Obesity Update 2020

Surgery for Weight Loss

Royal Alexandra HOSPITAL FOUNDATION
CASES
Centre for Advancement of Surgical Education & Simulation

Faculty/Presenter Disclosure

- **Faculty: Daniel Birch**

- **Relationships with commercial interests:**
  - **Grants/Research Support: -**
  - **Speakers Bureau/Honoraria: Obesity Canada**
  - **Consulting Fees: -**
  - **Other: -**

Disclosure of Commercial Support

- **Potential for conflict(s) of interest:**
  - **Dr. Daniel Birch** has not received payment/funding from companies exhibiting in this program AND/OR companies whose product(s) are being discussed in this program.
  - **The exhibitors did not provide content for Obesity Update 2020 nor did they have any editorial input or involvement with the selection of Dr. Birch as a speaker.**
  - **The Royal Alexandra Hospital Foundation and/or Centre for Advancement of Surgical Education & Simulation (CASES) has not** developed /licensed / distributed/ benefited from the sale of any product that is discussed in this program

Goals of Presentation

To support physicians in practice confidently and appropriately discussing and referring patients for weight loss surgery

To improve patient access and referral for management of obesity and comorbid disease

To reduce or eliminate the need for patients to travel out of province/country for weight loss surgery

Learning Objectives

At the conclusion of this session, participants will be able to:

- **Select individuals for whom bariatric surgery is appropriate**
- **Initiate a referral to a tertiary care center and comprehend the clinical process and timelines**
- **Explain how each bariatric surgery type facilitates weight loss**
- **Evaluate surgery's impact on patients' obesity and related comorbidities, quality of life, and mortality**
- **Identify postoperative complications of bariatric surgery and employ appropriate management including re-referral to tertiary care**

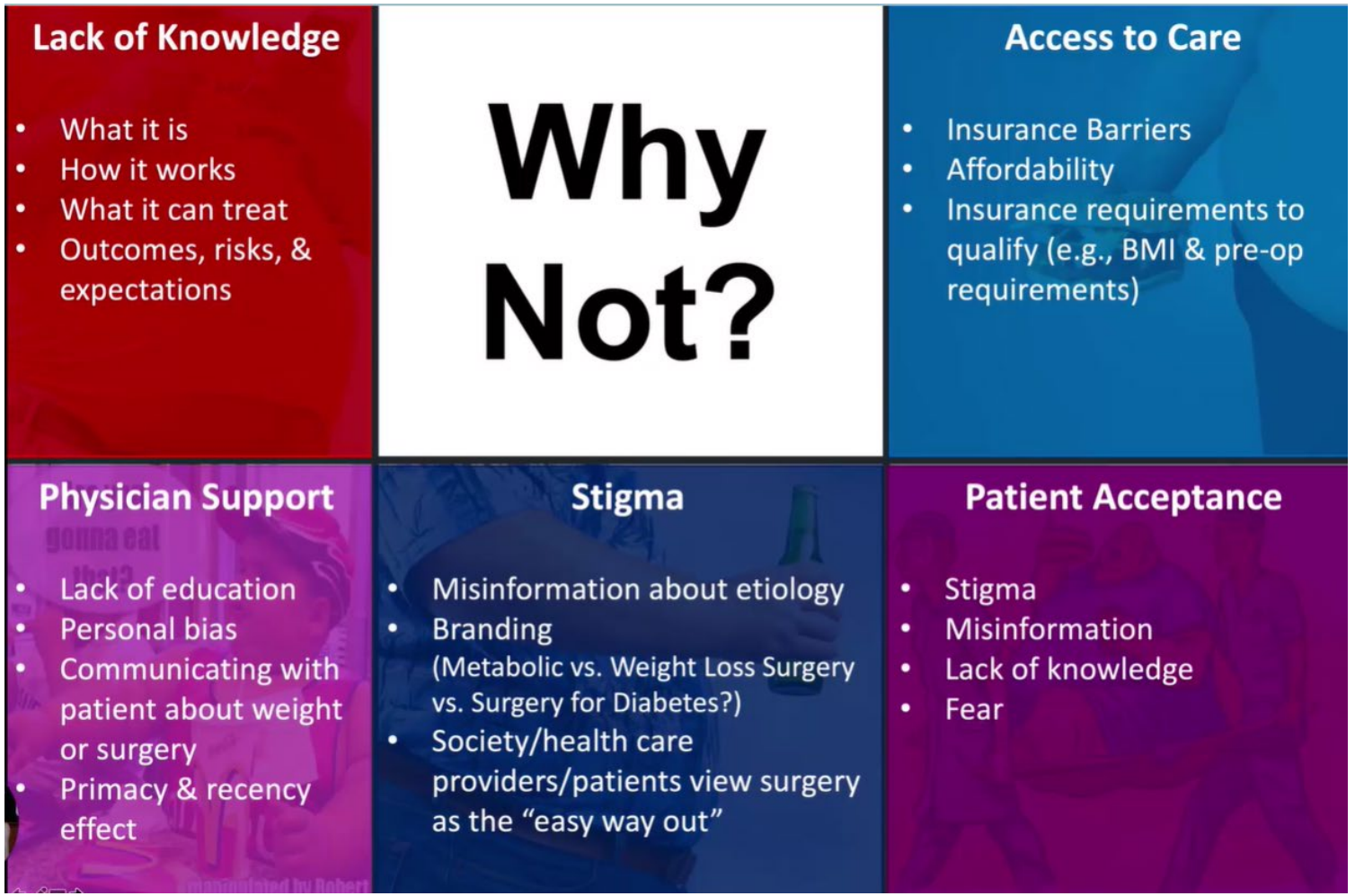
Challenges of Knowledge Translation

- **Knowledge translation: referred to as the "knowledge to action" process**
- **Changing behaviours of physicians in practice is very challenging – if not impossible!**
- **Knowledge sharing without knowledge transfer not effective**

- **Parallel: Influencing patients and their beliefs in healthcare – similarly challenging**

How do we improve the knowledge to action process in obesity management?

Barriers to Weight Loss Surgery



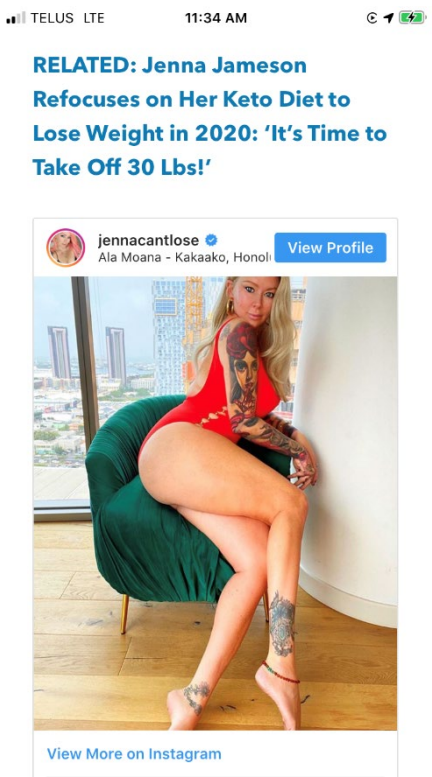
[Kelli Friedman—To Have Surgery or Not: The Psychology Behind the Decision – CME (cmevirtual.com)]

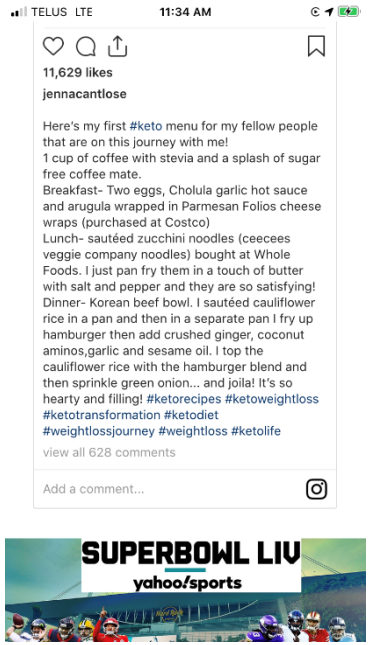
Knowledge translation strategies – what works?

