Did you know that...

Obesity is a growing epidemic.

- In 2010 34% of U.S. adults, over ¼ of the population, were obese.¹

- In the U.S. from 2000 to 2005, the prevalence of obesity increased by 24%, severe obesity by 50% and super obesity by 75%.²

- Obesity is fast approaching tobacco as the top underlying preventable cause of death in the United States.⁵⁹

There are significant consequences from being obese.

- Obesity is often accompanied by type 2 diabetes (T2DM), hypertension, coronary heart disease and sleep apnea.³

- A severely obese person is nine times more likely to die from an obesity-related disease than from surgery.⁵⁷, ⁵⁸
Bariatric and metabolic surgery is the most effective therapy available for severe obesity.

• According to the NIH Consensus Statement of 2005, surgery is the only way to obtain consistent, permanent weight loss for severely obese patients.¹¹

• Bariatric and metabolic surgery has shown significant obesity-related disease improvements.³³⁻⁴⁵
  - 45% to 68% improvement or resolution of type 2 diabetes
  - 42% to 62% resolution of hypertension
  - 41% resolution of osteoarthritis or degenerative joint disease
  - 45% to 76% resolution of sleep apnea

• Bariatric surgery provides the greatest amount of excess weight loss with:
  - A greater than 45% excess weight loss one year post surgery compared to 10% or less for lifestyle and/or pharmacological treatments³⁰⁻³²
  - Average weight loss from baseline bariatric surgery patients at 20 kilograms over 10 years versus less than 1 kilogram for the control⁸
Obesity defined

Obesity is defined by an abnormal or excessive body fat accumulation and identified by a body mass index (BMI) of 30 or higher.\textsuperscript{4, 65}

| NIH Body Mass Index Classifications\textsuperscript{5} |
|----------------------------------|----------------------------------|
| 25 to 29.9 BMI                  | Overweight                       |
| 30 or higher BMI                | Obese Class 1                    |
| 35 or higher BMI                | Obese Class 2                    |
| 40 or higher BMI                | Severely obese                   |

Obesity and obesity-related diseases are a leading cause of disability and death, accounting for high healthcare utilization and high healthcare costs in the United States. Obesity is a complex, multifactorial metabolic disease characterized by a dysfunction of the gut endocrine system.\textsuperscript{4, 9}

What obesity looks like

With such a large percentage of the population overweight or obese, many people don’t realize that they are in the overweight or obese categories.

The pictures below show what an average 5’4” woman would look like at various BMI categories.\textsuperscript{6, 11}
Body mass index (BMI)

The body mass index chart helps to identify an individual’s likely BMI.

Obesity has been recognized as a serious health threat by health organizations such as the Centers for Disease Control (CDC), National Institute of Health (NIH) and many key medical professional societies such as the American Association of Clinical Endocrinologists (AACE) and the American Heart Association. The chart helps to identify an individual’s likely BMI based on their height and weight.
Causes of obesity

The metabolic “set-point”

There are several factors that play a role in an individual becoming obese. A few important ones are an individual’s genetic makeup, the environment and behavioral choices.

Body weight and fat levels are regulated by a complex system of signals in the body. These signals control appetite, digestion, energy balance and metabolism to keep body weight and fat at a steady level or “set point.”

New science shows that for some people, their weight-regulating system becomes dysfunctional. Once they gain weight, this weight-regulating dysfunction makes it very difficult to lose weight and/or keep lost weight off. A starvation-type defensive mechanism, involving gut hormones and neuronal signals, is activated to maintain their new, higher weight. This defensive action presents a challenge for obese individuals trying to lose weight or keep lost weight off. Changes in the chemicals and nutrients contained in our foods can affect our brains in ways that increase the amount we eat.

Everyone’s set point is different and an individual’s set point can change over time. It appears that the body regulates fat set points similarly to how it regulates other body functions such as blood glucose, cholesterol and blood pressure.
Why dieting and exercise may not be enough to fight obesity

Because the body works to defend its set point, dieting and exercising are rarely effective in helping people with obesity to achieve and maintain a healthy weight long term. Even for the obese person who is on a diet, the body thinks it’s being starved and its survival instincts kick in. As a result, the body is driven to store energy-rich body fat and can’t lose weight easily.

