



The Future of Life Sciences

Progressi in Medicina

ACCESSO ALL'INNOVAZIONE IN SANITÀ | COME FAR PROGREDIRE IL NUOVO WELFARE

VENEZIA

Ospedale Ss. Giovanni e Paolo - Sala San Domenico | Campo Santi Giovanni e Paolo, 6777

8, 9 e 10 SETTEMBRE 2025

Obesità3k

La «summa patologica» e la sfida del Terzo Millennio

Mirto Foletto, MD

Chirurgia Bariiatrica

Azienda Ospedale – Università, Padova

Agenda

1. Situazione attuale e traiettorie future

2. Implicazioni cliniche

3. Costi diretti ed indiretti

4. Impatto sociale

5. Approccio clinico

- Definizione
- Staged therapy

6. Ottimizzazione dei risultati

7. La prevenzione possibile?

Nothing to disclose

THE LANCET



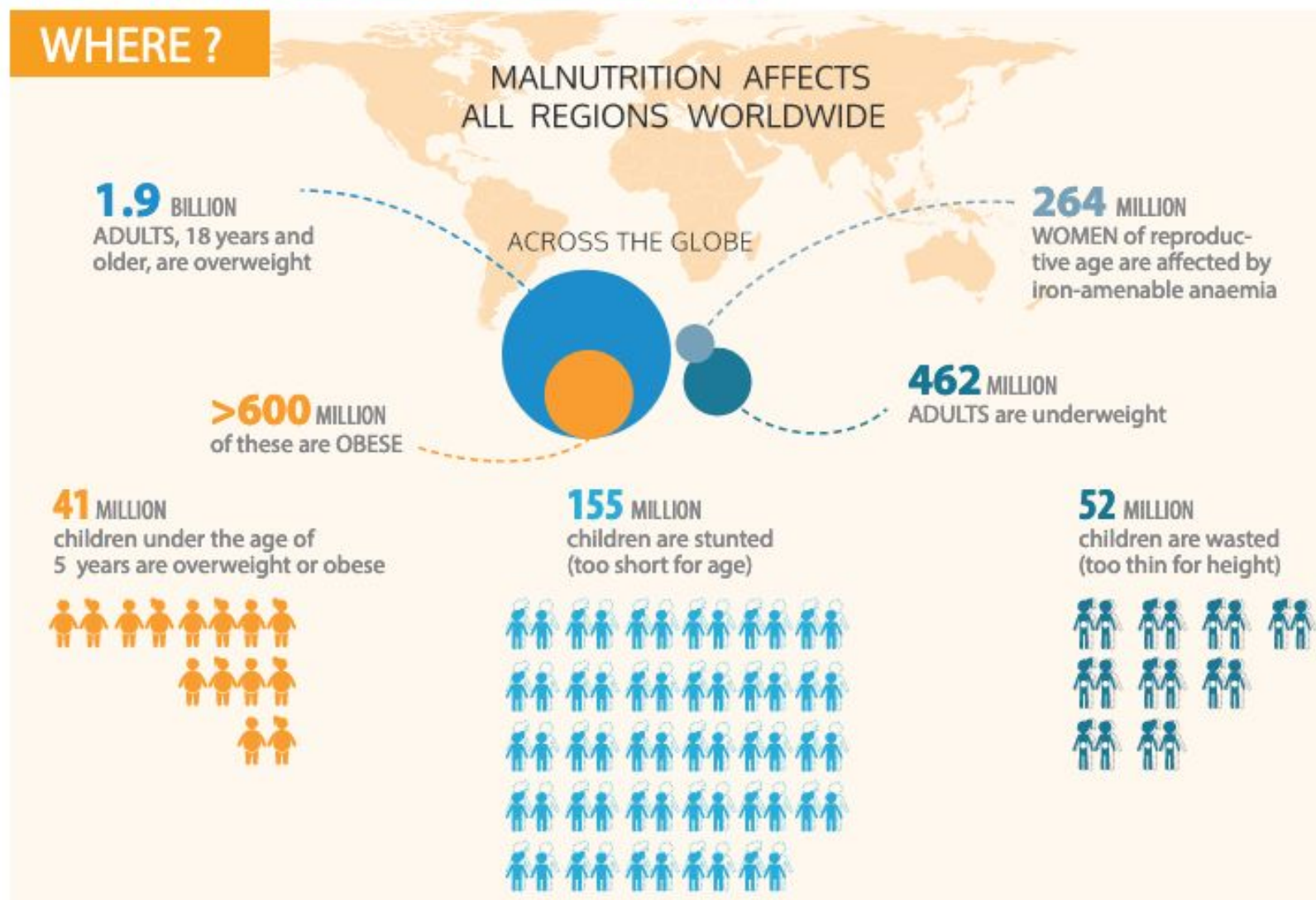
Milken Institute School
of Public Health
THE GEORGE WASHINGTON UNIVERSITY

The Global Syndemic of Obesity, Undernutrition, and Climate Change: *The Lancet* Commission report



Boyd A Swinburn, Vivica I Kraak, Steven Allender, Vincent J Atkins, Phillip I Baker, Jessica R Bogard, Hannah Brinsden, Alejandro Calvillo, Olivier De Schutter, Raji Devarajan, Majid Ezzati, Sharon Friel, Shifalika Goenka, Ross A Hammond, Gerard Hastings, Corinna Hawkes, Mario Herrero, Peter S Hovmand, Mark Howden, Lindsay M Jaacks, Ariadne B Kapetanaki, Matt Kasman, Harriet V Kuhnlein, Shiriki K Kumanyika, Bagher Larijani, Tim Lobstein, Michael W Long, Victor K R Matsudo, Susanna D H Mills, Gareth Morgan, Alexandra Morshed, Patricia M Nece, An Pan, David W Patterson, Gary Sacks, Meera Shekar, Geoff L Simmons, Warren Smit, Ali Tootee, Stefanie Vandevijvere, Wilma E Waterlander, Luke Wolfenden, William H Dietz

Fig. 2. Mapping the double burden of malnutrition (5, 6, 9)



