SURGICAL MANAGEMENT OF OBESITY

Dr. Scott Cassie

General and Bariatric Surgery

TBRHSC

DISCLOSURES

Presenter: _Dr. Scott Cassie

Relationships with commercial interests:

- Speakers Bureau/Honoraria: Ethicon, Janzen Pharmaceuticals
- Consulting Fee: Sanofi

Conflict of Interest Declaration: Nothing to Disclose

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Title of Presentation:
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I have no financial or personal relationship related to this presentation to disclose.

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OUTLINE

- Candidacy
- Surgical options
- Anticipated short and long term outcomes
- local results
- Surgery vs alternatives

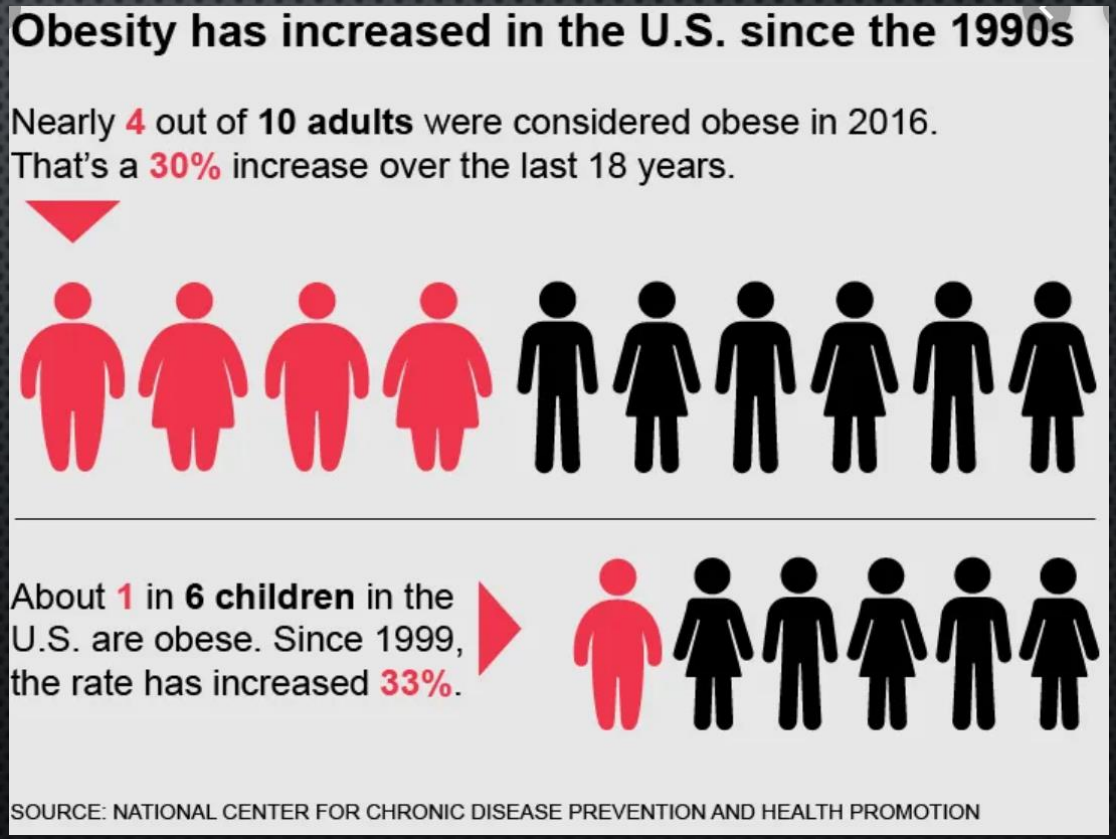
OBESITY

- By middle age, being overweight increases risk of death by 40%
- Being Obese increases risk of death by 2-3 times

Adams et al. 2006. NEJM

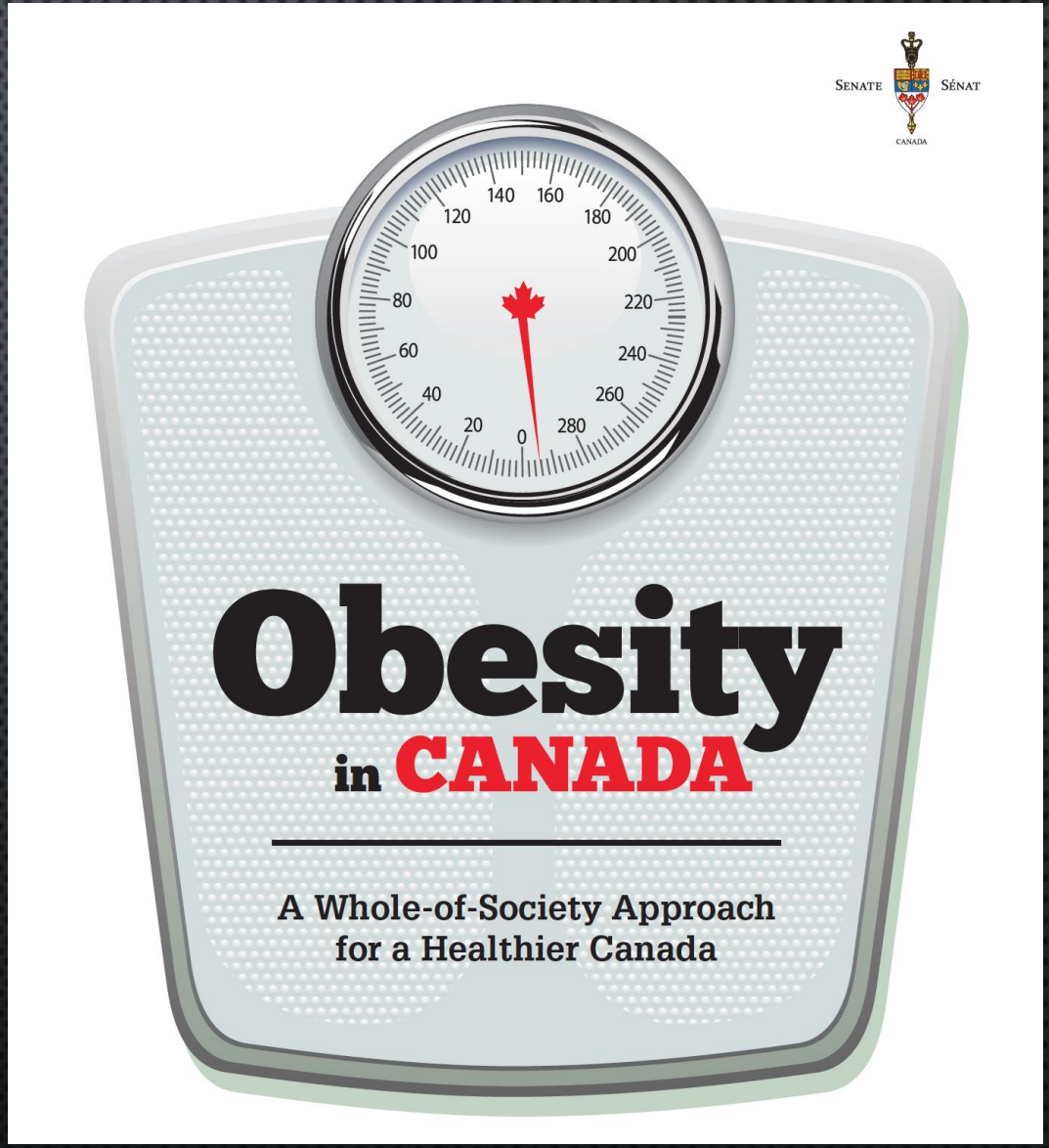
INCREASED MORTALITY

- CARDIOVASCULAR DISEASE
  - HTN, STROKE, MI, PE
- DIABETES
- SLEEP APNEA
- MALIGNANCY
  - BREAST, COLORECTAL, ENDOMETRIAL