A landmark Swedish study found that on average, a 200-pound patient fighting obesity with diet and exercise alone would only be able to achieve a sustained weight loss of four pounds over 20 years. 95% of obese people who lose weight with a rigorous weight-loss program will regain the weight (or more) within two to five years. 
Hormones and their role in obesity

Hormones play an important role in controlling weight. Metabolism, appetite and satiety are regulated by hormonal and neuronal signals. In an obese person hormones such as Ghrelin, Leptin and PYY are present in higher or lower levels than normal. When an obese person tries to diet, the body fights this by sending hormonal and neuronal signals to resist the effort.\textsuperscript{9,10}

According to an *Annual Review of Medicine* article published in 2003, researchers found that reduced-caloric diets and subsequent weight loss triggered a cascade of hormones that encouraged the body to regain weight by increasing the individual’s appetite (Ghrelin), decreasing satiety (PYY/CCK) and decreasing energy expenditure (Leptin/Melanocortin).\textsuperscript{10} Hormonal levels still had not returned to pre-diet levels even 12 months after dieting.\textsuperscript{10}
Obesity impacts nearly every organ in the body. Here are some of the more prevalent obesity-related diseases.

- Diabetes
- Hypertension
- Osteoarthritis or joint disease
- Obstructive sleep apnea
Obesity-related diseases

Our bodies pay a high price when it comes to obesity. There are significant diseases associated with excess weight. Almost every organ in the body is affected by excess weight. Here are some examples:

• The link between being overweight and developing T2DM has long been established. 85% of people with T2DM are overweight. 80% are obese.\(^8\) As obesity rates have increased, so too have the number of newly diagnosed cases of T2DM in the U.S. The diagnosis rate of T2DM has nearly doubled from 4.8 per 1,000 in 1997 to 9.1 per 1,000 in 2007.\(^13\)

• Hypertension is six times more likely in obese subjects than in lean men and women.\(^14\)

• Obesity is considered a major risk factor for the development and progression of obstructive sleep apnea (OSA). The prevalence of OSA in obese and severely obese adults is nearly twice that of the total adult population and it is estimated that OSA is present in over 50% of obese patients with a BMI higher than 40.\(^15,16\)

• Obesity has been associated with both osteoarthritis and degenerative joint disease. One study indicated that obese female adults are up to 4 times more likely to develop osteoarthritis of the knee compared to non-obese adults.\(^36\)
As a patient’s BMI rises, so does the prevalence of obesity-related diseases. For example, the incidence of diabetes in patients with a BMI of less than 25 is only 4%. With a BMI of greater than 40, the incidence of diabetes is 22%.

Obesity-related diseases increase as BMI rises.

**Prevalence of significant obesity-related diseases by weight**

![Graph showing prevalence of diseases by BMI](image-url)
The cost of obesity

These maps depict the percentage of people that are obese, by state, for the U.S. in 2010, compared to 1990. In 2010, every single state had at least 20% of its population classified as obese, compared to zero in 1990.1 Over ⅓ or 35.7% of the U.S. population is now classified as obese.1

Obesity doesn’t just impact individuals — it is a significant national epidemic with huge national implications.

The economic impact of obesity is significant. Every year, an estimated $168 billion is spent on the medical costs of obesity.18 Here are a few other obesity-related economic facts:

• There is 50% higher per-capita medical spending on obese patients than for normal-weight individuals.18

• For obese people, there is 80% more spending on prescription drugs than for normal-weight individuals.19

• 9.1% of increased annual medical spending was associated with obesity.19
Obesity has serious consequences

If an obese individual is unable to successfully reduce his or her weight in a significant way, there are serious consequences that are evident in many of the body’s systems.

- Life expectancy decreases as BMI increases.\textsuperscript{61}

- Obesity has been directly linked to the world’s leading cause of death, cardiovascular disease, and to one of the greatest public health threats of the 21st century — T2DM.\textsuperscript{20}

Being overweight or obese is among the top three leading causes of preventable death. Obesity was associated with 112,000 additional deaths in 2000.\textsuperscript{62}
Obesity treatment options
Treatments for obesity and obesity-related conditions

The current treatment recommendations for obesity are based on the patient’s BMI and the presence of one or more obesity-related diseases. Generally, as obesity progresses, the recommended interventions become more aggressive.

