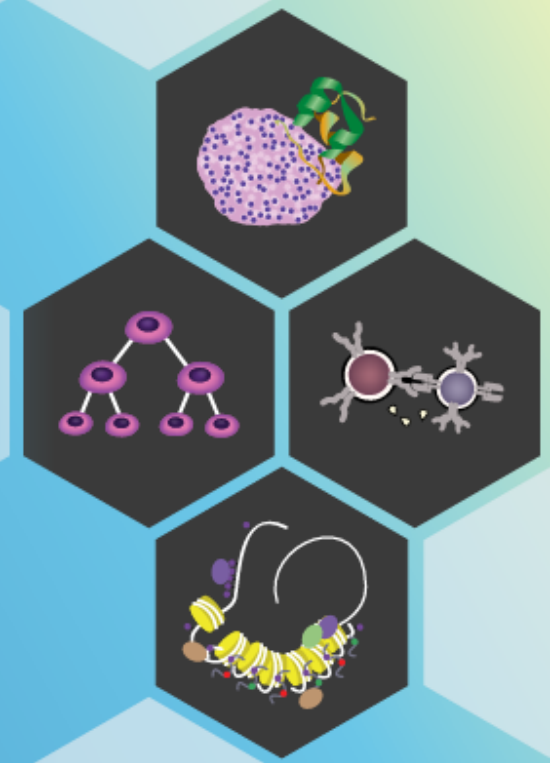
2024 RACHMIEL LEVINE-ARTHUR RIGGS

Diabetes Research Symposium

Is Bariatric Surgery Still Appropriate for Youth?



Justin Ryder, PhD

Vice Chair of Research for the Department of Surgery
at Lurie Children's Hospital

Associate Professor of Surgery and Pediatrics at
Northwestern Feinberg School of Medicine

Disclosures

- Grant/Research Support from Boehringer Ingelheim.
- Consultant for Calorify.

This presentation and/or comments will be free of any bias toward or promotion of the above referenced companies or their product(s) and/or other business interests.

This presentation and/or comments will provide a balanced, non-promotional, and evidence-based approach to all diagnostic, therapeutic and/or research related content.

This presentation has been peer-reviewed and no conflicts were noted.

Cultural Linguistic Competency (CLC) & Implicit Bias (IB)

STATE LAW:

The California legislature has passed Assembly Bill (AB) 1195, which states that as of July 1, 2006, all Category 1 CME activities that relate to patient care must include a cultural diversity/linguistics component. It has also passed AB 241, which states that as of January 1, 2022, all continuing education courses for a physician and surgeon **must** contain curriculum that includes specified instruction in the understanding of implicit bias in medical treatment.

The cultural and linguistic competency (CLC) and implicit bias (IB) definitions reiterate how patients' diverse backgrounds may impact their access to care.

EXEMPTION:

Business and Professions Code 2190.1 exempts activities which are dedicated solely to research or other issues that do not contain a direct patient care component.

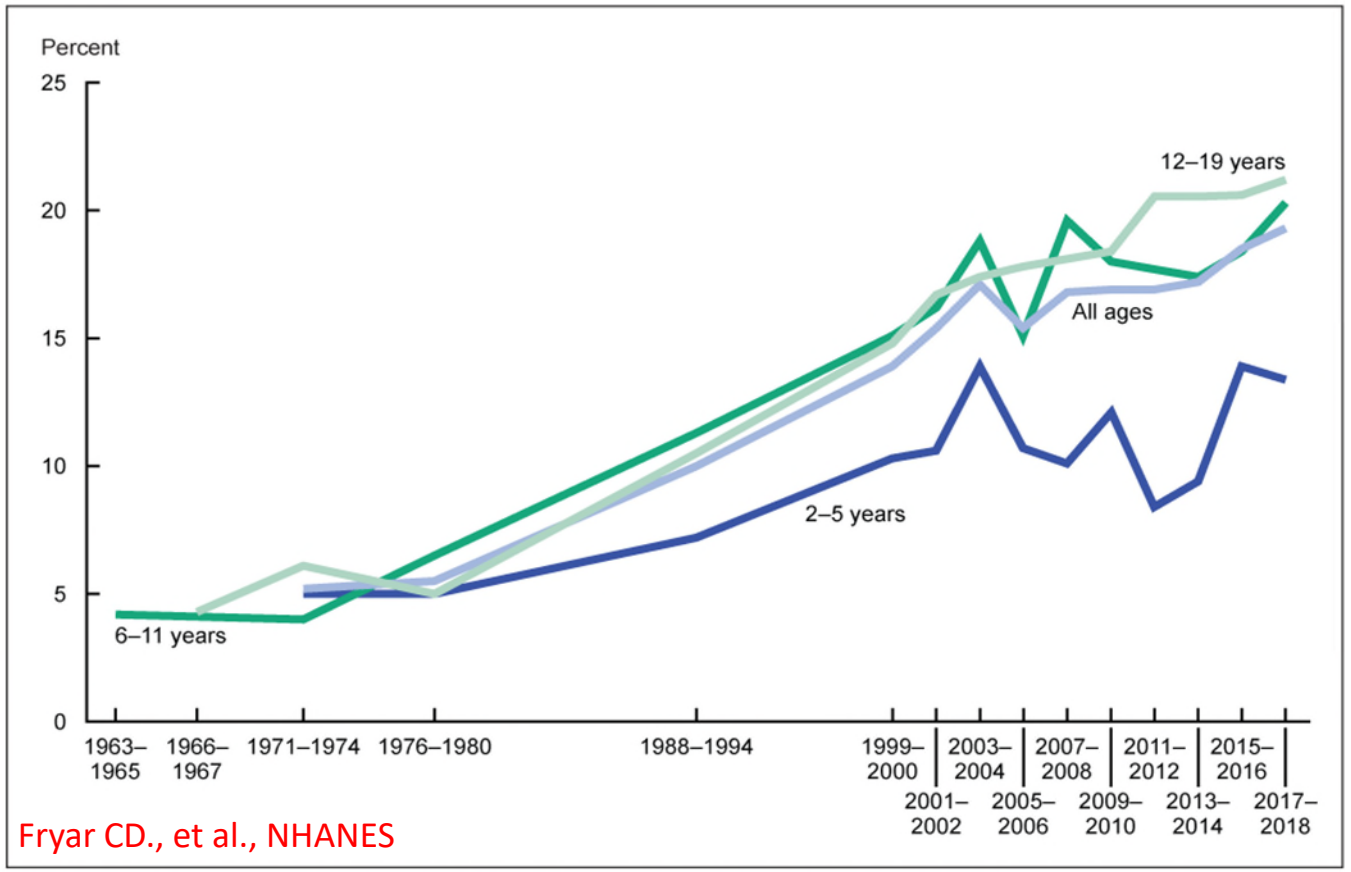
The following CLC & IB components will be addressed in this presentation:

- *Discuss diversity in clinical trial enrollment and barriers to access to care.*
- *Discuss obesity bias and stigma.*

Is Bariatric Surgery Still Appropriate for Youth?

- Absolutely!
- I would like to spend the next ~25min defending this position and supporting why we need more.