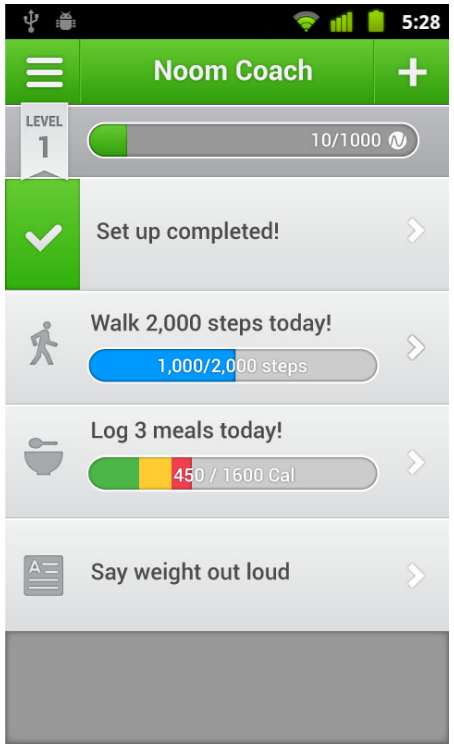
What do you need to evolve your practice in obesity?

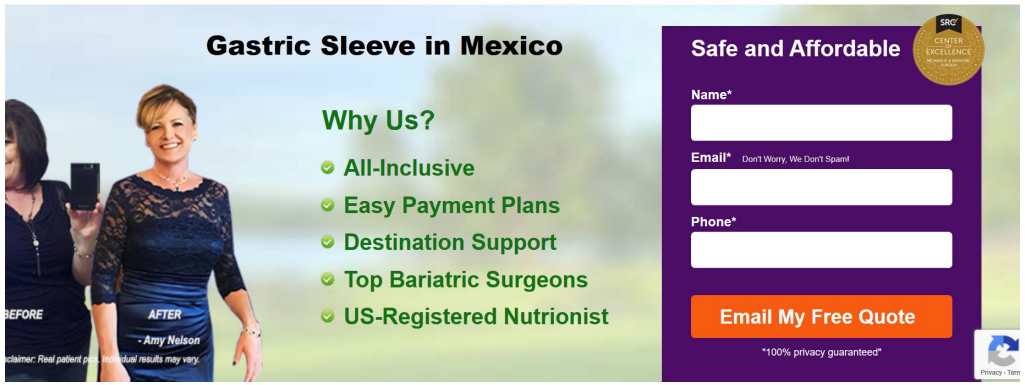
1. General medical conferences (2-3d)
2. Focused workshops (1d)
3. Mentoring (1 on 1 experience)
4. Podcasts (independent experience)
5. Other (specific study type…)

Finding the truth - can we insulate ourselves and patients from misinformation?







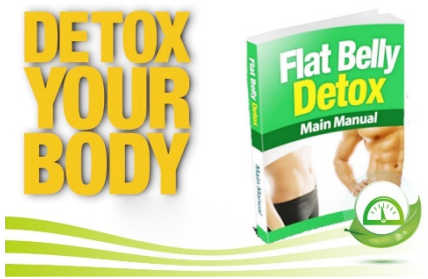


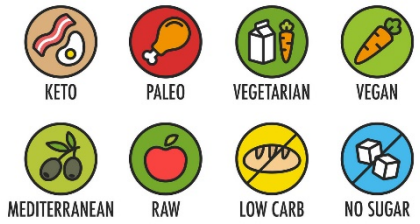
Royal Alexandra HOSPITAL FOUNDATION

CASES Centre for Advancement of Surgical Education & Simulation

Managing Misinformation in Healthcare

- **Remember that *Facts matter*: correcting misinformation is difficult but essential - despite low impact of evidence and facts, unexpected results**
- **Recognize the power of a good story: anecdotes very influential, despite low level of evidence**
- **Encourage vigilance and critical thinking: critical appraisal of evidence, fact checking, understanding levels of evidence**
- **Embrace better science, better healthcare and the value of trust: know your medicine and your consultants**

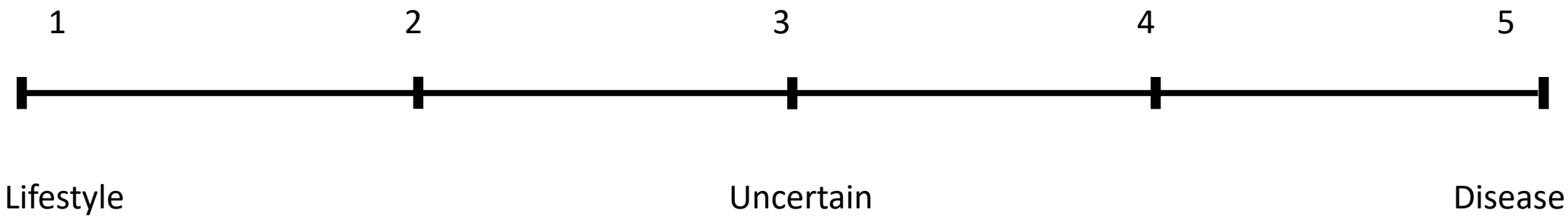




Moving beyond the decade of health and wellness bunk, Tim Caulfield, Canada research Chair in Health Law and Policy, University of Alberta, Globe and Mail, Sat Jan 4 2020

Obesity: Disease vs Lifestyle Decision

Where do you stand?



Obesity is a recognized Chronic Disease

- **World Health Organization**
- **American Medical Organization**
- **Canadian Medical Association**

- **Recognition of Obesity as a Chronic Disease influences all aspects of diagnosis and management**

Early education for health care professionals critical to recognition of Obesity as a treatable medical disease

Surgery for Weight Loss

What are your initial/impulsive thoughts, images and feelings?

What do you see when you think about surgery for weight loss?

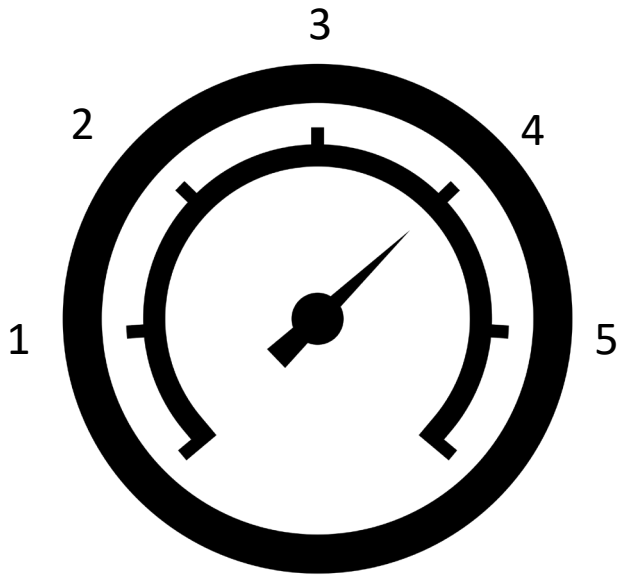
Terminology Important

Bariatric Surgery?

Weight Loss Surgery?

Metabolic Surgery?

Weight Loss Surgery



Initial Reactions: Positive or Negative
(1=negative, 5=positive)

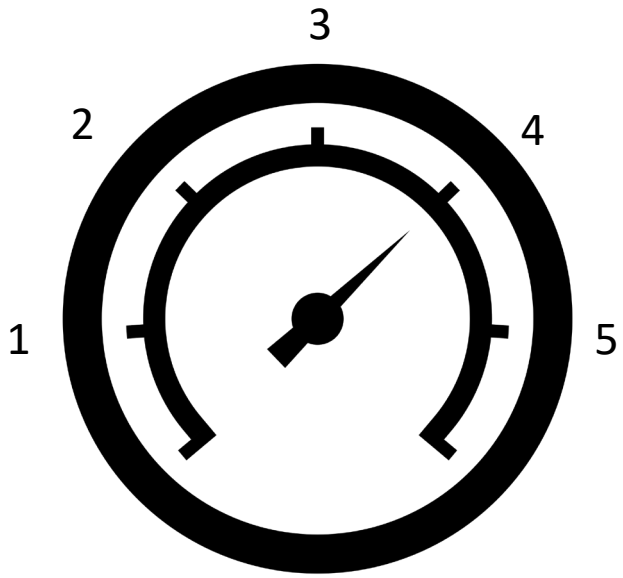
The Power of Words and the Narratives We Deliver

- **Choose your words carefully:**
  - **Inadvisable:** ***stomach stapling, morbid obesity, restrictive, malabsorptive***

- **Prepare the appropriate narrative:**
  - **Not evidence based*****: surgery as a last resort, high risk procedure, many patients regain their weight, used only when patients fail at lifestyle management***

- **Replace judgemental/out-dated language with accurate, appropriate terms and descriptions**

Weight Loss Surgery



Confidence in Surgery as Rx
(1=negative, 5=positive)

Surgery for Weight Loss

What do you need to know today about surgery for weight loss?

Surgical procedures
Mechanisms of action
Early complications
Late complications

Review clinical trials
Who to refer
How to refer
Impact on comorbid disease

Surgery for Weight Loss

Open (laparotomy) vs Laparoscopic approach for primary treatment of obesity?