The first treatment prescribed is usually lifestyle modification. This can involve diet, increased physical activity and/or behavior modifications. Next, pharmacotherapy is prescribed — a weight-loss drug and/or a disease-specific treatment such as insulin for T2DM.

Bariatric and metabolic surgery has been identified by the NIH as for individuals with a BMI of 35 or greater with obesity-related diseases or a BMI of 40 or greater.21
Lifestyle modifications

Lifestyle modifications are the foundation of any treatment plan. In general, the following are suggested components:

- Caloric intake should be reduced by 500 to 1,000 calories per day from the current level.
- Daily food logs should be kept for 4–6 weeks.
- The patient should weigh-in weekly.
- There should be increased physical activity.
- Fluid intake should be largely water.
- Behavior modification to better deal with emotional or stress signals is helpful.
Lifestyle modification results

A *JAMA* article in 2005 reported that the average weight loss with lifestyle modification is less than 3.5 kilograms (7.7 lbs) per year.\(^{22}\)

Comparing some of the commonly known diets

<table>
<thead>
<tr>
<th>Type of Diet</th>
<th>Completing One Year</th>
<th>Weight Loss at One Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atkins(^a)</td>
<td>21/40 (53%)</td>
<td>2.1kg (4 lbs)</td>
</tr>
<tr>
<td>Zone</td>
<td>26/40 (65%)</td>
<td>3.2kg (7 lbs)</td>
</tr>
<tr>
<td>Weight Watchers(^a)</td>
<td>26/40 (65%)</td>
<td>3.0kg (6 lbs)</td>
</tr>
<tr>
<td>Ornish</td>
<td>20/40 (50%)</td>
<td>3.3kg (7 lbs)</td>
</tr>
</tbody>
</table>

In the Swedish Obesity Study, as presented in the *NEJM* 2012, after 15 years patients lost 1% with diet and lifestyle changes only.\(^8\)
Pharmacotherapy options

Pharmacotherapy, or drugs approved by the FDA for long-term treatment of obesity and obesity-related diseases, can be a helpful adjunct for the treatment of obesity in some patients. These drugs should be used only in the context of a treatment program that includes the elements described previously: diet, physical activity and behavior therapy.

If lifestyle modification changes do not promote weight loss after six months, drugs may be considered.

There are limited FDA-approved weight-loss drugs on the market. The five currently available are alli®, Xenical®, Adipex-P®, Qsymia™ and Belviq®. The last two were approved by the FDA in 2012.
Pharmacotherapy results

The decision to add a drug to an obesity-treatment program should be made after consideration of all potential risks and benefits, and only after all lifestyle options have been exhausted.

Outlined below is a summary of the mechanism for action for each of these drugs, average weight loss and concerns.

<table>
<thead>
<tr>
<th>Drug</th>
<th>Mechanism of Action</th>
<th>Dosage</th>
<th>Average Weight Loss</th>
<th>Concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xenical (orlistat)24</td>
<td>Blocks fat absorption</td>
<td>120mg TID</td>
<td>5.7 lbs at 1 year</td>
<td>GI symptoms, risk of liver damage</td>
</tr>
<tr>
<td>alli (orlistat)25</td>
<td>Blocks fat absorption</td>
<td>60mg TID</td>
<td>5–10 lbs at 6 months</td>
<td>GI symptoms, risk of liver damage</td>
</tr>
<tr>
<td>Adipex-P (phentermine)26</td>
<td>Induces satiety</td>
<td>15–375mg QD</td>
<td>7.92 lbs at 1 year</td>
<td>Monitor blood pressure</td>
</tr>
<tr>
<td>Qsymia (phentermine/topiramate extended release)63</td>
<td>Reduced appetite &amp; possible satiety enhancement</td>
<td>3.75mg/23mg QD for 14 days, then increase to 75mg/46mg QD. Dose may be titrated higher if WL not achieved after 12 weeks</td>
<td>5.1%–10.9% of body weight at 1 year</td>
<td>Monitor heart rate</td>
</tr>
<tr>
<td>Belviq (lorcaserin hydrochloride)64</td>
<td>Reduced appetite &amp; satiety sooner</td>
<td>10mg BID</td>
<td>5.8% of body weight at 1 year</td>
<td>Possible risk of cardiac event</td>
</tr>
</tbody>
</table>
Bariatric and metabolic surgery

Why it works

For a person with obesity to achieve significant long-term weight loss, the body’s weight-regulatory system (or metabolic health) must be reset so that the body will stop storing excess fat. Surgical intervention is the most effective treatment to accomplish this to date. Obesity-related health conditions have been resolved in up to 80% of patients.59

Bariatric and metabolic surgery helps reset the body’s ability to effectively manage weight by altering the complex relationship the body has with food and its metabolism. New research indicates that bariatric and metabolic surgery has metabolic impacts that enable a new, lower set point, allowing the body to return to a lower body-fat level.

