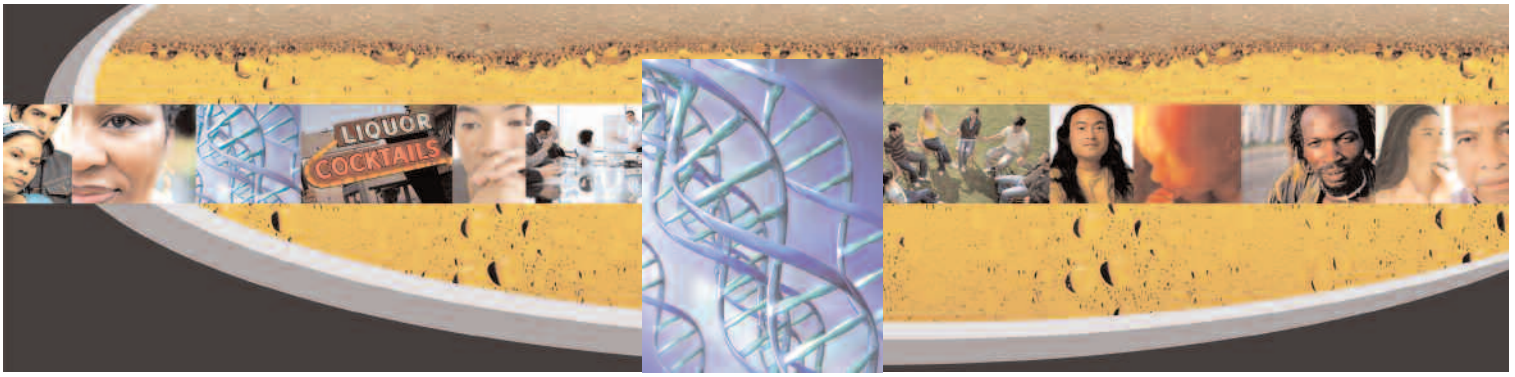

Alcohol **Pharmacogenetics** in **Mexican Americans**

Overview: The aim of this research grant, now in its 9th year of funding, is to investigate genetic factors that may contribute to the risk for development of alcohol dependence and other alcohol-related health problems in Mexican Americans. Mexican Americans comprise about two-thirds of the Hispanic population in the United States. They are at particularly high risk for the development of alcohol-related problems. Mexican-American men, for example, have a three times–higher prevalence rate for heavy drinking than non-Hispanic men, and their survival rate for alcoholic liver disease is considerably lower than for Whites or African Americans.

Design/Methods: Participants, all of whom are between 21 and 60 years of age and have at least three out of four biological grandparents of Mexican heritage, were recruited for this study from the southern part of Los Angeles County. Clinical assessment of alcohol-related health problems and a medical examination were conducted for individuals accepted into the study and who provided informed consent to participate. Blood samples were collected for DNA extraction and genotyping for genetic polymorphisms. Because of the difficulty in recruiting women with alcohol-related problems, increased community outreach to this group is being conducted by members of the research team.

Results/Outcomes: This research study has begun to identify a unique genetic profile in Mexican Americans that may contribute to the risk for the development of alcohol dependence and other alcohol-related health problems. Findings from this ongoing research study include, for example, the demonstration of a very low allele frequency for the ALDH2*2 (aldehyde dehydrogenase) and ADH2*2 (alcohol dehydrogenase) genes, which are critically involved in the metabolism of alcohol. The study also suggests a link between the ADH3*2 and ADH2*1 genetic alleles and episodes of binge drinking. Some very recent findings have shown that the frequency of the H6 polymorphism of the CYP2E1 gene (a gene induced by alcohol which generates free radicals that could cause organ damage) is significantly higher in alcoholic than in nonalcoholic individuals. This finding suggests that the occurrence of the H6 polymorphism in this ethnic population may place them at increased risk for the development of alcoholism.

Significance: Mexican Americans, especially men, appear to be at high risk for the development of alcohol-related health problems. Understanding the genetic risk factors that put Mexican Americans at risk for alcohol problems may contribute to the development of prevention and treatment programs to improve the health and well-being of this population.

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