1. 60% laparoscopic
2. 80% laparoscopic
3. 90% laparoscopic
4. 100% laparoscopic

Surgery for Weight Loss

Most Common operation (North America)for weight loss?

1. Gastric bypass
2. Duodenal switch
3. Adjustable gastric band
4. Sleeve gastrectomy
5. Vertical band gastroplasty

Surgery for Weight Loss

Length of Stay following weight loss surgery?

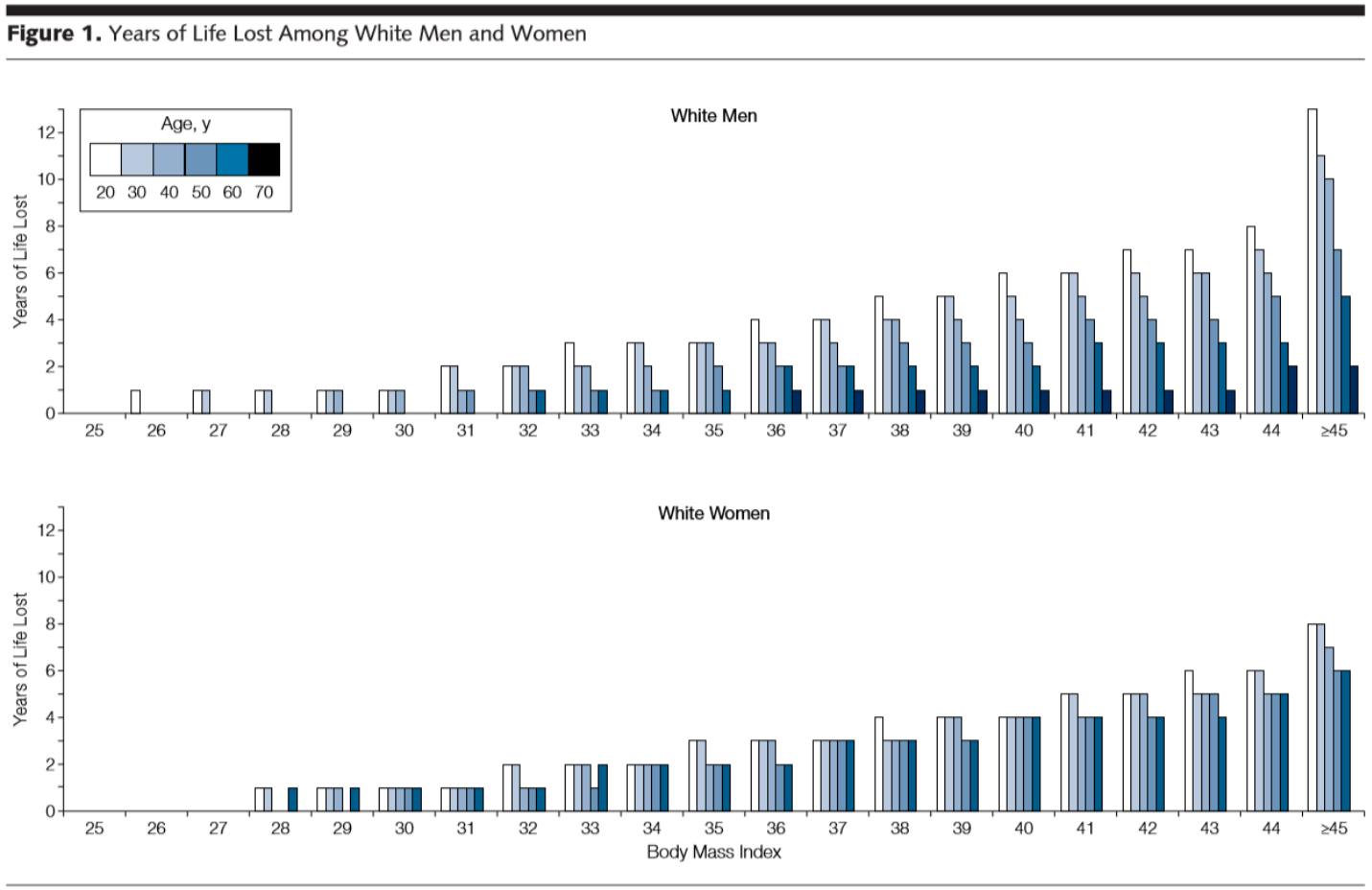
1. 1d
2. 2d
3. 3d
4. 4d
5. 5d

Surgery for Weight Loss

Peri-operative mortality rate?

1. 1%
2. 2%
3. .1%
4. 5%
5. 10%

Is Weight Loss Surgery Necessary?



Obesity Costs in Years of Life Lost

Fontaine et al, Years of life lost due to obesity JAMA 2003 289

Canadian Demographics

- ***One million people across Canada are severely obese***

➢ **Edmonton (metro): 1,034,945**

2.5%: 25,873 people with severe obesity!

- **In 2012 estimated prevalence of type 2 diabetes:**
  - ➢ **200,000 Albertans**
  - ➢ **2.8 million Canadians (www.publichealth.gc.ca)**

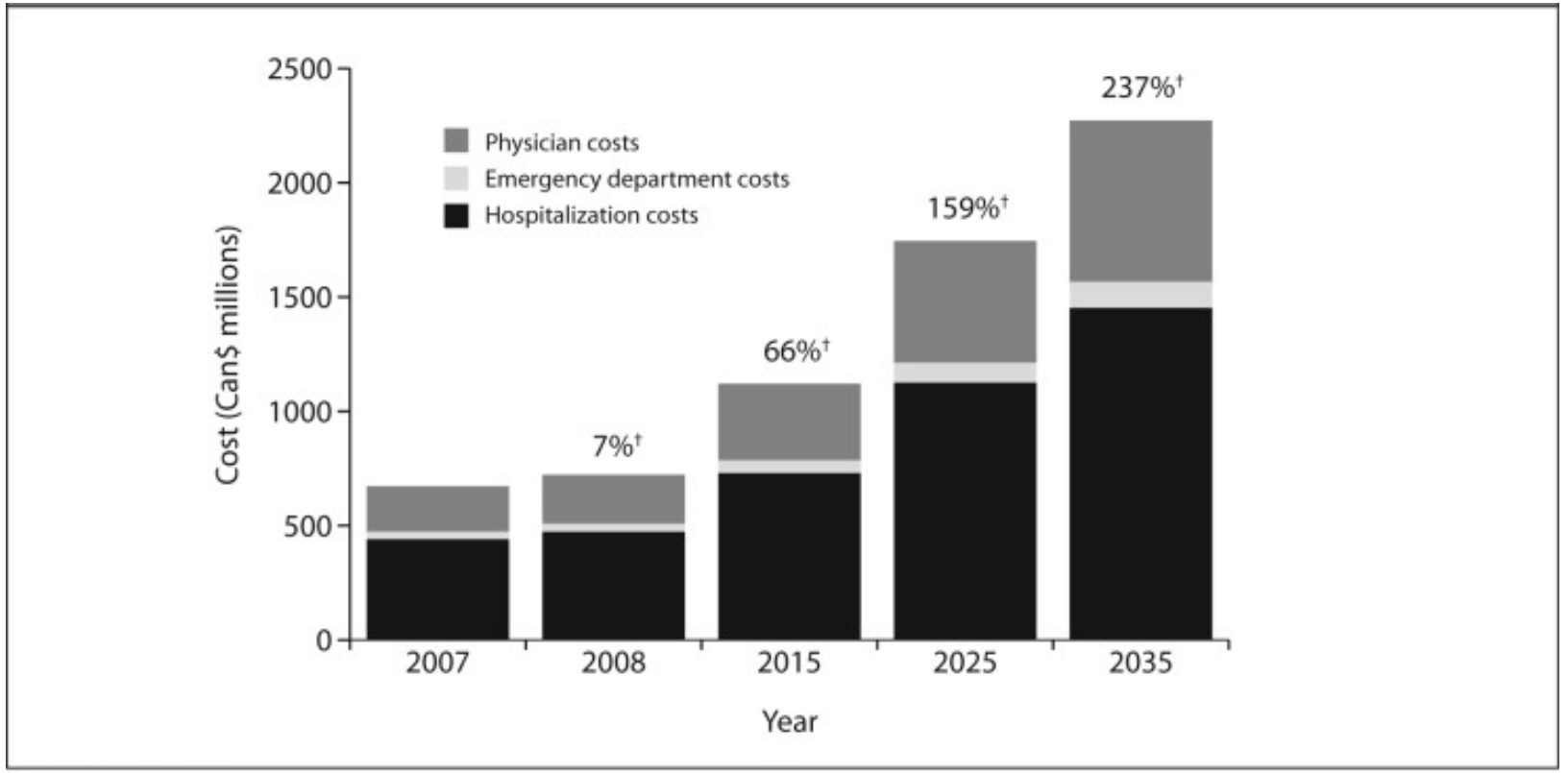
- **By 2025:**

394,278 Albertans will be living with diabetes

About half - 200,000 could be eligible for metabolic surgery

Predicting the Future Burden of Diabetes in Alberta from 2008 to 2035, Lau et Can J Diabetes 2011

