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**GENETIC EPIDEMIOLOGY
OF CORONARY
HEART DISEASE
PAST, PRESENT, AND FUTURE**

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GENETIC EPIDEMIOLOGY OF CORONARY HEART DISEASE

Past, Present, and Future

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Participants at the Workshop



Participants at the Workshop



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Preface

Considerable attention has been paid to the role of familial factors in the etiology of coronary heart disease (CHD) in man. Several conferences have been held over the past decade that specifically highlighted research priorities and characterized the relevant phenotypes that are known or suspected precursors of a variety of CHD endpoints. The major aim of two such conferences, "Task Force on Genetic Factors in Atherosclerotic Disease" in 1974 and "Genetic Analysis of Common Diseases: Application to Predictive Factors in Coronary Disease" in 1978, was to summarize the state of the art findings on the clinical, genetic, and epidemiological aspects of CHD. This format effectively disseminated a large amount of information to a wide audience. However, disciplinary isolation continues to be a limitation despite the emergence of collaborative efforts. So long as geneticists, epidemiologists, and clinicians continue with their parallel approaches, none is likely to resolve the etiological basis of complex human diseases such as CHD. A sound strategy should forge an interdisciplinary approach. We have deliberately designed this workshop for this purpose, by inviting experts in various disciplines to examine and constructively criticize the scientific value of each others' studies.

These proceedings are the result of an attempt to maximize interdisciplinary communication among geneticists, epidemiologists, and clinicians. On the first day of the conference four major epidemiological studies, chosen as examples of representative, prospective cohort studies containing data on a variety of CHD risk factors, were discussed. Each was reviewed by two experts who had not participated in the study, first by an epidemiologist and then by a geneticist. A formal discussion of these reviews was then conducted by one of the major contributors to the study, which generated additional discussion of similar studies. This format was designed to identify the extent to which earlier contributions have been received by the scientific community and to recognize the potential opportunities that still exist. Only by recognizing the limitations and strengths of past studies can we hope to design future investigations more efficiently. We believe this format succeeded in meeting these objectives, was successful in initiating discussions, and set the stage for a continuous and effective exchange of ideas throughout the conference period and beyond. Using these four studies as case models, the two subsequent days were dedicated to a review of current methodological approaches

and clarification of intervening phenotypes and endpoint definitions. In addition, and perhaps most importantly, specific genetic hypotheses and optimal statistical procedures were discussed that might best serve as guidelines for future research. Some attention was paid to the general utility of these recommendations for a wide spectrum of common diseases in man including CHD, cancer, behavioral phenotypes, and a variety of lung and blood disorders.

It is hoped that this volume represents another significant, albeit small, step toward the ultimate goal of understanding the etiological basis of coronary heart disease. While we were unable to be comprehensive, we believe we have encapsulated important features of past epidemiological studies, covered the most recent clinical findings, and indicated some optimal approaches to examining the role of genetic epidemiology in the manifestation of CHD. The more successful we become at communicating progressive ideas, revealing methodological or conceptual frustrations, and clarifying joint hypotheses and analytical strategies, the closer we will be to understanding, managing, and eventually controlling coronary heart disease. This workshop will have served its major purpose if it succeeds in convincing clinicians, epidemiologists, and geneticists that real progress on the genetic epidemiology of CHD can only be made through meaningful interactions among these disciplines.

The Editors

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