By altering the anatomy of the stomach and/or intestine, bariatric and metabolic surgery affects hormonal signals, resulting in decreased appetite, increased feelings of fullness, increased metabolism and healthier food preferences. These positive changes allow the body to lose weight without the internal fight to return to the higher set point.
Bariatric and metabolic surgery procedures

There are several bariatric and metabolic surgical procedures to be considered. No single procedure is right for all patients. The selection of a specific procedure is a decision best left to the patient and physician. The three main bariatric procedures performed are:

- Roux-en-Y Gastric Bypass
- Sleeve Gastrectomy
- Laparoscopic Adjustable Gastric Banding

Bariatric and metabolic surgery provides medically significant sustained weight loss. All procedures involve alteration of the GI tract, which affects the hormonal and neuronal signaling that control weight regulation.

Late complications are uncommon.
Roux-en-Y Gastric Bypass

The most frequently performed bariatric procedure in the U.S., Roux-en-Y gastric bypass enables weight loss and obesity-related disease improvement through a combination of restriction and changes to the gut-signaling anatomy.

With this procedure, the surgeon creates a stomach pouch that significantly reduces overall stomach size and the amount of food it can hold. The pouch is surgically attached to the middle of the small intestine, thereby bypassing the rest of the stomach and the upper portion of the small intestine (duodenum). The smaller stomach size helps patients feel full more quickly, which reduces food intake. Bypassing part of the intestine limits calorie absorption.

The gastric bypass procedure produces profound physiological and metabolic changes in many organs as a result of surgical anatomic manipulation.† 29

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† Resolution reflects observations within the confines of the study; EES has no independent data to suggest permanent resolution.
Vertical Sleeve Gastrectomy

Vertical sleeve gastrectomy is a newer procedure with increasing popularity. Vertical sleeve gastrectomy can be the first step before other surgical procedures such as gastric bypass.

As a stand-alone procedure, the surgeon creates a small stomach “sleeve” using a stapling device; the rest of the stomach is removed.

This procedure induces weight loss in part by restricting the amount of food (and therefore calories) that can be eaten without it bypassing the intestines and therefore absorbed. Weight loss and improvement in parameters of metabolic syndrome are connected with the resection of the stomach and subsequent neuro-hormonal changes.¹

¹ Resolution reflects observations within the confines of the study; EES has no independent data to suggest permanent resolution.
Laparoscopic Adjustable Gastric Banding (LAGB)

Laparoscopic Adjustable Gastric Banding can be performed using the Ethicon Endo-Surgery Curved Adjustable Gastric Band.

With this procedure, a soft, adjustable silicone band is wrapped around the upper part of the stomach and closed or locked to create two chambers, an upper and lower stomach, which causes food-passage restriction. The upper stomach will only hold about four ounces of food, limiting food intake. Patients eat less because they feel full faster and longer, and because digestion is slowed.

The level of food-passage restriction can be adjusted by adding to or removing saline solution from the band through a port that is subcutaneously placed.29

† Risks are in addition to the general risks of surgery.
Who is a surgical candidate?

The NIH currently has guidelines for whom to refer to surgery. Additionally, there are some common insurance requirements that should be considered.

