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Differences in the activity of the HPA-Axis in non-alcoholic females as a function of family history of alcoholism

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Vulnerability to alcoholism is determined by the interplay of genetic and environmental factors such as stress. A number of studies have demonstrated differences in the activity of the HPA-axis under basal conditions and in response to alcohol and stress as a function of family history of alcoholism. Most of the studies have been performed using male participants. Though males present a higher incidence of alcoholism than females, alcoholism is observed in females, while there is evidence for a higher incidence of alcoholism in the daughters of alcoholic parents. The present studies test the hypothesis that there are differences in the activity of the HPA-axis under basal conditions and in response to stress and alcohol between non-alcoholic females with and without a family history of alcoholism. Participants were between 18-30 years old. The response of the HPA-axis to placebo or alcohol containing drinks and to a stress task was determined by measuring plasma ACTH and cortisol concentrations prior to and at specific time points following the drink and performance of the stress task. Results demonstrated higher basal levels of ACTH and cortisol as well as a higher response to alcohol and stress in females with a family history of alcoholism. Consumption of an alcohol drink attenuated or prevented the stress induced increase of both ACTH and cortisol regardless of the family history. Thus, non-alcoholic females present differences in the activity of the HPA-axis as a function of family history of alcoholism which may be important in determining vulnerability for alcohol abuse.

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