

# Metabolic/Bariatric Surgery in Class I Obesity in Patients with Type 2 Diabetes

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# Disclosures

Research/Educational Grants: MRC, Novo Nordisk, Ethicon, Medtronic

Scientific Advisory Board: Morphic Medical (GI Dynamics), Keyron

Speakers Honoraria: Medtronic, Ethicon

SAB: GT Metabolic Solutions Inc



ELSEVIER



Surgery for Obesity and Related Diseases 18 (2022) 1345–1356

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SURGERY FOR OBESITY  
AND RELATED DISEASES

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Original article

## 2022 American Society for Metabolic and Bariatric Surgery (ASMBS) and International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO): Indications for Metabolic and Bariatric Surgery

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- MBS is recommended in patients with T2D and BMI 30 kg/m<sup>2</sup>
- Obesity definitions using BMI thresholds do not apply similarly to all populations.
- Access to MBS should not be denied solely based on traditional BMI risk zones.

## Potential of Surgery for Curing Type 2 Diabetes Mellitus

Francesco Rubino, MD,\* and Michel Gagner, MD, FACS, FRCS†

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# Diabetes Surgery Summit 1

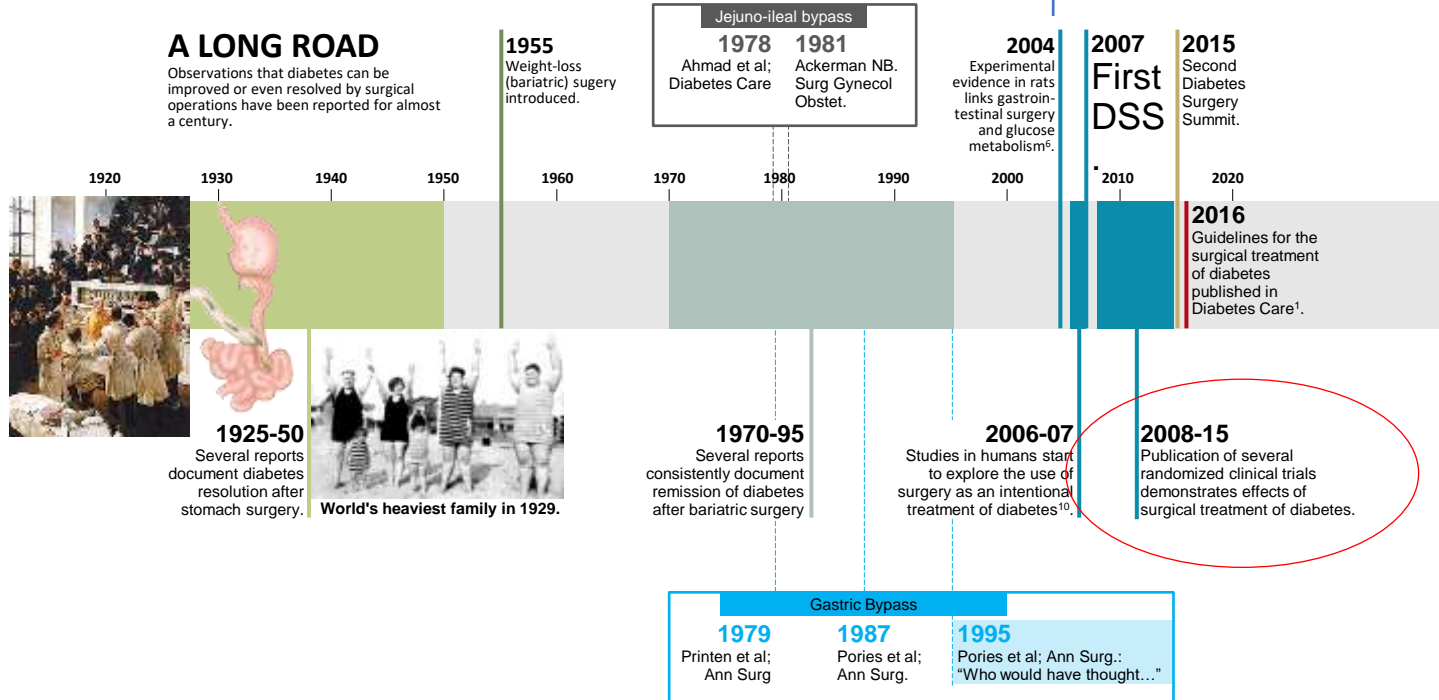
Rome 2007



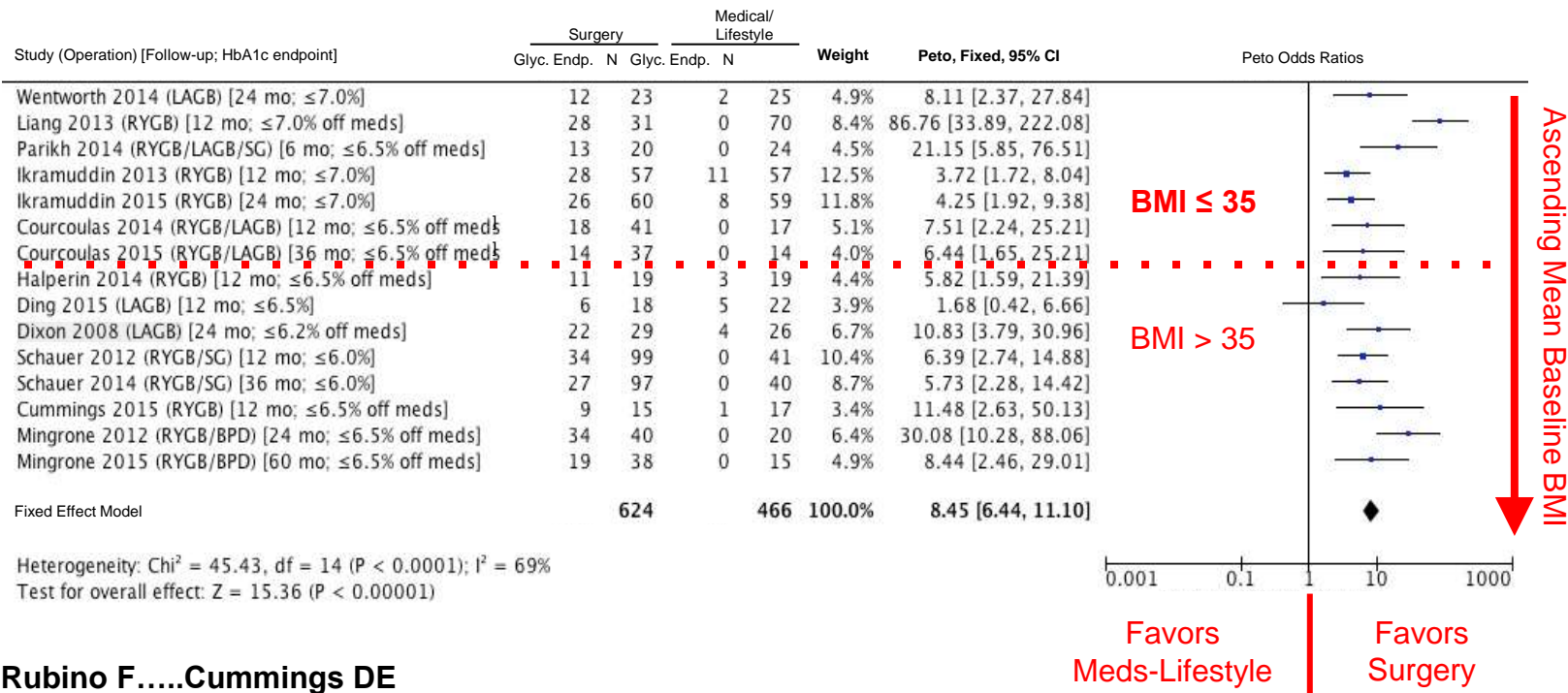
### Weight independent effects of GI Surgery in rodents

## A LONG ROAD

Observations that diabetes can be improved or even resolved by surgical operations have been reported for almost a century.