Patients must meet the NIH criteria of BMI of greater than or equal to 35 with significant obesity-related diseases or a BMI of 40+.21

Common insurance requirements include:

• Age 18 years or older
• Failed medically supervised weight-loss attempts
• Understands surgery and risks
• Acceptable operative risks (patient and procedure)
• Stable psychological conditions
Bariatric and metabolic surgery results

**Weight-loss results**

According to the NIH Consensus Statement of 2005, surgery is the only way to obtain consistent, permanent weight loss for severely obese patients.21

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Excess Weight Loss: 3 Years</th>
<th>Excess Weight Loss: 5 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diet / Behavior66</td>
<td>(0.1%)*</td>
<td>(1.6%)**</td>
</tr>
<tr>
<td>Drug therapy67</td>
<td>11%*</td>
<td>No data</td>
</tr>
<tr>
<td>Gastric bypass surgery32, 68</td>
<td>62%</td>
<td>93%</td>
</tr>
<tr>
<td>Adjustable gastric banding30, 69</td>
<td>41%</td>
<td>59%</td>
</tr>
<tr>
<td>Sleeve gastrectomy31, 70</td>
<td>66%</td>
<td>60%</td>
</tr>
</tbody>
</table>

In terms of weight loss, bariatric and metabolic surgery has posted strong results.

These results place bariatric surgery as providing significantly stronger excess weight losses when compared to pharmacotherapy and/or lifestyle modifications.30-32

* Average weight loss, 2 years.
** Average weight loss, 10 years.
Values in parentheses indicate weight gain.
Adverse events

Bariatric Surgery Centers of Excellence must report outcomes data to a national registry, thereby providing good data to assess the results of the surgery.

Based on reported procedures to the national registry for a period between June 2007 and September 2009, the percentage of serious events following all 3 types of bariatric surgery was below 2%. The percentage of mortality was less than .25%.

The mortality rate for bariatric and metabolic surgery is lower than for other common procedures such as a laparoscopic cholecystectomy, hip replacement or coronary artery bypass.

While there are risks with any surgery, advances in bariatric surgery over the years and the fact that 90% are performed laparoscopically have reduced the incidence of serious events and/or deaths.
Type 2 diabetes spotlight

The link between obesity and T2DM

It is clear that there is a strong link between T2DM and obesity. Evidence suggests that bariatric and metabolic surgery changes the chemical signals between the stomach, intestine, brain and liver — changing the underlying mechanisms of diabetes.

Recent research from the Cleveland Clinic, called STAMPEDE, showed that gastric bypass and sleeve gastrectomy surgeries were more effective than intensive medical treatment alone in managing uncontrolled T2DM in overweight or obese patients. The authors of the study concluded that:

“Bariatric surgery represents a potentially useful strategy for the management of uncontrolled type II diabetes, capable of completely eliminating the need for diabetes medication in some patients and a marked reduction in need for drug treatment in others”

Findings indicated that in patients who had metabolic and bariatric surgery:

- 77% of diabetes was completely “resolved,” defined as no longer taking diabetes medications.

- 86% of diabetes medications were reduced or no longer used.

- In gastric bypass patients, diabetes medications were no longer needed in nearly 84% of patients, and were substantially reduced or no longer needed in 93%.
Worldwide clinical evidence

Recently there have been a large number of significant clinical findings highlighting the advantages of bariatric and metabolic surgery for the treatment of T2DM compared to other treatment options. Some of these studies are:

• STAMPEDE — Year 1 results published in the *NEJM*, March, 2012. The conclusion was that surgical treatment and medications achieved glycemic control in more patients than medical therapy alone.48

• Mingrone — *NEJM*, April, 2012. The conclusion was that bariatric surgery resulted in better glucose control than did medical therapy.49

• Buchwald — *American Journal of Medicine*, 2009. The conclusion was that T2DM was resolved or improved in 87% of patients following bariatric surgery.50

• Klein — *Obesity*, 2011. The conclusion was that T2DM was resolved or improved in 87% of patients following bariatric surgery.50

• Bolen — *Obesity Surgery*, 2012. The conclusion was that there is a lower proportion and likelihood of having T2DM at 5 years post bariatric surgery.51

• Swedish Obesity Subjects — *NEJM*, 2012. The conclusion is that bariatric surgery appears to be markedly more efficient than usual care in the prevention of T2DM in an obese person.8

• Swedish Obesity Subjects — *NEJM*, 2012. There was an 78% reduction in the risk of developing T2DM following bariatric surgery.8
Post-op care and monitoring

Expectations

• The amount of weight loss and rate of weight loss is dependent on the type of surgery. Weight loss expected from the gastric bypass and sleeve gastrectomy is faster than the gastric band expectation of about 1 to 2 pounds per week.\textsuperscript{52}

• Assessment of inadequate weight loss may require radiological studies as well as an evaluation of plan compliance.