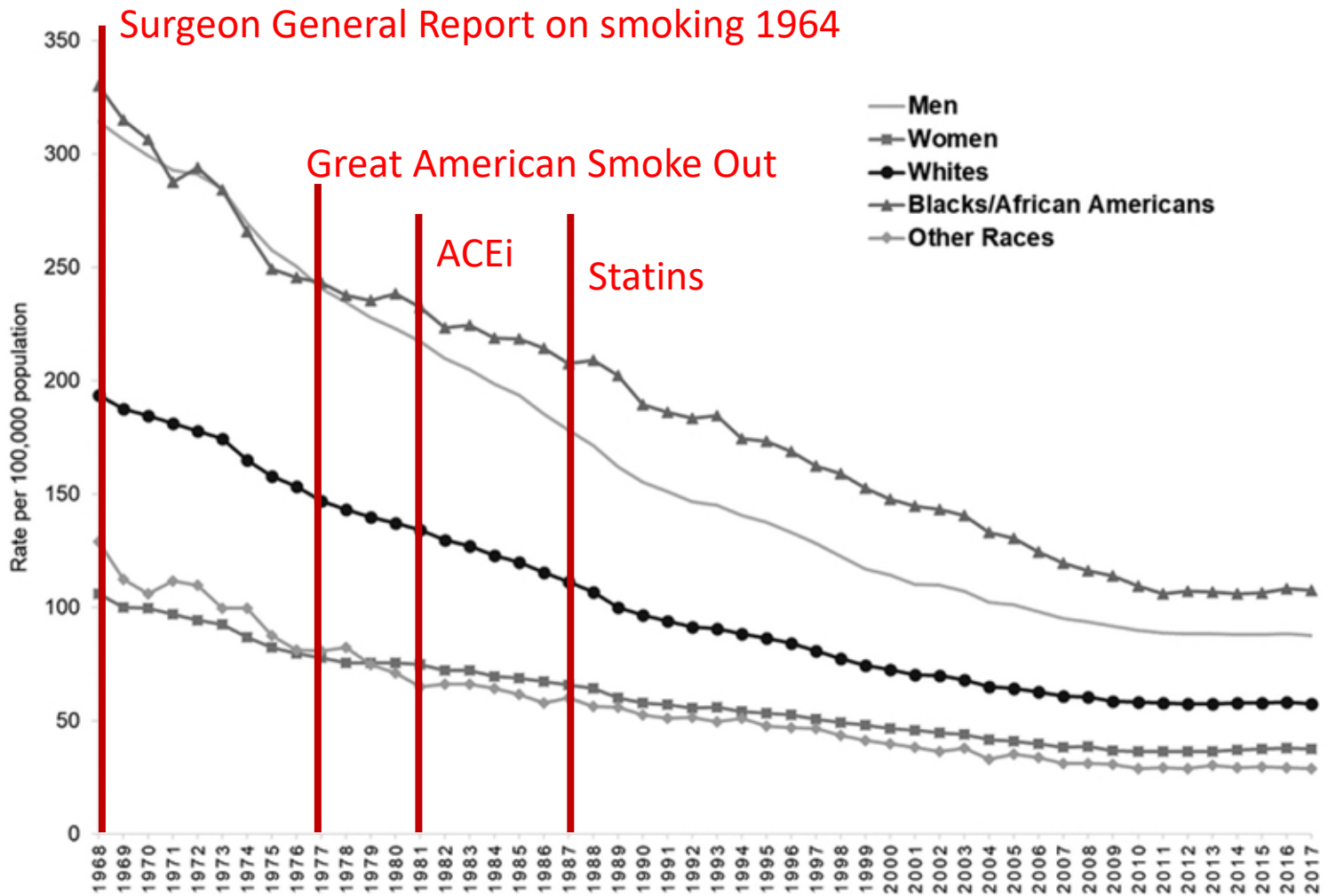
Obesity is not getting any better….



NOTE: Obesity is body mass index (BMI) at or above the 95th percentile from the sex-specific BMI-for-age 2000 CDC Growth Charts.
SOURCES: National Center for Health Statistics, National Health Examination Surveys II (ages 6–11), III (ages 12–17); and National Health and Nutrition Examination Surveys (NHANES) I–III, and NHANES 1999–2000, 2001–2002, 2003–2004, 2005–2006, 2007–2008, 2009–2010, 2011–2012, 2013–2014, 2015–2016, and 2017–2018.

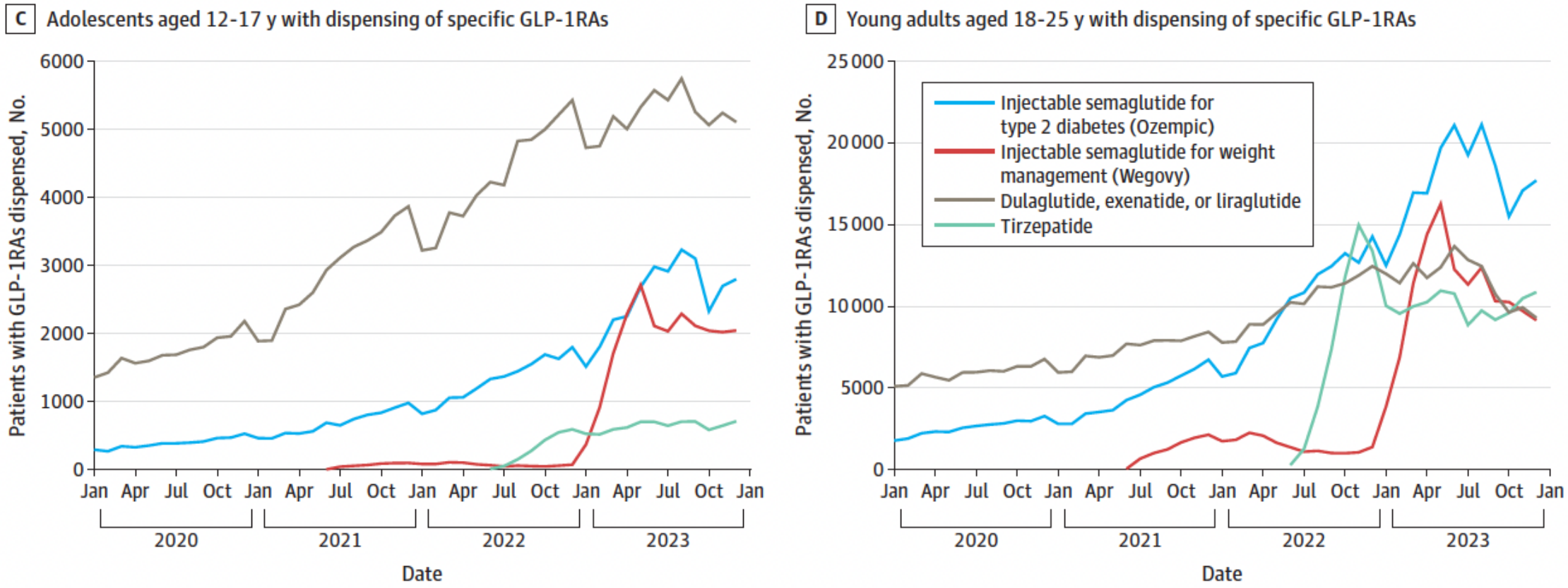
Will GLP-1s induce a Smoking +Pharma like event on CVD events?

Hard CVD events



Ritchey et al., 2019 Trends CV Med

Current use of GLP-1s……



1 in 23 adolescents met the eligibility criteria for MBS (Shapiro et al, 2024, Pediatrics)

~ 1.8mil adolescents

Lee et al., 2024 JAMA

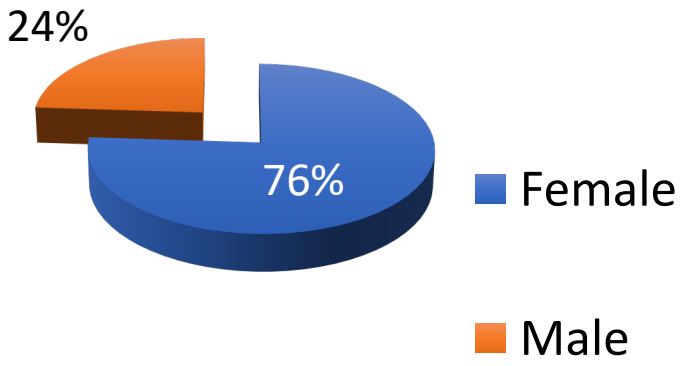
Study Design of Teen-LABS

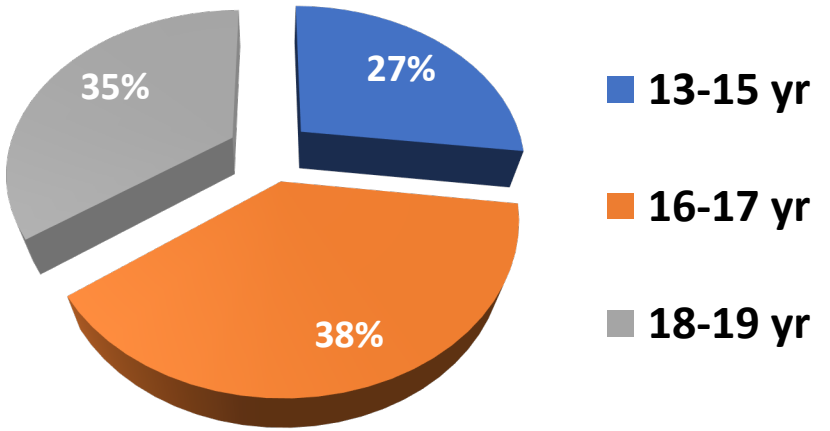
- Multi-institutional Prospective Observational Study
- Data collection similar to adult LABS to permit valid comparisons to adults who carried obesity forward from age 18
- 274 consecutive adolescents age ≤19 approved for any bariatric procedure
- Longitudinal assessment: Pre-op, 6mo, 12mo and annually (10 years).
- Biospecimen collection

