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BINGEING ON CARBS MIGHT MAKE YOU DRUNK?

ANTHONY ISENHOUR

Everyone loves eating too many carbs and realistically the occasional food-binge doesn't harm the body very much. For some people, however, it can. For people in the United States who have been diagnosed with Auto-brewery Syndrome, or Gut Fermentation Syndrome, carbo-loading (eating copious amounts of carb-heavy food at once) can have some legal and behavioral consequences.

Auto-brewery Syndrome is a condition where the yeast within your gut produce ethanol through fermentation instead of traditional aerobic respiration. For people with this condition who eat large amounts of carbs in one meal, they end up with low levels of alcohol intoxication.¹ Scientists have known about this phenomenon for about a century, describing it as "abnormal gut syndrome," "germ carbohydrate fermentation," and "intestinal carbohydrate dyspepsia" as far back as 1912.²

This syndrome has been shown to affect adults and children and could be a possible cause for sudden infant death. People with this condition can also experience side effects such as hangovers, belching, disorientation, and chronic fatigue.¹ Having a gut that can make its own alcohol seems fun, but controlling it isn't as easy as you might think.

Auto-brewery Syndrome happens because the yeast within the gut go through anaerobic respiration, also known as fermentation. This means that when breaking down the sugars from the carbs you eat, they produce ethanol as a byproduct. Your liver typically metabolizes and breaks down alcohol, but this extra production by yeast leads to an increased alcohol content in your body even leading to getting drunk. In treating this unintentional alcohol intake, doctors typically recommend low carbohydrate diets, as well as probiotic supplements to increase the amount of normal bacteria in your gut.¹

Because individuals with this syndrome do not always know when it happens, multiple people have attempted to use this syndrome as a drunk-driving defense in court. In 2015, a woman from upstate New York was charged with a DWI (driving while intoxicated) hours after having had her last drink. When pulled over while driving with a flat tire, her blood alcohol content (BAC) was 4 times over the legal limit. She was taken to the hospital, as standard protocol for this BAC level, but was

released because she presented no symptoms. In further testing she was found to have an increased alcohol tolerance that correlates to the level of functioning alcoholics. Her charges were dismissed by a judge after presentation of her possessing this syndrome.³

In early March of 2019, however, a man from Maine attempted to use this syndrome as a defense for his own DWI. His appeal was denied, but not strictly in response to whether or not he had this syndrome. The judge felt that the possibility of using an "ignorance" approach as a legal loophole to drunk driving made the ruling a particularly important one. The judge made clear his dismissal of the appeal was not on the grounds

of the man having this syndrome or not, but that his witnesses attesting to this appeal were untrained or not provided in a timely manner.⁴ This syndrome does raise the question: Can individuals with Auto-brewery Syndrome be convicted for driving while intoxicated if they have BACs that are unintentionally over the legal limit?

While being able to get drunk after eating too many carbs may seem fun, individuals with this syndrome struggle with the

fluctuating levels of intoxication they experience. Additionally, they may face unintentional conflicts with the law, as well as the detrimental effects of continuous alcohol within their bodies.



References

1. Painter K, Sticco KL. Auto-brewery Syndrome (Gut Fermentation) [Updated 2019 Feb 14]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2019 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK513346/>
 2. K. Eaton, Keith & McLaren Howard, John & Hunnisett, Adrian & Harris, Malcolm. (2009). Abnormal Gut Fermentation: Laboratory Studies reveal Deficiency of B vitamins, Zinc, and Magnesium. *The Journal of Nutritional Biochemistry*. 14. 115-120. 10.1080/13590840410001734965.
 3. LaMotte, Sandra. "Woman claims her body brews its own alcohol, has DUI charge dismissed." CNN; 1 Dec 2015. <https://www.cnn.com/2015/12/31/health/auto-brewery-syndrome-dui-womans-body-brews-own-alcohol/index.html>
 4. Koenig, Seth. "Maine man says he shouldn't be convicted of drunk driving because his gut brews alcohol." *WGME*; 8 Mar 2019. <https://wgme.com/news/local/maine-man-says-he-shouldnt-be-convicted-of-drunk-driving-because-his-gut-brews-alcohol>
- [xi] November 13, 2018, from <https://www.shape.com/health-eating/diet-tips/what-is-biohacking-nutrition-science>
- [xii] Detwiler, J. (2018, June 25). I Hacked My Body So You Don't Have To. *Popular Mechanics*. Retrieved November 13, 2018, from <https://www.popularmechanics.com/science/health/a21272160/biohacking>
- [xiii] Webb, S. (2017, October). Bootstrapping Biology. *BioTechniques*, 63(4), 152-156. <https://www.future-science.com/doi/pdf/10.2144/000114594>
- [xiv] Blazeski, G. (2014, May 1). The Need for Government Oversight Over Do-It-Yourself Biohacking, the Wild West of Synthetic Biology. *Seton Hall University eRepository*. Retrieved November 13, 2018 from https://scholarship.shu.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1411&context=student_scholarship
- [xv] Wolinsky, H. (2016). The FBI and biohackers: an unusual relationship. *EMBO Reports*, 17(6), 793-796. <https://doi.org/10.15252.embr.201642483>
- [xvi] Shinde, S. & Meller-Herbert, O. (2017, June 12). Biohacking. *Anaesthesia*, 72(7), 909. Retrieved November 13, 2018 from <https://onlinelibrary.wiley.com/doi/full/10.1111/anae.13952>