# Odds of Diabetes Remission or Glycemic Control in All 12 RCTs of Surgery vs. Meds/Lifestyle Care for T2DM

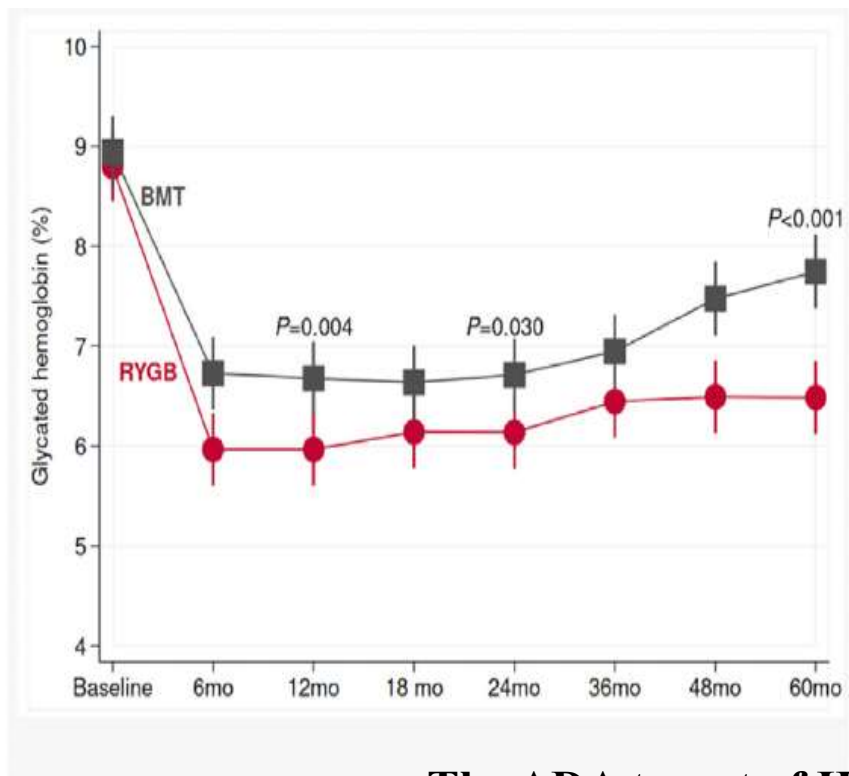


Rubino F.....Cummings DE  
 Diabetes Care (June 2016)

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## **Gastric bypass *versus* best medical treatment for diabetic kidney disease: 5 years follow up of a single-centre open label randomised controlled trial**

*Ricardo V. Cohen,<sup>a,\*</sup> Tiago Veiga Pereira,<sup>b,c</sup> Cristina Mamédio Aboud,<sup>a</sup> Tarissa Beatrice Zanata Petry,<sup>a</sup> José Luis Lopes Correa,<sup>a</sup> Carlos Aurélio Schiavon,<sup>d</sup> Carlos Eduardo Pompilio,<sup>a</sup> Fernando Nogueira Quirino Pechy,<sup>a</sup> Ana Carolina Calmon da Costa Silva,<sup>a</sup> Livia Porto Cunha da Silveira,<sup>a</sup> Pedro Paulo de Paris Caravatto,<sup>a</sup> Helio Halpern,<sup>a</sup> Frederico de Lima Jacy Monteiro,<sup>a</sup> Bruno da Costa Martins,<sup>a</sup> Rogerio Kuga,<sup>a</sup> Thais Mantovani Sarian Palumbo,<sup>a</sup> Allon N. Friedman,<sup>e</sup> and Carel W. le Roux<sup>f,g</sup>*



# Glycemic control

The ADA target of HbA1c  $\leq 6.5\%$

25.4%



x

60.2%

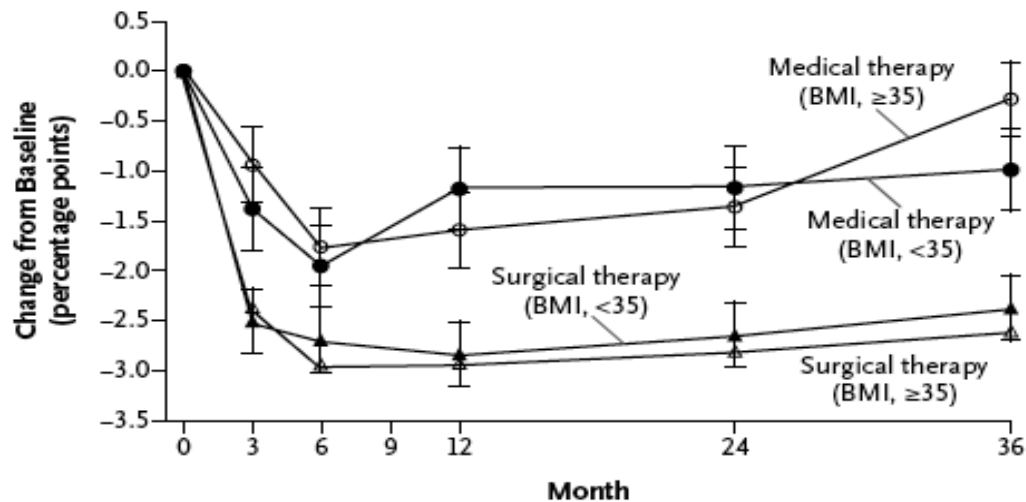


$P < 0.001$

# Similar Changes in HbA1c after GI Surgery for BMI < 35 or > 35

(Stampede Trial; NEJM, March 2014)