CANADA

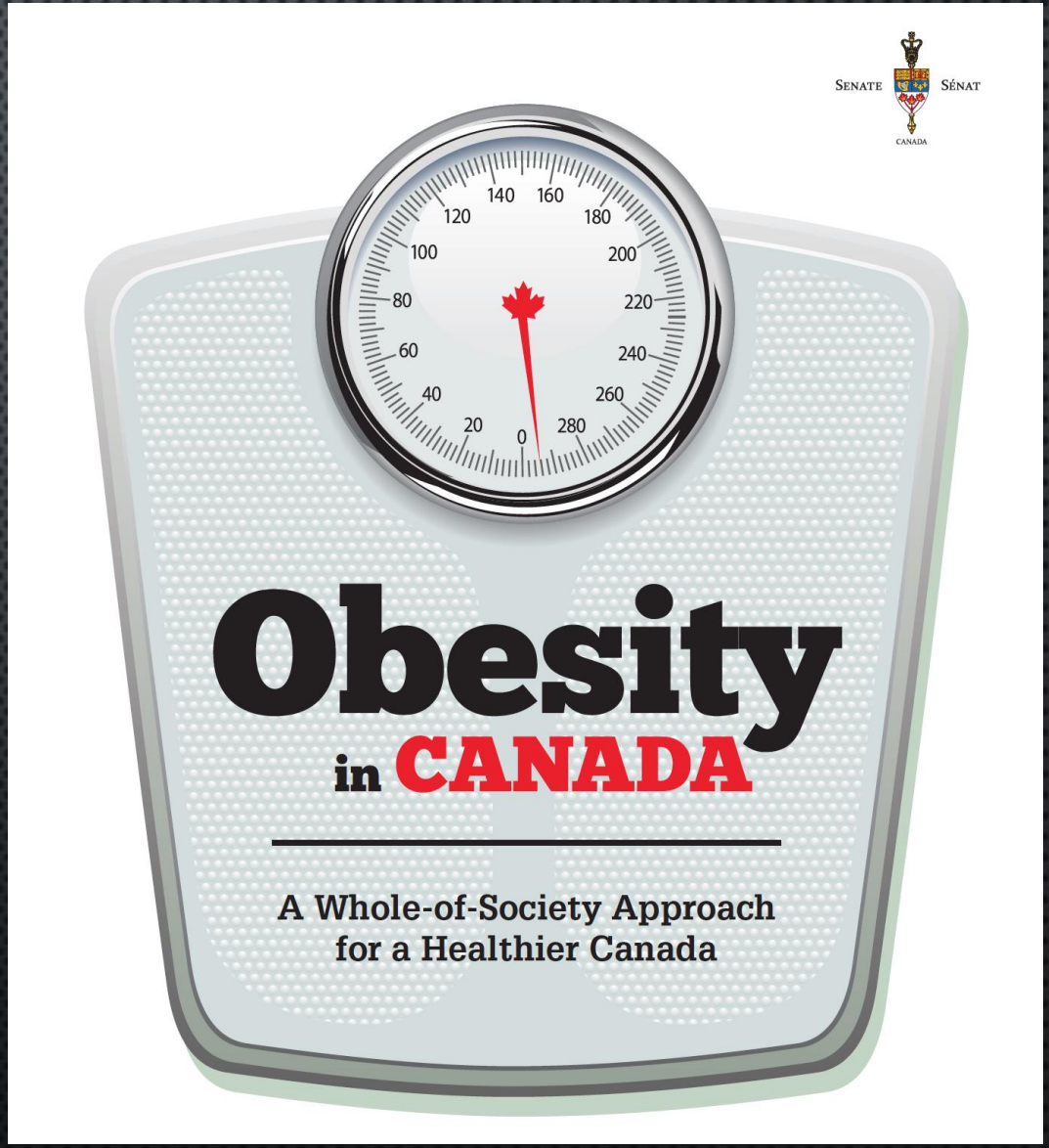
- SINCE 1980 PREVALENCE OBESE ADULTS HAS DOUBLED
- PREVALENCE OF OBESE CHILDREN HAS TRIPLED



Obesity in Canada Senate Report. 2016.

CANADA

- 25% OBESE, 36% OVERWEIGHT
- 70% ABORIGINAL POPULATION OVERWEIGHT OR OBESE



Obesity in Canada Senate Report. 2016.

OBESITY IS AN EPIDEMIC

SURGERY MAY BE THE MOST EFFECTIVE INTERVENTION

WHO IS A CANDIDATE?

- NIH Guidelines – potential candidates
  - BMI > 40
  - BMI > 35 with associated obesity related comorbidity
    - DM2, HTN, GERD, sleep apnea, arthropathy

National Institutes Health Consensus Statement. 1991.

BARIATRIC CLINIC

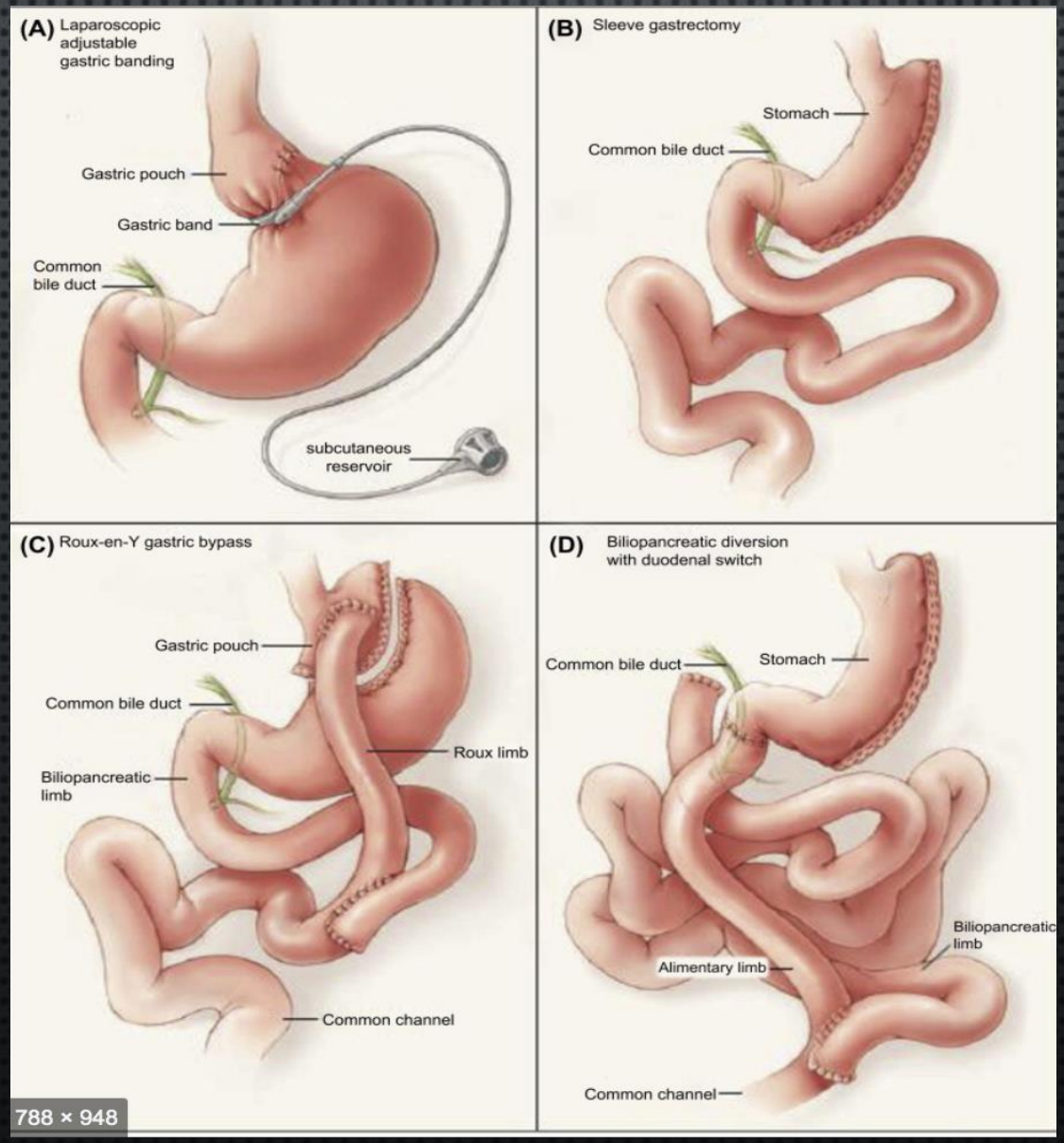
- Internal medicine specialists
- Registered Dieticians
- Social Worker
- Psychologist/Psychometrist
- Kinesiologist
- RN, LPN