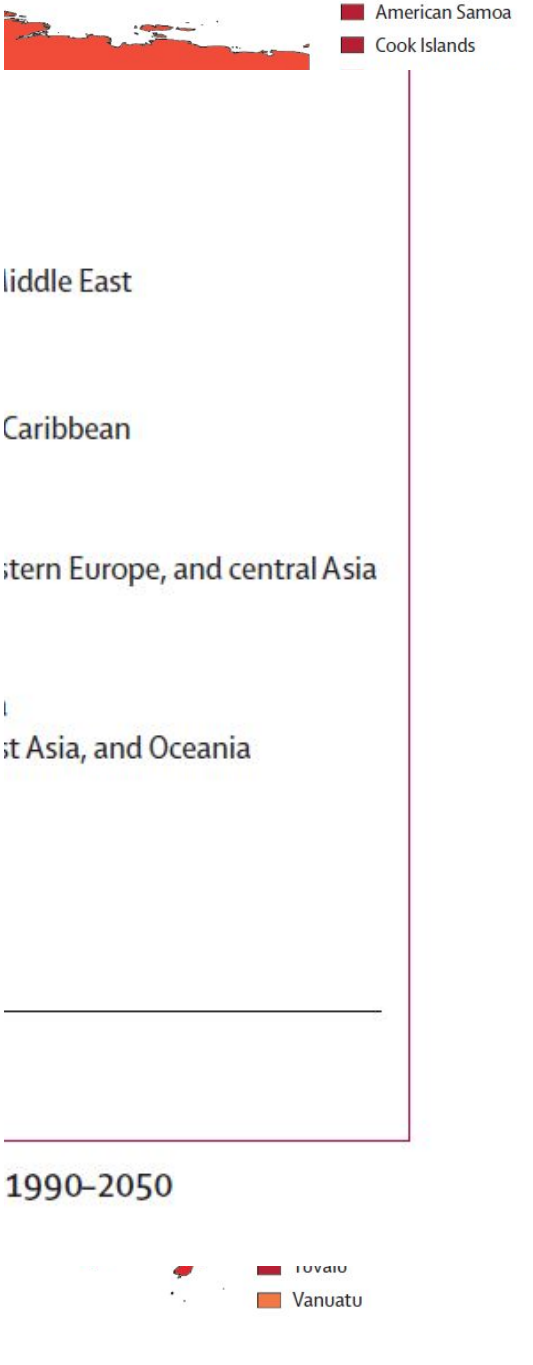
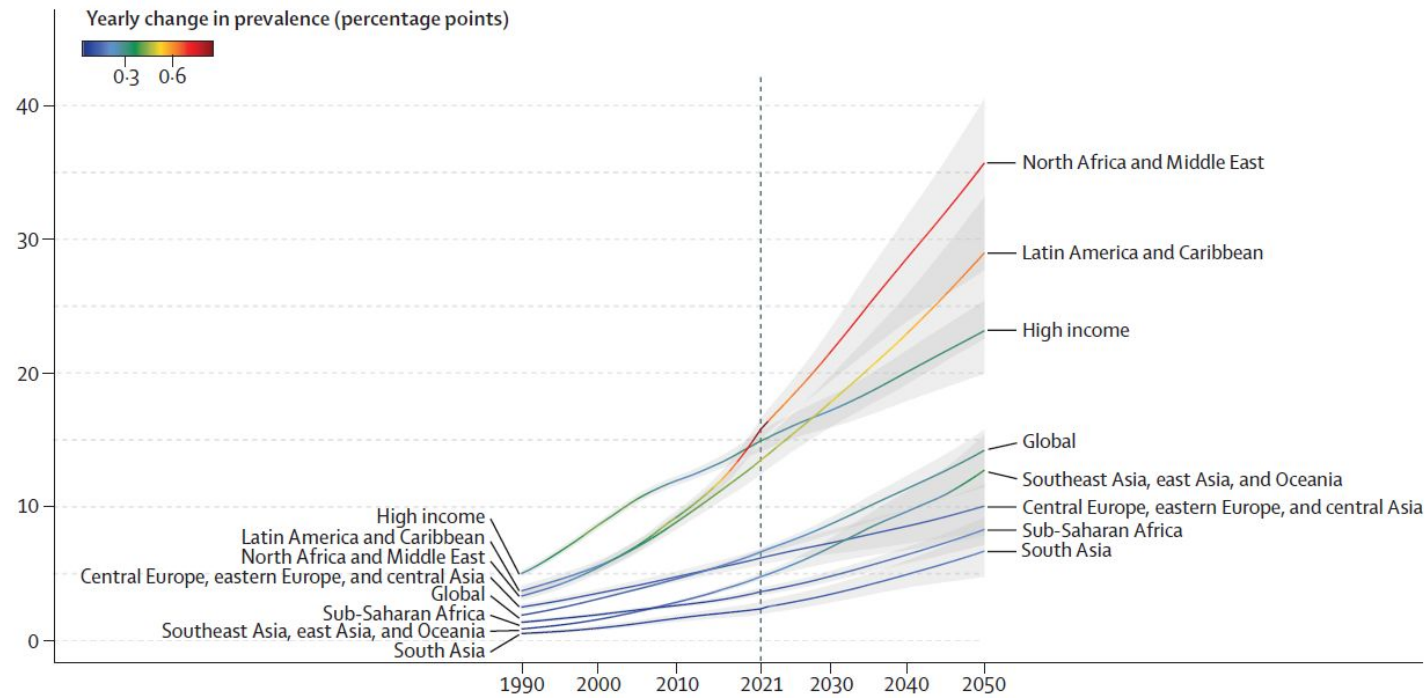
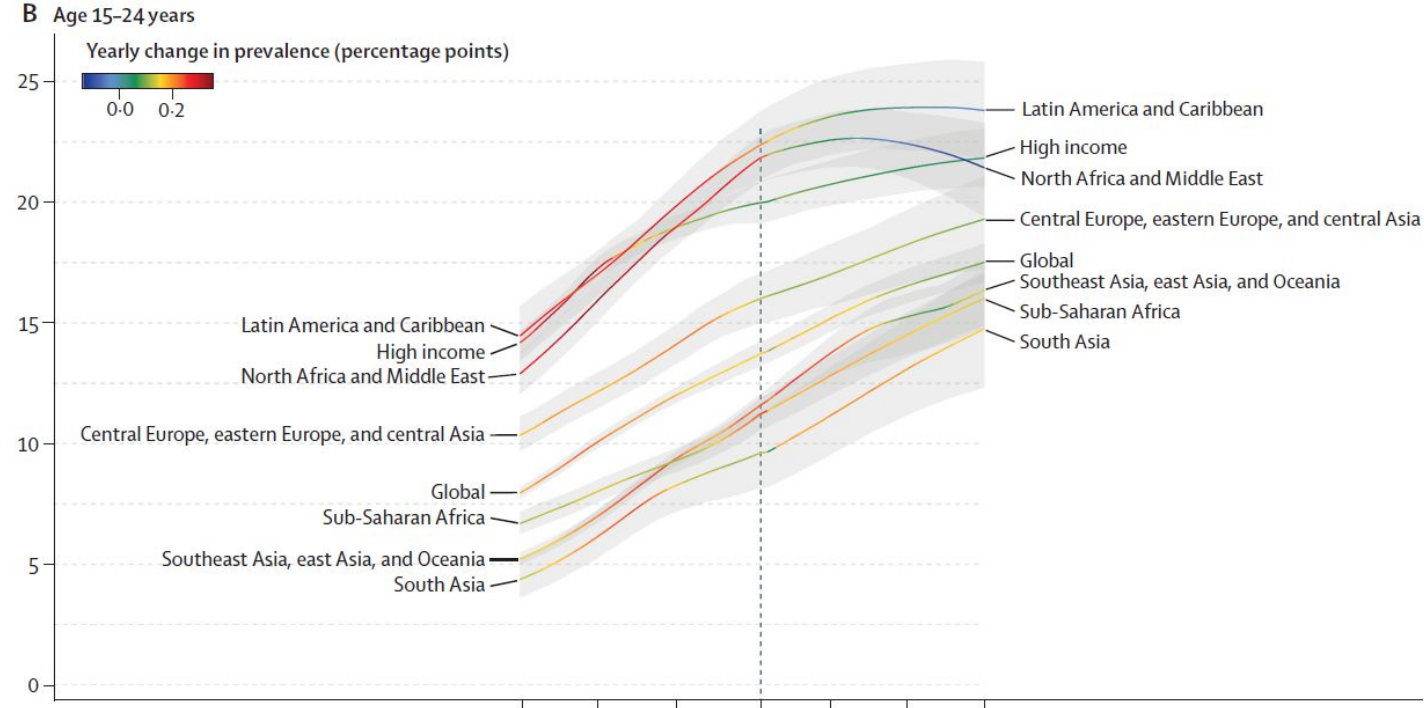
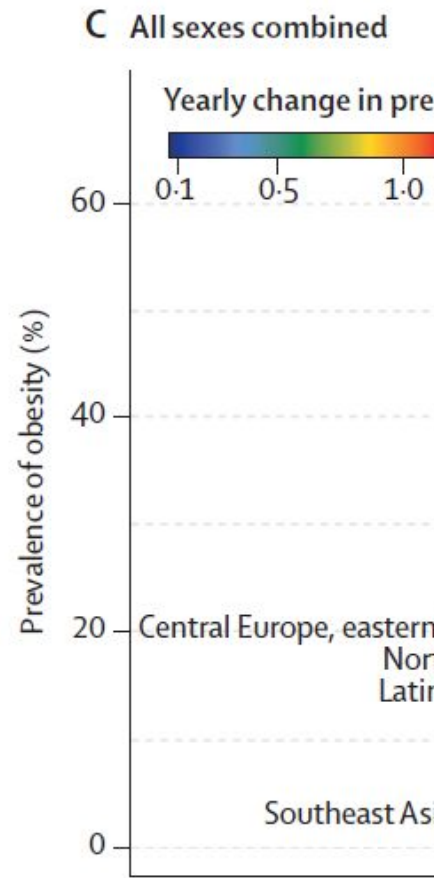


