



# Food and alcohol disturbance among people who have undergone bariatric surgery

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## Abstract

There have been numerous investigations of aberrant eating and substance abuse among patients who have undergone bariatric surgery, which affects the metabolism and the pharmacokinetics of alcohol. However, there is a dearth of literature considering the complex interplay between changes in post-surgery food and alcohol consumption. Furthermore, despite the increasing recognition of issues surrounding replacing food consumption with alcohol consumption (Food and Alcohol Disturbance [FAD]), most emerging research has focused on young adult populations. This perspective reviews and synthesizes the small but growing body of research on the interplay between food and alcohol consumption, particularly FAD, and considers its application to bariatric surgery in general. There are unique considerations for patients who have undergone bariatric surgery. Patients experience altered gastric anatomy, which affects food and alcohol metabolism, and are advised to abstain from drinking alcohol after surgery. After reviewing the available literature, this perspective highlights future directions for research and practice in bariatric surgery.

## KEYWORDS

alcohol use, bariatric surgery, disordered eating behavior, food and alcohol disturbance

## 1 | ALCOHOL USE FOLLOWING BARIATRIC SURGERY

An emerging body of research suggests that patients who undergo bariatric surgery are at increased risk for alcohol use disorders (AUD) post-surgery.<sup>1,2</sup> Findings from the prospective multicenter Longitudinal Assessment of Bariatric Surgery-2 (LABS-2) study indicate that the prevalence of AUD symptoms increased from 7% pre-surgery to 16% 7 years post-surgery.<sup>3</sup> Indeed, people who have undergone bariatric surgery are over-represented in alcohol abuse treatment.<sup>4</sup> There are a number of risk factors for post-surgery alcohol problems

including pre-surgery regular (drinking  $\geq$  twice per week) or problematic alcohol use, male sex, younger age, and type of surgery.<sup>5</sup> Although male sex is a predictor of AUD in the general population and among people who have undergone bariatric surgery, most people who seek inpatient treatment for AUD<sup>4</sup> and who have undergone bariatric surgery are female.

Evidence suggests that patients who have undergone Roux-en-Y Gastric Bypass (RYGB) and Sleeve Gastrectomy (SG), the two most commonly performed bariatric procedures,<sup>6</sup> are at higher risk for post-surgery problems with alcohol compared to other bariatric procedures and pre-surgery. For example, in LABS-2, undergoing

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Roux-en-Y Gastric Bypass (RYGB) versus Laparoscopic Adjustable Gastric Banding (LAGB) was associated with twice the risk of incident AUD symptoms as measured by the Alcohol Use Disorders Test (AUDIT), with one fifth of participants reporting incident AUD symptoms within 5 years post-RYGB.<sup>3</sup> There is evidence that SG patients may have similar responses to alcohol as those seen in patients after RYGB.<sup>7</sup> Both RYGB and SG may accelerate gastric emptying and cause faster and higher peak blood alcohol concentrations than when people drank the same amount of alcohol pre-surgery.<sup>7-9</sup>

A number of reasons have been hypothesized for why people who have undergone bariatric surgery experience increased risk of AUD and alcohol-related problems post-surgery, including pre- to post-surgery changes in neurohormonal factors (e.g., ghrelin signaling),<sup>10</sup> brain reward processing,<sup>11,12</sup> and pharmacokinetics (e.g., peak blood alcohol concentration as well as malabsorption).<sup>10</sup> Nonetheless, clinically and anecdotally, the notion of “addiction transfer” or “symptom substitution” persists in this population. Addiction transfer is thought of as an unconscious process of substituting one addiction (e.g., food) for another (e.g., alcohol). Although addiction transfer may be offered as an explanation for post-surgery AUD by providers or patients,<sup>13</sup> it has not been empirically supported.<sup>14</sup> Specifically, research has not shown a direct link between decreased overeating and increased problems with alcohol post-surgery.<sup>15,16</sup>

