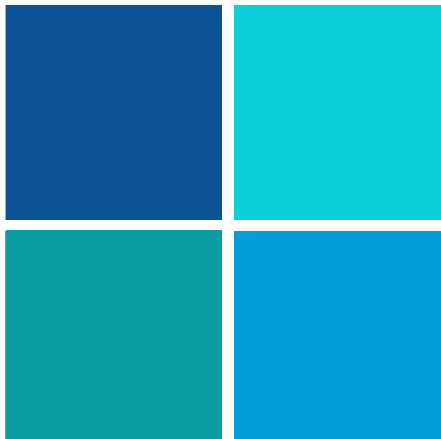




# Weight Loss Surgery Review



Patrick Yau, MD, FRCS(C)

Bariatric and General Surgeon



## Outline

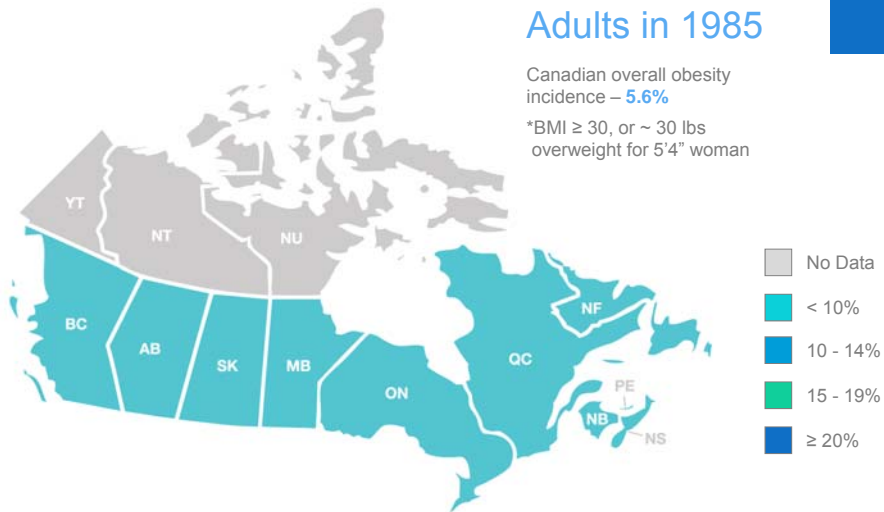
- Obesity trends over past 20 years
- Nonsurgical options
- Surgical management

## + Obesity in Canada: An Epidemic

### Adults in 1985

Canadian overall obesity incidence – **5.6%**

\*BMI ≥ 30, or ~ 30 lbs overweight for 5'4" woman



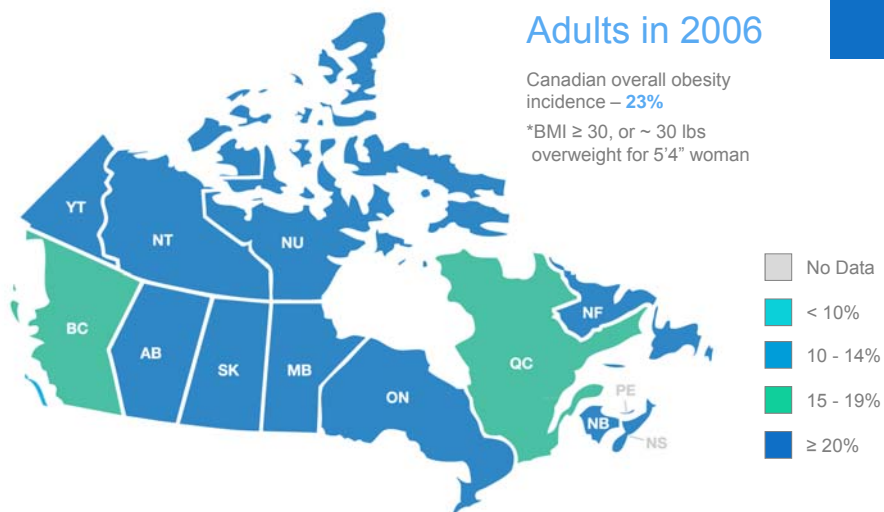
Source: Katzmarzyk PT, Can Med Assoc J 2002;166:1039-1040.