Figure 4: Estimated age-standardized prevalence of obesity, by sex and region, 1990–2050

(A) Females. (B) Males. (C) All sexes combined.

Bridging the gap in obesity research: A consensus statement from the European Society for Clinical Investigation

Abstract

Background: Most forms of obesity are associated with chronic diseases that remain a global public health challenge.

Aims: Despite significant advancements in understanding its pathophysiology, effective management of obesity is hindered by the persistence of knowledge gaps in epidemiology, phenotypic heterogeneity and policy implementation.

Materials and Methods: This consensus statement by the European Society for Clinical Investigation identifies eight critical areas requiring urgent attention. Key gaps include insufficient long-term data on obesity trends, the inadequacy of body mass index (BMI) as a sole diagnostic measure, and insufficient recognition of phenotypic diversity in obesity-related cardiometabolic risks. Moreover, the socio-economic drivers of obesity and its transition across phenotypes remain poorly understood.

Results: The syndemic nature of obesity, exacerbated by globalization and environmental changes, necessitates a holistic approach integrating global frameworks and community-level interventions. This statement advocates for leveraging emerging technologies, such as artificial intelligence, to refine predictive models

Definition and diagnostic criteria of clinical obesity



Francesco Rubino, David E Cummings, Robert H Eckel, Ricardo V Cohen, John P H Wilding, Wendy A Brown, Fatima Cody Stanford, Rachel L Batterham, J Sadaf Farooqi, Nathalie J Farpour-Lambert, Carol W le Roux, Naved Sattar, Louise A Baur, Katherine M Morrison, Anoop Misra, Takashi Kadowaki, Kwang Wei Tham, Priya Sumithran, W Timothy Garvey, John P Kirwan, José-Manuel Fernández-Real, Barbara E Corkey, Hermann Toplak, Alexander Kokkinos, Robert F Kushner, Francesco Branca, Jonathan Valabhji, Matthias Blüher, Stefan R Bornstein, Harvey J Grill, Eric Ravussin, Edward Gregg, Noor B Al Busaidi, Nasreen F Alfaris, Ebaa Al Ozairi, Lena M S Carlsson, Karine Clément, Jean-Pierre Després, John B Dixon, Gauden Galea, Lee M Kaplan, Blandine Laferrère, Martine Laville, Soo Lim, Jesús R Luna Fuentes, Vicki M Mooney, Joseph Nadglowski Jr, Agbo Urudinachi, Magdalena Olszanecka-Glinianowicz, An Pan, François Pattou, Philip R Schauer, Matthias H Tschöp, Maria T van der Merve, Roberto Vettor, Geltrude Mingrone

