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## **The Genetics of Alcohol Metabolism and Alcoholism**

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**KEY WORDS** Alcohol metabolism; alcohol abuse; alcoholism; genetic factors; family studies; twin and adoption studies.

**ABSTRACT** Alcoholism is an extremely complex disease for which no generally accepted definition exists; there is a complex interaction between the socio-environmental context, the individual at risk, and the availability of alcohol. Recent human genetic studies clearly suggest that predisposition to alcohol abuse and/or to develop alcoholism is inherited. The results of family, twin, and adoption studies are compatible with the existence of genetic factors in the etiology of alcohol abuse. Pedigree analysis, linkage, and association studies have helped to detect marker loci and candidate genes that may be useful for identifying individuals at risk. The legacy of alcoholism among certain ethnic groups suggests that genetic factors can increase an individual's vulnerability for this disease. Recent molecular genetic research into the causes of alcoholism has drawn attention to the potential important role of alcohol and acetaldehyde metabolizing enzymes. Functional polymorphisms have been observed at various genes encoding these enzyme proteins that act as one of the biological determinants significantly influencing drinking behavior and the development of alcoholism and alcohol-induced organ damage.

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