

group. In the study, the chronic bronchitis combination, is taken as including cough, phlegm production, and a chest illness at least once in the course of the last three years. A comparison of the incidence found in this study with those reported from rural or small town areas of other countries indicated chronic bronchitis symptoms to be more numerous in this study than in a Danish study and about the same as in Scottish and Welsh ones. The incidence, as was to be expected, was considerably lower than that found in London. -- APCA Abstr.

- 840 Immunologic Defect in Patients Recovered from Sarcoidosis. H. L. Israel and M. Sones. *New Engl. J. Med.* 273, 1003-1006 (Nov. 4, 1965).

Insensitivity to tuberculin has long been recognized as a cardinal feature of sarcoidosis. Recently in the course of another investigation, tuberculin tests were given patients who had recovered from sarcoidosis. Nearly all had no reaction. This unexpected finding led to a detailed examination of the behavior of the tuberculin reaction in patients under prolonged observation in a sarcoidosis clinic. The results of serial tuberculin tests in 170 patients with sarcoidosis over a mean interval of six years are reported. Tests in 60 who recovered from sarcoidosis showed that tuberculin anergy persisted after disappearance of all residual of the disease. Eleven patients who recovered received BCG vaccinations. Transient, weak tuberculin reactions developed in four patients; only one patient maintained tuberculin sensitivity three months after vaccination. The immunologic defect thus demonstrated may be the result of the disease, but evidence is adduced to support the alternative hypothesis that inability to develop and maintain delayed hypersensitivity is a constitutional defect that is prerequisite to the development of sarcoidosis. -- *Am. Rev. Resp. Dis. A*

- 841 Chronic Disease in Former College Students. II. Methods of Study and Observations on Mortality From Coronary Heart Disease. R. S. Paffenbarger, Jr., et al. *Am. J. Public Health* 56, 962-971 (June, 1966).

Over 45,000 former students of the University of Pennsylvania and of Harvard University are under study for the kinds and amounts of chronic diseases that have developed in their later life. Physical, social, and psychological data recorded during college years are correlated with later health status as measured through self-administered questionnaires, physical examinations, and death certificates. College records from 1921 through 1950 contain precursive and causative factors of subsequent chronic disease. Observations on coronary heart disease were limited to the first 590 male former students known to have died from this cause. They were contrasted with 1,180 randomly chosen classmates of equivalent age who were known to be still alive. Analyses of college case-taking and other records of these subjects identified nine precursors of fatal coronary heart disease: heavy cigarette smoking, higher levels of blood pressure, increased body weight, shortness of body height, early parental death, absence of siblings, nonparticipation in varsity athletics, higher emotional index, and scarlet fever in childhood. Some precursors correlated only with early death from coronary disease and some with death throughout the range of ages afforded for study. Heavy cigarette smoking early in life was associated with a marked increase in risk of coronary mortality. Higher levels of blood pressure, as measured on both systolic and diastolic scales, and a higher emotional index, as self-assessed by students, also showed a preponderance in those who later died of coronary heart disease. In contrast, participation in varsity athletics was associated with a substantial sparing effect. Although some of these characteristics may be changed later in life, it is of interest that early precursors can be recognized and quantified years before overt evidence of coronary heart disease. The study benefits from the use of predocumented data on young adults, drawing on records made years in advance of clinical recognition of chronic diseases that develop later in life. Advantages include: (1) availability of a large population, (2) uniformity of records, (3) focus on susceptible age groups and their characteristics precursive of chronic disease, and (4) the utilization of invaluable help from university sources. -- Cond. from authors' summary

- 842 Heart Disease Among Industrial Workers. J. B. Tauber and A. Ciocco. *J. Occ. Med.* 8, 317-325 (June, 1966).

A group of 3,359 male nonsalaried employees of a steel plant, presumably free of heart disease, was observed by means of repeated medical examinations for an average of 3.6 years. The following findings were noteworthy: (1) For the period of the follow-up, 1% of the men 40 years of age and over acquired heart disease annually, while still actively employed; the rate was 1 per 1,000 among men under 40 years of age. Approximately one-half of the new cases were considered to be of acquired myocardial infarction. (2) Men with relatively higher diastolic blood pressure and weight-height ratio demonstrated a higher risk of acquiring heart disease. Preliminary analysis of the data indicates that further clarification of this association may be obtained.

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