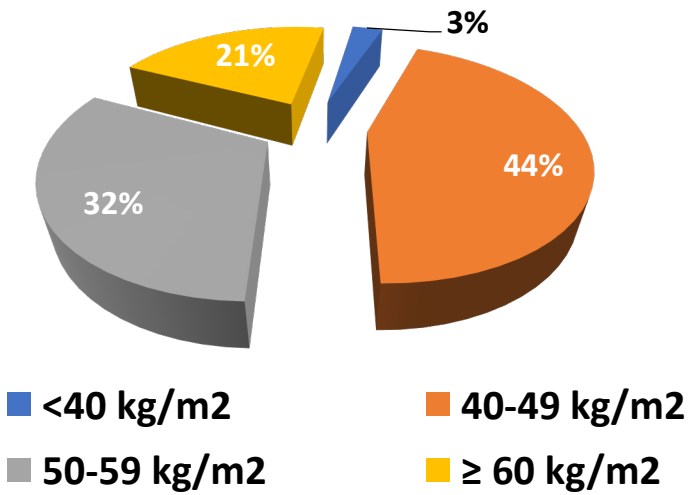
Teen Longitudinal Assessment of Bariatric Surgery
www.Teen-LABS.org

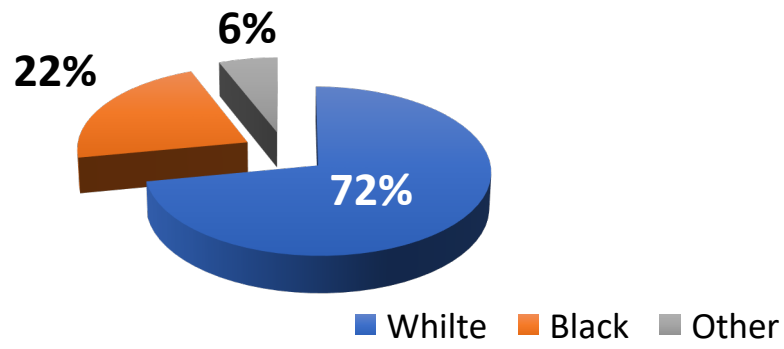
National Institute of Diabetes and Digestive and Kidney Diseases

Baseline Demographics of Teen-LABS



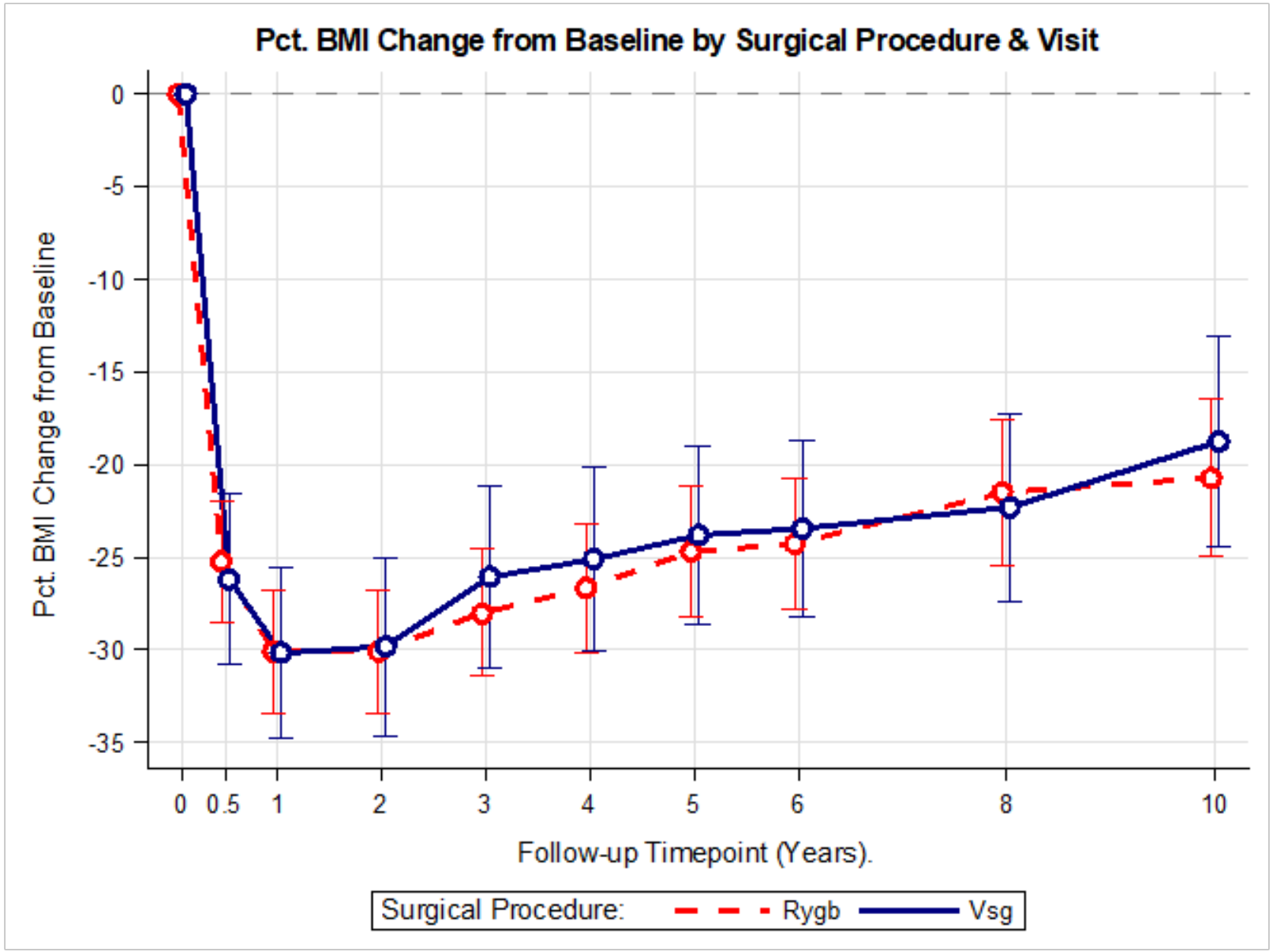






Ryder et al., *In-Press*

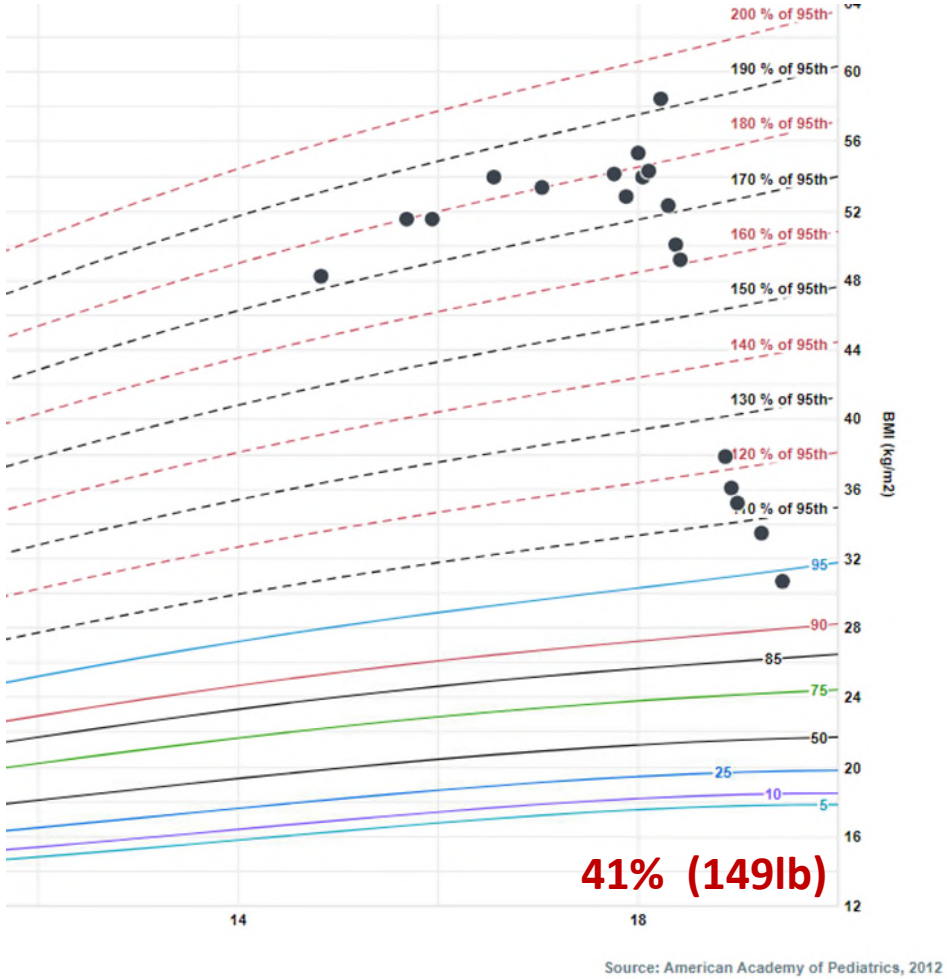
Excellent and Durable Weight Loss out 10 year post-MBS



