CVD EPIDEMIOLOGY NEWSLETTER
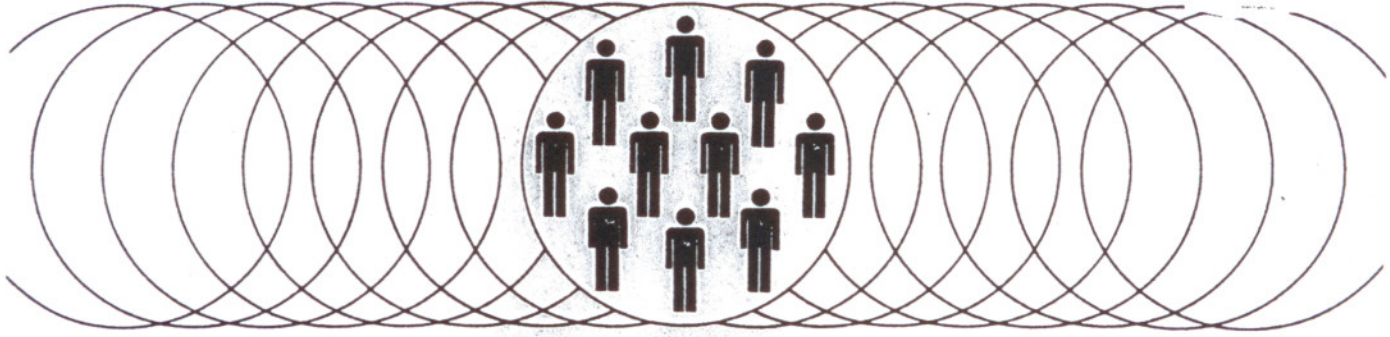
COUNCIL ON EPIDEMIOLOGY

American Heart Association

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treatment in mild hypertension, and only 14% of the hypertensive patients are treated without drug treatment. It may be concluded that, an increase in medical treatment of mild hypertension primarily may lead to an increase of drug prescription in cardiovascular prevention.

11. **Blood Pressure, Body Mass, Alcohol Consumption, and Electrolyte Excretion in Federal Republic of Germany and German Democratic Republic: The INTERSALT Experience**

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INTERSALT is an international epidemiological study on the relation of blood pressure to electrolyte excretion in 10,079 men and women aged 20-59 years. Positive association between the ratio of urinary sodium to potassium, body mass index, high intake of alcohol, and blood pressure were observed in the combined data for the 52 INTERSALT centers. We examined the level of these variables in the German speaking centers (Bernried [FRG], Cottbus [GDR], and Heidelberg [FRG]) and the public health implication for our population. In these three centers, the mean sodium excretion was 167, 147, and 172 mmol/24 hr, while mean potassium excretion was 72, 55, and 73 mmol/24 hr, respectively. The mean molar sodium to potassium ratio was 2.5, mean body mass index was moderately high (24.6), and 16% of the participants reported intake of $\geq$300 ml alcohol/wk. Approximately 17% were hypertensive. Slope (increase) of systolic blood pressure between age 25-55 was calculated to be about 11 mm Hg. With use of the overall INTERSALT coefficients to estimate effect of improvement in these risk factor variables, it was calculated that a reduction of sodium intake from 163 (9.7 g NaCl) to 100 mmol (5.8 g NaCl) would correspond to a 1.5 mm Hg lower average systolic blood pressure in the population. An additional increase of potassium intake by half (FRG) or double (GDR) would change the sodium to potassium ratio to 1, which would correspond to a 2.4 mm Hg lower average systolic blood pressure in the population. Average body mass index of 23.0 instead of 24.6 would correspond to lower systolic blood pressure by 1.2 mm Hg. If, in addition to these life-style modifications, the proportion of heavy drinkers was also cut in half, the population's average systolic blood pressure would be lower by a total of at least 5 mm Hg. This potential for lower blood pressure has importance since the lower the average population blood pressure, the lower the prevalence of hypertension, and the lower the rate of coronary heart disease and stroke.

12. **Göttingen Risk, Incidence, and Prevalence Study - Risk Factors and Atherosclerotic Diseases: Results Based on a 5-Year Follow-up Period**

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The main part of the Göttingen Risk, Incidence, and Prevalence Study (GRIPS) is a prospective incidence study (GRIPS Project B) that was started in 1982 and included 6,029 male subjects aged 40-60 years. A 5-year observation period (January 1982-December 1986) is complete and data is available on the incidence of death and disease for more than 95% (n=5,738) of the original study population.

Those study participants who had no symptoms of atherosclerotic disease in 1982 (n=5,414) were included in the present evaluations. Of this group, 1,097 subjects

developed myocardial infarction during the observation period, 74 coronary artery disease without myocardial infarction, 26 peripheral arterial vascular disease, and 47 an event of stroke. These four groups were compared to the remaining 5,160 reference subjects (i.e., all those with no symptoms of atherosclerotic disease up to December 1986) with respect to various variables commonly thought to be potential risk factors for atherosclerosis, which had been determined at the initial examination in 1982.

Univariate age-adjusted analysis of associations between these variables and the incidence rates of the above end point diseases showed the following variables to be 1) predominant risk factors (regression coefficient to incidence rate of the respective end point diseases $R > 0.3$, according to Cox's univariate logistic regression analysis; $p < 0.0001$ according to likelihood ratio test) or 2) additional risk factors (R 0.06-0.3, $p < 0.05$) listed in the rank order of their importance for the respective end-point diseases:

Myocardial infarction: 1) low density lipoprotein cholesterol, total cholesterol, and apolipoprotein B, and 2) positive family history of myocardial infarction, high density lipoprotein cholesterol (inverse), blood pressure, smoking, triglycerides, very low density lipoprotein cholesterol, blood glucose, and apolipoprotein A1 (inverse).

Coronary artery disease: 1) low density lipoprotein cholesterol, total cholesterol, and apolipoprotein B, and 2) triglycerides, very low density cholesterol, blood pressure, body mass index, apolipoprotein A1 (inverse) high density lipoprotein cholesterol (inverse), and cardiac arrhythmias.

Stroke: 1) blood pressure and 2) blood glucose, cardiac arrhythmias, smoking, and positive family history of stroke.

Peripheral arterial vascular disease: 1) blood pressure, smoking, and blood glucose and 2) apolipoprotein B, low density lipoprotein cholesterol, total cholesterol, and apolipoprotein A1 (inverse).

These results will be completed and confirmed by more complex, and especially, multivariate analyses. However, they already indicate that prevention strategies for the various forms of atherosclerotic disease must not only focus on different major risk factors but must also consider different combinations of additional risk factors in order to provide sensitive and specific identification and an effective treatment of high risk patients.

13. **Sociostructural Evaluation Within the German Cardiovascular Prevention Study**

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Three years of intensive formative and process evaluation of preventive activities in seven communities in the Federal Republic of Germany have shown the following results:

o   In every community there are several organizations and groups engaged in prevention;

o   Intervention programmes are necessary to establish preventive supply systems for coordination and improvement of preventive facilities; and

o   Preventive supply systems alter over time depending on new issues and new organizations brought into the community as well as on demand for preventive facilities.