

## **What makes alcoholics drink? Research shows it's more complex than supposed**

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What makes alcoholics drink? New research has found that in both men and women with alcohol dependence, the major factor predicting the amount of drinking seems to be a question of immediate mood. They found that suffering from long-term mental health problems did not affect alcohol consumption, with one important exception: men with a history of depression had a different drinking pattern than men without a history of depression; surprisingly those men were drinking *less* often than men who were not depressed

*"This work once again shows that alcoholism is not a one-size-fits-all condition",* said lead researcher, Victor Karpyak (Mayo Clinic, MN, USA). *"So the answer to the question of why alcoholics drink is probably that there is no single answer; this will probably have implications for how we diagnose and treat alcoholism".*

The work, presented at the ECNP congress by researchers from the Mayo Clinic\*, determined the alcohol consumption of 287 males and 156 females with alcohol dependence over the previous 90 days, using the accepted Time Line Follow Back method and standardized diagnostic assessment for life time presence of psychiatric disorders (PRISM); they were then able to associate this with whether the drinking coincided with a positive or negative emotional state (feeling "up" or "down"), and whether the individual had a history of anxiety, depression (MDD) or substance abuse.

The results showed that alcohol dependent men tended to drink more alcohol per day than alcohol dependent women. As expected, alcohol consumption in both men and women was associated with feeling either up or down on a particular day, with no significant association with anxiety or substance use disorders. However, men with a history of major depressive disorder had fewer drinking days ( $p=0.0084$ ), and fewer heavy drinking days ( $p=0.0214$ ) than men who never a major depressive disorder.

Victor Karpyak continued:

*"Research indicates that many people drink to enhance pleasant feelings, while other people drink to suppress negative moods, such as depression or anxiety. However, previous studies did not differentiate between state-dependent mood changes and the presence of clinically diagnosed anxiety or depressive disorders. The lack of such differentiation was likely among the reasons for controversial findings about the usefulness of antidepressants in treatment of alcoholics with comorbid depression.*

*This work will need to be replicated and confirmed, but from what we see here, it means that the reasons why alcoholics drink depend on their background as well as the immediate circumstances. There is no single reason. And this means that there is probably no single treatment, so we will have to refine our diagnostic methods and tailor treatment to the individual. It also means that our treatment approach may differ depending on targeting different aspects of alcoholism (craving or consumption) and the alcoholic patient (i.e. man or a woman) with or without depression or anxiety history to allow really effective treatment".*

Commenting, Professor Wim van den Brink (Professor of Psychiatry and Addiction at the Academic Medical Centre, University of Amsterdam) said:

*"This is indeed a very important issue. Patients with an alcohol use disorder often show a history of other disorders, including mood and anxiety disorders, they also often present with alcohol induced anxiety and mood disorders and finally they may report mood symptoms that do not meet criteria for a mood or anxiety*

disorder (due to a failure to meet the minimal number of criteria or a duration of less than two weeks). All these different conditions may influence current levels or patterns of drinking.

*The current study seems to show that the current presence of mood/anxiety symptoms is associated with more drinking in both male and female alcoholics, whereas a clinical history of major depression in male alcoholics is associated with lower current drinking levels. Although, the study does not provide a clear reason for this difference, it may have consequences for treatment. For example, antidepressant treatment of males with a history major depression may have no effect on drinking levels. However, these findings may also result from residual confounding, e.g. patients with a history of major depression might also be patients with a late age of onset of their alcohol use disorder and this type of alcohol use disorder is associated with a different pattern of drinking with more daily drinking and less heavy drinking days and less bingeing. More prospective studies are needed to resolve this important but complex clinical issue”.*

\*This work was presented on Sunday 3rd September, 2017.

