

The Mediterrean Diet and Public health

This is a happy occasion for me, coming back to Harvard 55 years after I quit my position in the Fatigue Laboratory to go to Minnesota. My Harvard colleagues said I was leaving a cultural center for the wilderness of Minnesota. Also I am happy to take part in a conference on the Mediterranean diet and health, a subject that I first talked about 40 years ago in lectures in the Netherlands and New York. Few in the big audience in Amsterdam thought I was making sense. The audience in New York was very small but one doctor got the message and carried the torch with great effect. That was Fred Epstein, long living in Zurich but effectively participating in meetings all over the world.

Now the Mediterrean diet is in the limelight. Witness the meeting here. Last year the English Nutrition Society had a symposium entitled "Mediterrean Food and Health". One of the two speakers was Flaminio Fidanza who greeted us in 1952 when we first went to Naples to look at the question of the diet and coronary heart disease. That was forty years ago. Later Fidanza spent a year with us in Minneapolis; now he is a professor in Perugia and soon will be "emeritus."

I write in May. Ten days ago a crew from the Italian television system came to our home, "Minnelea", to have me talk about the Mediterranean diet. A few a days later two women from London came here for my advice about a book they propose to write about the Mediterranean diet.

What is the Mediterranean diet? One definition might be it is what the Mediterranean natives eat. As we know and think of it

now it is a relatively new invention. Tomatoes, potatoes, and beans came from America long after Christopher Columbus discovered the new world. Pasta and maccheroni had to wait for the importation of hard wheat from the Black Sea area around two hundred years ago. But we are interested in the Mediterranean diet as it is now and has been in recent times. The heart of the Mediterranean diet is vegetarian - pasta in many forms, leaves sprinkled with olive oil, all kinds of vegetables in season, frequently washed down with wine, cheese along the way, all finished off with fruit. I say "leaves". Where we live in southern Italy that is the word for all kinds of leaves that are an important part of the everyday diet - many kinds of lettuce, spinach, Swiss chard, purslane and plants which I can't identify with an English name - lettuga, barbabietole, scarola, rape. What we call pie is almost unknown as are cornstarch and steamed puddings. Cake is mostly special types for Christmas and Easter.

There are variations in different countries bordering the Mediterranean. Wine is forbidden in Moslem countries and there are differences within countries bordering the Mediterranean. In Italy there is a gradient in "richness" from north to south, more meat and dairy products in the north. In Italy we made surveys in Cagliari on the island of Sardinia and later in Bologna. Paul White was with us and had a hard time finding coronary patients in Cagliari but the hospitals in Bologna were full of them. There was a striking difference in the diets, Cagliari vegetarian except for fish, Bologna living up to its description as "Bologna

la rica". The levels of cholesterol in the blood serum corresponded.

The diet is not constant. Even in our time the diet has been changing. During the 30 years that we have been following two rural populations in Italy a big change in the diet is the increasing use of meat and dairy products. My colleague Flaminio Fidanza has collected data on the proportion of calories provided by various foodstuffs in the villages in Italy we have included in the Seven Countries Study. From 1960 to 1980 there has been a sharp rise in the proportion of calories supplied by meat. For all Italy and southern Spain the consumption data show much more meat and milk than a few years ago. The Aegean Sea can be considered an extension of the Mediterranean and I believe the Greeks increasingly eat more meat and milk. Certainly that is true of Crete where we started working thirty five years ago.

Our introduction to the Mediterranean diet began in 1951. I was a visiting professor at Oxford when the Food and Agriculture Organization of the United Nations asked me to be chairman of the first conference on nutrition in their new headquarters in Rome. The conferees talked only about nutritional deficiencies. When I asked about the diet and the new epidemic of coronary heart disease no one was interested. Gino Bergami, professor of physiology, said there was no problem in Naples.

Back in Oxford I was free after obligatory lectures, we were freezing in our unheated house and were tired of food rationing. Why not go down to Naples and check Bergami's claim. The result

was to find that Bergami was right to some extent. We found that heart attacks were rare except in the small class of rich people whose diet differed from that of the general population - meat every day instead of every week or two. So there seemed to be an association between the diet and coronary heart disease. We confirmed the picture in a month's work in Madrid.

My concern about the diet as a public health problem began with our surveys in Naples and Madrid but my interest in the diet began with experiments. I wanted to know the effect of the diet on serum cholesterol. Some research reports were indicating an association between serum cholesterol and coronary heart disease. So we started controlled experiments on men confined in a mental hospital. Soon we found an effect of fats in the diet on serum cholesterol. The experiments, continued for eight years, defined details, the dominant effect of saturated fatty acids raising the serum cholesterol level; the small opposing effect of the polyunsaturated fatty acids, the neutrality of monoene, the major fatty acid in olive oil.

Paul White, Eisenhower's doctor, had been with us in surveys in Italy, Greece and Japan. When he became President of the International Heart Association, he thought there should be a research committee and appointed me to be chairman. Asked what I should do, he said "it is up to you". Perplexed, I met Jerry Stamler who suggested international seminars. Those annual seminars, held in a score of cities in various countries, have stressed the importance of the diet for prevention. The diet

advised may not be called Mediterranean but that is the pattern. Publicizing the facts and educational programs are already having effects, indicated first by lower levels of serum cholesterol in population samples, then by declining rates of heart attacks, notably in Finland and the United States. Colleagues in this conference will tell us more about what is happening. The challenge is to tell us, and the world at large, what should happen and how to make it happen.

There are economic problems, habits and prejudices to overcome. Boys are told that eating muscles (meat) will build muscles. When talk about the "good Mediterrea diet" there is a problem. We learn something from Italian restaurants in the United States and England. Those restaurants are increasingly popular but the food they serve is far from the Mediterrean pattern. There is no such thing as a plain dish of spaghetti or a simple pizza as we found it in Naples 40 years ago. Everything has to be loaded with butter and ground meat. Serving only fruit for dessert is not common; ice cream or pie is customary.

Everone agrees that the diet is important for the public health. Here we are looking at what the Mediterranean diet can tell us. But we must consider what that diet is now, what it used to be and how it is changing. All I can say personally is that it is changing and the changes tend to destroy the virtue for health of the Mediterrean diet as I saw it 40 years ago. I hope this conference will show how to reverse the change.

Education is needed, of course. I would concentrate on the

medical profession and the schools. It is not enough that doctors measure serum cholesterol and tell patients with high values to lay off butter and fat meat. The general public must be the target. It doesn't help that food products are advertized as being low or free of cholesterol. Dietary cholesterol is much less important in regard to cholesterol in the blood serum than saturated fatty acids. But in advertizing perhaps we should not object to promoting lean meat even though the leanness means a dollar more a pound.

So we talk about persuading people not to eat some things. More important and more difficult it may be to get them to eat certain things, to eat them more often and in larger amounts. I emphasize vegetables and fruits. I hope from this meeting will come advice about ways to do this.

Finally, I think it is important to bring the message to school children. In the long run they should benefit most and they can take the message to their parents. Think what happened when Apple computers were given free to schools. The children told their parents and soon millions of Apple computers were sold. The problem is how to make children tell their parents they want to become Mediterraneans.

I don't propose to tell you what to do or how to do it. I only wanted to recall a little history and say what you already know; there are difficult and important things to do.