Although qualitative research suggests that most patients are aware of recommendations to abstain from alcohol use following surgery due to their increased risk for developing AUD, the majority of patients still drink post-surgery.<sup>17</sup> Furthermore, given their concerns regarding the effects of drinking on their weight or possible physical discomfort individuals may feel after consuming certain types of alcoholic beverages, one study found that some patients may elect to consume alcoholic beverages that might be lower in calories or carbohydrates, or uncarbonated alcoholic beverages such as hard liquor versus beer.<sup>18</sup> Since hard liquor is associated with increased intoxication and negative consequences among non-clinical populations,<sup>19-21</sup> this type of consumption is particularly concerning among people who have undergone bariatric surgery, given the metabolic propensity toward experiencing high blood alcohol concentration levels relative to the quantities of alcohol consumed.

This perspective examines the concept of Food and Alcohol Disturbance (FAD), colloquially known as drunkorexia<sup>22,23</sup> or alcoholimia,<sup>24</sup> as an emerging area of research that holds promise for elucidating the nature of some alcohol problems after bariatric surgery. FAD is an intentional compensatory pattern of behavior exhibited by restricting calorie consumption due to heightened concerns with weight while maximizing alcohol intoxication. FAD may be particularly problematic among people who have undergone bariatric surgery given that a major side-effect of surgery is the dramatic alteration in metabolism and pharmacokinetics, which not only leaves patients vulnerable to developing AUD<sup>3</sup> but also serves as the context for purposeful behaviors to either control weight or enhance the effects of alcohol.

## 2 | FAD AS A GROWING CONCERN AMONG YOUNG ADULTS

It has been more than 15 years since the popular press began to describe individuals who wanted to drink but not gain weight.<sup>25</sup> Since then, proposed diagnostic criteria for FAD include dysfunctional compensatory behaviors, such as severe food restriction, induction of vomiting or drinking so much that vomiting occurs, laxative or diuretic usage, stimulant usage, and exercising to an extreme (e.g., 2 h or more) on days when consuming alcohol is anticipated; moreover, those experiencing FAD might also elect to restrict their calories prior to consuming alcohol in order to become intoxicated more quickly following alcohol use.<sup>24</sup> For some individuals with FAD, dietary restriction precedes binge drinking later in the day, perhaps followed by binge eating and/or purging behaviors.<sup>23</sup>

FAD is not a recognized diagnosis<sup>24,26-29</sup> in the Diagnostic and Statistical Manual of Mental Disorders (DSM) and the prevalence of FAD remains unclear.<sup>24</sup> To date, most research on FAD has been conducted among young adults, typically college students.<sup>21,26,28-30</sup> Available data in college students suggests that at least one-fifth of undergraduate students engage in FAD behaviors on a regular basis,<sup>31</sup> but there is also evidence that FAD may be prevalent outside the student population.<sup>32,33</sup> FAD behaviors are associated with the risk of negative alcohol-related consequences such as blackout,<sup>30</sup> and development of AUD.<sup>34</sup> Furthermore, research shows that college-age women who partake in FAD behaviors are more likely to report being injured and increased risky sexual behaviors, while college-age men are more likely to report getting into more physical altercations.<sup>35</sup>

Some people might be particularly susceptible to developing FAD because of a desire to restrict calories while feeling the need to drink to “fit in” and socialize.<sup>36</sup> Other risk factors for FAD, such as body dissatisfaction,<sup>22,37,38</sup> disinhibition,<sup>32,39</sup> fear of gaining weight,<sup>34,37</sup> and desire to attain a specific body ideal<sup>40</sup> are also prevalent in people who have undergone bariatric surgery, putting them at risk of FAD.