ENDS

## Notes for Editors

### **The European College of Neuropsychopharmacology (ECNP)**

The ECNP is an independent scientific association dedicated to the science and treatment of disorders of the brain. It is the largest non-institutional supporter of applied and translational neuroscience research and education in Europe. Website: [www.ecnp.eu](http://www.ecnp.eu)

The 30th annual ECNP Congress took place from 2<sup>nd</sup> to 5<sup>th</sup> September in Paris. It is Europe’s premier scientific meeting for disease-oriented brain research. The 2017 meeting attracted 4600 neuroscientists, psychiatrists, neurologists and psychologists from around the world. Congress website: <http://2017.ecnp.eu/>

## Conference abstract

### **P.6.b.005 The impact of positive and negative emotional states vs. comorbid depression or anxiety diagnoses on alcohol consumption in male and female alcoholics**

V. Karpyak, J.R. . Geske, D.K. Hall-Flavin, L.L. Loukianova, T.D. Schneekloth, M.K. Skime, M.A. Frye, J.M. Biernacka  
*Mayo Clinic, Rochester MN, USA*

**Background:** Comorbid depression and anxiety, as well as propensity to drink during positive and negative emotional states are known contributors to differences in alcohol use and risk for alcohol use disorders (AUD) [1]. However, less is known about the impact of those clinical variables on the specific alcohol consumption measures.

**Study aims:** To investigate the associations of alcohol consumption with comorbid depression and anxiety disorders, as well as propensity to drink during positive and negative emotional states in male and female alcoholics.

**Methods:** Univariate and multivariable linear regression models were used to examine the association and interactions between sex, comorbid major depressive disorder (MDD), substance induced depression (SID) and anxiety disorders (AnxD) determined by Psychiatric Research Interview of Substance and Mood Disorders (PRISM), as well as propensity to drink in the negative, positive and temptation situations determined by Inventory of Drug Taking Situations (IDTS) subscale scores with alcohol consumption measured by Time Line Follow Back (TLFB) during preceding 90 days in 287 males and 156 females meeting DSM-IV criteria for alcohol dependence.

**Results:** The prevalence of MDD, SID and AnxD was higher in females compared with males (33.1 versus 18.4%, 44.8 versus 26.4% and 42.2 versus 27.4%, respectively;  $P < 0.01$ , each). Increased propensity to drink in negative emotional situations was associated with comorbid MDD ( $\beta = 6.6$ ,  $P = 0.013$ ) and AnxD ( $\beta = 4.8$ ,  $P = 0.042$ ) as well as SID  $\times$  sex interaction effect ( $P = 0.003$ ), indicating that the association of SID with propensity to drink in negative emotional situations differs by sex and is stronger in males ( $\beta = 7.9$ ,  $P = 0.009$ ) compared with females ( $\beta = 6.6$ ,  $P = 0.091$ ). Male sex was associated with higher alcohol consumption per day ( $p < 0.001$ ), but not with the number of drinking days ( $p > 0.05$ ). In men, lifetime history of MDD was associated with fewer drinking days ( $p = 0.0084$ ) and fewer heavy drinking days ( $p = 0.0214$ ) but not with differences in daily alcohol consumption. In women, MDD history was not associated with differences in alcohol consumption. IDTS positive, negative and temptation scores were strongly

associated with increased number of drinks per day and number of drinking days ( $p < 0.0001$ ) in male and female subgroups. Post-hoc sex-stratified analyses suggested that the association of the negative IDTS score with total amount of alcohol consumed by men may be modified (decreased) by life time history of MDD. We found no associations of alcohol consumption measures with lifetime SID, AnxD or MDD within 12 months before assessment.

**Conclusions:** Our findings support strong association of alcohol consumption in male and female alcoholics with positive and negative emotional states but not with the life time diagnoses of AnxD or SID. Moreover, the number of drinking days and heavy drinking days was decreased in males with the life time history of MDD. These finding support the need for individualized approach to selection of treatment options for males and females with AUD (personalized medicine) and need for development of medications targeting alcohol consumptions driven by positive or negative emotions.

## References

[1] Erol, A., Karpyak, V.K., 2015. Sex and gender-related differences in alcohol use and its consequences: Contemporary knowledge and future research considerations. *Drug and Alcohol Dependence* 156, 1-13.

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