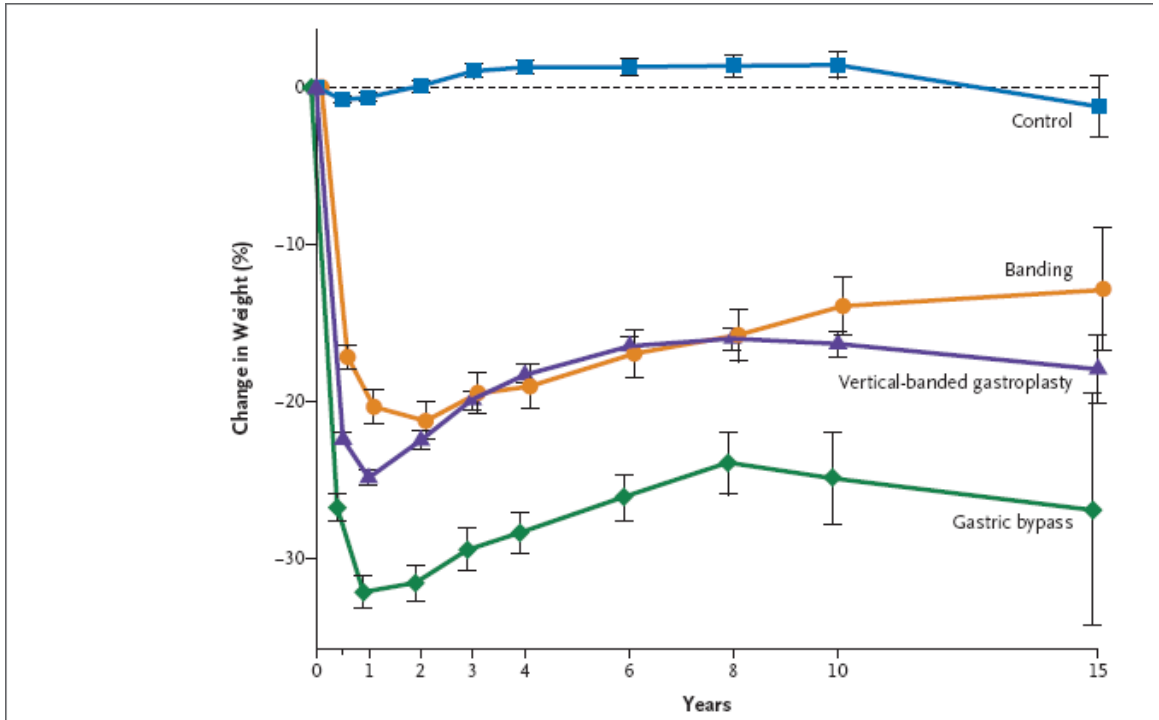
Cost of Diabetes in Alberta



*2007 Canadian dollars
†Increase from 2007

Predicting the Future Burden of Diabetes in Alberta from 2008 to 2035, Lau et Can J Diabetes 2011

Results of Weight Loss Surgery



No. Examined									
Control	2037	1768	1660	1553	1490	1281	982	886	190
Banding	376	363	357	328	333	298	267	237	52
Vertical-banded gastroplasty	1369	1298	1244	1121	1086	1004	899	746	108
Gastric bypass	265	245	245	211	209	166	92	58	10

Sjostrom et al. Effects of Bariatric Surgery on Mortality in Swedish Obese Subjects. N Engl J Med 2007;357(8):741-52

Weight Loss Surgery Adds Years

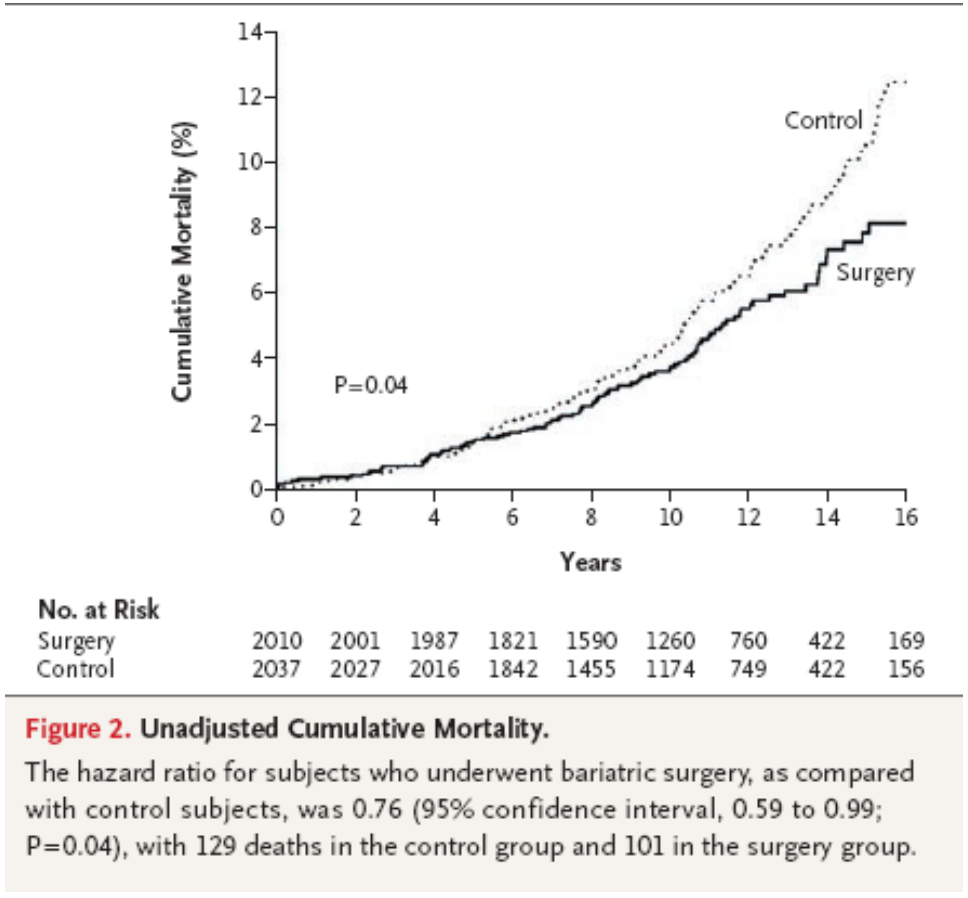
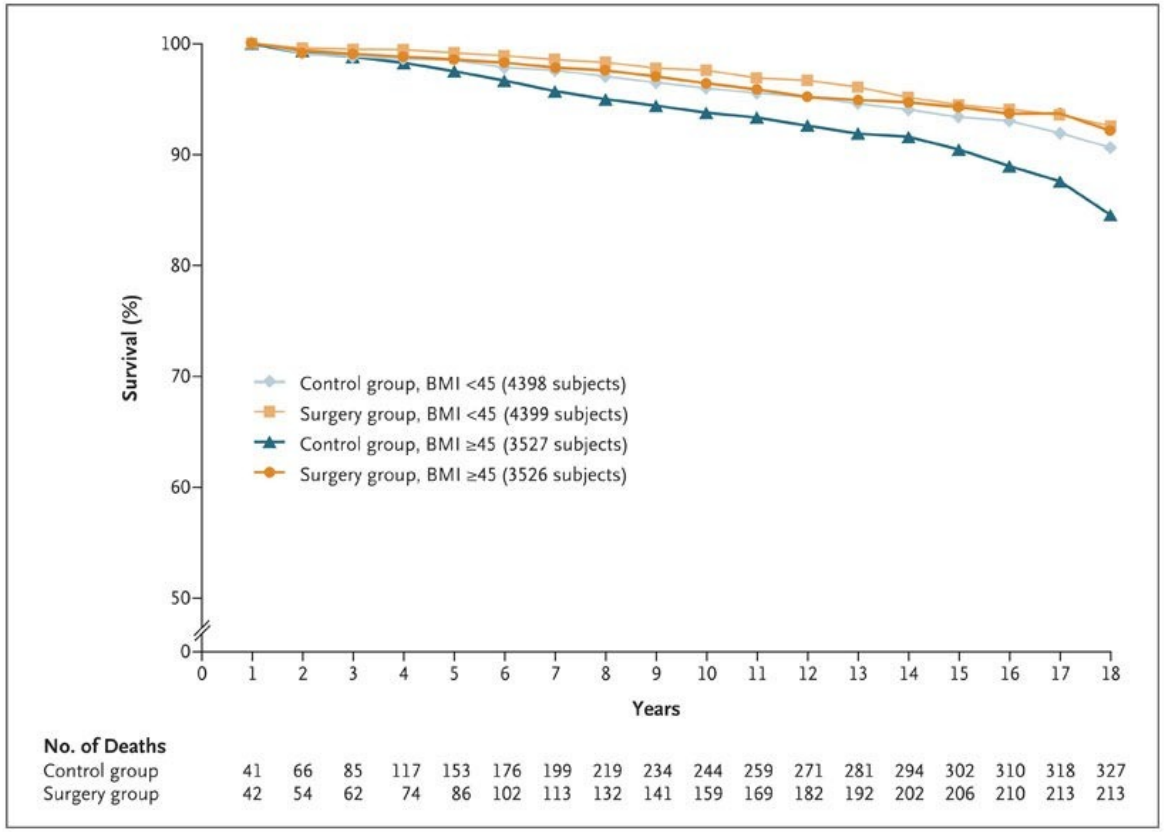