## 3 | PRELIMINARY EVIDENCE OF FAD AMONG PEOPLE WHO HAVE UNDERGONE BARIATRIC SURGERY

To our knowledge, no study has explicitly measured FAD in people who have undergone bariatric surgery. A better understanding of the mechanisms for the development of post-surgery problems with alcohol and their relationship to dietary intake, such as the onset of post-surgery FAD, will help to inform tailored interventions to prevent and treat AUD among people who have undergone bariatric surgery. Bariatric surgery affects many aspects of patients' lives such as their mental health and eating and drinking behaviors.<sup>41-43</sup> Post-surgery, patients are advised to abstain from alcohol use, as well as restrict their carbohydrate and fat intake, while enhancing protein consumption.<sup>44</sup> Although there can be considerable variation in post-surgery diet progression, many patients are started on a low sugar,

clear liquid diet within the first 24 h after surgery and then advanced to a full liquid diet, with pureed food introduced several days after surgery and solid food re-introduced within a few months after surgery.<sup>44</sup> Many patients follow recommendations to abstain from alcohol through the first year following surgery, but may become more lenient in their alcohol consumption<sup>18</sup> as individuals reintegrate a more normal diet. As such, there is evidence that many people who have undergone bariatric surgery gradually increase their alcohol use every year following surgery.<sup>45</sup>

Although their underlying reasons for engaging in alcohol use may be distinctive, similar to those with FAD, people who have undergone bariatric surgery may substitute drinking alcohol post-surgery for food consumption since alcohol use may not be as strongly associated with the same negative consequences as over-eating (e.g., “plugging” or the sensation of food getting stuck). For instance, qualitative research has shown that patients may turn to drinking because they are unable to eat as much or eat the same foods post-surgery (e.g., “I drank because I couldn't eat”).<sup>46</sup> However, consistent with indicators of FAD, patients cite the “extra buzz” from drinking as a reason to continue their usage since alcohol impacts them faster after consuming significantly smaller quantities post-surgery versus pre-surgery.<sup>18</sup>

Qualitative research also suggests that most patients believe lifelong abstinence from alcohol post-surgery is unrealistic because social gatherings often center around food and alcohol consumption.<sup>18</sup> Following their weight loss, patients who have undergone bariatric surgery may experience increased self-esteem and increased socialization, which may provide more opportunities to drink socially.<sup>18</sup> Consequently, similar to those with FAD, the desire to attend social drinking contexts while minimizing caloric intake may further contribute to maladaptive food and alcohol-related bingeing and purging patterns among people who have undergone bariatric surgery.<sup>47</sup> Thus, some patients may intentionally overeat or over-drink in order to instigate purging themselves of unwanted calories and/or to alleviate their physical discomfort.

Although available data suggest possible patterns of FAD among people who have undergone bariatric surgery, to our knowledge, current instruments used to identify FAD among the general population may be lacking in terms of assessing the prevalence and impact of FAD in this group. Currently, there are two validated scales to assess FAD in the general population; however, the FAD dimensions measured using these instruments<sup>26</sup> may not be applicable to people who have undergone bariatric surgery. For instance, people who have undergone bariatric surgery may not endorse items which appraise intentionally eating less or restricting calories in order to feel intoxicated quicker,<sup>48</sup> even though the net effect is the same as those with FAD. That is, both groups might be motivated to restrict their calories or to maintain their health and physique following surgery; however, people who have undergone bariatric surgery experience greater intoxication due to the way their bodies metabolize alcohol post-surgery. Thus, screening tools for FAD may need to be modified for the bariatric surgery population, with an increased focus on teasing apart normative versus disordered eating behaviors.

## 4 | FUTURE DIRECTIONS FOR RESEARCH AND PRACTICE

Currently, there is no evidence-based guidance on whether there is a “safe” amount of alcohol to consume after bariatric surgery. Although studies have examined substance use and eating behaviors among people who have undergone bariatric surgery,<sup>15,16</sup> no study has teased apart the temporal pathways between dietary restriction and alcohol consumption with patient samples who have undergone different types of bariatric surgery. While most FAD research is conducted in college students, there is evidence that FAD behaviors exist outside this age group.<sup>27,32,33</sup> The evidence provided in this perspective suggests that bariatric patients may experience FAD; however, given the average age of patients who undergo bariatric surgery is 40 years old,<sup>49</sup> it is possible that FAD does not function in the same way in this mostly middle-aged population. More research is needed to better elucidate the functional associations between different FAD behaviors among people who have undergone bariatric surgery. Prospective studies could determine whether existing measures for FAD need to be adapted for this vulnerable patient population.<sup>26,50</sup> Given that the FAD-related compensatory behaviors may hold potentially even more negative consequences among people who have undergone bariatric surgery than the general population, such research could inform evidence-based guidelines for the prevention and treatment of post-surgical eating and alcohol problems.