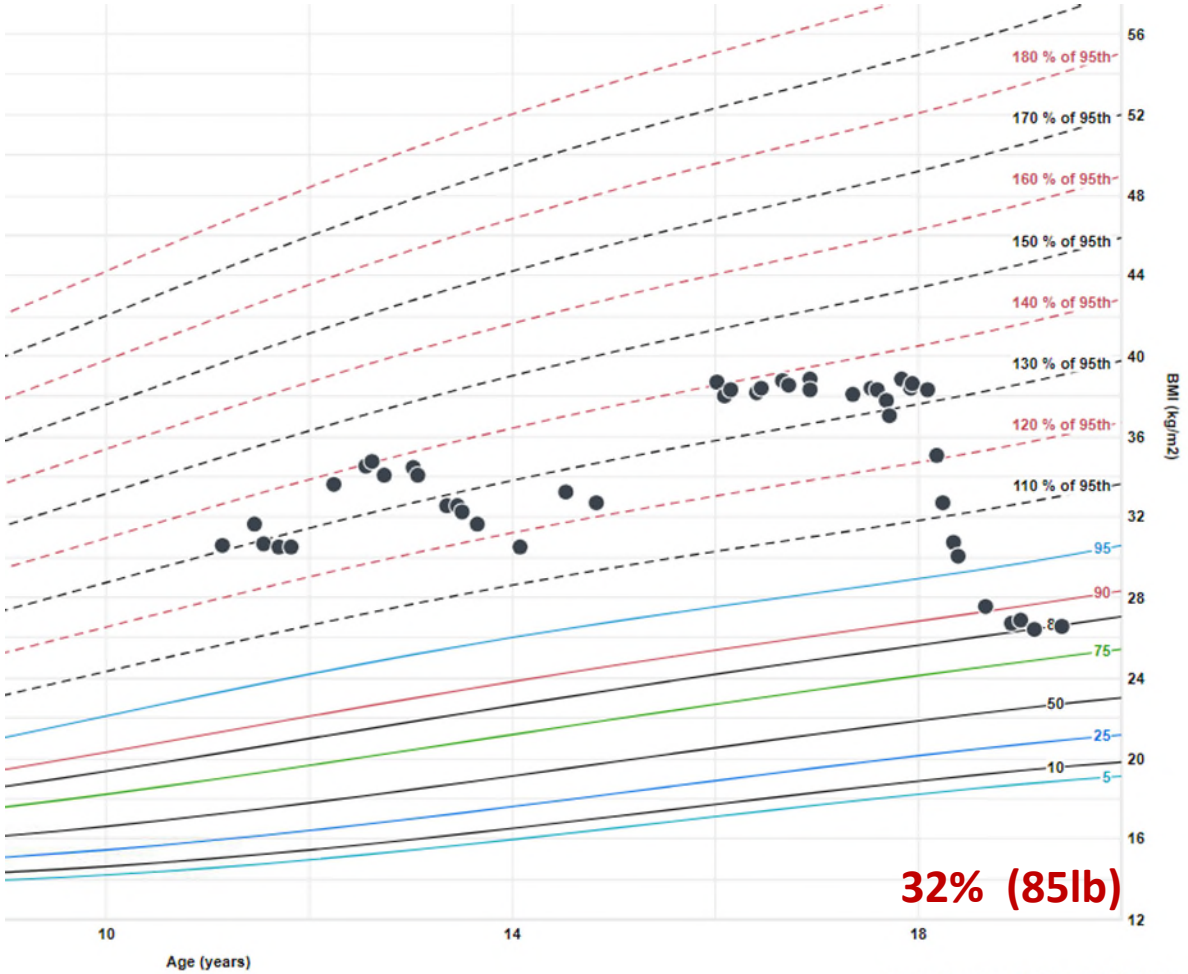
No group mean difference between surgery type

Ryder et al., *In-Press*

The results are fast and amazing…..

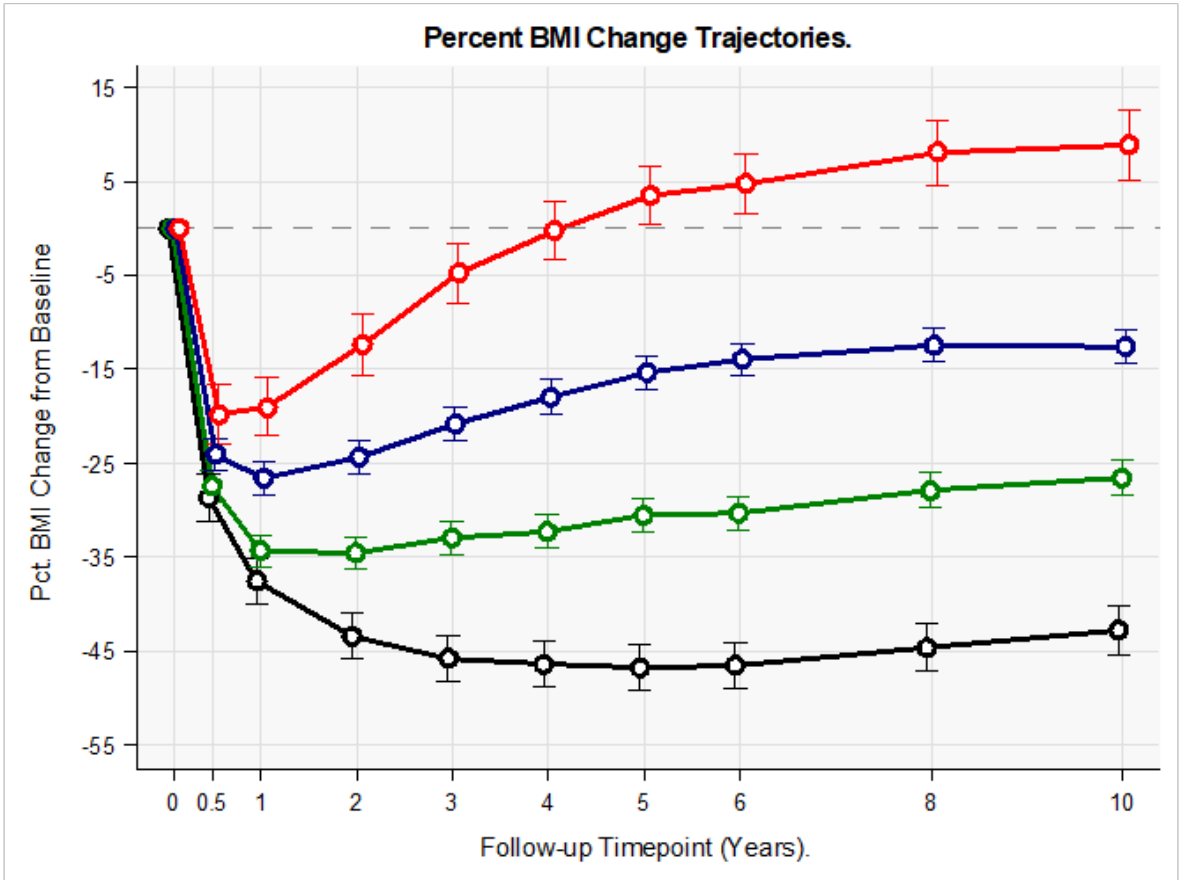


Source: American Academy of Pediatrics, 2012



Source: American Academy of Pediatrics, 2012

Heterogeneity is pronounced.



