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PREFACE

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Migraine is an almost unique example of the success of medical empiricism: a disease of unknown cause in which treatment of the painful attacks with a wide variety of pharmacological agents confers substantial benefit. Yet despite the demonstrable utility of prophylactic therapy, only a minority of patients are effectively treated. At the start of the 21st century, the greatest promise for surmounting these limitations seems to be the identification of genetic determinants of migraine, target organ susceptibility, and therapeutic efficacy. Identification of genetic variation predisposing to migraine is an active area of research. Characterization of genes for migraine may permit focused efforts at primary prevention, may predict responses to pharmacological interventions, and may identify individuals at risk for developing the disease. To date, genes for several rare types of migraine have been identified, but such genes appear to play no important role in migraine with or without aura.

Research on headache genetics is active all over the world and it obliges all of us to a high standard of updating in order to maintain our expertise in this area of clinical medicine. An increasing number of research laboratories, from universities and public companies, plan projects to identify human genes that may be an underlying cause of a common, but hard-to-treat, disease group: migraine headaches. New technologies are rapidly transforming basic, clinical and pharmaceutical research in the broad arena that includes migraine and cluster headache. How do these genes work inside the human body and why do people born with certain alleles of the genes develop the related headache while those who inherit other alleles seldom do? The ultimate goal is to understand the basic biology behind migraine and this will quickly lead the research to develop profitable drugs that will either treat migraine in novel ways, or help prevent them in genetically vulnerable individuals. New gene-hunting technology is being used to identify the genes that make people susceptible to 20-30 of the most common and intractable human diseases. These include heart disease, stroke, asthma, arthritis, allergy, cancer, depression, schizophrenia, baldness and even migraine.

Here, we want to state as clearly as possible that uncovering these migraine "susceptibility genes" will unleash ways to diagnose, treat and prevent migraines that scientists could only dream of doing some years ago. Scientists can now scan large swaths of human DNA samples to find the subtle genetic variations that distinguish one person from another.

Collaborations among various research groups around the world have produced a growing body of

genetic evidence based on the study of migraine-affected families. In fact, the key to finding these genes is having a map of the entire genome in affected members of the same family.

This supplement contains the presentations of the IV International Seminar of the Italian Society for the Study of Headaches that was held in Rome, on 8 September 2000. At the seminar, leading investigators in basic and clinical genetics of headaches were panelists who shared with the audience their expertises.

We trust that the high standard of the reports in this supplement represents the latest cornerstone on this rapidly developing research area. We hope that this will be a vehicle for a spreading awareness of this growing branch of headache research, gaining and addressing the interest of an increasing number of research teams in the near future.