

The Association of Depressive Symptom Patterns Following Metabolic Bariatric Surgery With 5-Year Weight Regain

Olivero, Stephanie^{1,2} Côté, Marilou^{1,3}, Bacon, Simon L.^{1,4}, Lavoie, Kim L.^{1,5}, Dialufuma Vakambi, Maximilien¹, and Ben-Porat, Tair^{1,6} on behalf of the REBORN Study Team

¹ *Montreal Behavioural Medicine Centre, Centre Intégré Universitaire de Santé et de Services Sociaux du Nord de l'Île de Montréal (CIUSSS-NIM), Montréal, QC, Canada*

² *Department of Psychology, Concordia University, Montréal, QC, Canada*

³ *Département des fondements et pratiques en éducation, Université Laval, Québec, QC, Canada*

⁴ *Department of Health Kinesiology, and Applied Physiology, Concordia University, Montréal, QC, Canada*

⁵ *Department of Psychology, Université du Québec à Montréal (UQAM), Montréal, QC, Canada*

⁶ *School of Public Health, Faculty of Social Welfare and Health Sciences, University of Haifa, Haifa, Israel*

While short-term improvements in depressive symptoms are observed following metabolic bariatric surgery (MBS), long-term symptom patterns and their impact on weight regain remain unclear. This study aimed to identify depressive symptom trajectories over five years post-MBS and examine their association with long-term weight regain (i.e., 5-year weight – nadir weight). Participants ($n=375$; 81% Female; $M_{age}=45.9\pm11.4$; $M_{BMI}=48.3\pm8.0$) who underwent primary MBS completed the Beck Depression Inventory-II (BDI-II) and anthropometric assessments pre-surgery, and 6-, 12-, and 60-months post-surgery. We used standard multiple imputation techniques to account for missing data. Latent Class Growth Analysis identified three distinct BDI-II trajectories: (1) stable low symptoms ($BDI_{baseline}=12.5$; $BDI_{5Y}=11.6$), 92% of participants (no depression); (2) initially high symptoms ($BDI_{baseline}=29.3$) that decreased over time ($BDI_{5Y}=14.5$), 6% of participants (partial remission); and (3) initially moderate symptoms ($BDI_{baseline}=23.7$) that increased significantly over time ($BDI_{5Y}=41.0$), 2.2% of participants (severe worsening). ANCOVA analyses revealed no statistical difference in weight regain between trajectories; however, trajectory 3 was linked to the highest weight regain at 5-years (18.5 vs. 13.2 and 13.3 kg). While most participants experienced low to moderate depressive symptoms, a small subgroup exhibited a severe worsening of symptoms over time, which, in turn, seemed to be associated with greater weight regain five years post-surgery. These results highlight a depressive symptom pattern that may have a substantial impact on long-term weight outcomes and underscore the need for continued psychological monitoring and support beyond the first postoperative year. Further research is needed to clarify the directional relationship between these variables.