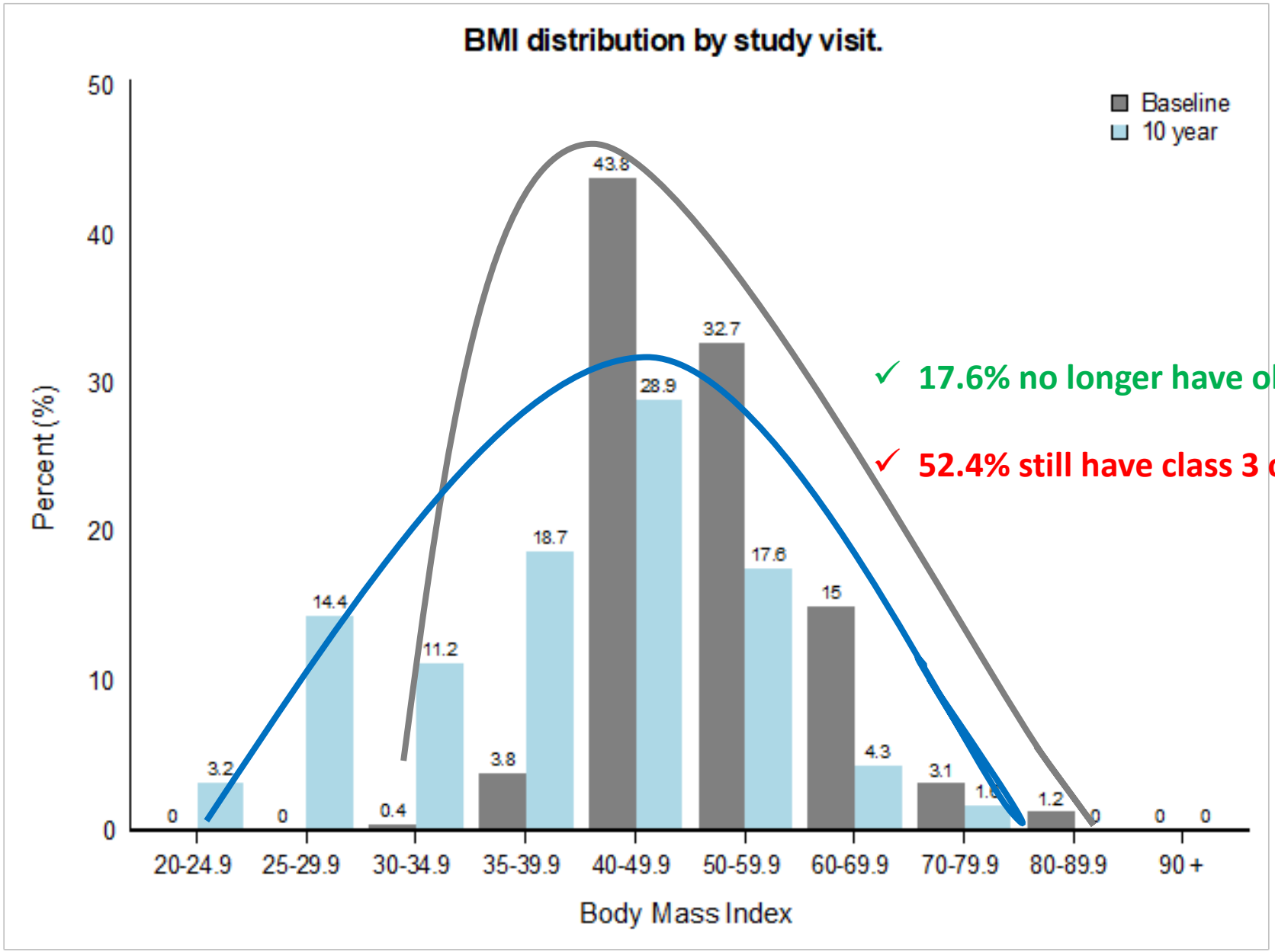
- 11% (n=28)
- %BMI change at 6mo -19.6%
- %BMI change at 10 year +7.1%

- 38% (n=99)
- %BMI change at 6mo -24.2%
- %BMI change at 10 year -12.6%

- 33% (n=87)
- %BMI change at 6mo -27.6%
- %BMI change at 10 year -26.9%

- 18% (n=46)
- %BMI change at 6mo -28.7%
- %BMI change at 10 year -43.7%

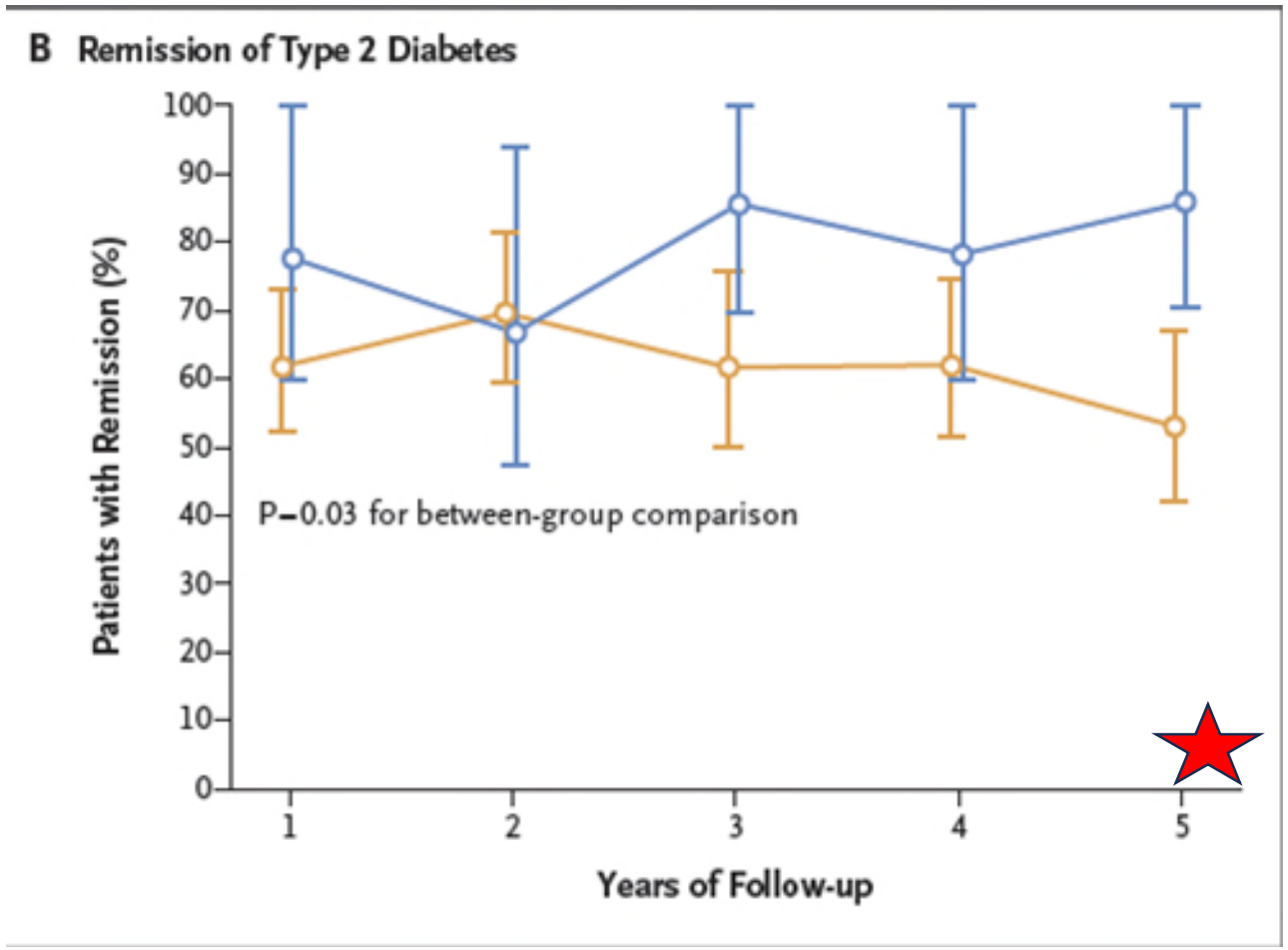
Shifting the bell curve….