Contraindications

- Binge eating disorders, severe coagulopathy
- Untreated major depression or psychosis
- Current drug and EtOH abuse
- Severe cardiac disease with prohibitive anesthetic risk
- Inability to comply with nutritional requirements

SURGICAL OPTIONS

SURGICAL OPTIONS



Sciencedirect.com

SHORT-TERM OUTCOMES

PAPERS OF THE 131ST ASA ANNUAL MEETING

First Report from the American College of Surgeons Bariatric Surgery Center Network

Laparoscopic Sleeve Gastrectomy has Morbidity and Effectiveness Positioned Between the Band and the Bypass

Matthew M. Hutter, MD, MPH, Bruce D. Schirmer, MD,† Daniel B. Jones, MD,‡ Clifford Y. Ko, MD,§ Mark E. Cohen, PhD,¶ Ryan P. Merkow, MD,** and Ninh T. Nguyen, MD††*

BMI

- LRYGB
  - 10.82kg/m^2 at 6 months
  - 15.34 kg/m^2 at 1 year
- Sleeve
  - 8.75kg/m^2 at 6 months
  - 11.87kg/m^2 at 1 year

BMI

- LRYGB
  - 10.82kg/m^2 at 6 months
  - 15.34 kg/m^2 at 1 year
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Hutter et al. Ann Surg. 2011.

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	DM	HTN	Dyslipidemia	OSA	GERD
LRYGB	83% resolution or improvement at 1-year	79% resolution or improvement at 1 -year	66% resolution at 1-year	66% resolution at 1-year	70% resolution at 1-year
LSG	55% resolution or improvement at 1-year	68% resolution or improvement at 1-year	35% resolution at 1-year	62% resolution at 1-year	50% resolution at 1-year

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IS SURGERY SAFE?

Outcome	LSG N (%)	LAGB N (%)	LRYGBP N (%)
Total Patients	944	12,193	14,491
Conversion to Open[§]	9 (0.10)	30 (0.25)*	207 (1.43)
30-day Mortality	1 (0.11)	6 (0.05)	21 (0.14)
1-Year Mortality	2 (0.21)	10 (0.08)	49 (0.34)
Readmission	51 (5.4)	208 (1.71)*	937 (6.47)
Reoperation	28 (2.97)	112 (0.92)*	728 (5.02)*
Mean LOS, (days)	2.98	0.76*	2.61*
30-day Morbidity	53 (5.61)	175 (1.44)*	857 (5.91)

WILL MY PATIENT REGAIN WEIGHT LONG TERM?

0021-972X/06/$15.00/0
Printed in U.S.A.

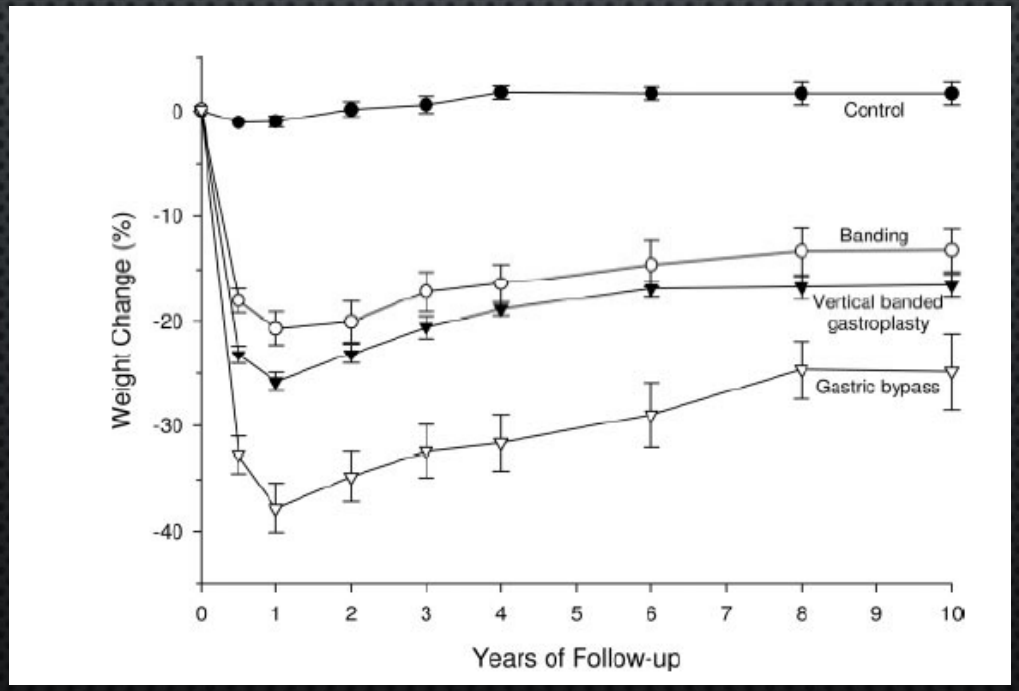
The Journal of Clinical Endocrinology & Metabolism 91(11):4223–4231

doi: 10.1210/jc.2006-0557

REVIEW: Long-Term Impact of Bariatric Surgery on Body Weight, Comorbidities, and Nutritional Status

Meena Shah, Vinaya Simha, and Abhimanyu Garg

Division of Nutrition and Metabolic Diseases (M.S., V.S., A.G.), Department of Internal Medicine (V.S., A.G.), and Center for Human Nutrition (M.S., V.S., A.G.), University of Texas Southwestern Medical Center at Dallas, Dallas, Texas 75235-9052; and Department of Kinesiology (M.S.), Texas Christian University, Fort Worth, Texas 76129



Surg Endosc (2017) 31:4331–4345
DOI 10.1007/s00464-017-5505-1

REVIEW

The bariatric surgery and weight losing: a meta-analysis in the long- and very long-term effects of laparoscopic adjustable gastric banding, laparoscopic Roux-en-Y gastric bypass and laparoscopic sleeve gastrectomy on weight loss in adults

Mahdieh Golzarand[1] · Karamollah Toolabi[2] · Roya Farid[3]

Procedure	America	Asia	Europe	Oceania
LAGB				
%EWL	41.74 (40.36–43.13)	48.24 (42.64–53.84)	55.95 (55.70–56.21)	46.70 (46.57–46.83)
P value	<0.001	<0.001	<0.001	<0.001
I-squared (%)	89.4	92.1	98.1	83.5
LRYGB				
%EWL	60.10 (55.35–64.84)	61.91 (60.50–63.31)	56.68 (54.69–58.66)	–
P value	<0.001	<0.001	<0.001	–
I-squared (%)	92.1	0.0	67.1	–
LSG				
%EWL	57.10 (52.26–61.93)	51.95 (51.00–52.91)	55.72 (53.88–57.57)	40.00 (34.71–45.28)
P value	<0.001	<0.001	<0.001	<0.001
I-squared (%)	76.4	89.9	0.0	0.0

LAGB laparoscopic gastric banding, *LRYGB* laparoscopic Roux-en-Y gastric bypass, *LSG* laparoscopic sleeve gastrectomy