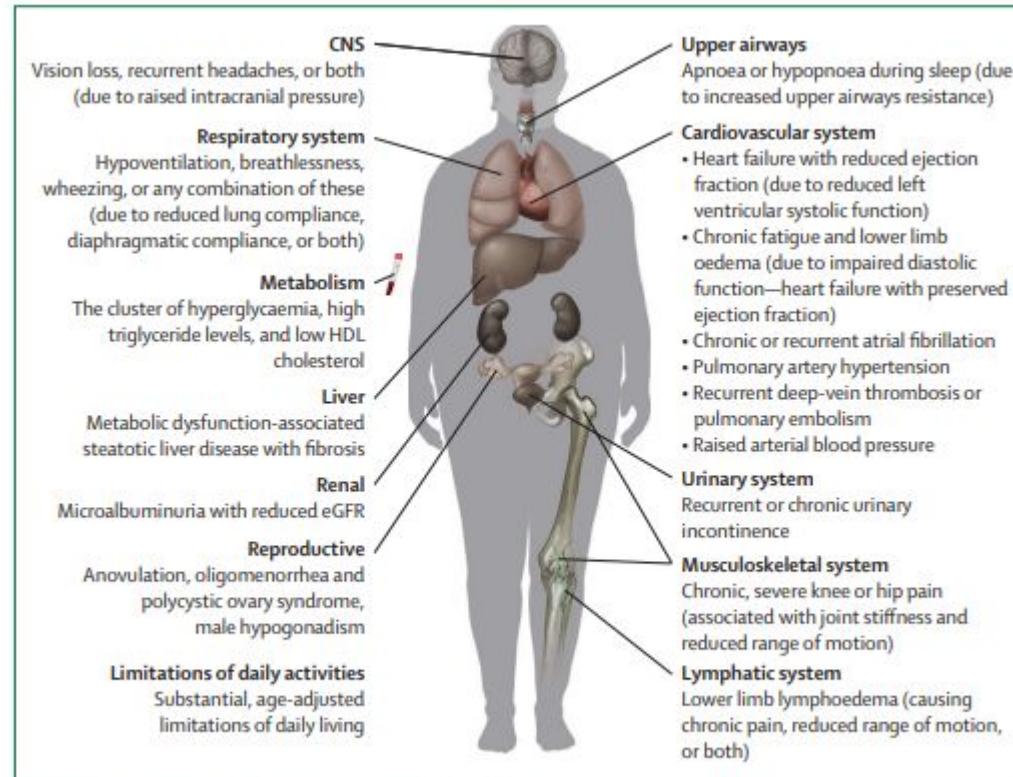


Figure 6: Diagnostic criteria for clinical obesity in adults
eGFR=estimated glomerular filtration rate.

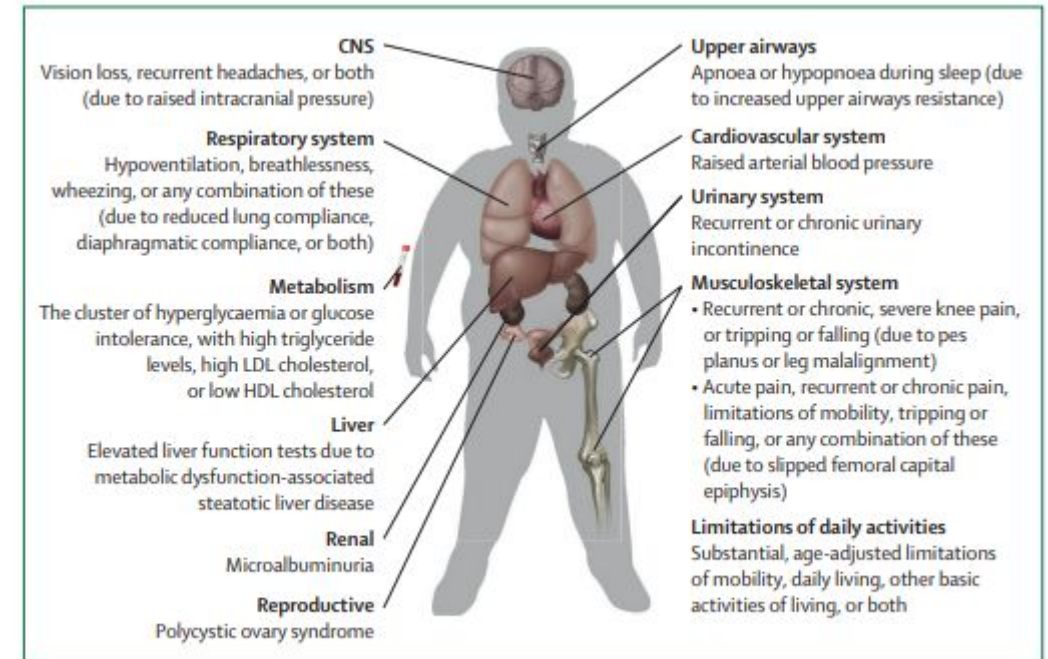


Figure 7: Diagnostic criteria for clinical obesity in children and adolescents



The economic burden of obesity in Italy: a cost-of-illness study

Margherita d'Errico¹ · Milena Pavlova¹ · Federico Spandonaro^{2,3}

Table 2 Prevalence of obesity in Italy stratified by age and BMI classification, adapted from

Table 4 Obesity-associated cases of cancer in Italy estimated using the Population Attributable Fraction (PAF)

Prevalence	Normal weight 18.50 ≤ BMI < 25, (%)	Overweight 25 ≤ BMI < 30, (%)	Obese BMI ≥ 30, (%)	Total (%)		
Cancer type	Proportion (%) ^a	Cases in Italy	RR ^b	PAF (%)	Cases due to obesity	
All	100	2,243,953	–	–	–	
Breast	23.3	522,235	1.25 ^D	5	27,460	
Colon-rectum	13.2	296,687	1.25 ^D	5	15,600	
Kidney	3.8	84,413	1.68 ^D	13	11,072	
Leukaemia	2.3	51,378	1.11 ^{GBD}	2	1225	
Liver	1.0	21,416	1.24 ^{GBD}	5	1083	
Oesophagus	0.2	3700	2.3 ^D	22	829	
Ovaries	1.7	37,829	1.04 ^{GBD}	1	333	
Pancreas	0.4	9636	1.08 ^{GBD}	2	168	
Prostate	9.7	216,716	1.05 ^G	1	2379	
Thyroid	3.6	81,129	1.18 ^{GBD}	4	3117	
Uterus	4.1	91,689	1.61 ^{GBD}	12	10,936	
Ischaemic heart disease	75,054,180	0.0	1,000,000	2	10	210,101
Myocardial infarction	43,054,180	1.0	430,542	1.44 ^W	9	38,313
Pulmonary embolism	36,548,850	0.02	6908	3.51 ^G	36	2472
Stroke	43,054,180	4.9	2,109,655	1.56 ^D	11	233,272
Endocrinological diseases						
Diabetes	43,054,180	8	3,444,334	6.25 ^D	54	1,853,785

Table 8 Costs attributable to obesity in billions of EUR in Italy in 2020

Direct healthcare costs		
Bariatric surgery	€0.24	1.8%
Diabetes	€0.65	4.9%
Cardiovascular diseases	€6.66	49.9%
Cancer	€0.33	2.5%
Total direct costs	€7.89	59.2%
Indirect costs		
Absenteeism	€2.62	19.6%
Presenteeism	€2.83	21.2%
Total indirect costs	€5.45	40.8%
Total	€13.34	100.0%



1.4% eligible pts (D'Angela Assobiomedica C.R.E.A. 2020)

54% si rivolgono al medico per essere aiutati
36% riceve una diagnosi (Caterson et al Diabetes Obes Metab 2019)