✓ 17.6% no longer have obesity

✓ 52.4% still have class 3 obesity at 10 years

Better at T2D remission than adults

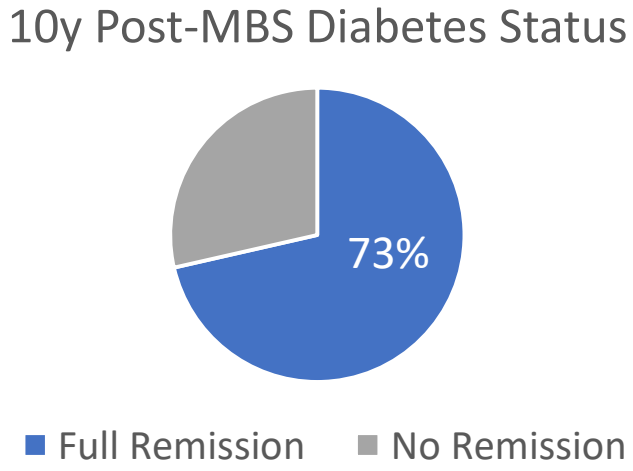


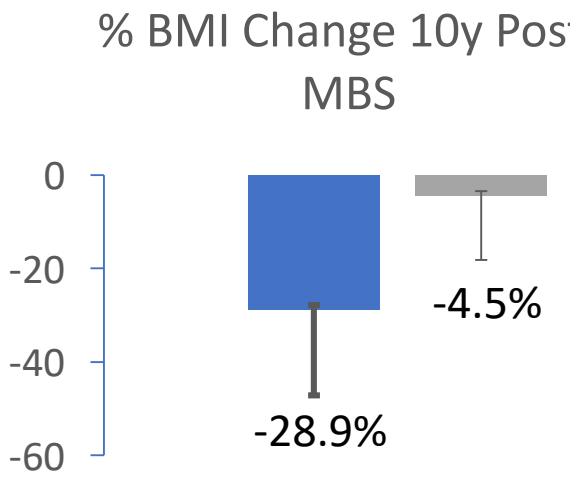
This is with medical management

Inge et al., 2019, NEJM

10 year T2D remission rates

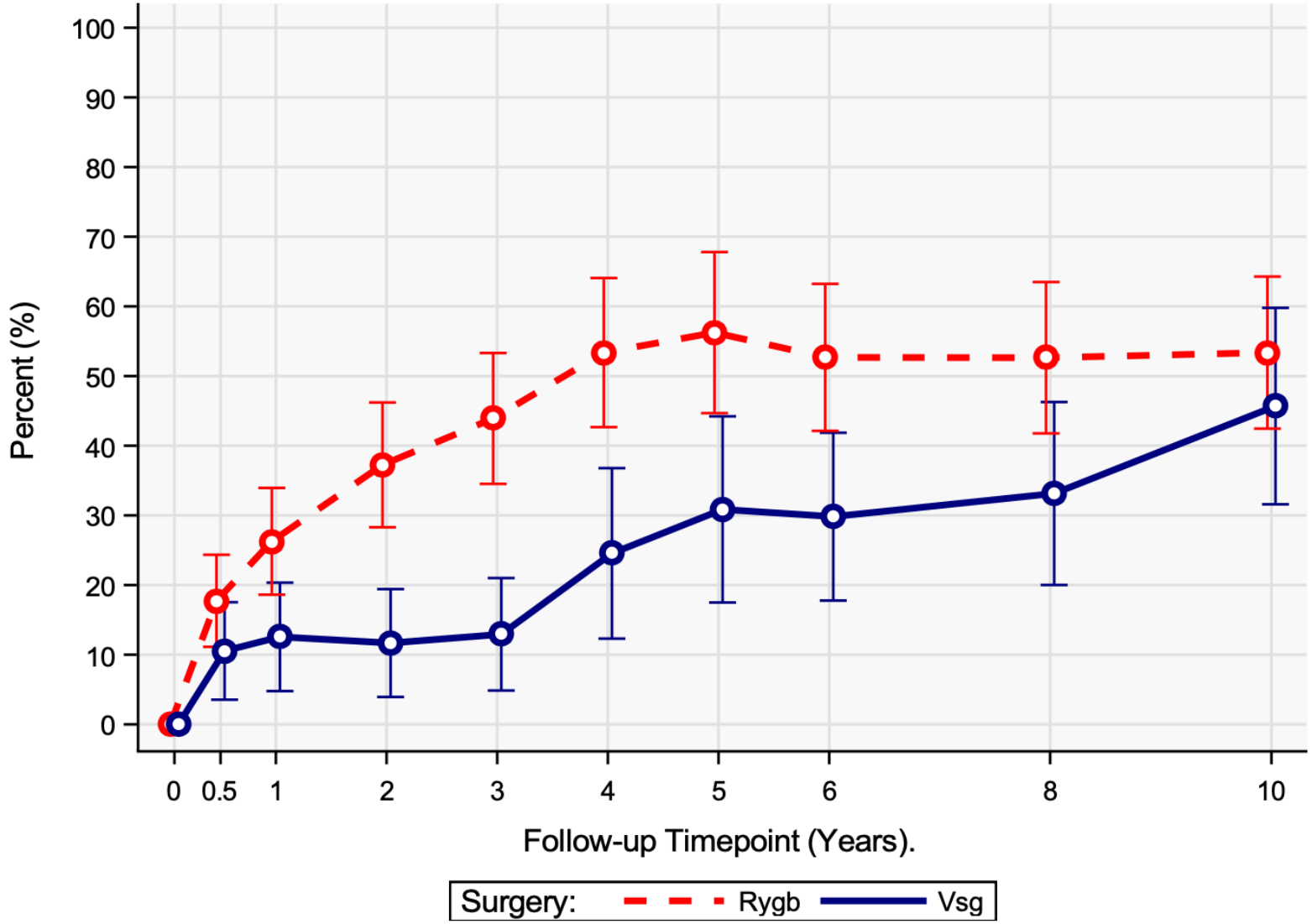
Patient Characteristics	Mean (SD) or Median (Q1, Q3)	T2D Remission	No T2D Remission
BMI (kg/m^2) at MBS	53.9 (9.2)	54.6 (9.4)	52.1 (9.3)
HbA1c (%) at MBS	6.3 (5.4, 8.0)	5.9 (5.3, 6.6)	6.8 (6.3, 10.8)
BMI (kg/m^2) at 10 years post-MBS	42.0 (13.2)	38.9 (13.3)	49.7 (10.4)
% Change BMI 10 years post-MBS	-21.9 (20.2)	-28.9 (18.3)	-4.5 (13.7)
HbA1c (%) 10 years post-MBS	5.2 (5.1, 6.4)	5.1 (4.9, 5.2)	9.2 (7.6, 10.8)