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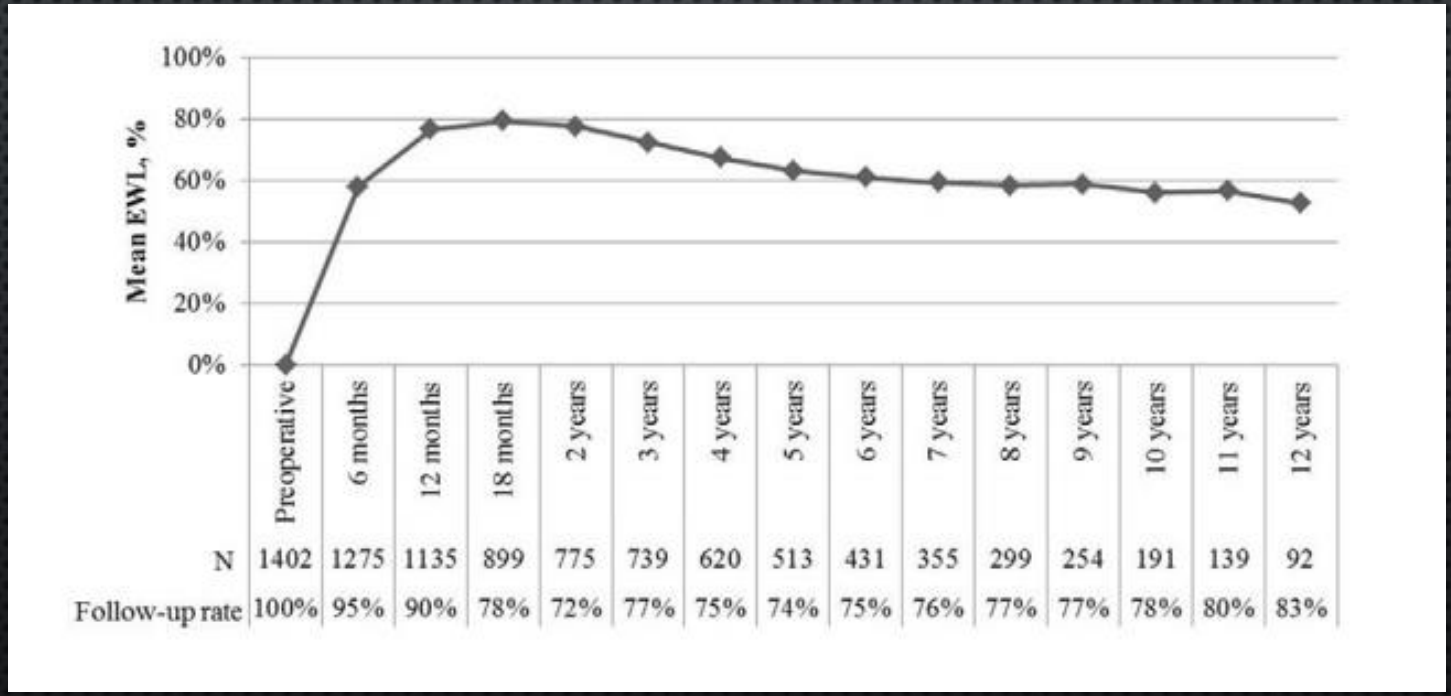
LONG-TERM (>10 YEAR) OUTCOMES AFTER LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS

Shanu Kothari[1]; Andrew Borgert[2]; Kara Kallies[2]; Matthew Baker[1]; Brandon Grover[1]; [1]*Gundersen Health System, La Crosse Wisconsin;* [2]*Gundersen Medical Foundation, La Crosse Wisconsin*



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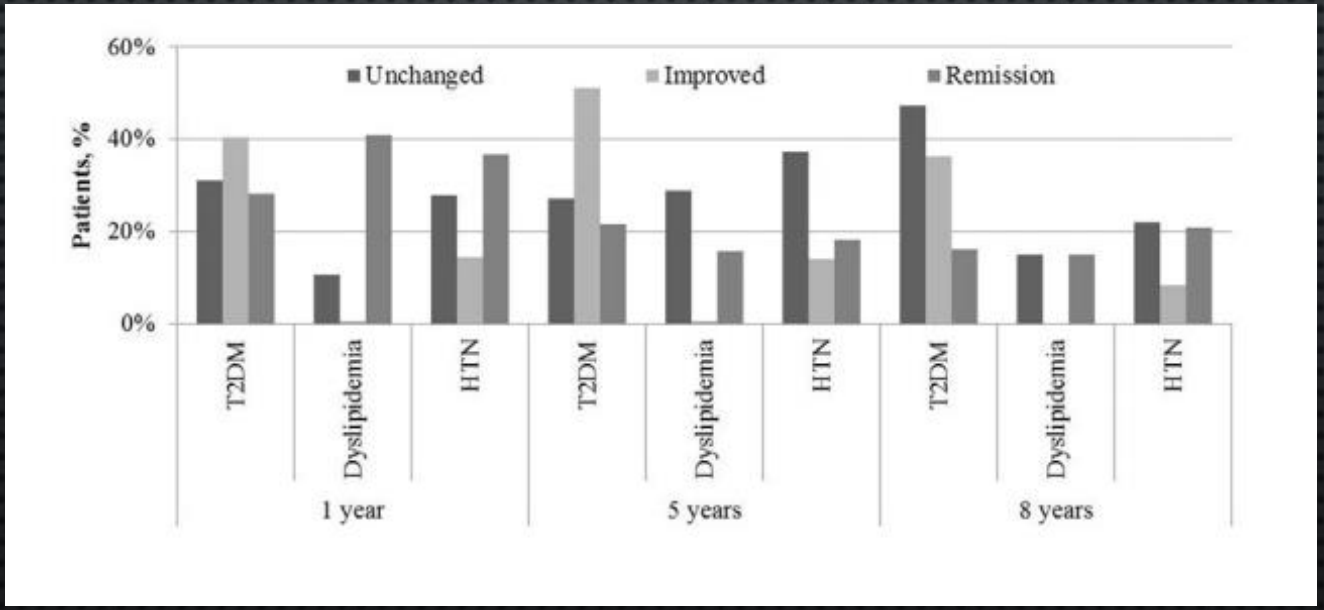
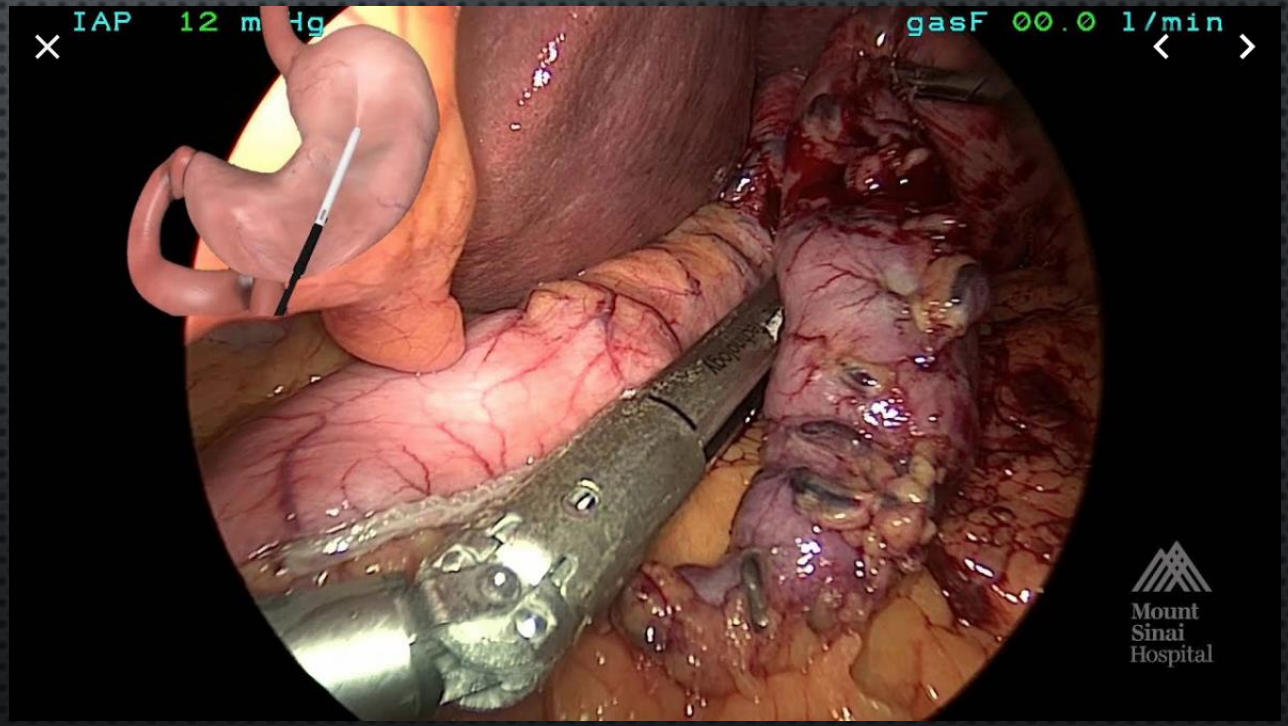