Figure 2. Unadjusted Cumulative Mortality.

The hazard ratio for subjects who underwent bariatric surgery, as compared with control subjects, was 0.76 (95% confidence interval, 0.59 to 0.99; P=0.04), with 129 deaths in the control group and 101 in the surgery group.

Sjostrom et al. Effects of Bariatric Surgery on Mortality in Swedish Obese Subjects. N Engl J Med 2007;357(8):741-52



Adams et al, Long-Term Mortality after Gastric Bypass Surgery N Engl J Med 2007; 357:753-761

Long term mortality following Gastric Bypass Surgery

- **During a mean follow-up of 7.1 years, adjusted long-term mortality from any cause in the surgery group decreased by 40%**
- **Cause-specific mortality in the surgery group decreased by 56% for coronary artery disease, by 92% for diabetes, and by 60% for cancer**

Adams et al, Long-Term Mortality after Gastric Bypass Surgery N Engl J Med 2007; 357:753-761

NEJM Editorial

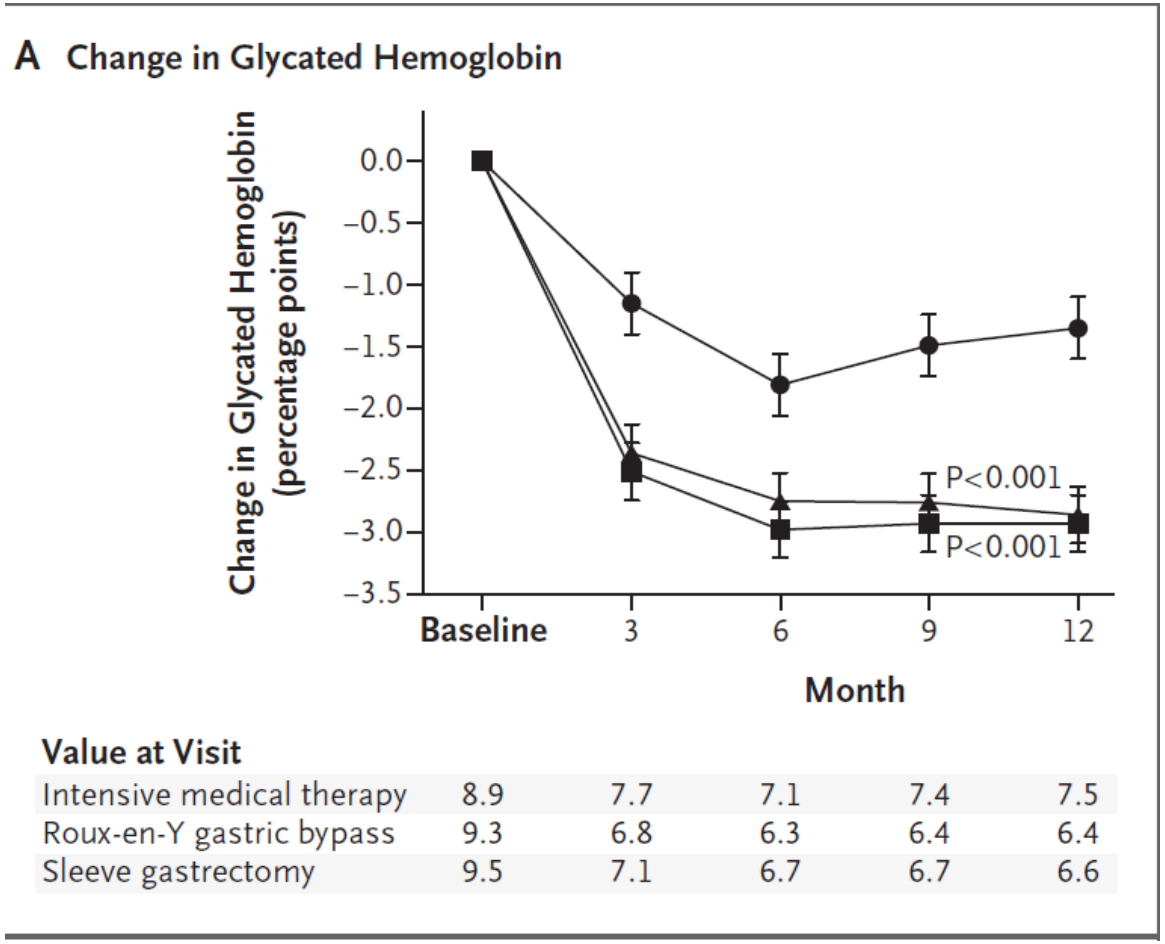
"Has the time come to reconsider BMI guidelines for bariatric surgery? In addition to the improvement in the risk of diabetes, the reduction in deaths from cancer may also argue in this direction. Sjöström et al. and Adams et al. show that weight loss saves lives in obese patients. Thus, the question as to whether intentional weight loss improves life span has been answered, and the answer appears to be a resounding yes"

Bray GA.The Missing Link Lose Weight, Live Longer. N Engl J Med 2007;357(8):818-20

RCT: Surgery vs Medical Therapy - Stampede Trial

- **RCT: 150 patients**
- **Med Rx vs RYGB vs LSG**

- **Primary outcome proportion of patients with HbA1c of 6% or less at 12 months**
- **Med Rx: 12%**
- **RYGB: 42%, p=.002**
- **LSG: 37%, p=.008**



Value at Visit					
Intensive medical therapy	8.9	7.7	7.1	7.4	7.5
Roux-en-Y gastric bypass	9.3	6.8	6.3	6.4	6.4
Sleeve gastrectomy	9.5	7.1	6.7	6.7	6.6

Schauer et al Bariatric Surgery vs Intense Medical Therapy in Obese Patients with Diabetes NEJM March 2012

RCT: Surgery vs Medical Therapy – Rome Trial

- **RCT: 60 patients**
- **Med Rx vs RYGB vs BPD**

- **Primary outcome proportion of patients with HbA1c of 6.5% and fasting glucose <5.6 mmol at 24 months**
- **Med Rx: 0%**
- **RYGB: 75%, p<.001**
- **LSG: 95%, p<.001**