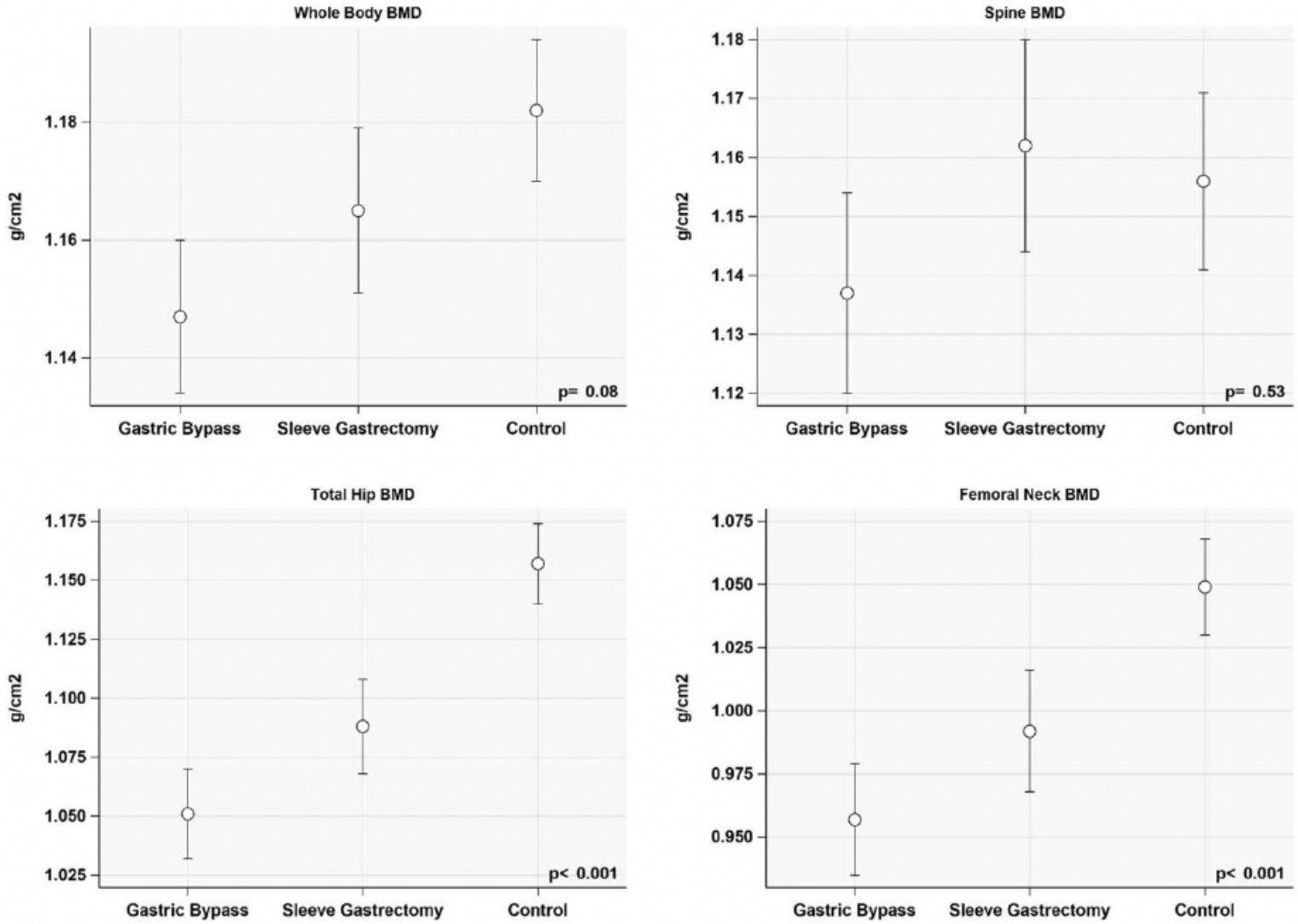


Sisley et al., 2024, ADA Scientific Sessions

Incidence of 2+ Micronutrient Abnormalities

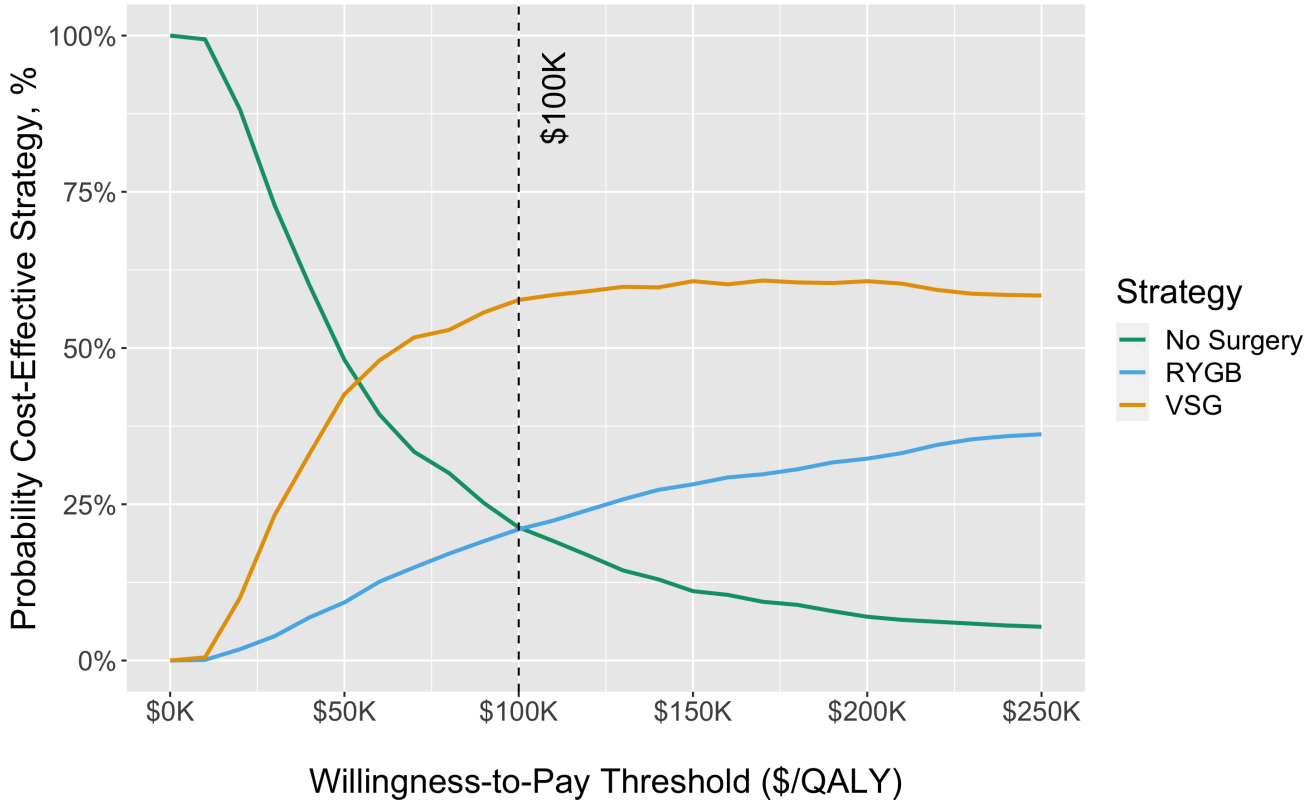


Bone Health (5-11 yrs post-MBS)



Wasserman et al., 2024 IJO

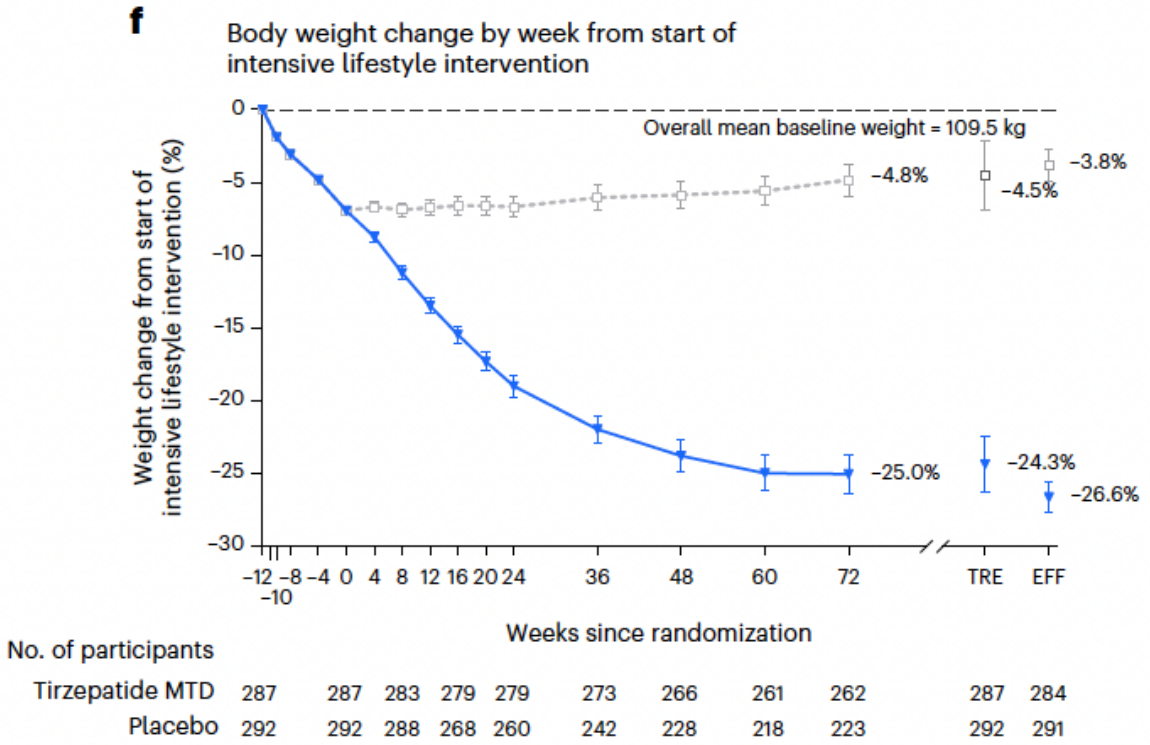
Is MBS in adolescents cost-effective?