TBRHSC

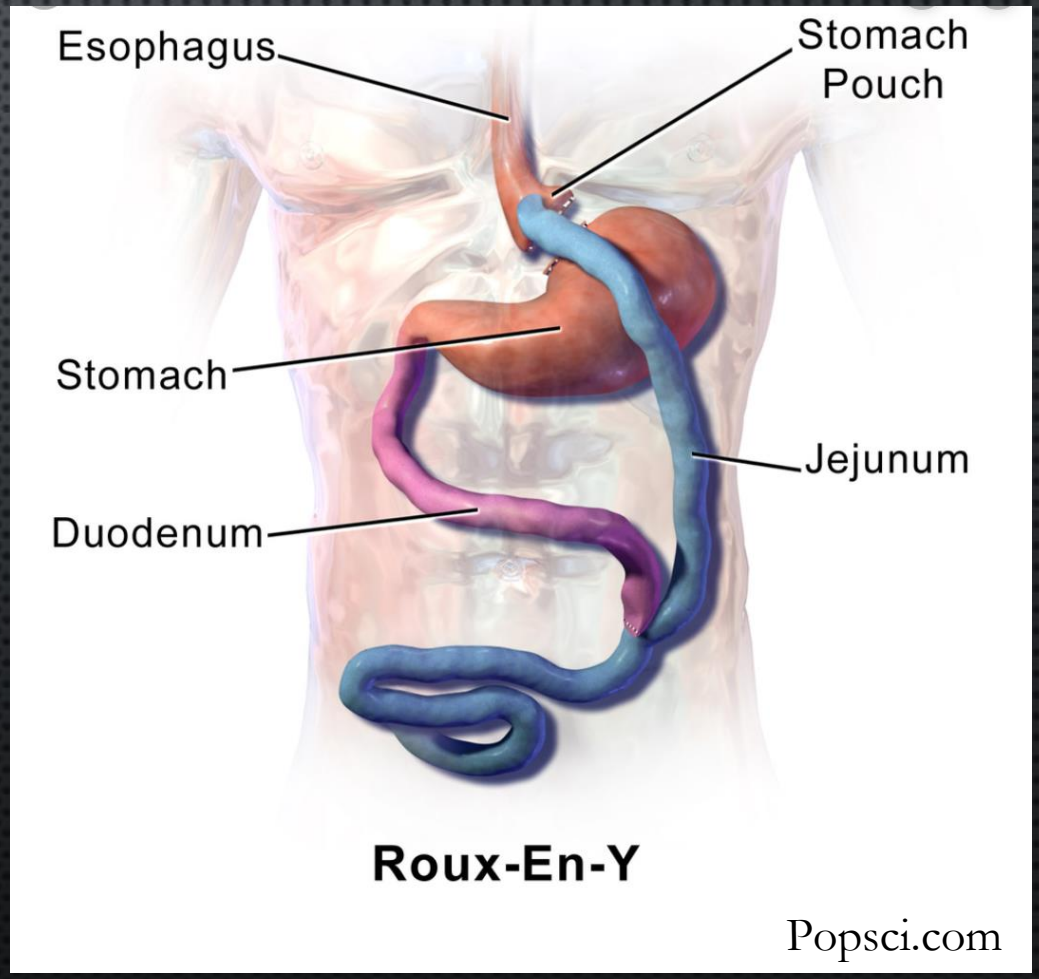
- Approximately 950 procedures
  - 70% LRYGB
  - 30% sleeve gastrectomy1
  - 1 Leak



youtube.com

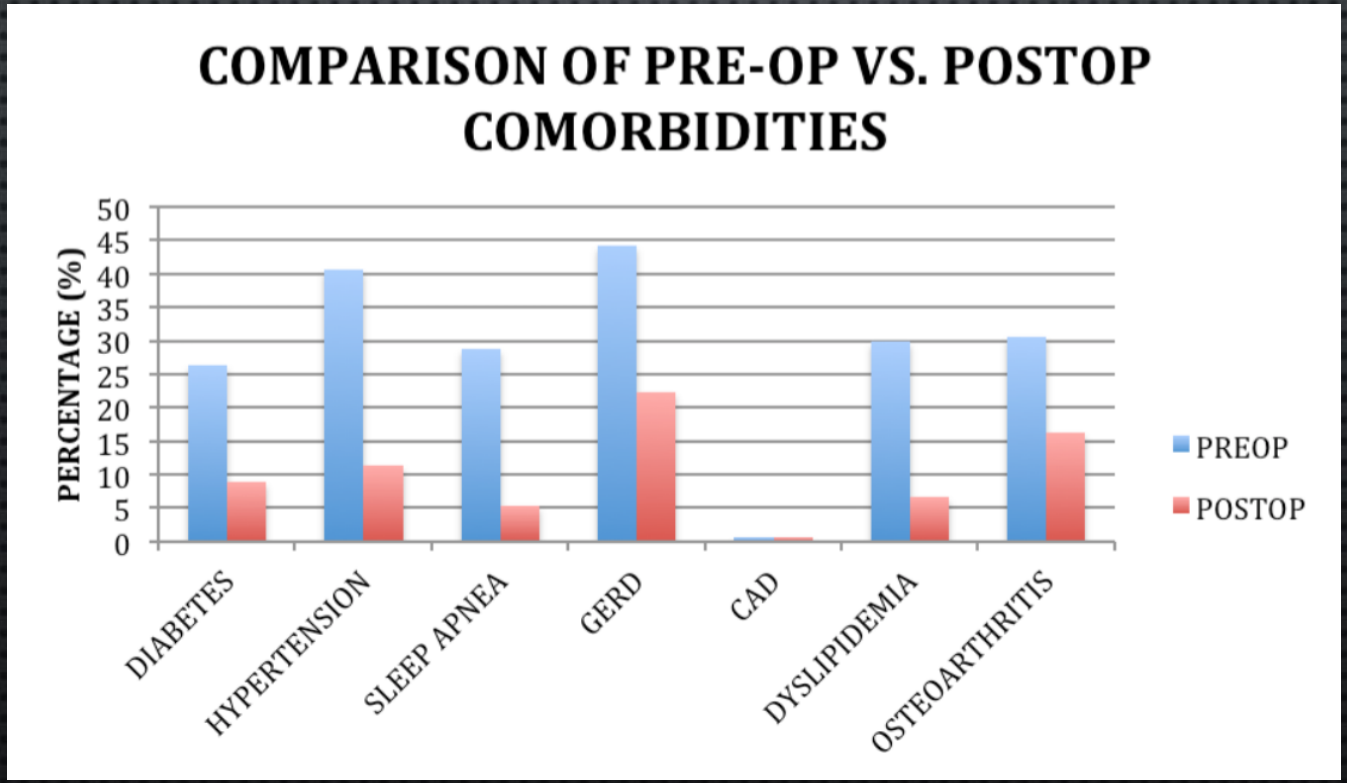
TBRHSC

- 168 LRYGB, 147 female (BMI 45.8), 19 males (BMI 47.8)
- Total Weight loss at 6, 12, 18 months
  - Females 22.9% 32.7%, and 30.1% TWL
  - Males 21.7%, 26.4%, and 23.8% TWL



Allard et al. 2019.