**B Glycated Hemoglobin According to Body-Mass Index**



**Value at Visit**

Medical <35 BMI	9.1 (8.9)	7.2 (6.8)	7.9 (6.9)	8.0 (7.4)	8.1 (7.8)
Medical ≥35 BMI	8.8 (8.5)	7.1 (6.8)	7.2 (6.7)	7.4 (6.9)	8.5 (7.3)
Surgical <35 BMI	9.4 (9.1)	6.7 (6.9)	6.6 (6.6)	6.8 (6.8)	7.1 (6.7)
Surgical ≥35 BMI	9.3 (9.2)	6.4 (6.2)	6.4 (6.1)	6.6 (6.4)	6.7 (6.4)

Metabolic Surgery for T2D(including in pts with Class I Obesity)  
Results in:

- Durable disease remission
- Excellent long-term glycemic control (including in patients with relapse after remission)
- Reduction of CV risk
- Less medication usage
- Lower incidence of diabetes-related complications
- Greater weight loss
- Better QoL



# Surgical Treatment of T2D in Class I Obesity

ASMBS/IFSO Guidelines

DSS Guidelines

ADA Standards of Care

ADA/EASD

IDF

Dozen national diabetes societies around the world

National Healthcare Systems (Brazil, Switzerland, France, UK Korea etc)

# THE LANCET

Volume 397 · Number 10 271 · Pages 253-340 · January 23-29, 2021

[www.thelancet.com](http://www.thelancet.com)

“Metabolic surgery is more effective than conventional medical therapy in the long-term control of type 2 diabetes.”

See [Articles](#) page 193

## Editorial

COVID-19: the intersection of education and health  
See page 251

## Articles

Adjuvant plus gemcitabine for recurrent ovarian cancer  
See page 301

## Articles

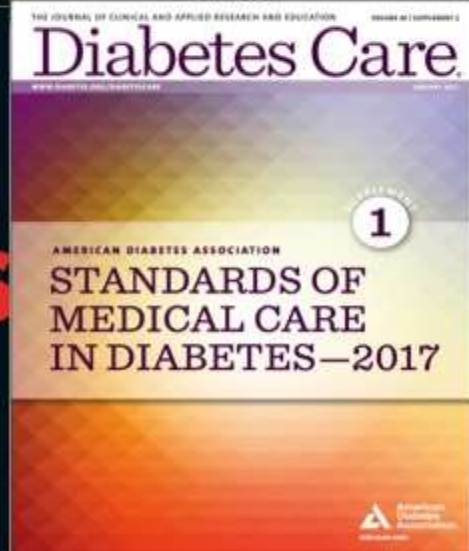
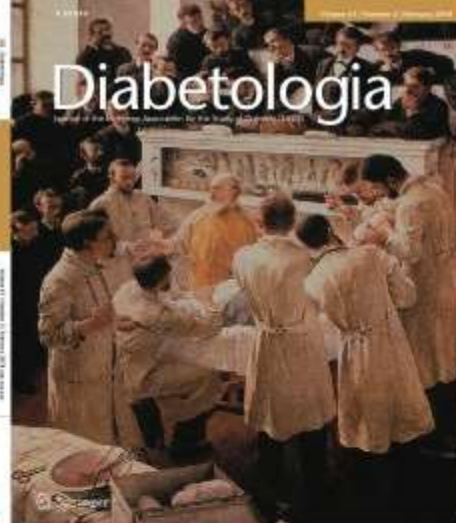
Rituximab versus tocilizumab in rheumatoid arthritis  
See page 305