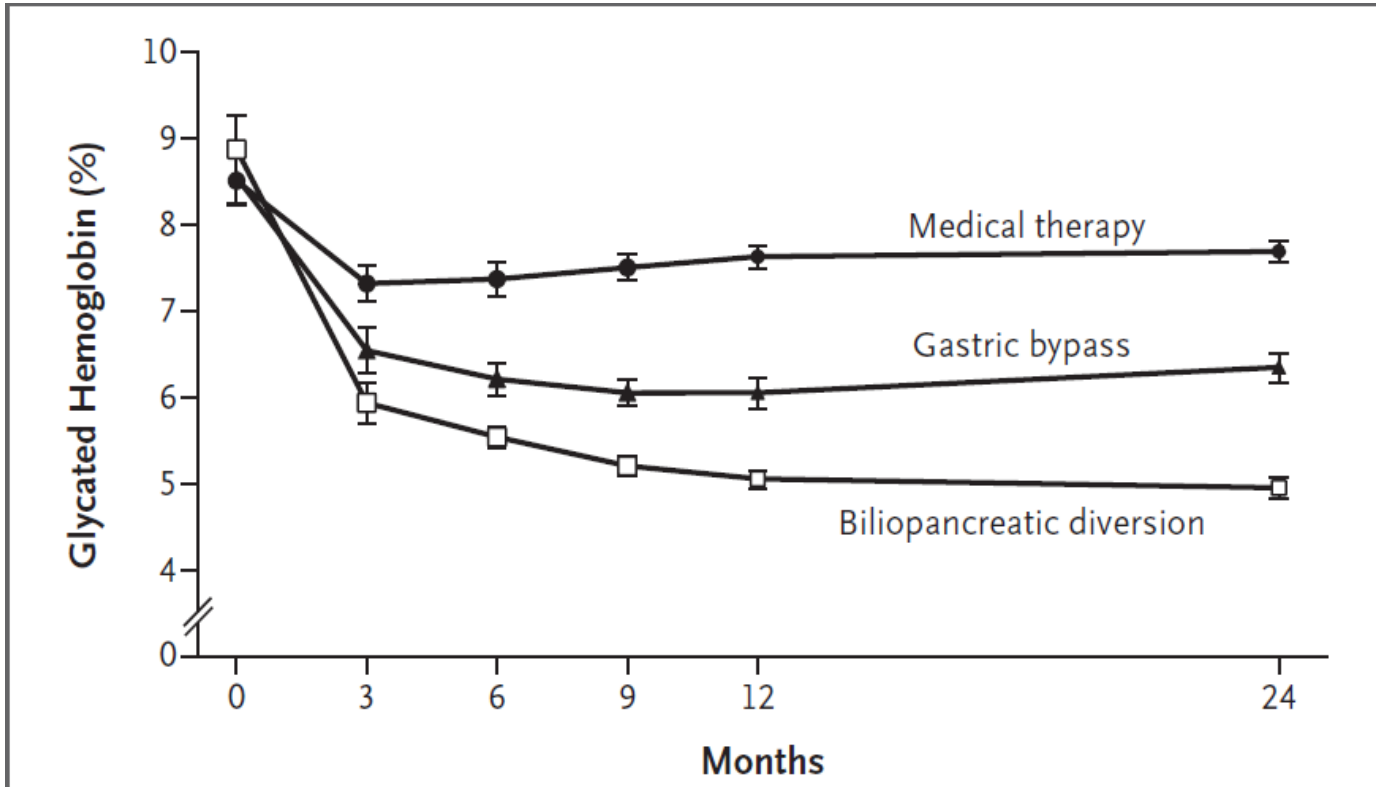


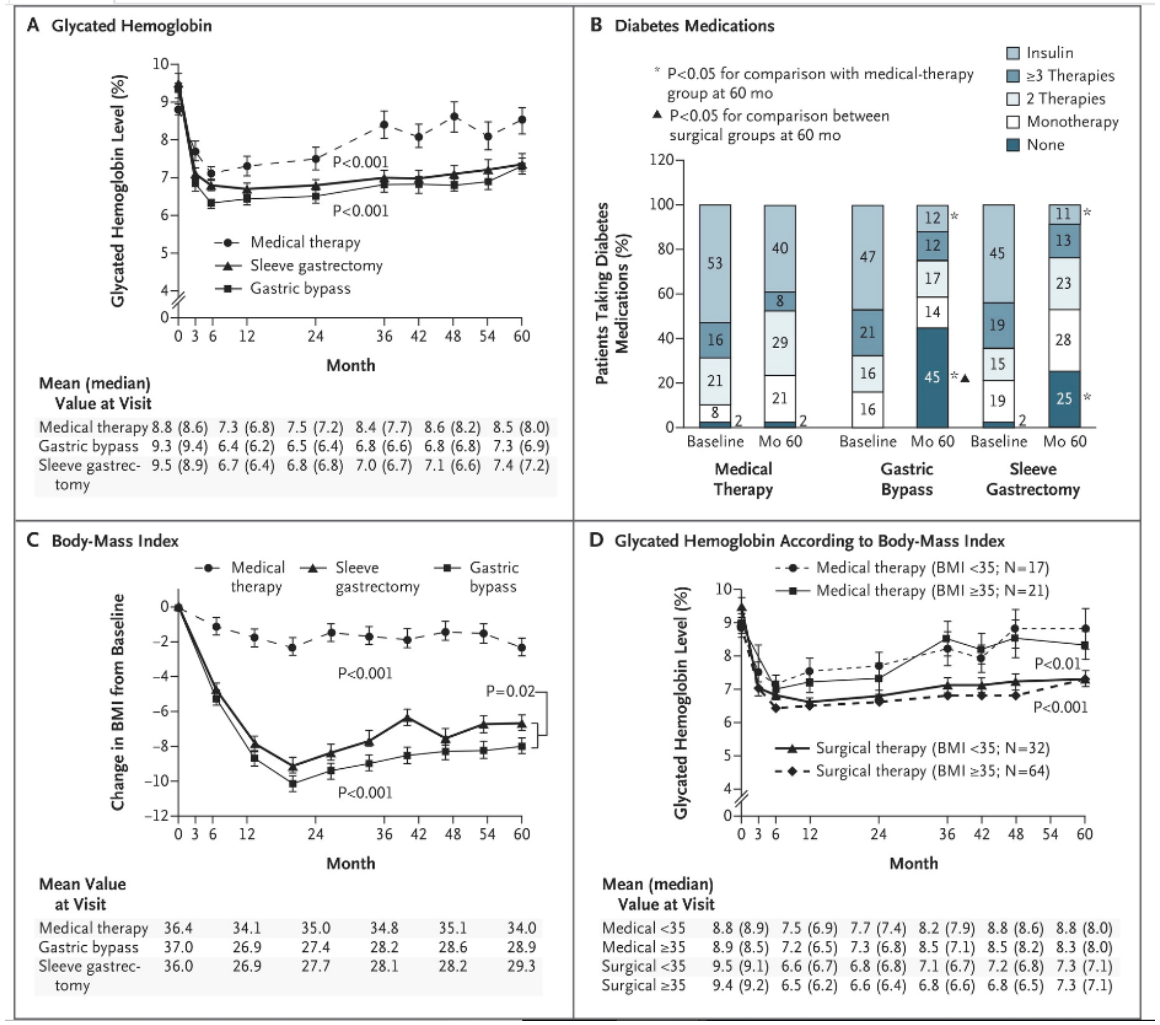
Figure 2. Glycated Hemoglobin Levels during 2 Years of Follow-up.

Bariatric Surgery vs Conventional Medical Therapy for Type 2 Diabetes NEJM March 2012

Stampede Trial: 5 years

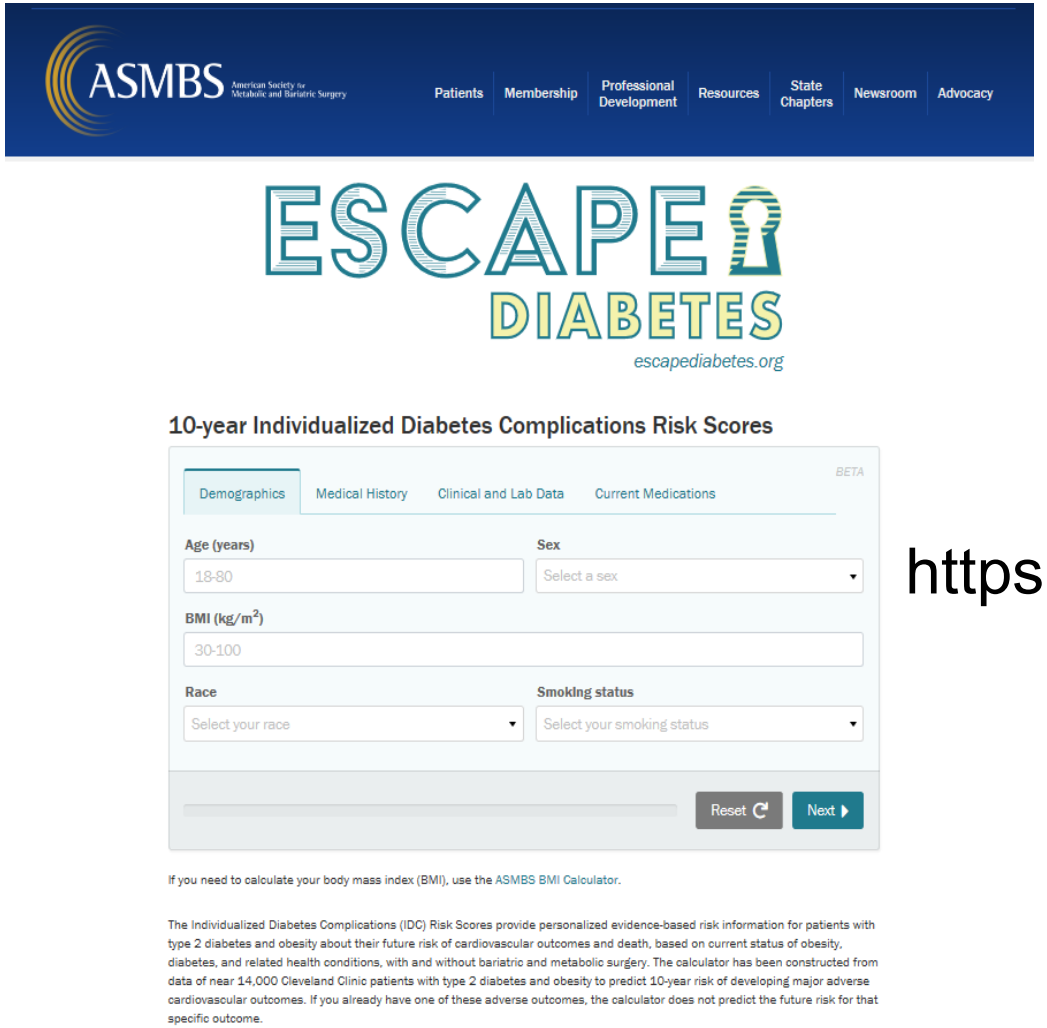
Over 88% of surgical patients had glycemic control considered 'very good to acceptable' (average glycated hemoglobin level of 7.0%) without the use of insulin

