



Does Gastric Bypass Have a Weight Loss–Independent Mechanism for Remission of Type 2 Diabetes?

Villy Våge¹ 

Received: 26 October 2023 / Revised: 26 October 2023 / Accepted: 1 November 2023 / Published online: 30 December 2023
© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2023

Dear Editor,

It has been speculated as to whether gastric bypass procedures have a weight loss–independent mechanism for causing remission of type 2 diabetes (T2DM). This is also addressed in a recent paper by Chang et al. where the effect of sleeve gastrectomy (SG), Roux-en-Y gastric bypass (RYGBP), and one-anastomosis gastric bypass (OAGB) on type 2 diabetes mellitus (T2DM) were compared 12 months after surgery [1].

For such procedures, nadir weight is typically reached after 18 months [2]. The Committee on Standards for Reporting Results at the American Society for Bariatric Surgery published their landmark paper in 1994, with an update in 1997, saying that “reporting weight loss with less than 2 years follow-up is discouraged” [3, 4]. Since improvements in obesity-related diseases like T2DM follows weight loss, the same could be stated for T2DM. A comparison 2 years after these procedures would therefore have been more appropriate.

The gut hormone response in the early phase, before any weight loss has occurred, is different after SG and RYGBP: 6 days after surgery, there is a more pronounced improvement in postprandial glucose homeostasis for RYGBP as compared to SG, possibly due to improved insulin sensitivity [5]. But as time goes by, weight loss becomes the driver for remission.

As part of the Swedish Obese Subjects Study, the results for glucose metabolism were evaluated 2 ($n = 1762$) and 10 years ($n = 1216$) after surgery. When comparing the effect of RYGBP with restrictive methods used at the time (gastric banding and vertical banded gastroplasty), the RYGBP had no advantage over these procedures within the same weight loss category [6]. Since the study by Chang et al. only provides 1-year follow-up data, it is not possible to conclude as to whether their bypass procedures have a weight loss–independent mechanism that

possibly could give higher remission rates for T2DM than for SG when weight stability has occurred. Furthermore, when suggesting a procedure for diabetic patients, it should be kept in mind that a SG can, if necessary, be converted to BPDDS bearing in mind that the BPD-type of operations clearly does have long-term, weight-independent mechanism(s) [7].

References

1. Chang YC, Hsu CN, Chong K, et al. Roux-en-Y and one-anastomosis gastric bypass surgery are superior to sleeve gastrectomy in lowering glucose and cholesterol levels independent of weight loss: a propensity-score weighting analysis. *Obes Surg.* 2023;33(10):3035–50.
2. Nijland LMG, Reiber BMM, Montpellier VM, et al. The association between patient attendance to a perioperative group-based lifestyle program and weight loss after bariatric surgery. *Surg Obes Relat Dis.* 2022;18(6):747–54.
3. Guidelines for reporting results in bariatric surgery. Standards Committee, American Society for Bariatric Surgery. *Obes Surg.* 1997;7(6):521–2.
4. Mason EE, Amaral J, Cowan GS Jr, et al. Standards for reporting results. *Obes Surg.* 1994;4(1):56–65.
5. Gudbrandsen OA, Dankel SN, Skumsnes L, et al. Short-term effects of Vertical sleeve gastrectomy and Roux-en-Y gastric bypass on glucose homeostasis. *Sci Rep.* 2019;9(1):14817.
6. Sjöholm K, Sjöström E, Carlsson LM, et al. Weight change-adjusted effects of gastric bypass surgery on glucose metabolism: 2- and 10-year results from the Swedish Obese Subjects (SOS) study. *Diabetes Care.* 2016;39(4):625–31.
7. Mingrone G, Panunzi S, De Gaetano A, et al. Metabolic surgery versus conventional medical therapy in patients with type 2 diabetes: 10-year follow-up of an open-label, single-centre, randomised controlled trial. *Lancet.* 2021;397(10271):293–304.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

✉ Villy Våge
villy.vage@helse-bergen.no

¹ Helse Bergen Health Trust, Bergen, Norway