI)

Source: Australian Institute of Health and Welfare

% of Adult Population Obese

32% obese



Lower bound: 10%

Upper bound: 50%

Takeup Rate

30% takeup



81%

Source: SELECT-trial

Hazard Ratio

19% mortality reduction



Estimating Impact on Population Mortality

Insights – **Impacts** – Imperatives



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$32\% \times 30\% = 10\%$ *of population on obesity drugs*

19% reduction in mortality for those on the drugs

~2% reduction in population mortality

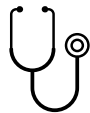


What about Morbidity?

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Cardiovascular (20% reduction in adverse cardiovascular events)¹



Cancer (at least 13 different cancers are associated with obesity)



Osteoarthritis



Reward centre



Smoking (8.3% of Aus pop. are smokers)²



Vaping (19.8% have tried vaping)²



Alcohol (31% drink at risky levels)²



Illicit drugs (~16%)³

¹Semaglutide and Cardiovascular Outcomes in Obesity without Diabetes, A. Michael Lincoff et al. 2023

²Australian Institute of Health and Welfare 2022-23

³ Estimates from surveys in 2019

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Potential impacts:
life insurers



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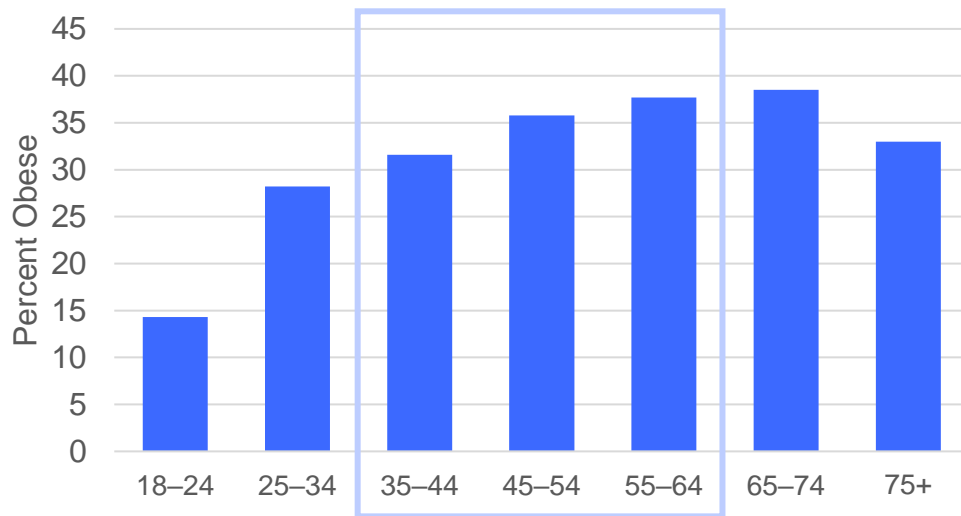
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How do insured populations differ?

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Obese individuals by age group
Australia 2022



Data source: Australian Institute of Health and Welfare

They are also likely to be:



Wealthier



Underwritten for weight in the past



Better able to access the drugs



Measure risk factors in portfolio



Target solutions for at-risk groups

Obesity

Opportunities for insurers



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Impact on the life insurance value chain

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Product Design

Scalable digital solutions to **identify at-risk individuals**, offer weight loss support programs and assist access to the drugs.



Pricing

Due to improved mortality and morbidity, **substandard lives** will be favourably impacted.

Prevention activities **reduce portfolio claim rate** over time.



Underwriting

Definition of obesity may be adjusted to accommodate GLP-1 inhibitor use, past or future.

Reduced BMI for some individuals **expands insurable population**.



Claims

Claims management will be better equipped with a new tool to manage weight and associated morbidity.



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Thank you for your attention.

Dr. Matthew Paul, Jonathan Blunden