

April 16, 1979

- JNC-FTD
- S. J. J. J.

MEMORANDUM

TO: W. T. Hoyt

CC: AY
WUG
RCH

FROM: Leonard S. Zahn

SUBJECT: Annual Conference on Cardiovascular Disease Epidemiology
New Orleans, March 19-21, 1979

This meeting was opened to the press for the first time in its 19-year history and the American Heart Association, whose Epidemiology Council cosponsored the conference along with the National Heart, Lung and Blood Institute, set up and manned a press room. Press coverage consisted of the medical trade press, local papers and news wire bureaus, and a medical writer from the "New York Times."

I had been told at the 1978 meeting that there were pressures to permit the press to cover; these pressures were internal only. There was fear that researchers, knowing press people were present, might feel restrained in their comments; on the contrary, there was the usual effort by various scientists to get publicity for their papers.

Knowing that the meeting would be public may have prompted its organizers to have a session on "Smoking and Health" (three papers, see below) which did not attract any attention, at least in the lay press. However, I expect one or more medical publications will carry something before long.

The highlights:

1. "Smoking and early menopause: the LRC Program" -- Judith Hill, Oklahoma City. Coronary heart disease mortality is much more frequent in males than females under age 50, Hill opened. Since menopause occurs near the age when the rate of female deaths from heart disease begins to increase, hormonal factors that are protective for women during their productive years have been suggested as a possible explanation for this difference.

Smoking has long been accepted as a major risk factor in heart disease, Hill continued. If smoking is associated with earlier menopause, this could help explain the changing coronary risk that appears to accompany menopause.

Hill described a study encompassing 374 white women between 45 and 55 years of age in 10 communities who were participants in the so-called Prevalence Study of the Lipid Research Clinics (LRC) Program. A relationship was found between cigarette smoking and early menopause among these women, she said.

Leonard Zahn
PUBLIC RELATIONS COUNSEL
and Associates, Inc.

(P. O. BOX 223) 13 LINCOLN ROAD • GREAT NECK, N.Y. 11021 • (212) 895-7445

03732265

More than half the women completing natural menopause before age 50 smoked cigarettes as opposed to slightly more than a fourth of those continuing to have menstrual cycles. Heavy smokers were more likely to be postmenopausal than light smokers. Ex-smokers were more likely to have completed menopause before age 50 than women who had never smoked.

The same pattern was found for alcohol use, Hill said. Women postmenopausal before age 50 were three times as likely to drink four or more ounces of alcohol per week as abstainers. Alcohol use, however, tended to accompany smoking, Hill said. In other words, she added, though drinkers were found to have an earlier menopause, this appeared to be due to the effect of smoking.

When the women were divided into two groups based on body mass, more of the leaner women were postmenopausal within each age group. However, the proportion of smokers was higher in the leaner group.

There may be some common factor of factors that cause both smoking and early menopause, Hill continued. Perhaps there are substances in smoke that affect the pituitary or ovarian functions or alter sex hormone metabolism. Smoking may lower high density lipoprotein cholesterol levels (a supposed protective factor in heart disease).

"Obviously, the association between smoking and early menopause is not clear and requires further study," she said at the end of her presentation.

During Q and A, an unidentified physician noted that some women mature early and take up smoking earlier. Such women, he said, usually take up many things -- the "pill," alcohol, etc. -- indicating they are somehow different than other women. It seems difficult to pull out just the one habit (factor) of smoking in regard to early menopause, he said. Hill agreed that it was a complicated matter.

2. "Effect of diet and smoking on saliva and serum thiocyanates" -- Terry F. Pechacek, Minneapolis. This paper described a study to show that smoking-health researchers will have to be careful to assess diet in determining smoke exposure as measured by thiocyanate (SCN) levels.

Smokers have elevated SCN levels, Pechacek said. The SCN measure has become widely used to quantify habitual smoke exposure and to validate self-reported abstinence. (SCN levels decline slowly after smoking is ended and can be easily measured in urine, saliva or blood samples.)

Recent studies of large groups of smokers and nonsmokers have shown overlaps between the distributions of SCN in the two

03732266

groups. All smokers have high SCN levels, Pechacek said, but some nonsmokers also have elevated levels. The so-called "false positives" may result from exposure to cyanide or cyanide gases, but it has been widely believed that high levels in nonsmokers come from eating certain foods which contain small amounts of cyanide or SCN (e.g., cabbage, cauliflower, broccoli, turnips, rutabagas, or almonds). However, the ability of such foods to produce elevated SCN levels has not been shown in controlled feeding experiments.

A 12-week study was done with 16 subjects divided into four groups of four (one smoker and three nonsmokers in each group). The diet was controlled by a central kitchen. All were fed four dietary supplements along with a basic diet. The supplements were: leafy vegetables (high in SCN), root vegetables (moderately high in SCN), whole grains (low in SCN), and a sugar control (no SCN).

The leafy vegetables (cabbage, broccoli, brussels sprouts, cauliflower, spinach) produced "reliable and dramatic" elevations in SCN levels among nonsmokers. However, the root vegetables (beets, carrots, sweet potatoes, parsnips, rutabagas, and turnips) produced a much smaller effect.

