

# Optimizing outcomes and treatment strategies in bariatric surgery

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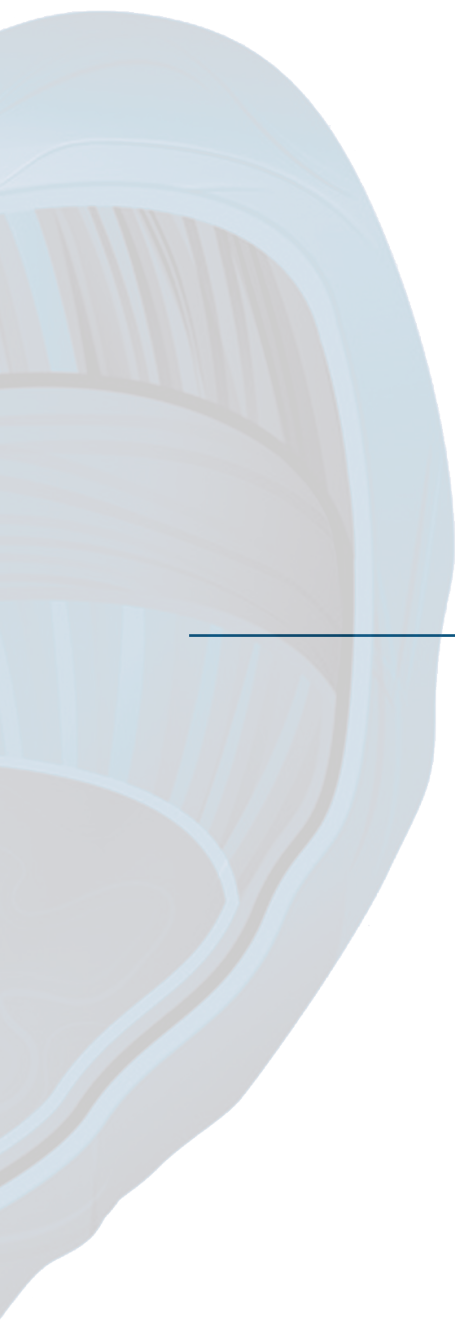
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## **Impact Paragraph**



## Impact Paragraph

In the Netherlands, 14.2% of the population suffers from obesity.<sup>1</sup> Obesity is associated with a high risk for comorbidities such as diabetes, cholesterol, hypertension, reflux, cardiovascular diseases, and obstructive sleep apnea syndrome.<sup>2</sup> In combination, the conditions result in poor quality of life, chronic morbidity, or even mortality. Therefore, it is important to take action as there are several treatment options for these patients. Metabolic and bariatric surgery has proven to be superior compared with nonsurgical methods in treating obesity and reducing the risk of associated morbidity. In addition, abundant literature on bariatric surgery shows its safety and efficacy. However, the question which bariatric procedure will provide the best patient outcomes remains difficult to answer, because the different types of procedures each have their own advantages and disadvantages. In addition, randomized trials comparing outcomes between the different types of procedures typically have a selected patient population, which may not reflect the outcomes achieved in daily practice when including all patients. In the Netherlands, the data of all bariatric procedures are collected in the Dutch Audit for Treatment of Obesity (DATO) registry.<sup>3</sup> This provides the opportunity to leverage this population-based data to gain new knowledge, optimize treatment strategies, and further improve the quality of bariatric surgical care. Therefore, we used DATO data to compare outcomes of the most frequently performed surgical techniques in terms of weight loss, weight recurrence, complications, and remission of comorbidities.

Approximately 12,000 procedures are annually recorded in the DATO, with the Roux-en-Y Gastric Bypass (RYGB) and Sleeve Gastrectomy (SG) being the most frequently performed techniques. Even though Dutch hospitals differ in which procedure they perform more often, the results in this thesis show that their overall outcomes are similar in terms of weight loss after 2 years of follow-up and complications within 30 days after the procedure. Although the main outcome after bariatric surgery is weight loss, its success cannot solely be measured by one outcome. Ideally, all outcomes such as weight loss, comorbidity remission, complications, and quality of life have to be evaluated. The studies in this thesis show that the metabolic effects after RYGB with regard to comorbidity remission are more favorable than after SG. In addition, the RYGB showed better weight loss results up to 5 years of follow-up with a lower likelihood for weight recurrence than SG. Still, the choice for the procedure has to be evaluated case-by-case and tailored to each individual patient, as the RYGB has higher long-term complication risks including a higher risk for surgical intervention.