Finally, drinking norms have been found to be a robust predictor of drinking within the general population,<sup>31,51</sup> particularly among college students (a population that has also been most studied with respect to the extant FAD literature).<sup>30,31,35</sup> Since people who have undergone bariatric surgery may lack an appropriate reference group for eating and drinking behaviors, which might be contributing to their maladaptive consumption behaviors and attitudes, future research could examine how perceptions of what is normative to eat and drink post-surgery play a role in drinking and eating patterns among these patients. This line of research may be important in that it could lead to the development of novel, personalized-normative intervention approaches for this at-risk population. As internalized ideals<sup>36</sup> and social comparisons<sup>52</sup> may affect FAD behaviors, this area warrants further exploration among people who have undergone bariatric surgery.

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### CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

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## REFERENCES

- Heinberg LJ, Ashton K, Coughlin J. Alcohol and bariatric surgery: review and suggested recommendations for assessment and management. *Surg Obes Relat Dis.* 2012;8(3):357-363. <https://doi.org/10.1016/j.soard.2012.01.016>
- Capelo Vides M, Campello de Oliveira M, Lassi DLS, et al. Bariatric surgery and its influence on alcohol consumption: differences before and after surgery - a systematic review and meta-analysis. *Int Rev Psychiatry.* 2023;1-10. <https://doi.org/10.1080/09540261.2023.2223317>
- King WC, Chen JY, Courcoulas AP, et al. Alcohol and other substance use after bariatric surgery: prospective evidence from a U.S. multicenter cohort study. *Surg Obes Relat Dis.* 2017;13(8):1392-1402. <https://doi.org/10.1016/j.soard.2017.03.021>
- Cuellar-Barboza AB, Frye MA, Grothe K, et al. Change in consumption patterns for treatment-seeking patients with alcohol use disorder post-bariatric surgery. *J Psychosom Res.* 2015;78(3):199-204. <https://doi.org/10.1016/j.jpsychores.2014.06.019>
- Spadola CE, Wagner EF, Dillon FR, Trepka MJ, De La Cruz-Munoz N, Messiah SE. Alcohol and drug use among postoperative bariatric patients: a systematic review of the emerging research and its implications. *Alcohol Clin Exp Res.* 2015;39(9):1582-1601. <https://doi.org/10.1111/acer.12805>
- American Society for Metabolic and Bariatric Surgery. Estimate of bariatric surgery numbers, 2011-2019. Accessed April 13, 2022. <https://asmbs.org/resources/estimate-of-bariatric-surgery-numbers>
- Acevedo MB, Eagon JC, Bartholow BD, Klein S, Bucholz KK, Pepino MY. Sleeve gastrectomy surgery: when 2 alcoholic drinks are converted to 4. *Surg Obes Relat Dis.* 2018;14(3):277-283. <https://doi.org/10.1016/j.soard.2017.11.010>
- Seyedsadjadi N, Acevedo MB, Alfaro R, et al. Site of alcohol first-pass metabolism among women. *JAMA Netw Open.* 2022;5(3):e223711. <https://doi.org/10.1001/jamanetworkopen.2022.3711>
- Acevedo MB, Teran-Garcia M, Bucholz KK, et al. Alcohol sensitivity in women after undergoing bariatric surgery: a cross-sectional study. *Surg Obes Relat Dis.* 2020;16(4):536-544. <https://doi.org/10.1016/j.soard.2020.01.014>
- Ivezaj V, Benoit SC, Davis J, et al. Changes in alcohol use after metabolic and bariatric surgery: predictors and mechanisms. *Curr Psychiatr Rep.* 2019;21(9):85. <https://doi.org/10.1007/s11920-019-1070-8>
- Blackburn AN, Hajnal A, Leggio L. The gut in the brain: the effects of bariatric surgery on alcohol consumption. *Addiction Biol.* 2017;22(6):1540-1553. <https://doi.org/10.1111/adb.12436>
- Steffen KJ, Engel SG, Wonderlich JA, Pollert GA, Sondag C. Alcohol and other addictive disorders following bariatric surgery: prevalence, risk factors and possible etiologies. *Eur Eat Disord Rev.* 2015; 23(6):442-450. <https://doi.org/10.1002/erv.2399>
- Ivezaj V, Saules KK, Wiedemann AA. "I didn't see this coming.": why are postbariatric patients in substance abuse treatment? Patients' perceptions of etiology and future recommendations. *Obes Surg.* 2012;22(8):1308-1314. <https://doi.org/10.1007/s11695-012-0668-2>
