2015 Bariatric Surgery Analysis
Gender-Related Differences in Obesity,
Complications and Risks

Including Performance Outcomes for
Bariatric Surgery Excellence Award™ Recipients

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Obesity Is a National Epidemic

Obesity is a major health epidemic that affects all populations regardless of gender or race. According to the Centers for Disease Control and Prevention (CDC), over 2009 – 2012, 1 in 3 (35.3%) American adults were diagnosed as obese. The CDC classifies obesity and measures its prevalence using gradations of body mass index (BMI)—a measure of body fat based on a person’s height and weight.

Obesity affects men and women equally. While there is no statistically significant difference between overall rates of obesity in men and women (34.6% and 35.9% respectively)\(^1\), the proportion of obesity incidence across three CDC BMI grades below skews differently between men and women. Interestingly, the rate of women in the highest category, Grade 3, is nearly double the rate of men in that same category.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1 BMI 30.0-34.9</td>
<td>22.3%</td>
<td>18.5%</td>
</tr>
<tr>
<td>Grade 2 BMI 35.0-39.9</td>
<td>7.9%</td>
<td>9.2%</td>
</tr>
<tr>
<td>Grade 3 BMI ≥ 40</td>
<td>4.4%</td>
<td>8.2%</td>
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Treatment for obesity includes a comprehensive and sensible lifelong plan to reduce calories while getting proper nutrition and increasing physical activity. When diet and exercise programs are not enough to help severely obese people, medication and bariatric surgery may be an option.

Comparing Men and Women Undergoing Bariatric Surgery

Healthgrades explored the rates, and variations in complications and risk factors, as well as the benefits of bariatric surgeries among men and women. These findings lead to interesting questions for both patients and providers to consider when treating obesity and identifying good candidates for bariatric surgery.

More women have bariatric surgery and experience fewer complications

- While the overall obesity rate is fairly equal between men and women, women are undergoing bariatric procedures more frequently than men.
- Men comprise only 18% of bariatric surgery patients, with women leading the patient mix at 82%.
- While men are the minority undergoing these procedures, they are statistically more likely than women to experience a complication (4.7% complication rate in women compared to 6.7% in men).
**Women are having surgery at less severe obesity levels**

Although more women than men have a Grade 3 obesity severity level (BMI $\geq 40$), women are having the surgery at a lower obesity severity level compared to men. Men who undergo bariatric procedures tend to have higher BMIs and, therefore, more severe obesity.

Men who undergo bariatric procedures at higher BMIs are:

- 2 times more likely to have a BMI $> 70$
- 1.54 times more likely to have a BMI $> 60$
- 1.23 times more likely to have a BMI $> 50$

**Men have higher risks coming into surgery**

Men who have bariatric surgery are:

- 3 times more likely to have moderate chronic kidney disease
- 2 times more likely to have severe chronic kidney disease
- 1.4 times more likely to have pulmonary collapse

**Men experience adverse events more often, which increase their risks for complications**

Men who have bariatric surgery are:

- 1.3 times more likely to have a laparoscopic procedure converted to an open
- 1.2 times more likely to require additional (other) repair of stomach or intestine
Men have higher rates of complications, both surgical and medical

Men who have bariatric surgery are:

- 1.7 times more likely to experience complications of care, such as acute renal failure, digestive system complications, and other urinary complications
- 1.4 times more likely to experience surgical complications, such as accidental puncture or laceration, hematoma or hemorrhage, and acute respiratory failure

Questions patients and physicians should discuss related to treatment options and timing

Our analysis shows a correlation between higher BMI and complication rates in men undergoing bariatric surgery. However, more research studies are necessary to determine if the higher rate of medical and surgical complications in men compared to women are due to higher BMIs at the time of surgery, or due to other factors. In the meantime, it’s important for physicians to have an in-depth conversation with their patients about the timing of treatment as it relates to the patient’s gender and level of obesity.

Specific questions to discuss include:

- Are there differences in when men and women are advised to consider surgical treatment?
- Given the increased risk factors associated with higher severities of obesity, should men consider surgical options sooner?
- Is it better to try and lower BMI before considering surgery?

Unique Considerations for Women and Bariatric Surgery

The majority of patients (43%) having bariatric surgery are women of childbearing age—between the ages 18 to 44 years. Research on the impact of prior bariatric procedures on the complication rates of women during childbirth is mixed.

Healthgrades evaluated the complication rates in women having vaginal and cesarean deliveries. We wanted to understand if there was a difference in complications and risk drivers for women who are obese compared to women who previously underwent bariatric surgery before childbirth.