Fig. 1 Deterministic (one-way) sensitivity analysis and tornado diagram. Seven variables were tested to address uncertainty of the following parameter values when estimating the economic burden of obesity: (1) obesity prevalence, (2) total costs of bariatric surgery, (3) total costs of obesity-attributable CVDs, (4) total costs of obesity-attributable diabetes, (5) total costs of obesity-attributable cancer, (6) total costs of obesity-associated productivity losses, and (7) rate of eligible patients receiving bariatric surgery. Parameter values are changed through upper and lower bounds to estimate minimum and maximum total obesity costs

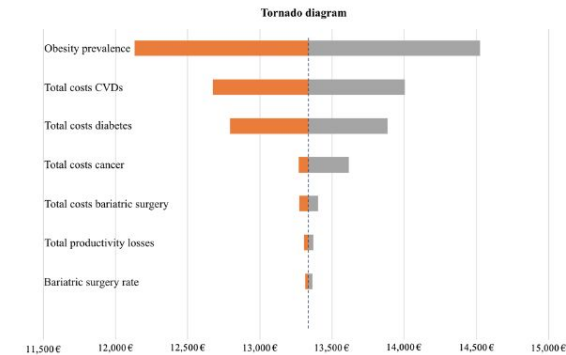
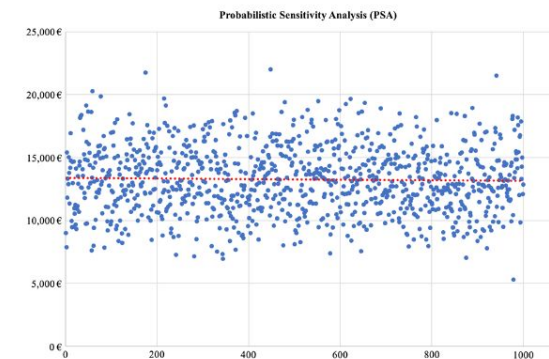
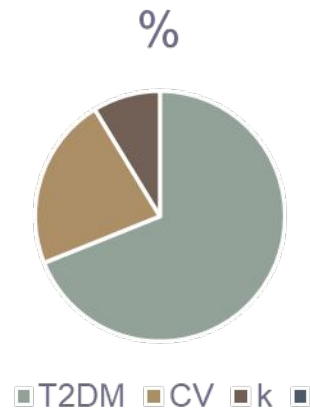


Fig. 2 Probabilistic sensitivity analysis (PSA) performed to address uncertainty of parameter values when estimating the total burden of obesity. The PSA was performed adopting the Monte Carlo method (second order) and calculation of the total obesity costs was replicated with 1,000 simulations



IMPATTO SOCIALE

- 8.4% del budget SSN speso per curare le malattie legate all'eccesso di peso (OCSE)



**9% spesa
SSN**

↓ 2.8% PIL



Ministero della Salute

Linee di indirizzo per la prevenzione e
il contrasto del sovrappeso e
dell'obesità

Definition and diagnostic criteria of clinical obesity

Francesco Rubino, David E Cummings, Robert H Eckel, Ricardo V Cohen, John P H Wilding, Wendy A Brown, Fatima Cody Stanford, Rachel L Batterham, I Sadaf Farooqi, Nathalie J Farpour-Lambert, Carel W le Roux, Naveed Sattar, Louise A Baur, Katherine M Morrison, Anoop Misra, Takashi Kadowaki, Kwang Wei Tham, Priya Sumithran, W Timothy Garvey, John P Kirwan, José-Manuel Fernández-Real, Barbara E Corkey, Hermann Toplak, Alexander Kokkinos, Robert F Kushner, Francesco Branca, Jonathan Volabji, Matthias Blüher, Stefan R Bornstein, Harvey J Grill, Eric Ravussin, Edward Gregg, Noor B Al Busaidi, Nasreen F Alfari, Ebaa Al Ozairi, Lena M S Carlsson, Kayne Clément, Jean-Pierre Després, John B Dixon, Gaudine Gelles, Lee M Kaplan, Blandine Laferrère, Marine Laville, Soo Lim, Jesús R Luna Fuentes, Vicki M Mooney, Joseph Nadglowski Jr, Agbo Urochachi, Magdalena Olczarecka-Glinianowicz, An Pan, François Pattou, Philip R Schauer, Matthias H Tschöp, Maria T van der Merwe, Roberto Vettor, Geltrude Mingrone