## + Obesity in Canada: An Epidemic

### Adults in 2006

Canadian overall obesity incidence – **23%**

\*BMI ≥ 30, or ~ 30 lbs overweight for 5'4" woman



Data from: Statistics Canada



## Mortality

Death rates increase at least 200% for men and women who are significantly obese more than 50 pounds.



## Cost of Obesity

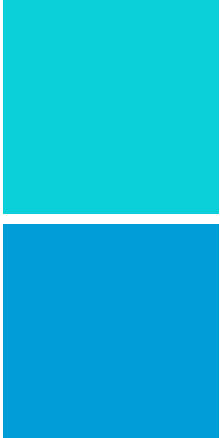
- In 2005, obesity related chronic conditions accounted for \$4.3 billion in costs in Canada.
- If left unchecked, financial burden of diabetes is estimated to be \$17 billion by 2020.

**+**

# Portion Distortion

## The Changes in Portion Sizes Over 20 Years

National Heart, Lung, and Blood Institute  
Obesity Education Initiative



**+**

# Portion Distortion Quiz

## Pepperoni Pizza

**20 Years Ago**  
**500** calories

**Today**  
How many calories are in two large slices of today's pizza?



**+**  
**Portion  
 Distortion  
 Quiz**  
 Pepperoni Pizza

**20 Years Ago**  
**500** calories

**Today**  
**850** calories

**Difference:**  
**350** calories



**+**  
**Portion  
 Distortion  
 Quiz**  
 Pepperoni Pizza

**Calories In =  
 Calories Out**

- How long will you have to play golf (while walking and carrying your clubs) in order to burn those extra 350 calories?\*
- If you place golf (while walking and carrying your clubs) for **1 hour** you will burn approximately **350 calories**.\*

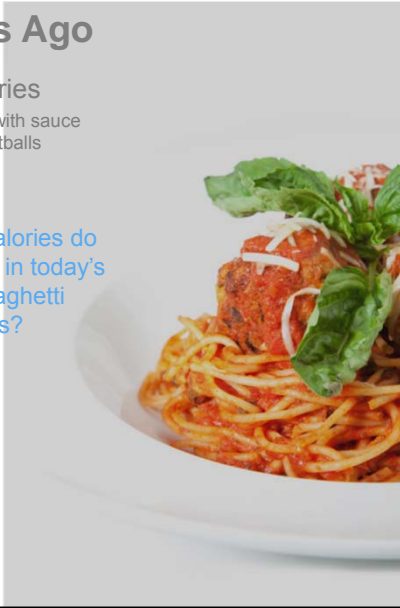


\*Based on 160 pound person

**+**  
**Portion Distortion Quiz**  
**Spaghetti and Meatballs**

**20 Years Ago**  
**500** calories  
1 cup spaghetti with sauce and 3 small meatballs

**Today**  
How many calories do you think are in today's portion of spaghetti and meatballs?



**+**  
**Portion Distortion Quiz**  
**Spaghetti and Meatballs**

**20 Years Ago**  
**500** calories  
1 cup spaghetti with sauce and 3 small meatballs

**Today**  
**1,025** calories  
2 cups spaghetti with sauce and 3 large meatballs

**Difference:**  
**525** calories



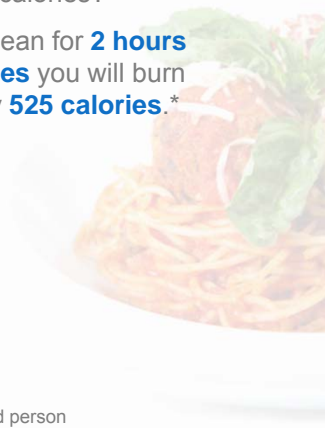


## Portion Distortion Quiz

Spaghetti  
and Meatballs

### Calories In = Calories Out

- How long will you have to houseclean in order to burn the extra 525 calories?\*
- If you houseclean for **2 hours and 35 minutes** you will burn approximately **525 calories**.\*



\*Based on 130 pound person



## Portion Distortion Quiz

Turkey Sandwich

### 20 Years Ago

**320** calories

### Today

How many calories  
are in today's turkey  
sandwich?