## Seminar

Male infertility  
See page 310

## Review

Acute flaccid myelitis  
See page 316



# Attitudes About New Obesity Drugs and Metabolic Surgery

Ted Kyle

Francesco Rubino

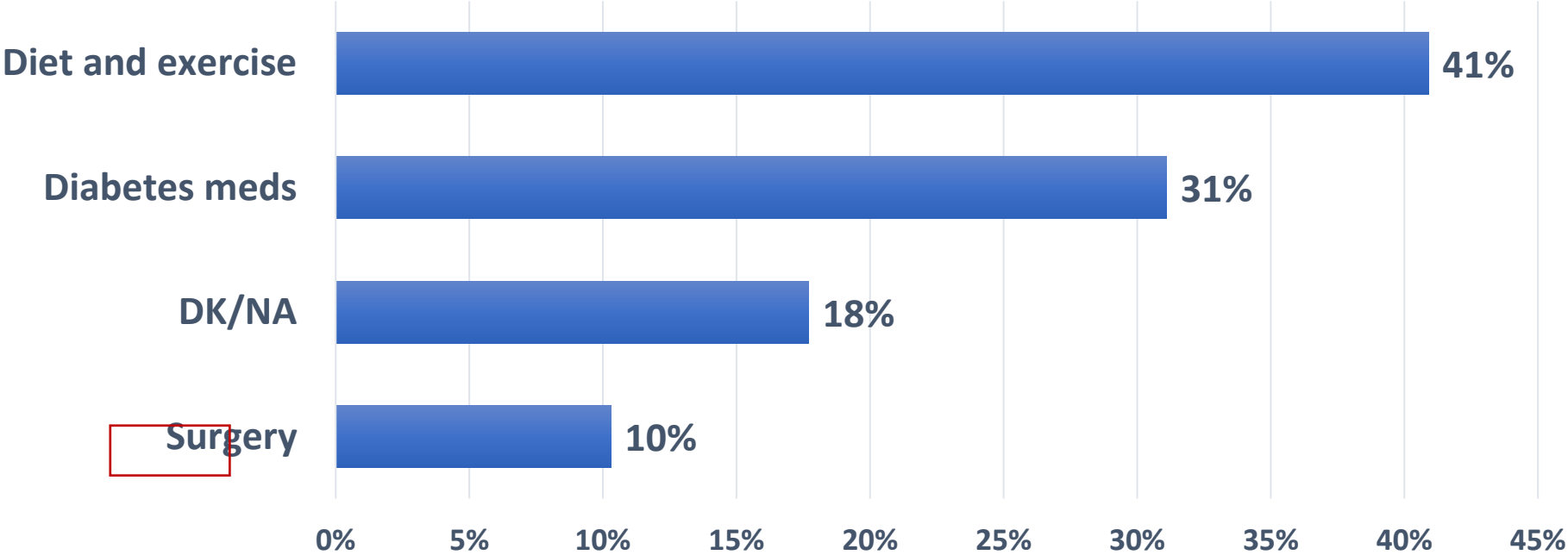
August 31, 2023



**Metabolic  
Health  
Institute**

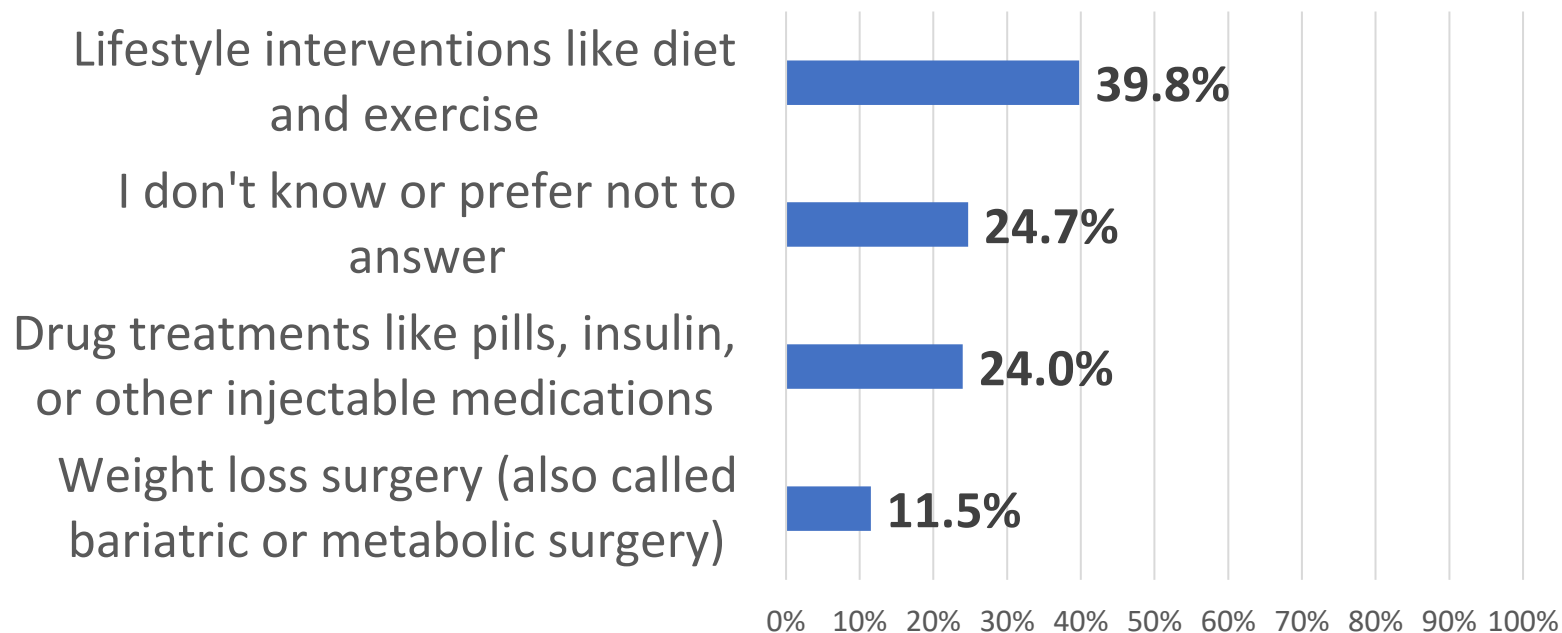
# Poor Understanding of Evidence Favoring Surgery

