ST. PAUL DISPATCH - PIONEER PRESS

MINNESOTA AND THE ST. PAUL PIONEER PRESS ★ *Centennial - 1949* ★

St. Paul 1, Minnesota
October 4, 1949

Dr. Ancel Keys, Director
Laboratory of Physiological Hygiene
University of Minnesota
Minneapolis 14, Minnesota

Dear Dr. Keys:

We would appreciate it very much if you would mail us a summary, or a copy of your speech, CHOLESTEROL AND THE PROBLEM OF AGING, which you will give Monday at the first meeting of the Minnesota Dairy Technology Society.

Sincerely,

F. S. Heaberlin

F. S. Heaberlin
Managing Editor

FSH:eh

OCT 5 1949

Outline of address on "Cholesterol and the Problem of Ageing" to be given at the first meeting of the Minnesota Dairy Technology Society on Monday, October 10, 1949 by Dr. Ancel Keys.

Cholesterol is a fat-like substance which is found in all animals and man but in no plants. Chemically, it is related to some of the hormones of the sex and adrenal glands. The fact that the brain and nerves contain very large amounts of cholesterol suggests it plays some important role there.

The great interest in cholesterol in relation to ageing is the fact that arteriosclerosis, one of the most general changes with advancing age, seems to involve and perhaps begin with a deposition of cholesterol in the walls of the blood vessels. This is the start of hardening of the arteries with its sequelae of high blood pressure, coronary disease, "strokes", and so on. Linked to this general process are half the total deaths in the United States beyond the age of fifty. And these changes may occur at any age. If we consider total deaths and disability and the present state of knowledge about disease, the problem of arteriosclerosis -- how it develops, what causes it, how it may be prevented or delayed -- is the greatest challenge now facing medical science.

Arteriosclerosis can be produced in some animals by feeding large amounts of cholesterol. And in man, persons with very large amounts of cholesterol in the blood are prone to early and severe arteriosclerosis. Finally, the problem of arteriosclerosis, and related diseases of the heart and blood vessels seems to be greater in the United States than in China.

One large difference between the United States and China is in the diet; we eat foods containing much cholesterol but the Chinese get little cholesterol in the diet.

Recently it has been suggested that cholesterol in the diet affects the deposition of cholesterol in the blood vessels and therefore as we grow older we should avoid foods which contain cholesterol. But this would mean cutting out some of the foods which are considered to be among the best items of the diet, both for nutrition and for food pleasure.

Closer analysis, and new data from the University of Minnesota's Laboratory of Physiological Hygiene, indicate that the problem is much more complex than a simple matter of diet. All animals, including the strict vegetarians which have no dietary cholesterol, tend to develop arteriosclerosis as they age. Moreover, cholesterol feeding has been shown to produce arteriosclerosis only in herbivorous animals; in omnivorous forms even enormous doses by themselves have no such effect. And man is an omnivore.

In man, the amount of cholesterol in the blood rises with age to reach a peak at 50 or 60 years and this change is not related to a change in diet. In men of the same age, the blood cholesterol is unrelated to the dietary cholesterol but does tend to be related to the fatness of the body. We found no relation between the habitual cholesterol intake and the level in the blood in almost 500 men studied over a period of two years.

Normal man at least has a large capacity to regulate wn level of cholesterol in the body. When a very large nt is fed over a short period it causes scarcely any change the blood. The only real change we have been able to pro- ce by diet is with a very meagre pure vegetable diet with o cholesterol or fat at all. This reduces the blood cholesterol in a few weeks but the diet would scarcely support life indefinitely even if it could be tolerated -- no meat, fish, eggs, milk, cheese or anything made from these materials.

We conclude that the control of cholesterol in the body must be generally sought in the body itself and not through dietary measures. The dietary damage from eliminating meats, eggs and dairy products may be a real hazard; the possibility of a useful effect on arteriosclerosis of such a diet seems to be remote indeed.