- Koball AM, Ames G, Goetze RE. Addiction transfer and other behavioral changes following bariatric surgery. *Surg Clin North Am.* 2021;101(2):323-333. <https://doi.org/10.1016/j.suc.2020.12.005>
- Chiappetta S, Stier C, Hadid MA, et al. Remission of food addiction does not induce cross-addiction after Sleeve gastrectomy and gastric bypass: a prospective cohort study. *Obes Facts.* 2020;13(3): 307-320. <https://doi.org/10.1159/000506838>
- Dickhut C, Hase C, Gruner-Labitzke K, et al. No addiction transfer from preoperative food addiction to other addictive behaviors during the first year after bariatric surgery. *Eur Eat Disord Rev.* 2021; 29(6):924-936. <https://doi.org/10.1002/erv.2857>
- Miller-Matero LR, Coleman JP, LaLonde L, Martens KM, Hamann A, Carlin AM. Patient recall of education about the risks of alcohol use following bariatric surgery. *Obes Surg.* 2019;29(8):2707-2710. <https://doi.org/10.1007/s11695-019-03940-2>
- Miller-Matero LR, Hecht LM, Barnett NP, et al. Patient perceptions regarding alcohol use after bariatric surgery. *Surg Endosc.* 2023; 37(5):3669-3675. <https://doi.org/10.1007/s00464-023-09868-0>
- Maldonado-Molina MM, Reingle JM, Tobler AL, Komro KA. Effects of beverage-specific alcohol consumption on drinking behaviors among urban youth. *J Drug Educ.* 2010;40(3):265-280. <https://doi.org/10.2190/de.40.3.d>
- Niemelä O, Aalto M, Bloigu A, Bloigu R, Halkola AS, Laatikainen T. Alcohol drinking patterns and laboratory indices of health: does type of alcohol preferred make a difference? *Nutrients.* 2022;14(21):4529. <https://doi.org/10.3390/nu14214529>
- Usdan S, Martin R, Mays D, Cremeens J, Weitzel JA, Bernhardt J. Self-reported consequences of intoxication among college students: implications for harm reduction approaches to high-risk drinking. *J Drug Educ.* 2008;38(4):377-387. <https://doi.org/10.2190/de.38.4.e>
- Choquette EM, Rancourt D, Kevin Thompson J. From fad to FAD: a theoretical formulation and proposed name change for "drunkorexia" to food and alcohol disturbance (FAD). *Int J Eating Disord.* 2018;51(8):831-834. <https://doi.org/10.1002/eat.22926>
- Vogt KS, Harper M, Griffin BL. ... because I'm so drunk at the time, the last thing I'm going to think about is calories": strengthening the argument for Drunkorexia as a food and alcohol disturbance, evidence from a qualitative study. *Br J Health Psychol.* 2022;27(3): 1188-1208. <https://doi.org/10.1111/bjhp.12594>
- Thompson-Memmer C, Glassman T, Drunkorexia DA. A new term and diagnostic criteria. *J Am Coll Health.* 2019;67(7):620-626. <https://doi.org/10.1080/07448481.2018.1500470>
- Chambers RA. Drunkorexia. *J Dual Diagn.* 2008;4(4):414-416. <https://doi.org/10.1080/15504260802086677>
- Speed S, Ward RM, Haus L, et al. A systematic review of common drunkorexia measures: examining gender differences across scales. *Am J Health Educ.* 2022;53(5):342-359. <https://doi.org/10.1080/19325037.2022.2100846>
- Moecik EK, Thomas NA. Food and alcohol disturbance in a broad age-range adult sample. *Eat Behav.* 2021;41:101510. <https://doi.org/10.1016/j.eatbeh.2021.101510>
- Rancourt D, Ahlich E, Choquette EM, Simon J, Kelley K. A comparison of food and alcohol disturbance (FAD) in sorority and non-sorority women. *J Am Coll Health.* 2022;70(1):30-33. <https://doi.org/10.1080/07448481.2020.1740233>
- Horvath SA, Shorey RC, Racine SE. Emotion dysregulation as a correlate of food and alcohol disturbance in undergraduate students. *Eat Behav.* 2020;38:101409. <https://doi.org/10.1016/j.eatbeh.2020.101409>
- Speed S, Ward RM, Budd K, Branscum P, Barrios V, Miljkovic K. The relationship between drunkorexia, alcohol, and blackouts among college students: an exploratory study. *Alcohol.* 2023;110:51-56. <https://doi.org/10.1016/j.alcohol.2023.04.004>
- Borsari B, Carey KB. Peer influences on college drinking: a review of the research. *J Subst Abuse.* 2001;13(4):391-424. [https://doi.org/10.1016/s0899-3289\(01\)00098-0](https://doi.org/10.1016/s0899-3289(01)00098-0)
- Griffin BL, Vogt KS. Drunkorexia: is it really "just" a university lifestyle choice? *Eat Weight Disord.* 2021;26(6):2021-2031. <https://doi.org/10.1007/s40519-020-01051-x>
- Hill EM, Mazurek ME. Problematic alcohol use and food and alcohol disturbance in mothers: examining the role of stress, body