TBRHSC



Allard et al. 2019.

WHAT WILL PROVIDE THE BEST OUTCOMES?

- Randomized trial, BMI > 27 with DM2
- LRYGB vs Intensive Medical management
- Primary outcome Hgb A1c < 7

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Bariatric Surgery versus Intensive Medical Therapy for Diabetes — 3-Year Outcomes

Philip R. Schauer, M.D., Deepak L. Bhatt, M.D., M.P.H., John P. Kirwan, Ph.D., Kathy Wolski, M.P.H., Stacy A. Brethauer, M.D., Sankar D. Navaneethan, M.D., M.P.H., Ali Aminian, M.D., Claire E. Pothier, M.P.H., Esther S.H. Kim, M.D., M.P.H., Steven E. Nissen, M.D., and Sangeeta R. Kashyap, M.D., for the STAMPEDE Investigators*

Table 1. Primary and Secondary End Points at 3 Years.*

End Point	Medical Therapy (N=40)	Gastric Bypass (N=48)	Sleeve Gastrectomy (N=49)	P Value		
				Gastric Bypass vs. Medical Therapy	Sleeve Gastrectomy vs. Medical Therapy	Gastric Bypass vs. Sleeve Gastrectomy
Glycated hemoglobin						
Level — no. of patients (%)						
≤6%	2 (5)	18 (38)	12 (24)	<0.001	0.01	0.17
≤6% without diabetes medications	0	17 (35)	10 (20)	<0.001	0.002	0.10
≤6.5%	7 (18)	23 (48)	23 (47)	0.003	0.003	0.92
≤6.5% without diabetes medications	0	22 (46)	14 (29)	<0.001	<0.001	0.08
≤7%	16 (40)	31 (65)	32 (65)	0.02	0.02	0.94
≤7% without diabetes medications	0	28 (58)	16 (33)	<0.001	<0.001	0.01

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Body weight						
At baseline — kg	104.5±14.2	106.8±14.9	100.6±16.5			
At 3 yr — kg	100.2±16.6	80.6±15.5	79.3±15.1	<0.001	<0.001	0.69
Change from baseline — kg	−4.3±8.8	−26.2±10.6	−21.3±9.7	<0.001	<0.001	0.02
% Change from baseline	−4.2±8.3	−24.5±9.1	−21.1±8.9	<0.001	<0.001	0.06

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Table 2. Medication Use at Baseline and at 3 Years.*

Medication	At Baseline			At 3 Years		
	Medical Therapy (N=40)	Gastric Bypass (N=48)	Sleeve Gastrectomy (N=49)	Medical Therapy (N=40)	Gastric Bypass (N=48)	Sleeve Gastrectomy (N=49)
Diabetes medications						
No. of medications	2.80±1.11	2.50±1.15	2.45±1.19	2.60±1.10	0.48±0.80†	1.02±1.01†‡
Insulin — no. of patients (%)	21 (52)	22 (46)	22 (45)	22 (55)	3 (6)†	4 (8)†
Not taking this class of medication — no. of patients (%)	1 (2)	1 (2)	1 (2)	1 (2)	33 (69)†	21 (43)†‡
Cardiovascular medications						
No. of medications	2.70±1.22	2.73±1.32	2.18±1.09	2.63±1.31	0.96±1.15†	1.35±1.40†
ACE inhibitor or ARB — no. of patients (%)	25 (62)	36 (75)	30 (61)	22 (55)	11 (23)§	13 (27)§
Not taking this class of medication — no. of patients (%)	0	3 (6)	2 (4)	1 (2)	20 (42)†	19 (39)†
Any medication						
No. of medications	5.50±1.71	5.23±1.76	4.63±1.67	5.23±1.86	1.44±1.49†	2.37±1.82†‡
Difference from baseline to 3 yr — no.				−0.28±2.03	−3.79±1.81†	−2.27±1.99†‡

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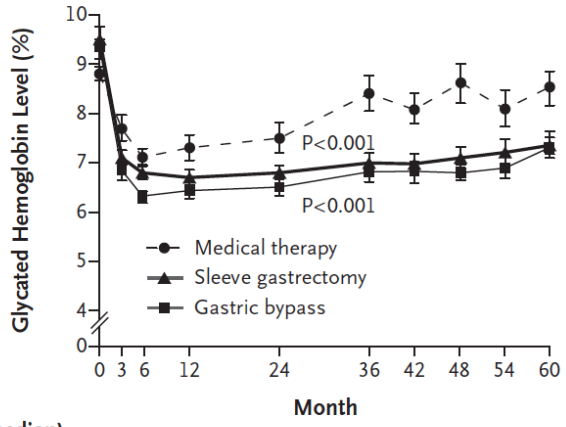
No. of medications	2.80±1.11	2.50±1.15	2.45±1.19	2.60±1.10	0.48±0.80†	1.02±1.01†‡
Insulin — no. of patients (%)	21 (52)	22 (46)	22 (45)	22 (55)	3 (6)†	4 (8)†
Not taking this class of medication — no. of patients (%)	1 (2)	1 (2)	1 (2)	1 (2)	33 (69)†	21 (43)†‡
Cardiovascular medications						
No. of medications	2.70±1.22	2.73±1.32	2.18±1.09	2.63±1.31	0.96±1.15†	1.35±1.40†
ACE inhibitor or ARB — no. of patients (%)	25 (62)	36 (75)	30 (61)	22 (55)	11 (23)§	13 (27)§
Not taking this class of medication — no. of patients (%)	0	3 (6)	2 (4)	1 (2)	20 (42)†	19 (39)†
Any medication						
No. of medications	5.50±1.71	5.23±1.76	4.63±1.67	5.23±1.86	1.44±1.49†	2.37±1.82†‡
Difference from baseline to 3 yr — no.				−0.28±2.03	−3.79±1.81†	−2.27±1.99†‡

Bariatric Surgery versus Intensive Medical Therapy for Diabetes — 5-Year Outcomes

Philip R. Schauer, M.D., Deepak L. Bhatt, M.D., M.P.H., John P. Kirwan, Ph.D., Kathy Wolski, M.P.H., Ali Aminian, M.D., Stacy A. Brethauer, M.D., Sankar D. Navaneethan, M.D., M.P.H., Rishi P. Singh, M.D., Claire E. Pothier, M.P.H., Steven E. Nissen, M.D., and Sangeeta R. Kashyap, M.D., for the STAMPEDE Investigators*