“What is most effective treatment today for type 2 diabetes?”

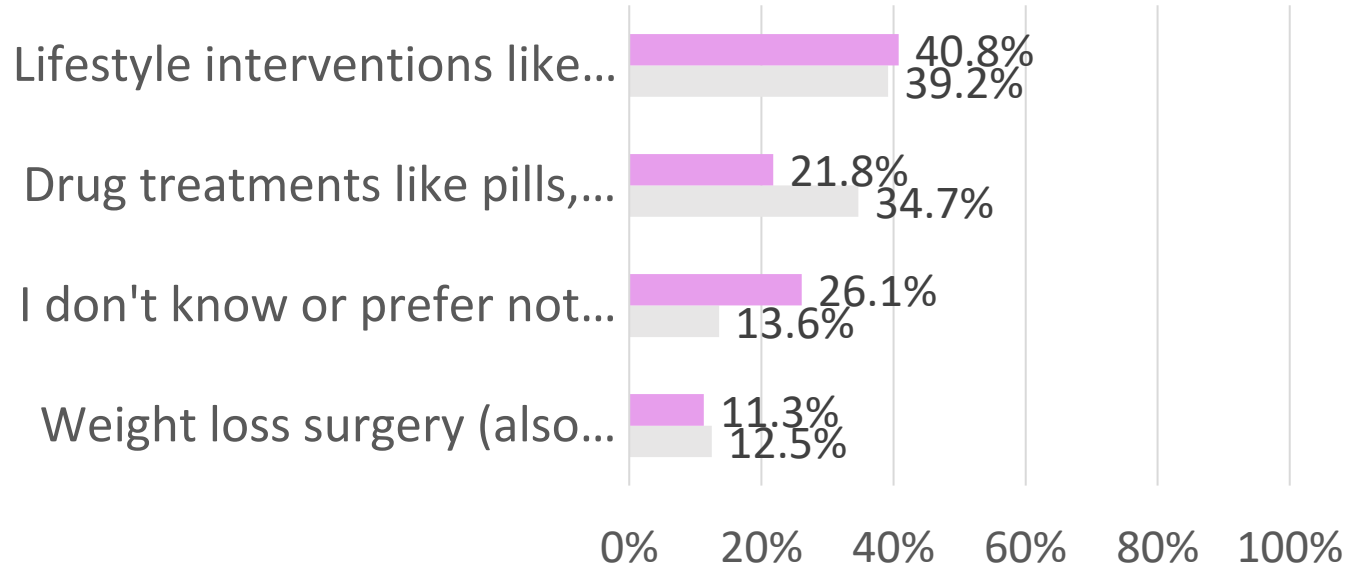


# Most People Prefer Lifestyle Interventions or Medications as a Treatment of Type 2 Diabetes

*Which one of the following interventions would be best for someone like you as a treatment for Type 2 diabetes? (Select one.)*



Which one of the following interventions would be best for someone like you as a treatment for Type 2 diabetes? (Select one.)



- Respondents not diagnosed with Type 2 diabetes
- Respondents diagnosed with Type 2 diabetes

Does it Still Make Sense to Categorize Surgical  
Candidates for Metabolic Surgery Based on BMI  
Tresholds in 2023??