## Portion Distortion Quiz

Turkey Sandwich

20 Years Ago

**320** calories

Today

**820** calories

Difference:

**500** calories



## Portion Distortion Quiz

Turkey Sandwich

Calories In =  
Calories Out

- How long will you have to ride a bike in order to burn those extra calories?\*
- If you ride a bike for **1 hour and 25 minutes**, you will burn approximately **500 calories**.\*




\*Based on 160 pound person



**+**  
Portion  
Distortion  
Quiz  
Muffin

**20 Years Ago**  
**210** calories  
1.5 ounces

**Today**  
How many calories  
are in today's muffin?



**+**  
Portion  
Distortion  
Quiz  
Muffin

**20 Years Ago**  
**210** calories  
1.5 ounces

**Today**  
**500** calories  
4 ounces

**Difference:**  
**290** calories





## Portion Distortion Quiz

### Muffin

## Calories In = Calories Out

- How long will you have to vacuum in order to burn these extra 290 calories?\*
- If you vacuum for **1 hour and 30 minutes** you will burn approximately **290 calories**



\*Based on 130 pound person



## Treatment Options

### Lifestyle Modification

- A. Diet and exercise
- B. Anti-obesity medications
- C. Weight loss surgery



1. Dixon et al. Diabetes Care. 2002.  
2. O'Brien et al. Obes Surg. 2006.  
3. Fisher et al. Amer J Surgery. 2002.  
4. Wierzbicki, A. Int J Clin Pract. 2006



## Weight Loss Surgery

Bariatric surgery is highly effective in achieving sustained weight loss and resolving comorbidities.<sup>2</sup>

Canadian Clinical Practice Guidelines<sup>1</sup> recommend bariatric surgery for patients with:

- BMI  $\geq$  35 with serious comorbidities
  - OSA, GERD, DM type II, HTN
- BMI  $\geq$  40



**Severely Obese**  
(BMI 35 to 39)



**Morbidly Obese**  
(BMI 40 or more)

1. 2006 Canadian Clinical Practice Guidelines on the Management and Prevention of Obesity in Adults and Children. CMAJ 2007;176(8):1-117.  
2. O'Brien PE, McPhail T, Chaston TB, Dixon JB. Systematic review of medium-term weight loss after bariatric operations. Obes Surg. 2006;16:1032-1040.

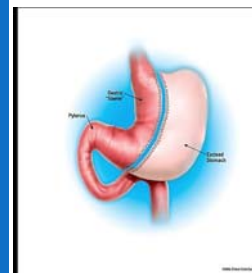
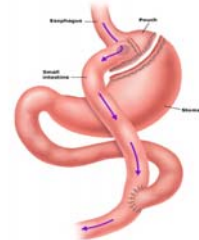


## Weight Loss Surgery Options

A. RNY

B. Sleeve

C. Gastric Band



1. Dixon et al. Diabetes Care. 2002.  
2. O'Brien et al. Obes Surg. 2006.  
3. Falher et al. Amer J Surgery. 2002.  
4. Wierzbicki, A. Int J Clin Pract. 2006

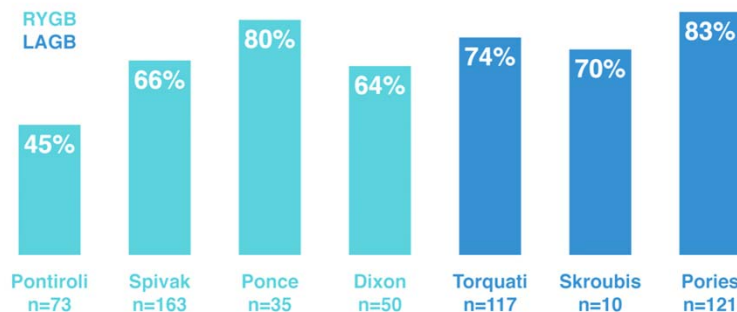
## + Comorbidities: Impact of Weight Loss on Risk Factors\*

	~5% Weight Loss	5% to 10% Weight Loss
Blood Sugar <sup>1</sup>	↓	↓
Blood Pressure <sup>2</sup>	↓	↓
Total Cholesterol <sup>3</sup>	↓	↓
HDL Cholesterol <sup>3</sup>	↑	↑
Triglycerides		↓