Majority of surgical patients who achieved a glycated hemoglobin level of 6.0% or less reached that target without diabetes medications, whereas none of the patients in the medical-therapy group reached that target without the use of diabetes medications



Schauer et al Bariatric Surgery vs Intense Medical Therapy in Obese Patients with Diabetes – 5 year outcomes NEJM Feb 2017

Escape Diabetes Risk Calculator



Determines 10 year risk with/without weight loss surgery

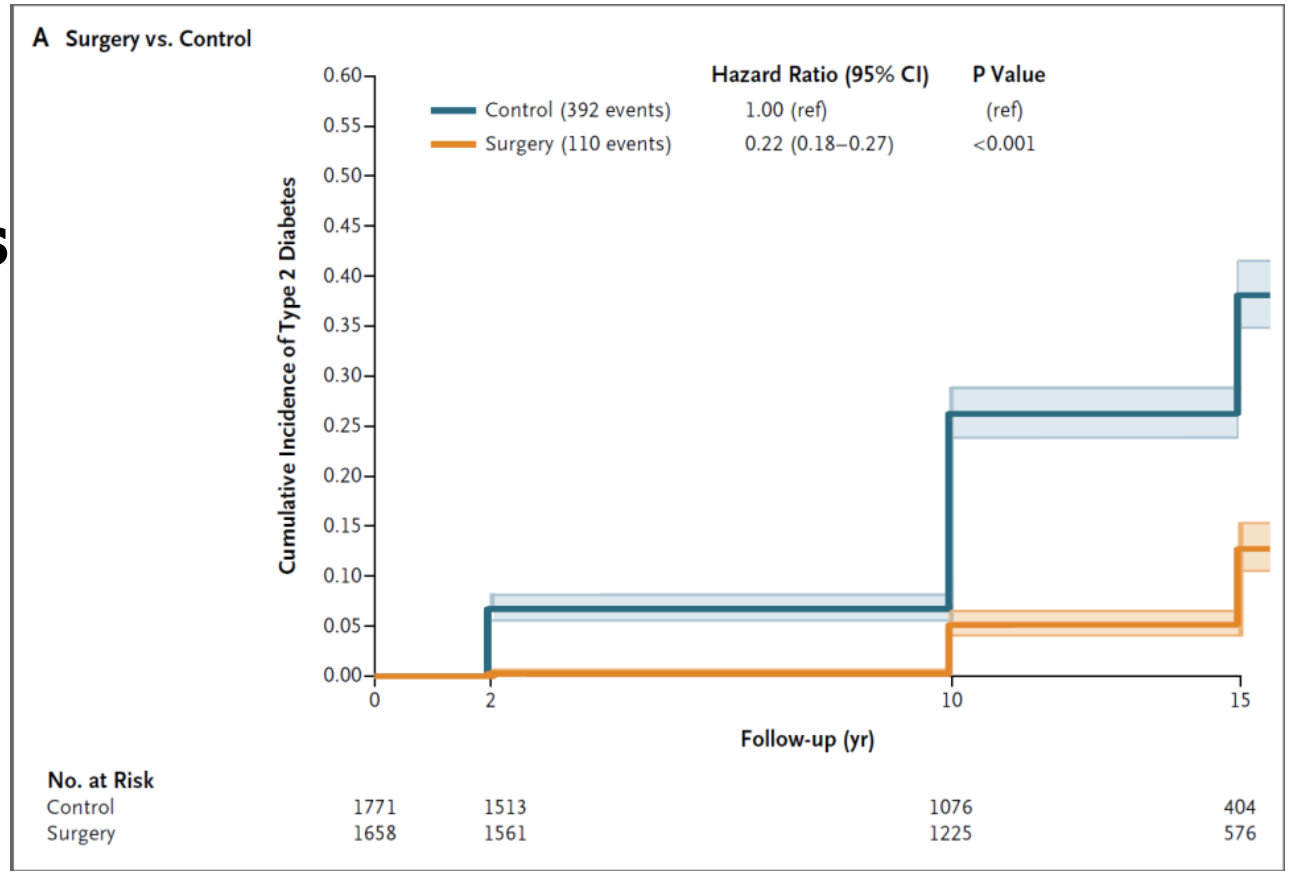
Images facilitate understanding risk reduction

https://asmbs.org › escape-diabetes › risk-calculator

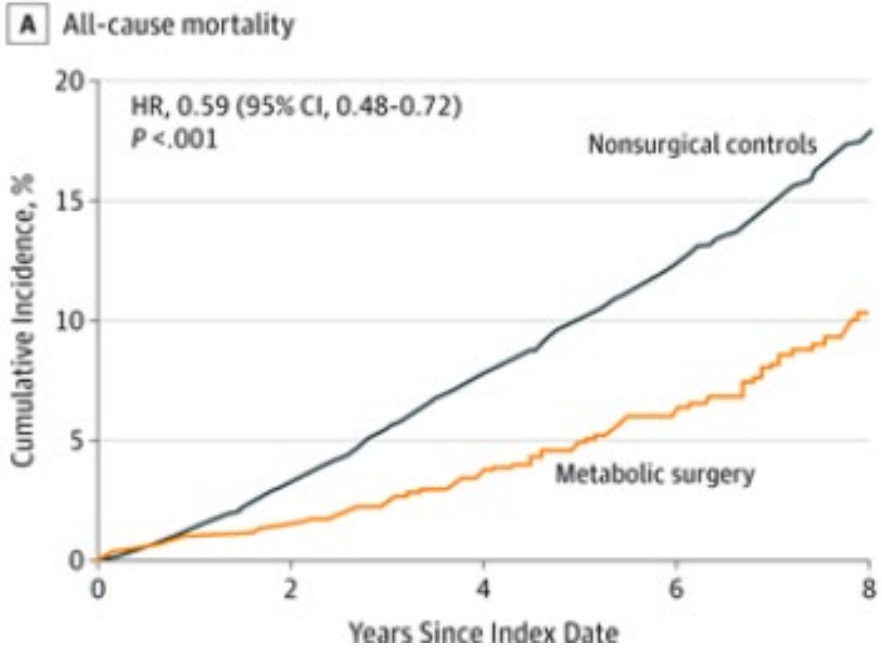
SOSS: Bariatric Surgery as Prevention of Type 2 Diabetes

SOS study: non-randomized/prospective/ controlled intervention trial comparing long term effects of bariatric surgery with usual care

- **Sept 1987-2001 accrual: 2010 pts surgery, 2037 matched controls**
- **Current study: 1658 surgery, 1771 controls without diabetes**



Carlsson et al Bariatric Surgery and Prevention of Type 2 Diabetes in Swedish Obese Subjects NEJM Vol 367 Aug 2012