- dissatisfaction, and wine-mom culture engagement. *Alcohol*. 2023;113:49-56. <https://doi.org/10.1016/j.alcohol.2023.08.001>
34. Simons RM, Hansen JM, Simons JS, Hovrud L, Hahn AM. Drunkorexia: normative behavior or gateway to alcohol and eating pathology? *Addict Behav*. 2021;112:106577. <https://doi.org/10.1016/j.addbeh.2020.106577>
  35. Giles SM, Champion H, Sutfin EL, McCoy TP, Wagoner K. Calorie restriction on drinking days: an examination of drinking consequences among college students. *J Am Coll Health*. 2009;57(6):603-609. <https://doi.org/10.3200/jach.57.6.603-610>
  36. Hill EM, Nolan MT. Examining eating disorder-related social comparison orientation and body dissatisfaction in the relationship between fit ideal internalization and drunkorexia engagement. *Eat Behav*. 2021;41:101480. <https://doi.org/10.1016/j.eatbeh.2021.101480>
  37. Mitchell JE, Lancaster KL, Burgard MA, et al. Long-term follow-up of patients' status after gastric bypass. *Obes Surg*. 2001;11(4):464-468. <https://doi.org/10.1381/096089201321209341>
  38. Herchenroeder L, Speed S, Ward RM, Yeung EW. Sexual minority status and food and alcohol disturbance among college students: the moderating role of body esteem. *Eat Behav*. 2023;49:101745. <https://doi.org/10.1016/j.eatbeh.2023.101745>
  39. Sarwer DB, Allison KC, Wadden TA, et al. Psychopathology, disordered eating, and impulsivity as predictors of outcomes of bariatric surgery. *Surg Obes Relat Dis*. 2019;15(4):650-655. <https://doi.org/10.1016/j.soard.2019.01.029>
  40. Wilkerson AH, Hackman CL, Rush SE, Usdan SL, Smith CS. "Drunkorexia": understanding eating and physical activity behaviors of weight conscious drinkers in a sample of college students. *J Am Coll Health*. 2017;65(7):492-501. <https://doi.org/10.1080/07448481.2017.1344848>
  41. Mitchell JE, King WC, Chen JY, et al. Course of depressive symptoms and treatment in the longitudinal assessment of bariatric surgery (LABS-2) study. *Obesity*. 2014;22(8):1799-1806. <https://doi.org/10.1002/oby.20738>
  42. Williams-Kerver GA, Steffen KJ, Mitchell JE. Eating pathology after bariatric surgery: an updated review of the recent literature. *Curr Psychiatr Rep*. 2019;21(9):86. <https://doi.org/10.1007/s11920-019-1071-7>
  43. White GE, Courcoulas AP, Richardson GA, Mair C, King WC. Alcohol use thresholds for identifying alcohol-related problems before and following Roux-en-Y gastric bypass. *Ann Surg*. 2019;269(6):1001-1009. <https://doi.org/10.1097/sla.0000000000003078>