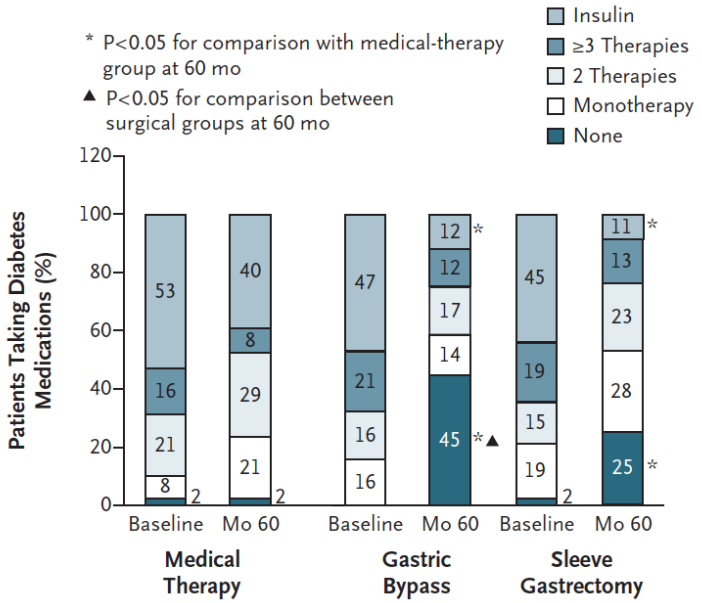
A Glycated Hemoglobin



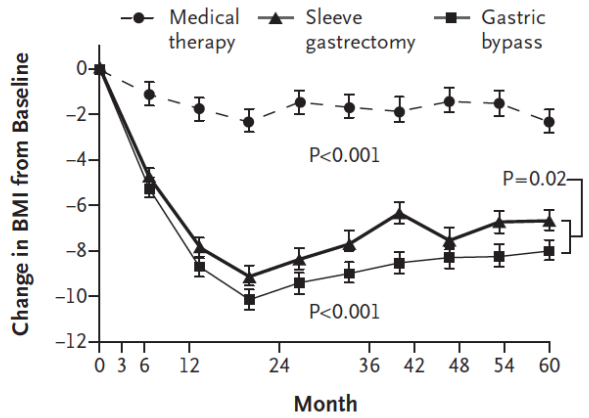
Mean (median) Value at Visit

Medical therapy	8.8 (8.6)	7.3 (6.8)	7.5 (7.2)	8.4 (7.7)	8.6 (8.2)	8.5 (8.0)
Gastric bypass	9.3 (9.4)	6.4 (6.2)	6.5 (6.4)	6.8 (6.6)	6.8 (6.8)	7.3 (6.9)
Sleeve gastrectomy	9.5 (8.9)	6.7 (6.4)	6.8 (6.8)	7.0 (6.7)	7.1 (6.6)	7.4 (7.2)

B Diabetes Medications



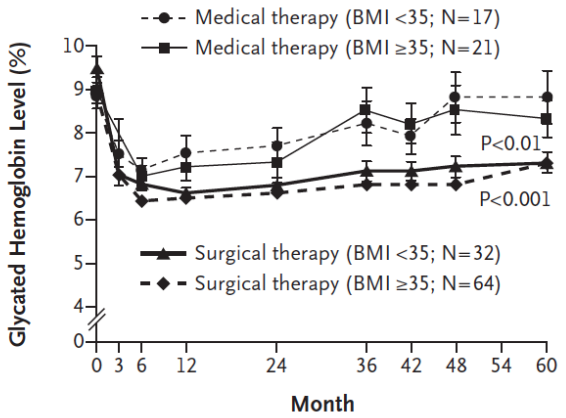
C Body-Mass Index



Mean Value at Visit

Medical therapy	36.4	34.1	35.0	34.8	35.1	34.0
Gastric bypass	37.0	26.9	27.4	28.2	28.6	28.9
Sleeve gastrectomy	36.0	26.9	27.7	28.1	28.2	29.3

D Glycated Hemoglobin According to Body-Mass Index



Mean (median) Value at Visit

Medical <35	8.8 (8.9)	7.5 (6.9)	7.7 (7.4)	8.2 (7.9)	8.8 (8.6)	8.8 (8.0)
Medical ≥35	8.9 (8.5)	7.2 (6.5)	7.3 (6.8)	8.5 (7.1)	8.5 (8.2)	8.3 (8.0)
Surgical <35	9.5 (9.1)	6.6 (6.7)	6.8 (6.8)	7.1 (6.7)	7.2 (6.8)	7.3 (7.1)
Surgical ≥35	9.4 (9.2)	6.5 (6.2)	6.6 (6.4)	6.8 (6.6)	6.8 (6.5)	7.3 (7.1)

JAMA | Original Investigation

Association of Metabolic Surgery With Major Adverse Cardiovascular Outcomes in Patients With Type 2 Diabetes and Obesity

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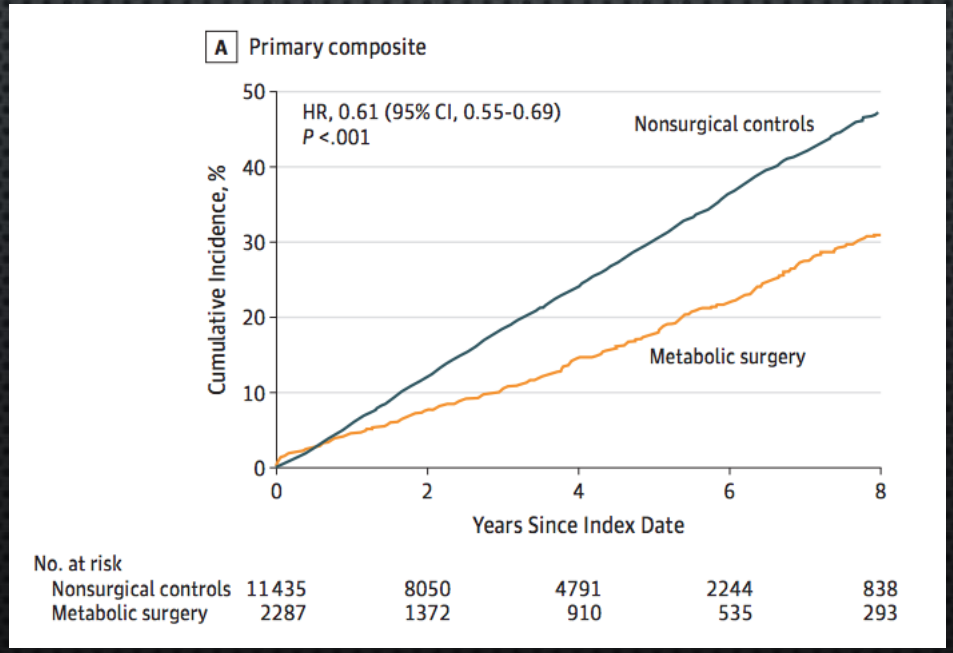

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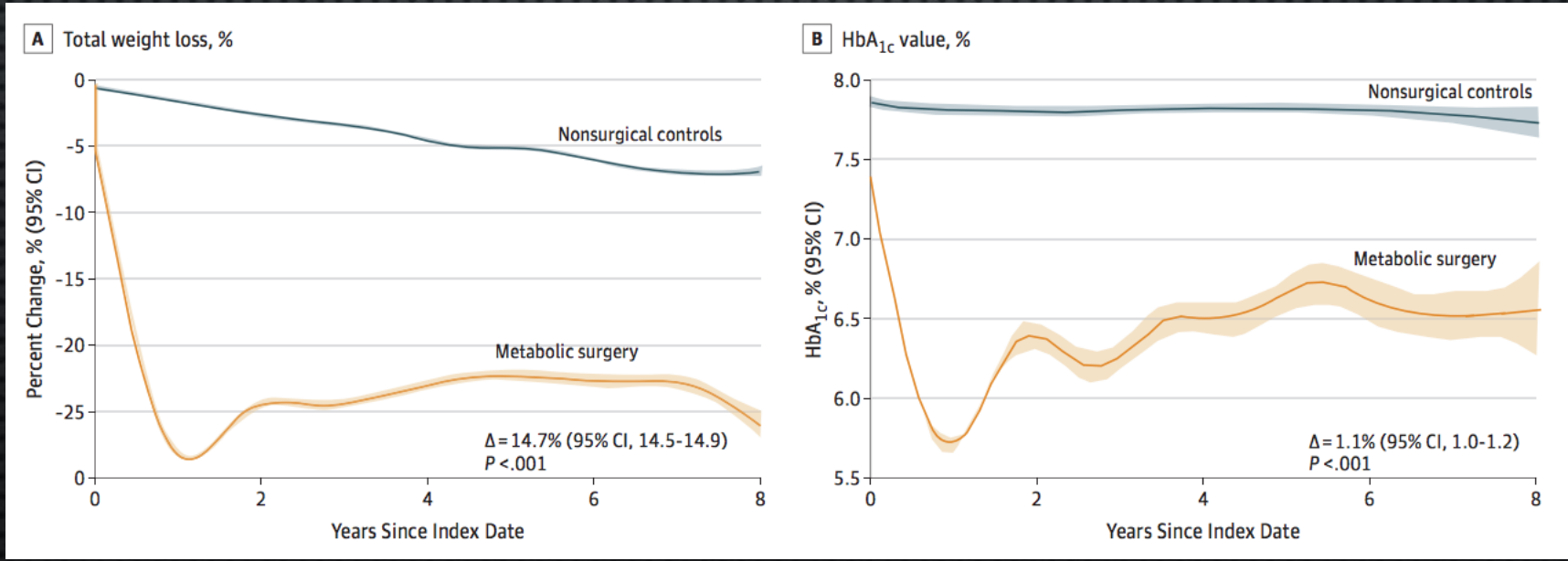