# Prognostic Factors in Type 2 Diabetes

## Prognostic Factors (Mortality and QoL)

- Older age, male sex
- Lower BMI
- Hypertension
- Retinopathy
- Nephropathy
- Neuropathy
- Treatment with insulin
- Higher LDL cholesterol
- **History of:**
  - TIA, stroke, angina,
  - myocardial infarction
  - coronary artery
  - peripheral vascular disease

## Surgery-related factors

- Glucose-lowering effect
- Remission of T2D
- Improvement of HTN, Lipids
- Reduction of CV risk
- Improvement of Cardio-metabolic comorbidities (i.e. NASH)
- QoL
- CKD

# Obesity

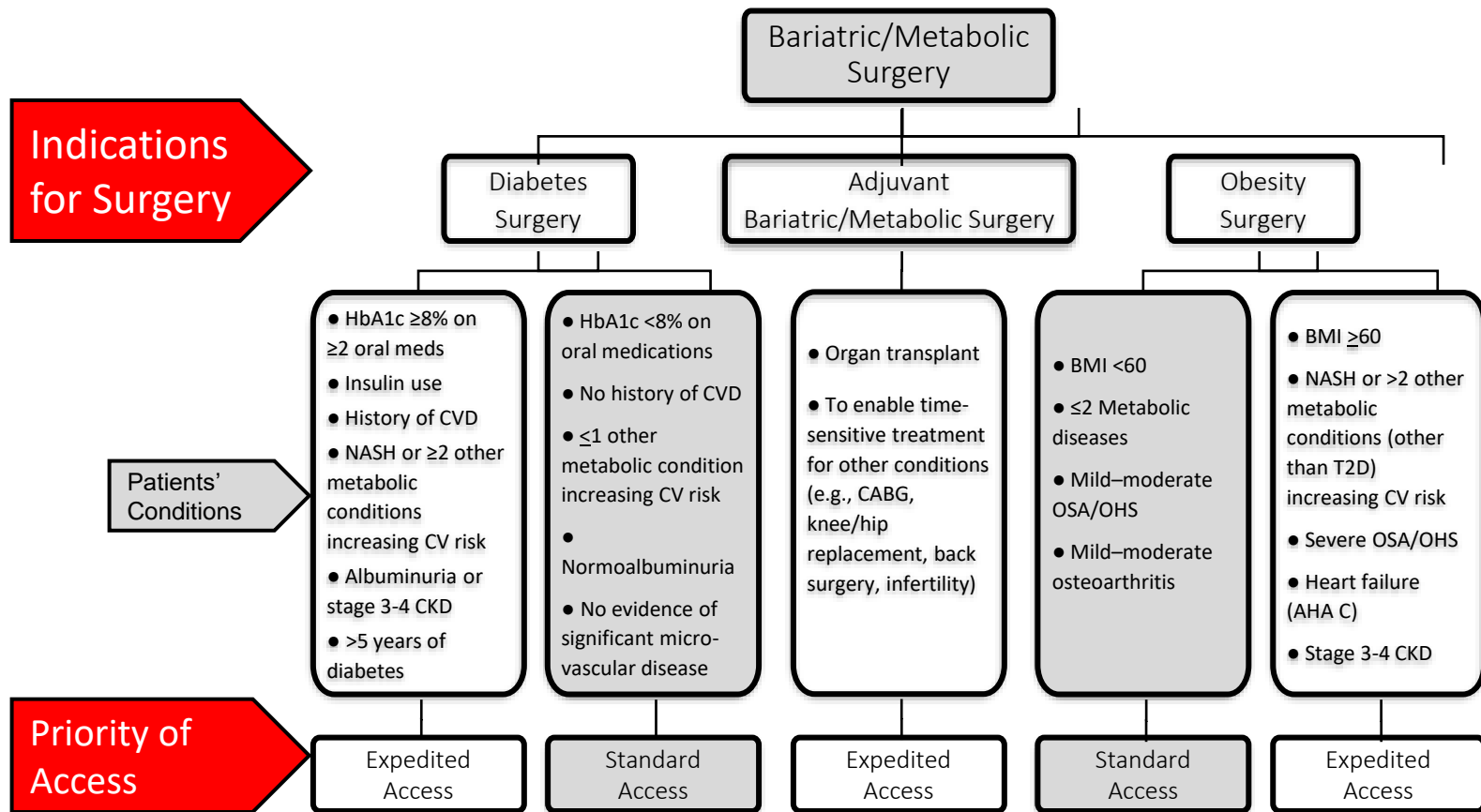
## **Prognostic Factors (Morbidity/Mortality and QoL)**

- High BMI
- Multiple-associated co-morbidities
- OHS
- Heart Failure
- Severe OSA
- CKD