  44. Mechanick JI, Apovian C, Brethauer S, et al. Clinical practice guidelines for the perioperative nutrition, metabolic, and nonsurgical support of patients undergoing bariatric procedures - 2019 update: cosponsored by American Association of Clinical Endocrinologists/ American College of Endocrinology, The Obesity Society, American Society for Metabolic & Bariatric Surgery, Obesity Medicine Association, and American Society of Anesthesiologists. *Surg Obes Relat Dis*. 2020;16(2):175-247. <https://doi.org/10.4158/gl-2019-0406>
  45. Cerón-Solano G, Zepeda RC, Romero Lozano JG, Roldán-Roldán G, Morin JP. Bariatric surgery and alcohol and substance abuse disorder: a systematic review. *Cir Esp*. 2021;99(9):635-647. <https://doi.org/10.1016/j.cireng.2021.10.004>
  46. Reaves DL, Dickson JM, Halford JCG, Christiansen P, Hardman CA. A qualitative analysis of problematic and non-problematic alcohol use after bariatric surgery. *Obes Surg*. 2019;29(7):2200-2209. <https://doi.org/10.1007/s11695-019-03823-6>
  47. Ivezaj V, Carr MM, Brode C, et al. Disordered eating following bariatric surgery: a review of measurement and conceptual considerations. *Surg Obes Relat Dis*. 2021;17(8):1510-1520. <https://doi.org/10.1016/j.soard.2021.03.008>
  48. Rahal CJ, Bryant JB, Darkes J, Menzel JE, Thompson JK. Development and validation of the Compensatory Eating and Behaviors in Response to Alcohol Consumption Scale (CEBRACS). *Eat Behav*. 2012;13(2):83-87. <https://doi.org/10.1016/j.eatbeh.2011.11.001>
  49. Davidson LE, Adams TD, Kim J, et al. Association of patient age at gastric bypass surgery with long-term all-cause and cause-specific mortality. *JAMA Surg*. 2016;151(7):631-637. <https://doi.org/10.1001/jamasurg.2015.5501>
  50. Hunt TK, Forbush KT. Is "drunkorexia" an eating disorder, substance use disorder, or both? *Eat Behav*. 2016;22:40-45. <https://doi.org/10.1016/j.eatbeh.2016.03.034>
  51. Saxton J, Rodda SN, Booth N, Merkouris SS, Dowling NA. The efficacy of personalized normative feedback interventions across addictions: a systematic review and meta-analysis. *PLoS one*. 2021;16(4):e0248262. <https://doi.org/10.1371/journal.pone.0248262>
  52. Hill EM, Ruark R. An examination of the role of social comparison orientation and social norms in drunkorexia engagement. *Addict Behav*. 2022;124:107107. <https://doi.org/10.1016/j.addbeh.2021.107107>

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