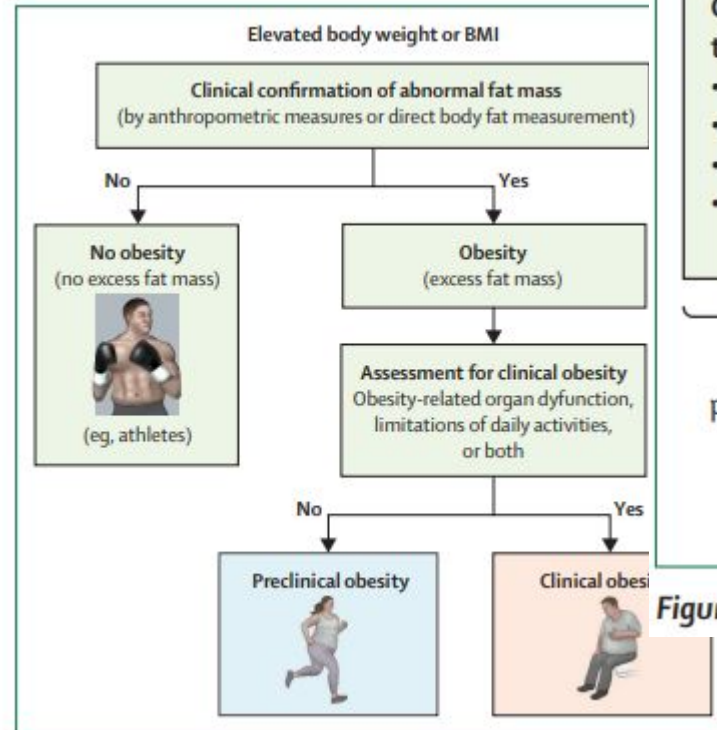


Figure 9: Goals of treatment in preclinical and clinical obesity

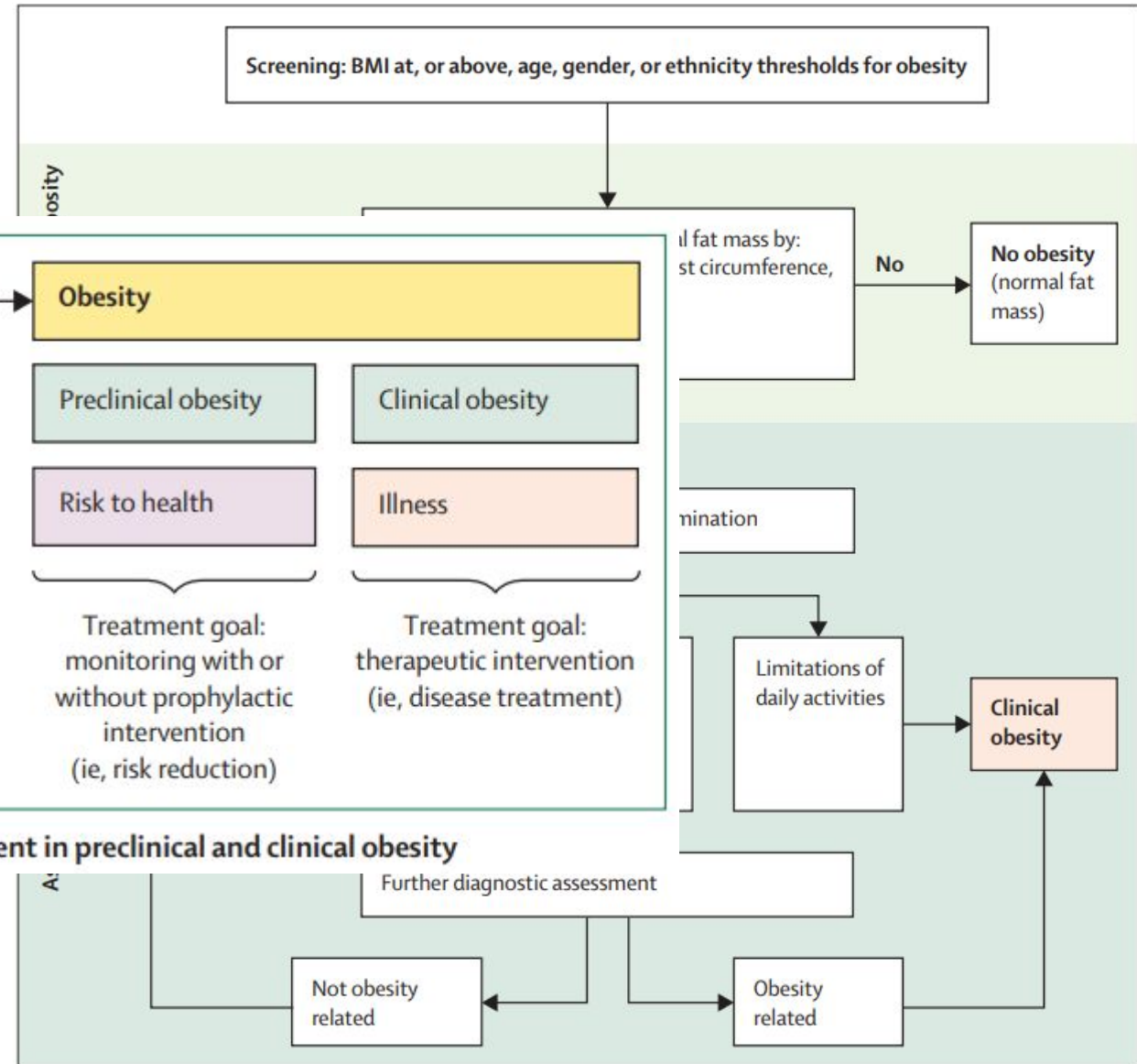
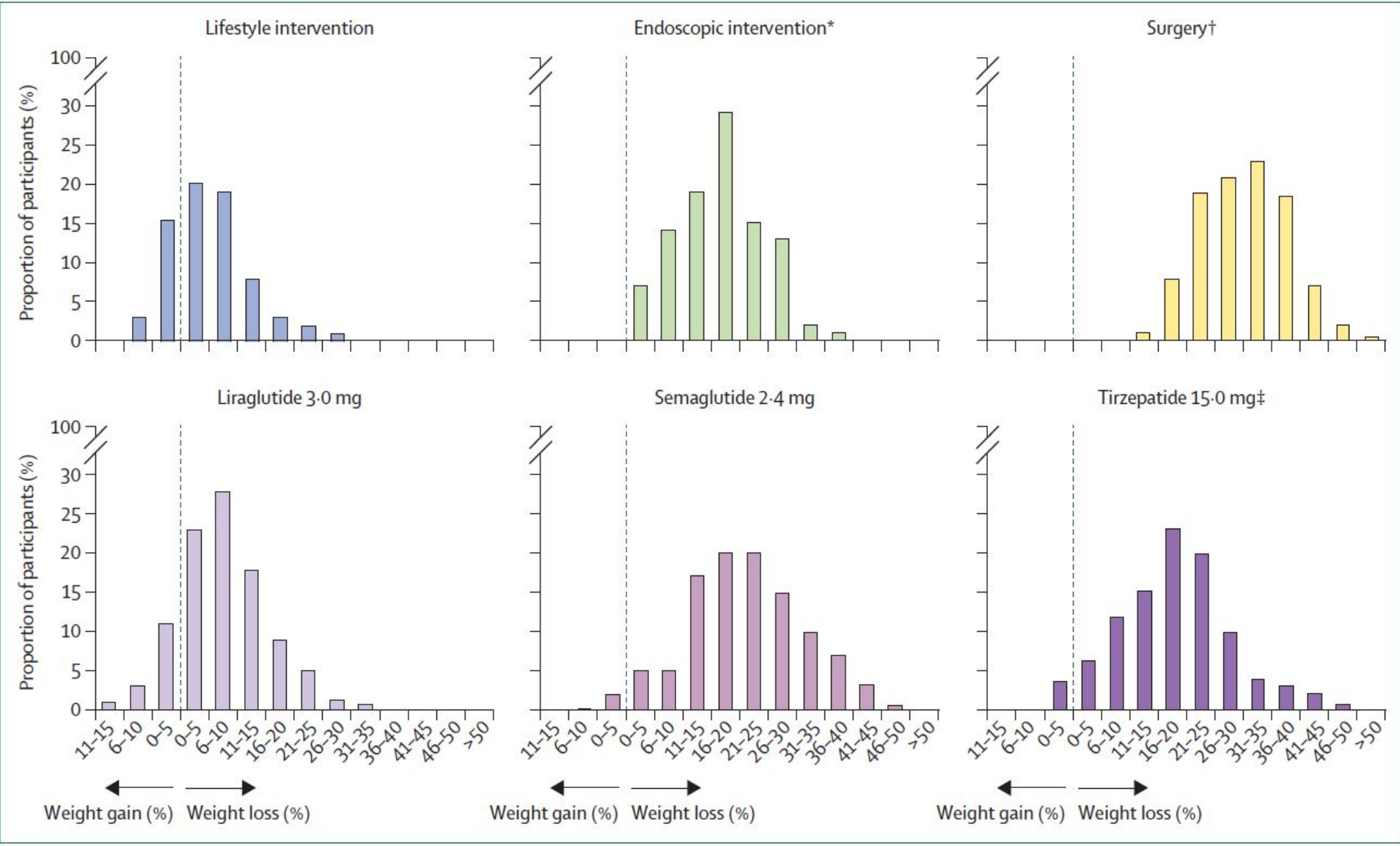