What are the relative risks of vaginal and cesarean deliveries for patients between the ages of 18 to 44 with a history of bariatric surgery?

After controlling for obesity across the various BMI categories, we observed the following relationships:

- Women who have had bariatric surgery are **20% less likely** to experience a complication during childbirth compared to obese patients.
- Women who have had bariatric surgery **do not** have statistically higher vaginal delivery complication rates (8.3%) compared to non-obese patients (8.2%).
- Women who have had bariatric surgery **do** have statistically higher cesarean delivery complication rates (5.6%) compared to non-obese patients (4.9%).

From these findings, it appears that women may encounter more complications during childbirth when they have a history of bariatric surgery when compared to women of healthy weight. However, women who had bariatric surgery for weight loss are less likely to experience a complication during childbirth compared to obese patients who did not have bariatric surgery.
Conclusion

Based on our findings and the variation in both risks and benefits among the genders, Healthgrades recommends that providers and their patients who are considering bariatric surgery should discuss the benefits and risks of the procedure, as well as when it would be most advantageous to have the surgery.

Specifically:

- For men, it may be beneficial to have bariatric surgery at lower obesity severity levels (Levels 1 or 2 vs. Level 3).
- For women who plan to have children, it may be beneficial to have bariatric surgery after having children, especially for women who may need a cesarean delivery. Reaching a lower level of obesity before childbirth also has definitive benefits that may outweigh risks associated with a history of bariatric surgery.

Performance Variation Exists

Each year, Healthgrades evaluates the performance of hospitals in bariatric surgery by measuring complication rates actually occurring compared to an expected rate based on their patient population.

This year’s analysis uses 2011 through 2013 claims data for 13 states where it is available and meets Healthgrades data requirements for statistical evaluation. The states claim volume represents 41.6% of the U.S. population.

Over 140,000 Bariatric Surgery patient claims were evaluated.

The specific states included are:

- Colorado
- Florida
- Iowa
- Illinois
- Maryland
- Nevada
- New York
- Oregon
- Pennsylvania
- Rhode Island
- Texas
- Washington
- Wisconsin

We then determine a star rating for each hospital’s performance.

- ★★★★★ Better Than Expected – Actual performance was better than predicted and the difference was statistically significant.
- ★★★ As Expected – Actual performance was not significantly different from what was predicted.
- ★ Worse Than Expected – Actual performance was worse than predicted and the difference was statistically significant.

Impact of Variation on Patient Outcomes

For the 2015 Bariatric Surgery Report, Healthgrades compared hospitals with statistically better-than-expected performance (5 stars), as a group, to those with statistically worse-than-expected performance (1 star), as a group, and found:

From 2011-2013, patients having a Bariatric Surgery in hospitals with 5 stars have, on average:
- 72.1% lower risk of experiencing a complication while in the hospital than if they were treated by hospitals with 1 star.2

From 2011-2013, patients having a Bariatric Surgery in hospitals receiving 1 star are, on average:
- 3.6 times more likely to experience one or more complications than if they were treated in hospitals with 5 stars.2

Impact of Superior Performance on Patient Outcomes

Healthgrades identifies top performers—the top 10% of those evaluated—and recognizes them as recipients of the Healthgrades 2015 Bariatric Surgery Excellence Award™. The benefit to patients selecting to have their surgeries at recipient hospitals can be significant.

From 2011 through 2013, if all hospitals in the 13 states included in this analysis, as a group, performed similarly to hospitals receiving the Bariatric Surgery Excellence Award, on average:
- 3,958 patients with complications could potentially have been avoided.2

From 2011 through 2013, patients treated in hospitals receiving the Bariatric Surgery Excellence Award have, on average:
- 62% lower risk of experiencing a complication while in the hospital than if they were treated in hospitals that did not receive the Bariatric Surgery Excellence Award.2

About Healthgrades

Healthgrades, headquartered in Denver, Colorado, is the leading online resource for comprehensive information about physicians and hospitals. Today, more than one million people a day use the Healthgrades websites to search, compare and connect with hospitals and physicians based on the most important measures when selecting a healthcare provider: experience, hospital quality, and patient satisfaction. For more information about Healthgrades, visit http://www.healthgrades.com or download the Healthgrades iPhone app.

References


2. Statistics are based on Healthgrades analysis of all-payer data for years 2011 through 2013 and represent 3-year estimates for patients in 13 states for which all-payer data was made available. (See Healthgrades Bariatric Surgery Rating 2015 Methodology for more details.)