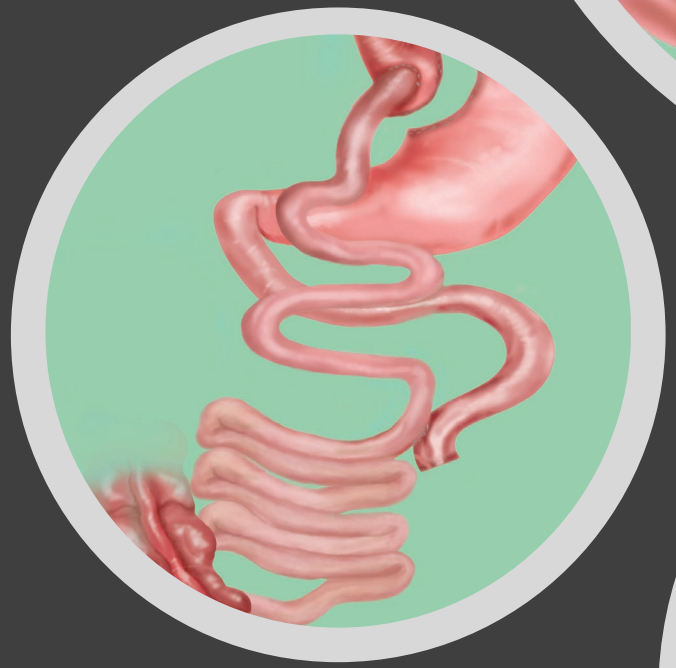


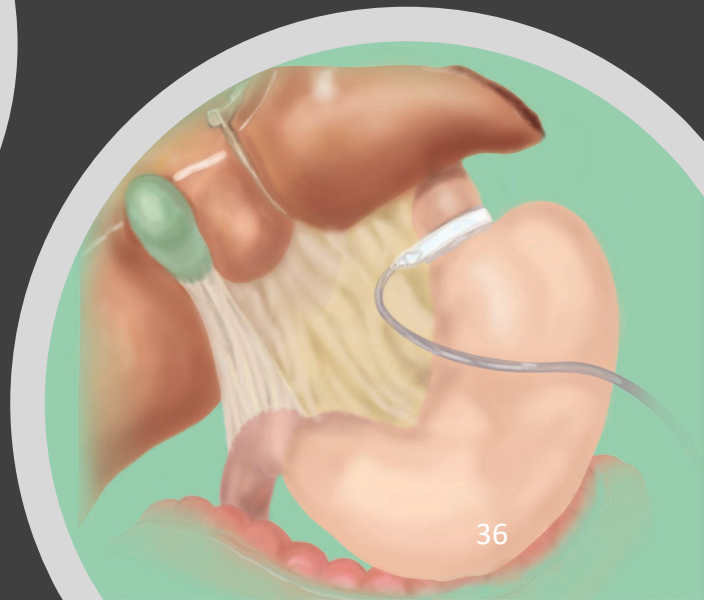
In this retrospective cohort study of 13 722 patients (including 2287 patients who underwent metabolic surgery and 11 435 matched controls), metabolic surgery was significantly associated with a lower risk of major adverse cardiovascular events (hazard ratio, 0.61).

Association of Metabolic Surgery With Major Adverse Cardiovascular Outcomes in Patients With Type 2 Diabetes and Obesity
JAMA. Published online September 02, 2019. doi:10.1001/jama.2019.14231

Surgical Procedures You Need to Know

- Sleeve Gastrectomy
- Gastric Bypass
- Adjustable Gastric Band





Royal Alexandra HOSPITAL FOUNDATION

CASES Centre for Advancement of Surgical Education & Simulation

Indications for Bariatric Surgery

NIH Recommendations

Gastrointestinal Surgery for Severe Obesity. NIH Consensus Statement Online 1991 Mar;9(1):1-20

Patients whose *BMI exceeds 40* are potential candidates for surgery if they strongly desire substantial weight loss because obesity severely impairs the quality of their lives. They must clearly and realistically understand how their lives may change after operation.

In certain instances less severely obese patients (*BMI's between 35 and 40*) also may be considered for surgery. Included in this category are patients with *high-risk co-morbid conditions* such as life-threatening cardiopulmonary problems

- **severe sleep apnea**
- **severe diabetes mellitus**
- ***physical* problems interfering with lifestyle**
- **(e.g., joint disease treatable but for the obesity, or body size problems precluding or severely interfering with employment, family function, and ambulation)**

Evolution of Indications for Surgery

- **Type 2 DM: BMI < 35kg/m^2**
- **Ethnicity: Asian, first nations, middle eastern suggests greater susceptibility to comorbid disease (Type 2 DM) at lower body weigtht**
  - **Lower BMI threshold by 2.5-5 kg/m^2**

Mechanisms of Action

"Surgical alteration in gastrointestinal anatomy that leads to early changes in *metabolism and gut physiology"*

- **Reduced hunger hormones and increased satiety hormones**
- **Impact on metabolic 'set point'**
- **Impact on microbiome**

Metabolic Change over Time

- **Significant reduction in Basal Metabolic rate along with other factors impacting total energy expenditure**
- **1-2% per decade after age 20, then after age 40 accelerates to as much as 10% per decade**

- **Impact on interpretation of weight gain following weight loss surgery in the aging patient**

Early Complications

https://riskcalculator.facs.org/bariatric/

- **Post operative internal bleeding: 0.5-1.0%**
- **Post operative leak from staple line/anastomosis: 0.5-1.0%**
- **Wound seroma/infection: 5%**
- **Thromboembolic disease: 0.5-1.0%**
- **Anastomotic ulcer/stricture: 1.0%**

Late Complications/Side Effects

https://riskcalculator.facs.org/bariatric/

- **Sleeve gastrectomy:**
  - **Reflux syndrome (mixed acidic, alkaline reflux), 5%**
  - **Post operative surveillance gastroscopy**

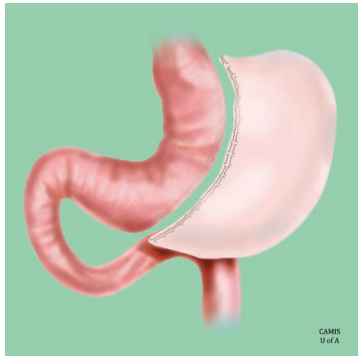
- **Gastric bypass:**
  - **Ulcer/stricture of gastrojejunostomy , 5%**
  - **Internal hernia (small bowel volvulus/obstruction), 0.5%**
  - **Dumping syndrome**
  - **Iron deficiency, vitamin/trace element deficiencies**

- **Excess abdominal/truncal extremity skin: 50%**

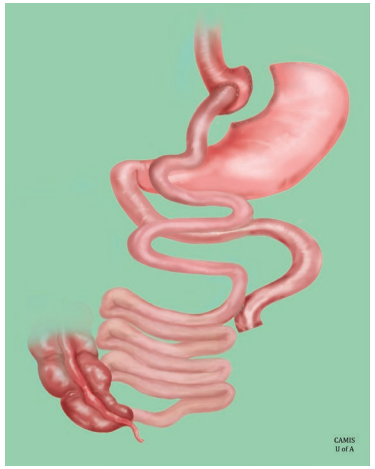
Choosing Wisely: Bypass vs Sleeve?

- **Consider: age, BMI, reflux, diabetes, GI disease/surgery, patient preferences, weight loss goals, reversibilty**

- **Sleeve gastrectomy**
  - **Increased age**
  - **No GERD/Barrett's**
  - **Hx of GI Dx/Sx**



- **Gastric bypass:**
  - **Decreased age**
  - **Type 2 DM**
  - **Reversible**



How to Refer

- **Alberta Health Services: referral form**
  - ***https://www.albertahealthservices.ca/frm-18205.pdf***

- **Consultation with physician/surgeon for complex cases**
- **Arya Sharma**
- **Ren Modi**
- **Sabrina Kwon**
- **Sarah Chapelsky**
- **Sarah Cawsey**
- **Dan Birch**
- **Shahzeer Karmali**
- **Aliyah Kanji**
- **Noah Switzer**

Where to Refer

- **Primary clinic: primary management of obesity and comorbid disease**

- **Revisional clinic: management of patients who have had surgery out of province, country or legacy procedures**

ASMBS MBSAQIP

The American College of Surgeons (ACS) and the American Society for Metabolic and Bariatric Surgery (ASMBS) combined their respective national bariatric surgery accreditation programs into a single unified program to achieve one national accreditation standard for bariatric surgery centers, the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP®).

MBSAQIP works to advance safe, high-quality care for bariatric surgical patients through the accreditation of bariatric surgical centers. A bariatric surgical center achieves accreditation following a rigorous review process during which it proves that it can maintain certain physical resources, human resources, and standards of practice. All accredited centers report their outcomes to the MBSAQIP database

Currently, there are more than 800 MBSAQIP-accredited centers in the United States and Canada, and more than 200,000 bariatric cases are captured annually in the MBSAQIP Registry. The program is celebrating its five-year anniversary in 2019.

THANK YOU

https://asmbs.org/patients?/treat-your-obesity

https://riskcalculator.facs.org/bariatric/

https://asmbs.org › escape-diabetes › risk-calculator

https://www.albertahealthservices.ca/frm-18205.pdf