These long-term complications are a downside of bariatric surgery and may require conversion to another technique e.g., after primary gastric banding. As is the case for primary surgery, there is debate on which type of conversion surgery could achieve the best results for patients. In more recent years, the one-anastomosis gastric bypass (OAGB) is

increasingly being performed as it requires one anastomosis less than the RYGB. Our study showed similar results in weight loss and comorbidity remission when the OAGB or the RYGB were performed as a conversion procedure after primary gastric banding. Future research is needed to evaluate the long-term complications after RYGB versus OAGB conversion procedures, which have to be considered when deciding which conversion technique achieves the best patient outcomes. Fortunately, complications do not frequently occur after bariatric surgery. However, this may present a challenge if the numbers in national registries such as DATO seem too limited to answer some research questions regarding complications. Combining data from multiple registries may solve this, provided that the same variables, outcomes, and definitions are used across registries. However, our research showed large discrepancies between national bariatric registries on the recorded data and the definitions, complicating the possibility for international collaborations. To illustrate the possibilities for such international collaboration when registries do have similar data, we validated the MBSC risk prediction tool to predict serious complications within 30 days in the Dutch DATO population. Dutch bariatric surgeons can use the information from this DATO prediction tool to support patient consultation and inform them about the benefits and individualized (complication) risks for a specific type of bariatric procedure.

These results are relevant for patients with morbid obesity and healthcare professionals involved in the multidisciplinary bariatric team to support their decision-making on what constitutes the optimal treatment strategy. Since previous studies have shown contrasting results, it is particularly important that these results add new population-based evidence including all types of patients treated in daily practice. In addition, it reiterates that all bariatric procedures in the Netherlands are safe and effective. Since most results have been presented during national and international conferences and are available online in scientific journals, this new knowledge can be utilized to build and guide future research and implemented as part of quality improvement projects. Dutch bariatric healthcare professionals are informed about the results through the scientific committee meetings of the DATO in which all bariatric institutions are represented. This enables them to apply the knowledge in relevant hospital-based policies and in doctor-patient consultations. However, informing patients with morbid obesity about relevant scientific developments currently depends on their treating healthcare professional, which might be improved by initiating a nationwide association.<sup>4</sup>

Even though metabolic and bariatric surgery is a safe and effective treatment for patients with morbid obesity, the field is rapidly changing with new techniques and treatments becoming available. These new techniques and treatments require evaluation on which strategy achieves the best outcomes, taking into account weight loss, weight recurrence, revision

surgery, complications, and comorbidity remission. Morbid obesity should be considered a chronic disease that may require multiple sequential treatments. The nationwide DATO is well-suited as a tool for long-term follow-up of patients, as well as for evaluation of treatment strategies and to initiate quality improvement initiatives by benchmarking hospitals or surgeons. The research reported in this thesis has shown several examples of how DATO may contribute real-world scientific evidence to provide guidance to bariatric surgeons and to improve the overall bariatric care across all phases in the treatment of obesity.

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## References

1. StatLine - Lengte en gewicht van personen, ondergewicht en overgewicht; vanaf 1981 Available from: <https://opendata.cbs.nl/statline/#/CBS/nl/dataset/81565NED/table?fromstatweb>. Accessed January 4, 2023.
2. Obesity and overweight Available from: <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>. Accessed January 4, 2023.
3. Poelmeijer YQM, Liem RSL, Nienhuijs SW. A Dutch Nationwide Bariatric Quality Registry: DATO. *Obes Surg*. 2018;28:1602.
4. NVOO Available from: <https://www.nvoo.nl/>. Accessed January 4, 2023.