



# The utility of Phosphatidylethanol testing in assessing alcohol use in bariatric surgery candidates: A case series

Kellie Martens, PhD, Lisa R. Miller-Matero, PhD, ABPP, Aaron Hamann, PsyD, Kelly Bryce, PhD, Jeffrey Genaw, MD, FACS, FASMBS & Arthur M. Carlin, MD, FACS, FASMBS  
Henry Ford Health System



## Background/Significance

- Current literature asserts that there is a higher prevalence of alcohol use disorders (AUD) after bariatric surgery, and that those with a history of heavy drinking are at higher risk.
- The incidence of AUD is also high, with 20.8% of patients developing an alcohol use disorder in the 5 years after surgery.<sup>1</sup>
- Before surgery, alcohol use is assessed during the psychiatric evaluation; however, patients may underreport drinking due to motivation for surgical clearance.
- Phosphatidylethanol (PEth) testing is used as an objective measure of alcohol use in other surgical populations (e.g., liver transplant candidates) but has not been utilized prior to bariatric surgery.



• This two-case series suggests that PEth testing may have utility in identifying heavy alcohol consumption among bariatric surgery candidates.

## Cases

- **Ms. X** is a Black female in her late 20s, body mass index (BMI) of 43.61. At her pre-surgical psychiatric evaluation, diagnoses included an adjustment disorder, psychological factors affecting morbid obesity, and **alcohol use disorder, moderate severity**. She had reportedly quit drinking three weeks prior to her evaluation.
- **Ms. Y** is a Black female in her early 40s, BMI of 45.77. She was diagnosed with an **alcohol use disorder, severe, in early remission** at her pre-surgical evaluation. She reported abstinence for approximately three months prior to her psychiatric evaluation.



**Both patients were required to initiate psychotherapy to prevent relapse of alcohol use and to maintain abstinence for a minimum of 6 months. Both were seen for follow-up, having reported over 6 months of abstinence to their therapists and the bariatric psychologist.**

## Results at Follow-up

- Ms. X's PEth results revealed **heavy alcohol use** in the prior 2-4 weeks (PEth 16:0/18.1 = 580 ng/mL).
- Ms. Y's PEth results were also **positive** (quantitative results not available).

## Discussion

- Two bariatric candidates were identified as having AUD at their pre-surgical psychiatric evaluation.
- After completing treatment for substance use relapse prevention and reporting abstinence for over 6 months, both patients tested positive for continued alcohol use. One patient was still drinking heavily.
- **Without objective alcohol use testing, these patients would have been cleared for bariatric surgery.**

## Conclusion/Implications

- Existing literature may overestimate the incidence of AUD related to bariatric surgery, as some patients underreport their drinking prior to surgery.
- Further research should explore whether PEth testing would be beneficial as a standard part of the pre-surgical work up for all bariatric surgery patients or if it is most useful for confirming abstinence among those with a history of heavy drinking.
- **Accurately identifying AUD before bariatric surgery may help ensure proper treatment to prevent relapse post-surgery.**

## References

1. King WC, et al. Alcohol and other substance use after bariatric surgery: prospective evidence from a US multicenter cohort study. *Surgery for Obesity and Related Diseases*. 2017;13(8):1392-402.
2. Images from: 123rf.com