A SCREENING OF MALFORMATIONS IN TWINS

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The hereditary conditioning of various malformations of the skeletal and the male genital systems has been determined through a twin study based on a sample defined with respect to zygosity and concordance. An interzygotic analysis was carried out and the inheritance coefficient determined.

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ISCHEMIC HEART DISEASE IN DEATH DISCORDANT TWINS

A Study on 205 Male and Female Pairs with Special Reference to Hereditary Factors

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Results are presented from a study on ischemic heart disease (IHD) in death discordant twin pairs, 46-70 years old, deriving from the Swedish Twin Registry. The main object of the investigation was to evaluate the genetic influence in IHD by examining the surviving cotwins with regard to clinical and subclinical signs of IHD as well as risk factors for IHD and correlate the findings to the cause of death of the partner (IHD-not IHD).
The material consists of 205 male and female twin pairs, who became death discordant during the period 1971-1973, i.e., one of the members in an unbroken pair died during this period. The surviving cotwins were then examined on average 5 months after the death of the partner.
The results showed significantly more clinical and subclinical signs of IHD among the surviving cotwins whose partners had died from IHD compared to those whose partners died from other causes than IHD. This difference was especially pronounced when MZ twins were compared.
Most of the biometric risk factors measured (anthropometric variables, blood pressure, lipids, uric acid) showed only slightly higher values for the cotwins whose partners died from IHD compared to those whose partners died from other causes.
It can be concluded that the results indicate a substantial genetic influence in the development of IHD and, furthermore, that the genetic influence seems to be transmitted not only through some of the risk factors measured but also through factors which are still unknown.

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CORONARY HEART DISEASE IN MALE TWINS

Seven-Year Follow-up of Discordant Pairs

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In an investigation in 1967 of about 100 male twin pairs collected from the Swedish Twin Register, discordance with respect to the presence of CHD was found in 37 pairs of which 19 were MZ. The investigation included physical examination, cholesterol measurements, and an interview regarding, among other things, smoking habits.
In a follow-up study in 1974 — seven years after the original investigation — all but one of the 37 twins regarded in 1967 as free from overt CHD could be traced. Ten of the 36 twins had developed symptoms of overt CHD (angina pectoris or infarction); 18 twins were still healthy, 2 had died from other causes, and 6 had questionable complaints of breast pains.
In a comparison of the two groups of twins with and without symptoms of overt CHD, no differences were found with respect to blood pressure, serum cholesterol, or smok-

ing habits, as presented at the 1967 investigation.
It is concluded that none of these factors seemed to influence the future development of CHD in twins apparently tainted with a heredity for this disease.

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METABOLIC RESEARCH IN MZ TWINS WITH DIABETES MELLITUS

Progress Report

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An intravenous and oral glucose-tolerance test and an intravenous tolbutamid-test have been carried out in a sample of 12 MZ twin pairs discordant for diabetes mellitus. Blood sugar, insulin, and free fatty acids were determined. The research aimed at finding out whether prediabetic subjects may show any characteristic feature in the metabolism of sugars and fats, that may reveal a diabetic ground. Preliminary results show that, in MZ twins with discordant juvenile diabetes mellitus, metabolic values may remain discordant for quite a number of years.

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A GENETIC STUDY ON DEAF TWINS

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A study was carried out on 33 cases of twins with early total deafness from the Japanese young population. Complete physical and otological signs of all subjects were examined by otolaryngologists. Twenty-five cases were accepted as index cases for genetic analysis. They had no evidence of the known exogenous causes of deafness. Family and developmental history were taken. The sample included 17 MZ and 8 DZ pairs. Cousin-mating rate was 32%, i.e., five times the average population rate in Japan.
Audiometric tests were analysed. Nonsignificant differences were found between right and left ear in zygosity group, but intrapair differences of the hearing impairment were larger in DZ than MZ pairs. The deafness concordance rates for DZ and MZ pairs were respectively assessed as 63 and 88%. Penetrance was established as 0.94. The average intrapair difference of the hearing loss was 8 dB in the MZ and 30 dB in the DZ group, and a dissolution indicated remarkable small value in the MZ group.
It is suggested that the degree of hearing impairment is strongly influenced by heredity.

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GENETIC FACTORS IN MYOPIA

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The present study is concerned primarily with the nature of the well documented relationship between nearsightedness and enhanced performance on scholastic or intelligence tests. Myopia is established to be a familial disorder, and there are great variations in its frequency between different ethnic or national groups. In some populations, such as those of Jewish, Japanese, or West-European origin, the rate of myopia is in the order of 25%, while primitive societies are almost free of myopia.
Many eye specialists favor the view that nearsightedness may result from excessive close work, often referring to the condition arising during the period of education as "school myopia". Recent surveys which indicate that an increase may be occurring in myopia in Eskimos and North-Canadian Indians have also been interpreted in terms of external factors. Some centers are engaged in experimental work with monkeys,