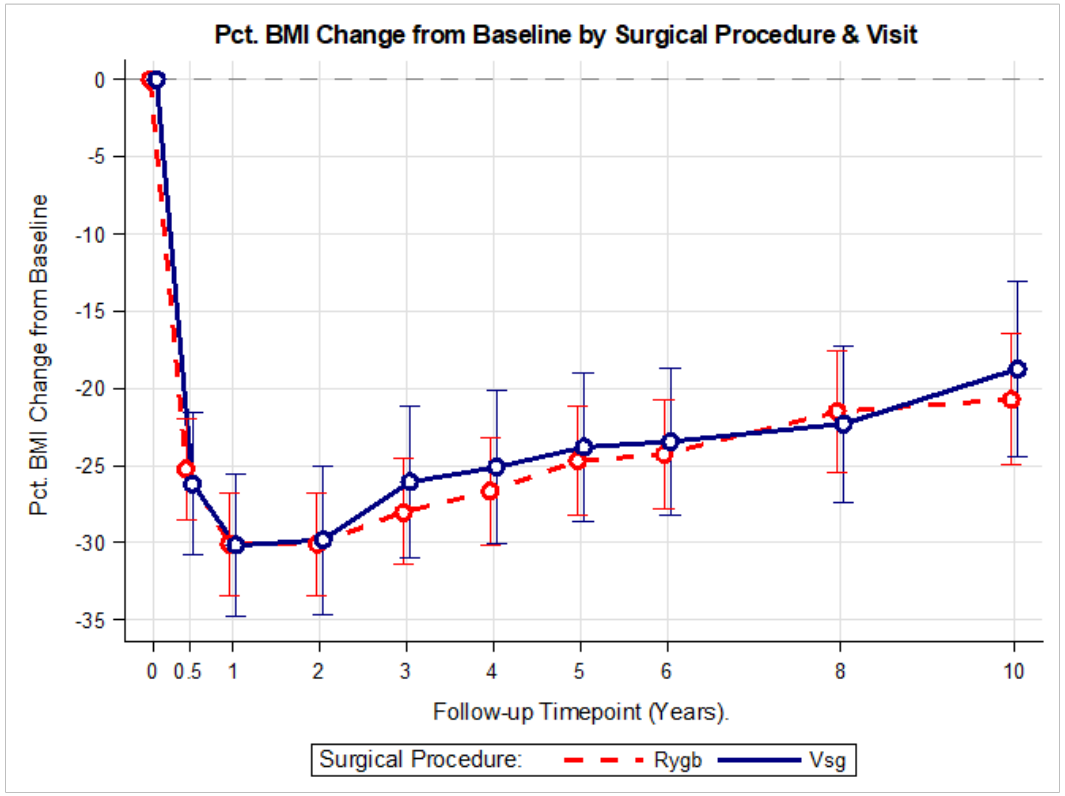


Strategy	Total Cost ($)	QALYs	ICER ($/QALY gained)	
			vs. no surgery	vs. VSG
No surgery	40,882	6.117	REF	
VSG	72,048	6.875	41,164	REF
RYGB	79,626	6.888	50,271	557,751

Ryder, Unpublished

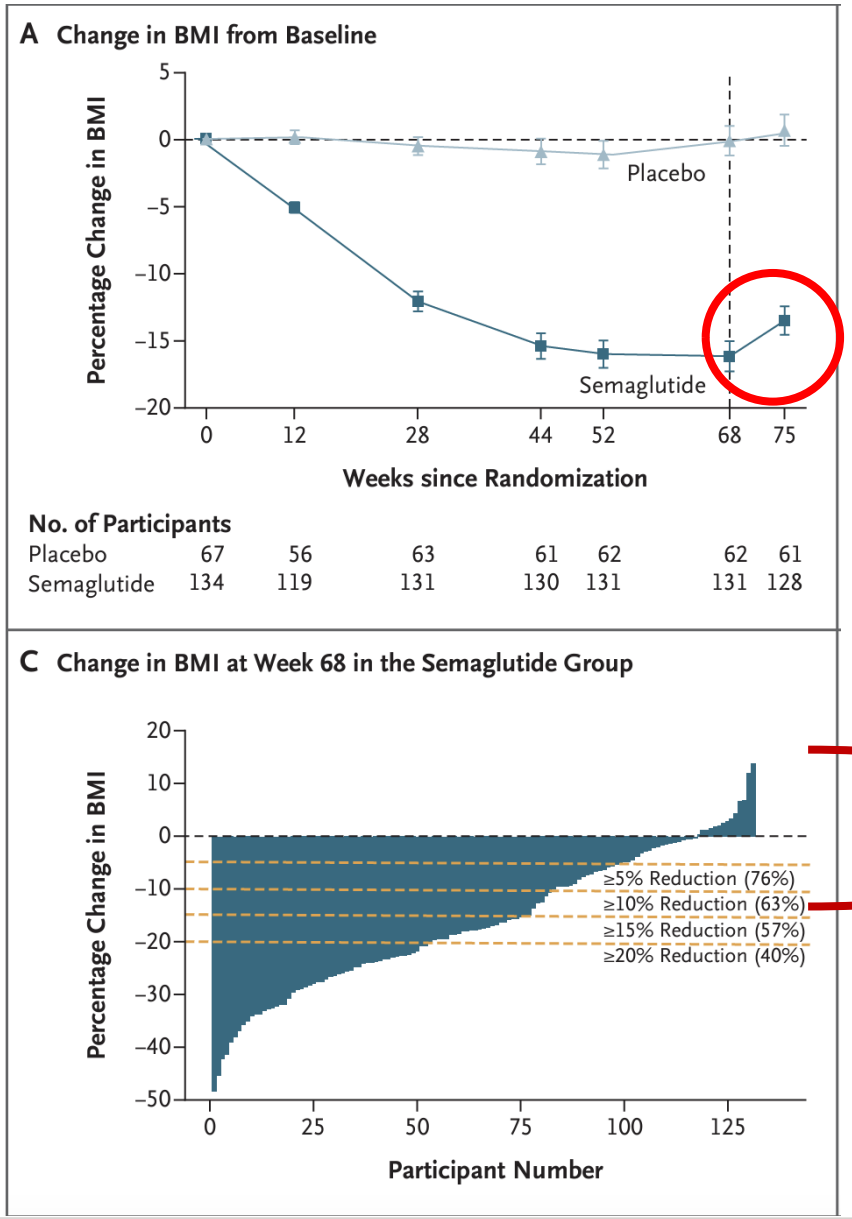
Are we close to equipoise with AOMs?





Wadden et al., 2023, Nature Medicine

Ryder et al., *In-Press*



Unlike with MBS, weight regain off-treatment is almost immediate?
Will this change over 3, 5, 10 years with and without meds?

If they still have severe obesity and/ co-morbidities are these prime surgical candidates?

Weghuber et al., 2023, NEJM

Summary

- MBS is a safe, effective, and durable obesity treatment for adolescents.
  - IT IS VERY APPROPRIATE

- The need for MBS should only increase as youth who fail 3rd generation medications will have 1 option.

- Equipoise, timing , additive / combination of MBS with AOMs use still needs to be rigorously evaluated in youth.

Questions?

Contact info: jryder@luriechildrens.org

Ann & Robert H. Lurie Children's Hospital of Chicago®

NIH National Institute of Diabetes and Digestive and Kidney Diseases

American Heart Association. 100 YEARS Bold Hearts

Teen Longitudinal Assessment of Bariatric Surgery

www.Teen-LABS.org