## **Surgery-related factors**

- Weight reduction
- Effects on QoL
- Contextual improvement of multiple co-morbidities
- Prevention of CKD progression
- Improvement of OSA, OHS

# DSS Algorithm for Prioritizing Bariatric-Metabolic Surgery During & After COVID-19



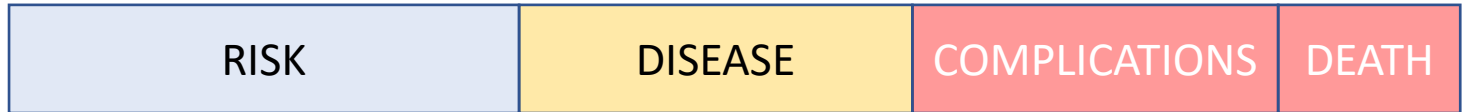
CVD: cardiovascular disease. CABG: coronary artery bypass graft. OSA: obstructive sleep apnea.  
 OSA: obesity hypoventilation syndrome. T2D: type 2 diabetes. CKD: chronic kidney disease

Rubino F, Cohen RV...Cummings DE  
*Lancet Diabetes Endocrinol*, May 2020

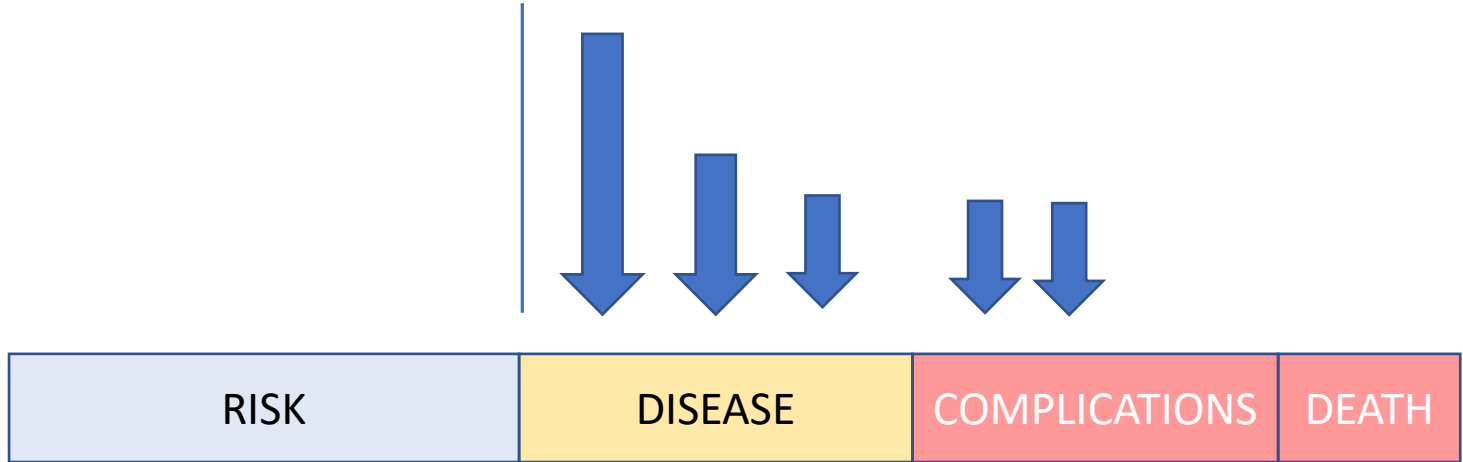
# INDICATION FOR “BARIATRIC” (WEIGHT-LOSS) SURGERY: 1950-2000s



Goal of Surgery:  
Weight Loss



# METABOLIC SURGERY



Goals of Surgery:

Cure? Remission? Prevention of Complications? QoL?

Decreased Mortality Risk/Improved Survival?

# New Anti-Obesity Drugs Will Expedite Evolution of Metabolic Surgery



## ***Lancet Commission on Clinical Obesity***

**“Commissioners Group”**: Globally representative, multidisciplinary group of approx. 60 world-leading experts, including:

- Academic clinicians specialised in obesity care
- Scientists (mechanisms underlying clinical manifestations of obesity)
- Public Health Specialists
- Patients Representatives
- WHO Representatives

# Attitudes About New Obesity Drugs and Metabolic Surgery

Ted Kyle

Francesco Rubino

August 31, 2023

13:00-14:00



**Metabolic  
Health  
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**Medtronic Lunch Symposium @IFSO 2023**

August 31, 2023

13:00-14:00