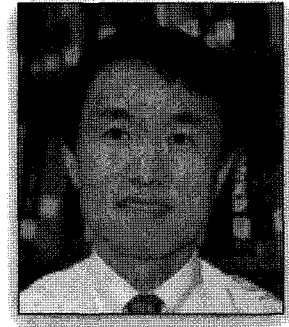


Design and Analysis of Genetic Association Studies of Complex Disease

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The mapping of disease genes to specific loci has received a great deal of attention in the last decade. A large number of genetic association studies have attempted to identify genes implicated in complex disease such as stroke or diabetes, but there have been few replicable and robust associations reported. We define the factors that determine statistical power and show how study design and analysis should be designed to increase the probability of localizing disease genes. We discuss important methodological and practical considerations such as the selection of appropriate controls, careful clinical phenotyping using standardized classification systems, adequate sample size, cost, adequate standards in genotyping, etc.