



## Alcohol Dependence **Genetics** in a Large **Chinese Pedigree**

**Overview:** This is an exploratory research grant to investigate the role of genes in alcohol dependence. Investigators have identified in rural northern Hunan Province in China a pedigree or ancestral line of Han Chinese that has a very high rate of alcohol dependence and little exposure to other substances of abuse. This pilot study will recruit individuals from four different branches of the identified pedigree in China. The rate of alcohol dependence in this pedigree has been estimated at around 15 percent, compared to a rate of about 3.8 percent in the overall Chinese population.

**Design/Methods:** Individuals accepted into the study will complete the Diagnostic Interview for Genetics Studies (Chinese version) for assessment of psychiatric and substance dependence problems and have blood samples collected for DNA extraction. Subject recruitment has begun at the Hunan Normal University, and 107 subjects have been recruited so far. The initial genotype studies will be performed in China over the coming year for 30 genetic markers that have been mapped to chromosome 4. Several previous linkage studies for alcohol dependence have identified two gene clusters (an ADH gene cluster and a GABA receptor subunit cluster) that are strongly associated with alcohol dependence and are located on chromosome 4. The investigators are working to obtain approval to export the DNA samples to the United States for more detailed genotyping analysis. The data obtained through this pilot study will provide the basis for a large research grant application and additional international collaboration.

**Significance:** Twin, family, and adoption studies have provided heritability estimates for alcohol dependence in the range of 50 to 60 percent. The findings from this study will not only lead to a better understanding of the genes that contribute to the risk for alcohol dependence in this Chinese pedigree but also provide data for comparison of differences in genetic risk between populations (e.g., Chinese and European-American populations). The relevance of these studies in a Chinese sample to U.S. Chinese Americans is high. These results may document diversity in the genetic underpinnings of alcohol use disorders among Chinese Americans.

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