1. Wing et al. Arch Intern Med. 1987.  
2. Flechtner-Mors et al. Obes Res. 2000  
3. Ditschuneil et al. Eur J Clin Nutr. 2002. \*Diet restricted

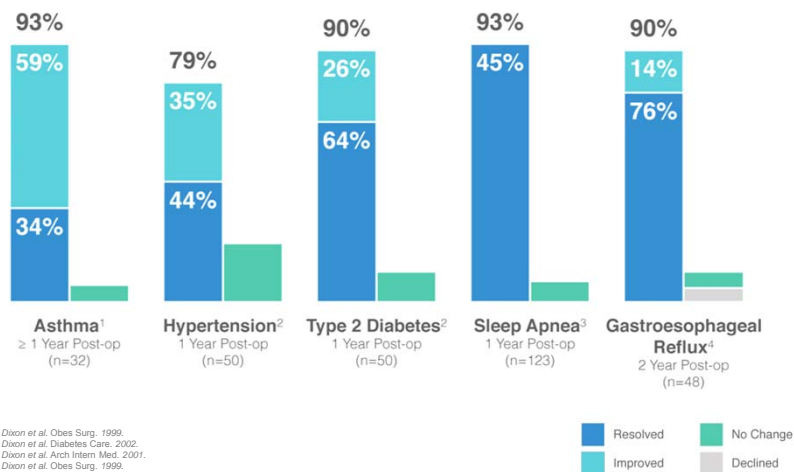
## + GB and RYGB in Diabetic Patients

Improvement or Remission of Diabetes



1. Pontiroli AE, Follì F, Paganelli M, et al. Laparoscopic gastric banding prevents type 2 diabetes and arterial hypertension and induces their remission in morbid obesity: a 4-year case-controlled study. Diabetes Care. 2005;28:2703-2709. 2. Spivak H, Hewitt MF, Onni A, Hall EE. Weight loss and improvement of obesity-related illness in 500 U.S. patients following laparoscopic adjustable gastric banding procedure. Am J Surg. 2005;189:27-32. 3. Ponce J, Haynes D, Paynter S, et al. Effect of Lap-Band®-induced weight loss on type 2 diabetes mellitus and hypertension. Obes Surg. 2004;14:1335-1342. 4. Dixon JB, O'Brien PE. Health outcomes of severely obese type 2 diabetic subjects 1 year after laparoscopic adjustable gastric banding. Diabetes Care. 2002;25:358-363. 5. Torquati A, Lutfi R, Abumrad N, Richards WO. Is Roux-en-Y gastric bypass surgery the most effective treatment for type 2 diabetes mellitus in morbidly obese patients? J Gastrointest Surg. 2005;9:1112-1116. 6. Skroubis G, Anesidis S, Kehagias I, Mead N, Vagenas K, Kalfarentzos F. Roux-en-Y gastric bypass versus a variant of biliopancreatic diversion in a non-supernobese population: prospective comparison of the efficacy and the incidence of metabolic deficiencies. Obes Surg. 2006;16:488-495. 7. Pories WJ, Swanson MS, MacDonald KG, et al. Who would have thought it? An operation proves to be the most effective therapy for adult-onset diabetes mellitus.

## + Substantial Reduction in Comorbidities with Gastric Banding



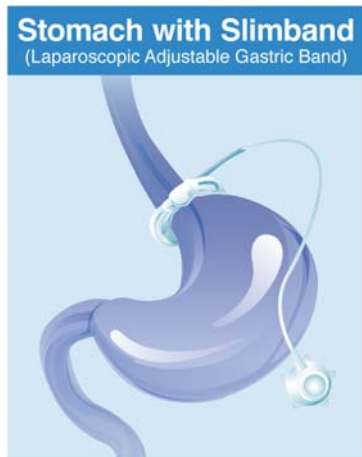
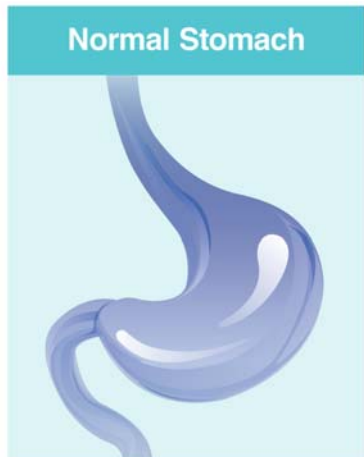
## + Safety: Laparoscopic Adjustable Gastric Banding\* vs Gastric Bypass Surgery