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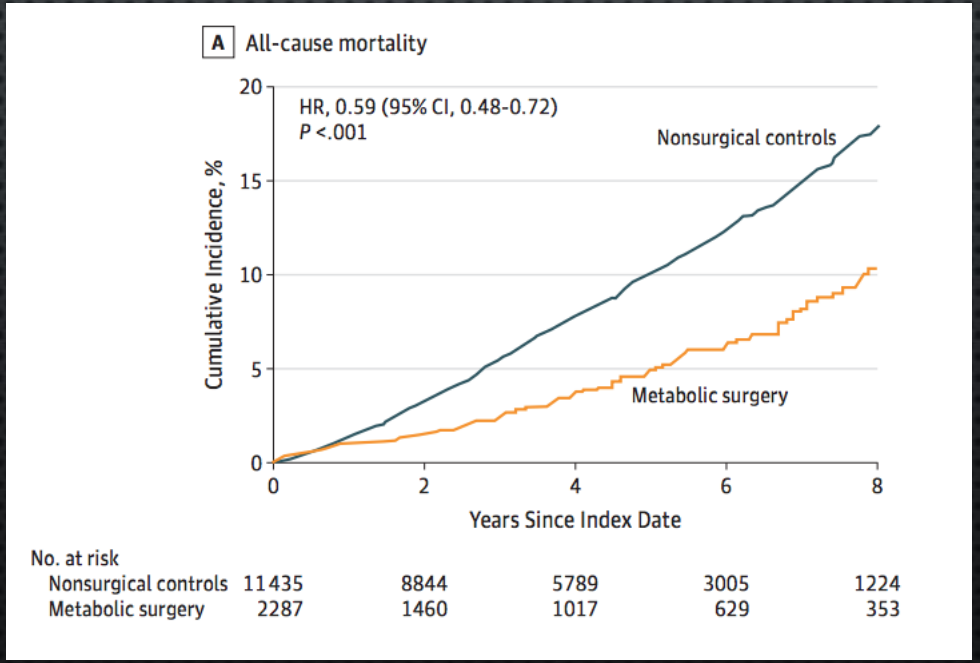

Review

Journal of INTERNAL MEDICINE

doi: 10.1111/joim.12012

Review of the key results from the Swedish Obese Subjects (SOS) trial – a prospective controlled intervention study of bariatric surgery

L. Sjöström

From the The SOS secretariat, Department of Molecular and Clinical Medicine, Institute of Medicine, The Sahlgrenska Academy, The University of Gothenburg, Gothenburg, Sweden

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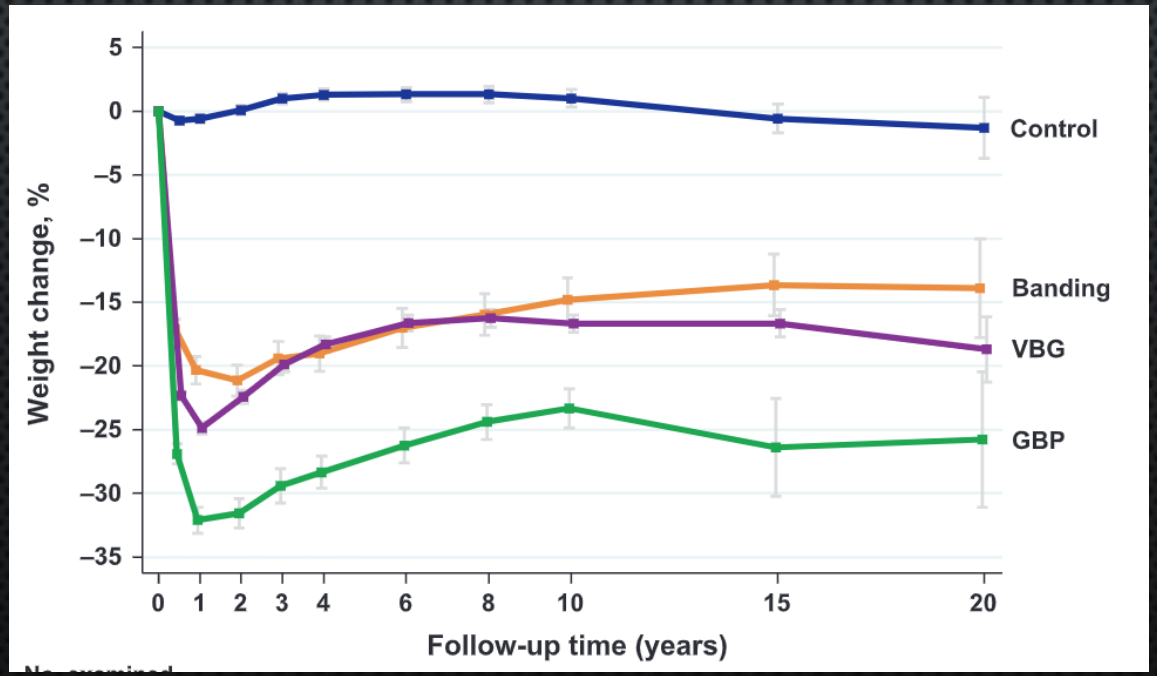

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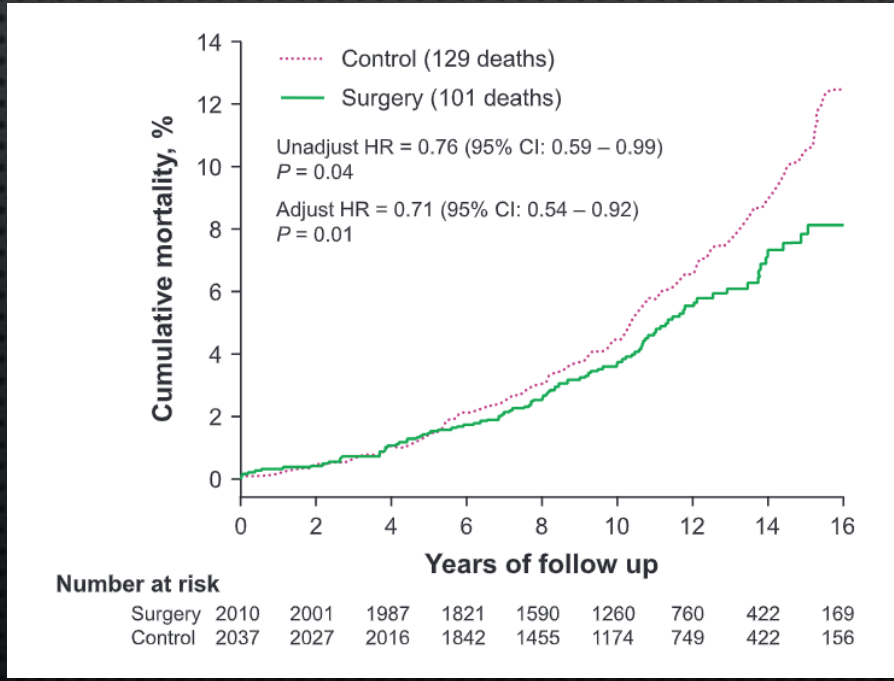

SURGERY

- Superior weight loss, resolution of diabetes and hypercholesterolemia with surgery
- Bypass > sleeve

SURGERY

- In carefully selected patients, surgery provides a survival advantage over conservative management of obesity

THANK YOU