An SCN level of 100 micromoles per liter in serum is commonly defined as the cutoff between smokers and nonsmokers. Only two of 12 nonsmokers had values over 100 after eating root vegetables for three weeks, but all 12 had values over 100 after eating leafy vegetables. In fact, Pechacek said, all 12 nonsmokers had SCN levels as high as or higher than those usually seen in persons smoking 20 or more cigarettes daily.

Elevated SCN levels like those seen in the nonsmokers in the study have little medical significance, Pechacek said. However, he added, the study showed that nonsmokers eating large quantities of leafy vegetables daily for three weeks will have SCN levels similar to those of smokers. Therefore, more care will need to be taken to assess recent dietary history, if SCN is to be used as measure of smoke exposure.

3. "Reduction of chronic disease risk factors in childhood. The 'Know Your Body' project (1976-78)" -- Charles B. Arnold, New York. This study followed 1,252 students in six New York City area school districts for three years; the students were part of a project aimed at reducing the prevalence of "clinical values" associated with chronic disease risk in adults. A general health education program and a smaller intensive education program were used to reduce prevalence in children with high values of cholesterol, cigarette smoking, physical inactivity, and obesity.

Arnold reported these findings to date: the school-based

03732267

prevention program is feasible and acceptable to the students; reduction of elevated values occurred with "intensive intervention" involving small groups of students; the general health education program itself produced little apparent reduction in children with extreme values for their age and sex.

(The "New York Times" writer at the meeting interviewed Arnold, who is with the American Health Foundation, and wrote a story on the study. Apparently it was not sent to the paper or, if it was, it did not appear in print. Certain aspects of the study were discussed with the writer.)

4. "Physical activity and the risk of coronary heart disease" -- Ancel Keys, Minneapolis. In this report to whose title he added the words "and premature death," Keys (now living in Italy) gave some details of physical activity findings in the Seven Countries Study which, he said, is being published (Harvard University Press). Retrospective studies showing lower coronary death rates in men in physically active occupations led to the Seven Countries Study.

The starting population consisted of 12,763 men aged 40-59 in 16 cohorts in seven nations. At entry 2% of the men were judged to have CHD and 5% had some kind of CVD. These were excluded from the analysis of the incidence of CHD and death. After 10 years, among men free of CVD at entry, 1,280 were dead, 290 from CHD. Including non-fatal cases, diagnosis of the disease had been given to 913 men.

The study found that among suggested risk factors for CHD, physical activity was "unique" in showing different, inconsistent relationships with the incidence of coronary disease in various areas and cohorts. In general, the 10-year experience showed that age, arterial blood pressure, serum cholesterol, and cigarette smoking, in that order, were major risk factors, while relative weight and body fatness were without significance.

How about the risk associated with habitual physical activity? "Clearly, there is no universal rule of increasing risk with decreasing habitual physical activity," Keys said. "I conclude that sedentary occupation is not a primary, independent risk factor."

5. "Physical exercise and the prevention of heart attack" -- Ralph S. Paffenbarger, Stanford, Cal. Most of Paffenbarger's presentation dealt with his study of 16,900 Harvard alumni. He first gave a few details of his study of San Francisco longshoremen who, he said, had 50% fewer fatal heart attacks than workers who expended fewer calories per day. What may be protective benefits of strenuous activity remained effective at all ages and were independent of other risk factors such as race, smoking,

03732268

obesity, high blood pressure or high blood glucose levels, Paffenbarger said.

Data from the Harvard alumni study show that if all had exercised more vigorously, the number of heart attacks in the group would have been reduced by 26%, he said. Avoiding cigarette smoking would have produced a 25% reduction, he said, but remission of hypertension only a 16% reduction because hypertensives constituted a smaller segment of the group than did smokers.

Since the experience of the alumni may well resemble that of the general public, Paffenbarger continued, "the implication is clear that suitable programs of intervention might reduced heart attack rates nationally by at least 50%."

6. "Work tension and incidence of coronary heart disease" -- Richard B. Shekelle, Chicago. Work tension seems to be related to increased risk of CHD, Shekelle said in reporting data from the Western Electric Health Study which began in 1957. The final group of workers in the study totaled 2,052 men, 543 (26.5%) of whom had responded "True" to the question, "I work under a great deal of tension." These men had 1.6 times greater risk of developing CHD in a 10-year period than did men who answered "False" to the question. Further analysis showed that the association could not be explained by variation in blood pressure, cholesterol levels, age, and cigarette smoking, Shekelle said.

While the study has some obvious limitations, he said, the findings emphasize the need for further research to define more clearly various work factors and subjective responses to them. For those in whom work tension is prominent -- and particularly for those with increased CHD risk due to smoking, high cholesterol levels and hypertension -- "it would seem prudent to recommend a program designed to improve personal skills in managing stress as part of an overall preventive cardiology regimen."

7. Two studies (one U.S., the other from Yugoslavia) were reported claiming a beneficial effect from moderate alcohol intake. A third study reported alcohol consumption appears to increase HDL levels. The Yugoslav study noted, however, that alcohol drinking was positively related to the incidence of deaths from stroke, accidents and violence. (There were warnings of damage from excessive drinking.)

8. Margaret Oalmann of New Orleans reported an autopsy study of 566 area men aged 25-44 years. A significant relation was found between post mortem cholesterol and the extent of coronary artery raised lesions for white but not for black men. The reason for the racial difference is not known, she said.

03732269

RECEIVED
APR 19 1979
A. J. STEVENS

03732270