

Letter to Editor Regarding: 'Dose-Response Characteristics of the Alcohol Biomarker Phosphatidylethanol (PEth): A Study of Outpatients in a Treatment for Reduced Drinking'

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Description

According to the regression line of this article, the 0.30 mmol/L threshold for "heavy drinker" would be met by someone drinking about 30 drinks/2 weeks (about 2 drinks/d, or 26 g alcohol/d). Translating from the 12 g alcohol standard drink in Europe to the 14 g US Standard Drink, 26 g alcohol per day would be 1.9 US standard drinks/d-hardly a "heavy drinker." Compared to most past studies, the regression line associates a surprisingly low number of drinks with each PEth unit of measure

The article did point out the high interpersonal variability in the number-of-drinks/PEth data points in this study, and also expressed a caution regarding the well-known problem of under-reporting drinks in self-reports. I believe these two problems are particularly prominent in the heaviest-drinking subgroup (PEth>0.5 mmol/L) in this study, to the point that this study's conclusions would be more valid if this group were excluded.

The number of drinks self-reported by this heavily-drinking subgroup of individuals with alcohol use disorder is likely unreliable, based on statistical and clinical considerations regarding this large subgroup (22 of the 100 data pairs). Statistically, this sub-group contributes a disproportionate share of variability to the data as a whole. The Standard Deviation of the data in this subgroup is over twice that of the other 4 subgroups clinically, a subgroup of heavily-drinking individuals with alcohol use disorder would almost be expected to manifest some denial/minimizing in self-reporting their alcohol consumption. A second concern to a clinician would be that a subgroup of heavily drinking individuals with alcohol use disorder is at high risk for impaired memory of the details of their heavy-drinking episodes, including the exact number of drinks consumed.

Graphs a data analysis that minimizes the problems self-report and inter-individual variability. It compares successive-

sampling-occasion results for the same individual (drinks the past 2 weeks, PEth level). Such same-individual results would filter out the denial factor in self-reports if the denial pattern was consistent over successive samplings. The results which are mentioned indicate the, on average, regular consumption of 20 g alcohol/day increases the PEth by about 0.10 mmol/L. The author notes that this makes 0.30 mmol/L PEth a reasonable threshold for "heavy drinking" (correlating with 60 g alcohol/d, or 5 drinks/d).

If one amends by removing the data points for the subgroup whose PEth was >0.5 mmol/L, the remaining data has an approximate regression line in which 20 g alcohol/d increases the PEth by about 0.10 mmol/L, as noted above, this is consistent with Helander's previous threshold of a PEth greater than 0.30 mmol/L indicating "heavy drinking." Converting the correlation of 20 g/d-alcohol-increases-PEth-by-0.10 mmol/L into measurement dimensions used in the US we get 1 standard US drink 14 g alcohol per day increases PEth by about 50 ng/ml. The flag of a "Highly Positive" PEth (>200 ng/ml) thus correlates with about 4 US standard drinks/d. This general guideline carries the usual caveat that a PEth result cannot give a detailed picture of an individual's alcohol consumption in terms of recency, frequency or exact amounts of alcohol consumed [1-3].

References

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