• Follow-up laboratory tests should be regularly performed, including a complete blood count and measurement of iron and B12 levels.\textsuperscript{53}

• Pregnancy is not recommended for at least 12 months.

• Support group attendance is strongly encouraged.

• Medication dosages for obesity-related conditions should be closely monitored. Extended-release medications may need to be changed to regular-release formulations.\textsuperscript{53}

• Oral contraceptives may not be fully absorbed after bariatric and metabolic surgery, potentially decreasing their effect.

• ASA and NSAID products (e.g., ibuprofen, naproxen sodium) should be avoided due to increased risk of ulcers and strictures.

• Patients may need lifelong vitamin and mineral supplements.
Next steps

How to talk about bariatric surgery with your patients

An important early step is to open up the conversation with your patient. Here are some suggested steps:

• Always address your patient’s chief complaints first.
• Open the obesity discussion in a sensitive manner.
• Tools can help open the discussion (BMI).
• Empathy and respect are important.
• Discuss the various treatment options.
• Suggest that the patient attend a seminar.
Complications

Physicians should monitor patients for nausea, vomiting and dehydration. The surgeon should be contacted if any of the following occur:

• The patient is unable to keep down fluids for 24 hours.

• The patient has abdominal pain with nausea or vomiting.

Other potential late complications include those provided below. This list is not exhaustive.

Any surgery — cholecystitis, cholelithiasis, dilated pouch, dysphagia, GERD, incisional hernia malnutrition and vitamin and mineral deficiency.29

Gastric bypass — nutrient deficiency, anastomotic stenosis, leak or fistula, marginal ulcer/gastritis and stenosis, bowel injury or obstruction, nausea/vomiting, internal/incisional hernia and pouch dilation.29

Sleeve gastrectomy — gastric leak, intra-abdominal abscess, pulmonary embolism, delayed gastric emptying, splenic injury, stricture and late choledocholithiasis.28

Gastric banding — gastric perforation, port rotation or leak, band or port-site infection, band obstruction, malposition, nausea/vomiting and band erosion.29
Summary

• Obesity is a disease that is growing in prevalence and should be treated as a medical condition.

• Obesity is characterized by a dysfunctional hormonal signaling system that works to maintain an obese person at a higher weight.

• Effective obesity treatments must affect the weight of the patient as well as rebalance hormonal signals.

• Surgery provides significant weight loss and improves a number of obesity-related diseases.

• Bariatric surgery provides metabolic benefits.

• There are clear referral guidelines for bariatric and metabolic surgery.

• Bariatric and metabolic surgery is the most effective therapy available for severe obesity.

• Bariatric and metabolic surgery is an effective treatment option for obesity-related conditions like T2DM.

• Bariatric and metabolic surgery is able to reduce an obese person’s risk of developing T2DM.
There is a growing consensus favoring bariatric surgery

There is currently a lot of public discussion about the population being overweight, obese or severely obese. With all of the clinical studies that are reporting positive results, many major professional societies are issuing statements in support of bariatric surgery. They include:

“Bariatric surgery should be considered for adults with BMI less than or equal to 35 and T2DM, especially if the diabetes is difficult to control with lifestyle and pharmacologic therapy.”

*The American Diabetes Association (2009)*

“When indicated, surgical intervention leads to significant improvements in decreasing excess weight and comorbidities that can be maintained over time.”

*The American Heart Association (2011)*

“The beneficial effect of surgery on reversal of existing T2DM and prevention of its development has been confirmed in a number of studies.”

*American Association of Clinical Endocrinologists (2011)*
The Endocrine Society recommends that:

“Practitioners consider several factors in recommending surgery for their obese patients with T2DM, including patient’s BMI and age, the number of years of diabetes and the assessment of the patient’s ability to comply with the long-term lifestyle changes that are required to maximize success of surgery and minimize complications.”

“...remission of diabetes, even if temporary, will still lead to a reduction in the progression of secondary complications of diabetes (such as retinopathy, neuropathy and nephropathy), which would be an important outcome of surgery.”

The Endocrine Society (2012)
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53. Still CS. Optimal management of obesity-related co-morbidities pre and post-bariatric surgery. 2010. (Presentation)