Figure 8: Clinical assessment of obesity



International Federation for the Surgery of Obesity statement on metabolic bariatric surgery after pharmacotherapy-induced weight loss in clinical obesity

Clinical obesity
characterised by
organs, physical
to excess adipos
mortality, and re

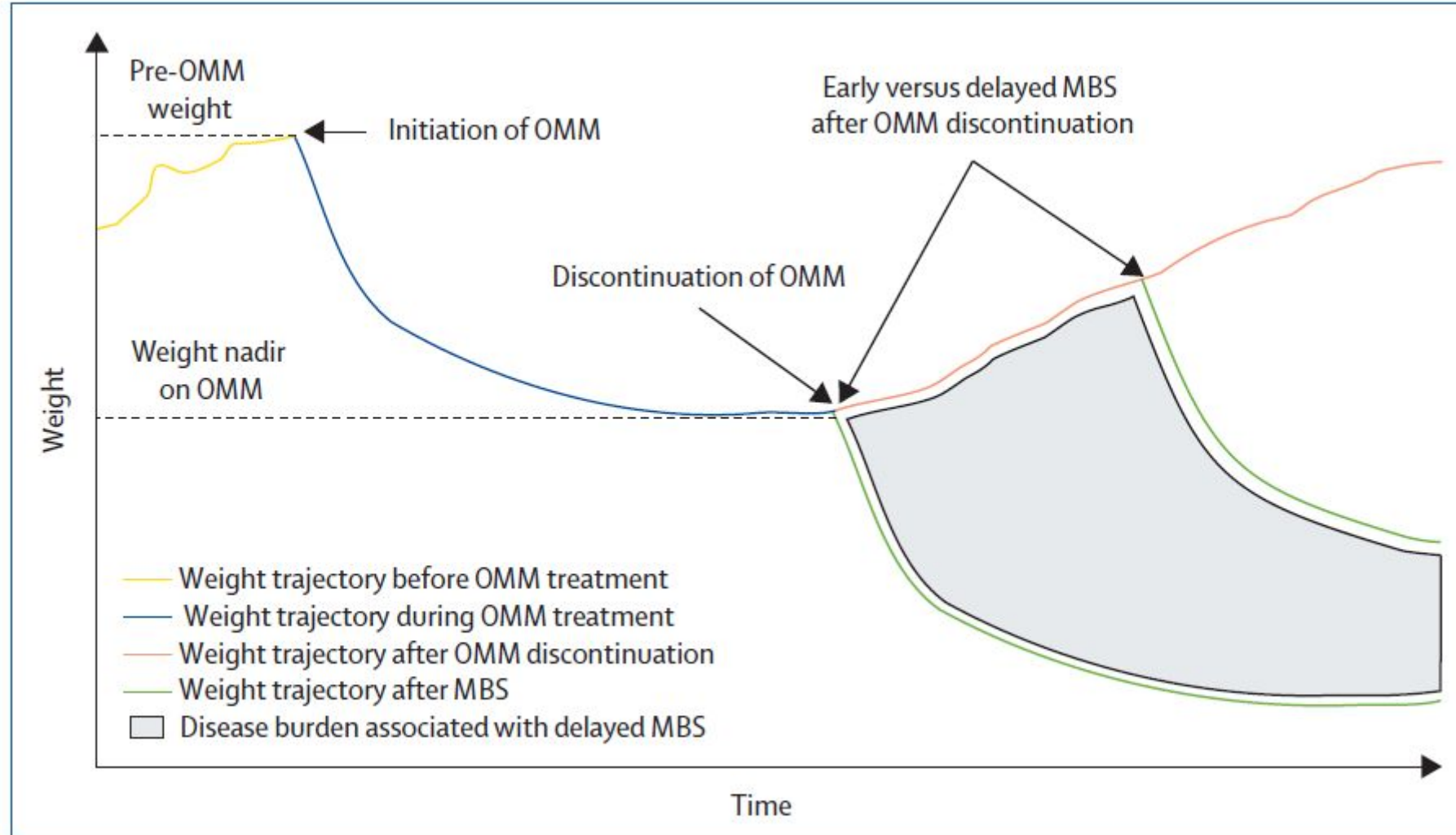
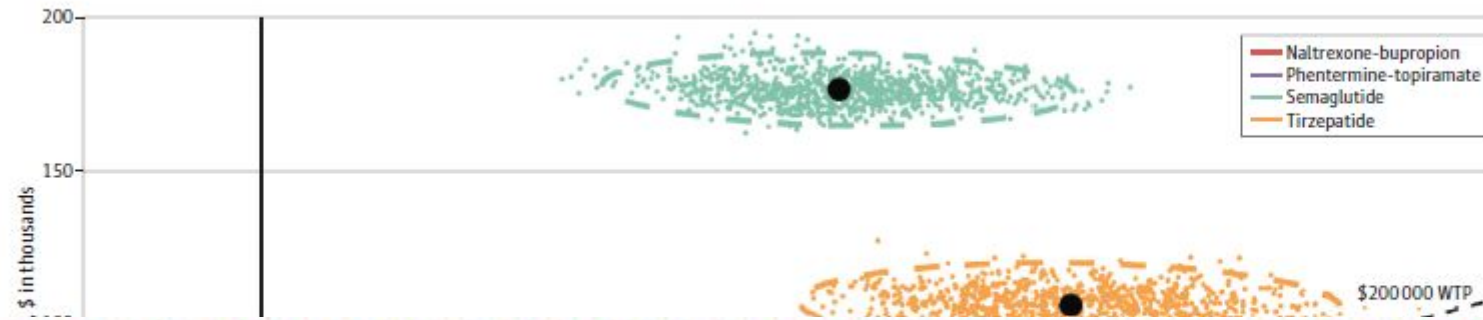


Figure 2. Probabilistic Sensitivity Analysis for the Cost-Effectiveness of the Antiobesity Medications vs Lifestyle Modification Over a Lifetime



substantial price reduction (30.5% for tirzepatide and 81.9% for semaglutide) would be needed to meet a cost-effectiveness threshold of \$100 000/QALY.

Conclusions

This economic evaluation found that although tirzepatide and semaglutide offered substantial long-term health benefits, they were not cost-effective at current net prices. Efforts to reduce the net prices of new antiobesity medications are essential to ensure equitable access to highly effective antiobesity medications.