LAGB is safer than gastric bypass surgery

Categories	LAGB	Gastric Bypass
Total Complications <sup>†1</sup>	9% (n= 480)	23% (n= 235)
Major Complications <sup>†1</sup>	0.2% (n= 480)	2.1% (n= 235)
Postsurgical Mortality Rate <sup>2</sup>	0.05% (n= 5780)	0.5% (n= 9258)

<sup>\*</sup>Includes LAP-BAND® System and other adjustable banding systems  
<sup>†</sup>Published complication rates vary depending upon the institution and how the surgeon diagnoses and defines a particular complication.  
<sup>1</sup> Farrah MS, Laker S, Weiner M, Hagsheyedjradji O, Rere CJ. Objective comparison of complications resulting from laparoscopic bariatric procedures. J Am Coll Surg. 2006;202(2):252-261.  
<sup>2</sup> Chapman AE, Kiroff G, Game P, et al. Laparoscopic adjustable gastric banding in the treatment of obesity: a systematic literature review. Surgery. 2004;135(3):326-351.

**+** Slimband: “Slimspot”  
Laparoscopic Adjustable Gastric Band



# Slimband

Working on the Brain

CONTROL

Programs designed to make lifestyle modification easier





## National Program

Designed to offer full support to patients nationwide

Slimband®

Slimband has support locations across Canada



## Access to Bariatric Surgery

- ~2% of obese individuals undergo bariatric surgery.
- Either Gastric Bypass or Laparoscopic Adjustable Gastric Band
- Gastric banding surgery is covered in Quebec, Alberta but numbers are limited





## Access to Bariatric Surgery

- However, some Canadian insurance companies have provided coverage.
- Value of LAGB surgery has been recognized in a number of HTA reviews:
  - Blue Cross Blue Shield Association (Feb. 07)
  - CADTH (Sept. 07)
  - Ontario Health Technology Advisory Committee (2005)



## Weight Loss Surgery Review

Thank you!

Patrick Yau, MD, FRCS(C)  
Bariatric and General Surgeon



## + Success Stories

### Andy lost 65 lbs

*"I used to hate smiling, and it was no fun being on air at 252 pounds. Now that I've lost 65 pounds, I actually love smiling and being on camera. My body isn't a problem anymore - there's nothing holding me back."*



Andy Then	Andy Now
252 pounds	187 pounds
Insecure on camera	Confident
Tired	Energetic, spontaneous

Slimband®

## + Success Stories

### Stephanie lost 115 lbs

*"Since losing 115 pounds with Slimband, I've become the mom I've always wanted to be. I'm up before my alarm goes off; I can play catch with my boys, meet with clients, and still have energy after that!"*



Stephanie Then	Stephanie Now
264 pounds	149 pounds
Unable to be active with children	Enough energy to be mom and self-employed
Obsessed with food	In control of eating habits

Slimband®

## + Success Stories

### Chelsea lost 145 lbs

*"With Slimband there's no more waking up in the morning and thinking 'I've failed.' Now it's, 'what can I do today?' I'm so happy - Slimband has given me a life."*



Chelsea Then	Chelsea Now
275 pounds	130 pounds
Frustrated	Unstoppable
Missing life	Seizing the moment

Slimband®

## + Success Stories

### Perpetua lost 125 lbs

*"Before Slimband I couldn't stick to anything, my stomach was winning every battle. Since Slimband my brain wins every battle. Best of all? I feel absolutely amazing; I'm so happy with the way I look now."*



Perpetua Then	Perpetua Now
258 pounds	133 pounds
Short of breath	Breathing easily
Lethargic	Energized

Slimband®

## + Success Stories

### Serge lost 126 lbs

*"I finally found something that helped me lose weight and keep it off."*



Frank Then	Frank Now
321 pounds	195 pounds
Watching TV	Living life
Hungry	Satiated

Slimband®