Each data point represents the mean value for the 1000 simulations. The solid black circles indicate the mean values for the 1000 simulations. The willingness-to-pay (WTP) are depicted by dashed lines.

JAMA Health

Original Investigation
Lifetime Health
in US Adults

Jennifer H. Hwang, DO; Ned

Why Some Physicians Still Lead With Lifestyle-First Obesity Care Despite the GLP-1 Revolution

Erin Cates

August 12, 2025

17 77

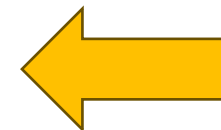
+ Add to Email Alerts

The rapid adoption of GLP-1 receptor agonists has fundamentally altered obesity management, with these medications now prescribed to millions of patients seeking significant weight loss. Yet a substantial number of physicians continue to prioritize lifestyle interventions as their primary approach, even as professional guidelines increasingly emphasize pharmacologic options and patients arrive with specific medication requests.

What drives this clinical philosophy in an era where injectable medications promise double-digit weight loss? The answer lies not in resistance to innovation but in a nuanced understanding of what produces lasting results in real-world practice.

Guidelines Support Combination Therapy, Not Medication Replacement

Current medical guidance reflects the growing evidence base for antiobesity medications while maintaining emphasis on behavioral foundations. As noted in the [National Institutes of Health's Endotext](#) chapter on obesity pharmacotherapy, current guidelines recommend that individuals who have attempted lifestyle improvements and continue to have a BMI of ≥ 30 or ≥ 27 with an obesity-related comorbidity may be eligible for weight-loss medication treatment.



Nota 1: Triage

MMG, Specialista ambulatoriale/ospedaliero

Nota 2: Presa in carico

- anamnesi/EO generali
- ricerca sintomi OSAS e questionario ESS (allegato A)
- anamnesi alimentare (allegato B)
- questionari motori (allegato C)
- test psicometrici per assessment psicologico (allegato D)

Medico Chirurgo,
Medico Internista
Medico Nutrizionista/Dietista

Nota 3: Criteri di esclusione

- età ≥ 70 aa
- ASA IV
- rifiuto del pz all'approccio chirurgico

Nota 4: Fenotipizzazione

- esami di laboratorio
- valutazione nutrizionale con diario alimentare
- polisonnografia se sintomi OSAS/ESS
- assessment psicologico quando richiesto
- auspicabile valutazione Medicina Sport (corollario 1)

Nota 5: Stadiazione dell'obesità sec. Edmonton Score (allegato E)

Nota 6: Esami preoperatori di I livello

- EGDS con biopsie
- RX tubo digerente prime vie
- Ecografia addome completo

preoperatori di II livello (se necessari)

- pH manometria esofagea
- RMN/TAC

Nota 7: Preparazione

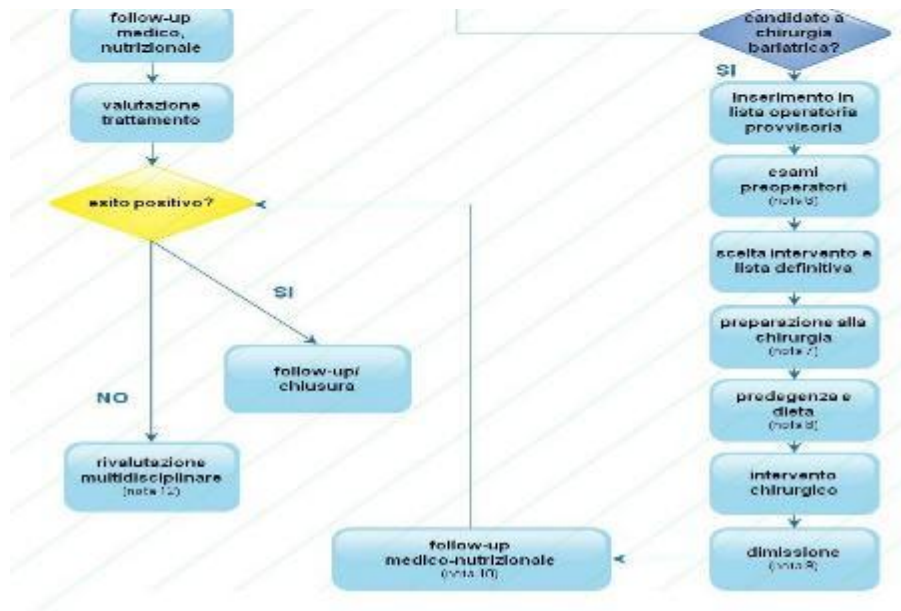
- rivalutazione internistica
- counseling nutrizionale
- ev. nutrizione riabilitativa - ev. supporto psicologico - ev. training esercizio fisico in palestra didattica e recall infermieristico

Medico Chirurgo
Medico Internista
Medico Nutrizionista/Dietista
Psicologo Clinico
Medico dello Sport
Specialista dell'esercizio
Case manager

PDTA



Patient Centered Approach



Nota 8: Predegenza

- routine preoperatoria
- rivalutazione antropometrica e dieta preoperatoria
- ev. nutrizione riabilitativa
- visita anestesiológica

Medico Nutrizionista/Dietista
Medico Anestesta
Medico Internista/Chirurgo

Nota 9: Dimissione

- indicazioni nutrizionali post-operatorie
- Ev. presa in carico delle complicanze chirurgiche, internistiche, nutrizionali

Medico Chirurgo
Medico Internista,
Medico Nutrizionista/Dietista

Nota 10: Follow-up

- 1 mese: chirurgico e dietologico/nutrizionale
- 3/6/12 mesi: internistico e dietologico/nutrizionale
- ev. indagini diagnostiche se complicanze
- a plastica (corollario 2)

rivalutazione funzionale e prescrizione esercizio fisico

Medico Chirurgo
Medico Internista
Medico Nutrizionista/Dietista
Medico dello Sport
Chirurgo Plastico

Nota 11: Terapia medica

Percorso medico internistico, nutrizionale, indicazione e promozione dell'attività fisica, farmacologico, ev. percorso psicoterapeutico

Medico Internista
Medico Nutrizionista/Dietista
Medico dello Sport
Psicologo Clinico

Nota 12: Rivalutazione

Multidisciplinare per

- eventuale chirurgia di revisione/conversione
- eventuale ricovero per nutrizione riabilitativa

Chirurgo
Medico Internista
Medico Nutrizionista/Dietista
Psicologo Clinico

Le linee guida sono le fondamenta del PDTA

Il PDTA è la madrelingua del team multidisciplinare



Empowerment del soggetto preso in carico
Empowerment del Team
Accountability della nostra pratica clinica
Risorse!

P



GRAZIE!