

After 25 Years –

North Karelia Project Shows The World How To Reduce Heart Disease

By Gerry Luoma Henkel

Back in the early 1970's, in Joensuu and other smaller villages in North Karelia, Dr. Pekka Puska (*on right*) and his colleagues would stand for hours in supermarkets handing out leaflets that described the benefits of eating better, smoking less, and exercising more. It was not an easy task for Puska and his co-workers to change the attitudes of the customers in the stores - many Finnish eating habits at that time worked against recommended dietary changes. Butter, cheese, cream and whole milk were regarded as healthy, especially for children. Finland was a butter and milk producer. Butter and milk production was subsidized by the government. These factors and others led to North Karelia having a heart-disease rate twice that of Finland as a whole.

Gautam Naik, a staff reporter for the Wall Street Journal writes about Pekka Puska's approach:

(He) ...figured that heart disease, rather than being a problem for just a few high-risk individuals, related to the lifestyle of the entire community. So the whole population would have to be persuaded to change its habits....Part of that meant getting local residents to see health care in a different way. People had rarely been told to take responsibility for their health, whether by watching their diet or exercising. If people got sick, they went to the doctor -- and that was that. The first challenge for Dr. Puska's team was to alter the local diet. In 1972, a typical meal in North Karelia consisted of high-fat dairy products and sausages. Anything green was dismissed as "food for animals," says the 57-year-old Dr. Puska. So he and his colleagues began by visiting dairy farmers and other food producers, touting the health benefits of a low-saturated-fat diet, and encouraging them to diversify into crops such as berries and apples. Although the project was organized by the Finnish government, the doctors had no power to coerce the farmers into changing their ways. They relied on simple persistence, hoping that the logic of the arguments would wear down farmers' resistance. In most cases, it took many visits to get people to come around. One sausage maker agreed to switch to ingredients such as mushrooms instead of pork, but only after he had a heart attack himself.

Naik also writes that "Dr. Puska appeared on a weekly TV show where he'd take the blood pressure and cholesterol readings of about 10 North Karelians – then exhort them to change their habits. The television series, which ran on and off for 15 years, became something of an obsession for some Finns. One day, when a new episode was about to air, Dr. Puska's



neighbor said to him: 'Hey, Pekka! I'm dying of curiosity. Has that girl from the previous show managed to stop smoking?' "

These efforts by Dr. Puska and others were all a part of a major effort called the North Karelia Project. It was launched in 1972 to reduce the exceptionally high coronary heart disease mortality rates in the area. In co-operation with local and national authorities and experts, as well as with World Health Organization, the Project was designed and implemented to carry out comprehensive intervention through the community organizations in the area, and the action of the people themselves.

Over the years the scope of the Project has been enlarged to promote integrated prevention of major noncommunicable diseases (cancer, diabetes, etc.) as well as health promotion in general, and prevention of risk related lifestyles in childhood and youth. The Project has undergone a comprehensive evaluation, and has now become a major demonstration program in Finland and internationally.



The published results of the North Karelia Project show how over the 25 year period major changes have taken place. Among men in North Karelia, smoking was greatly reduced and dietary habits have markedly changed. In 1972, a little more than half of middle-aged men in North Karelia smoked. In 1997 the percentage had fallen to less than a third.

In the early 70's use of vegetables or vegetable oil products was very rare; now it is very common. In 1972 about 9 out of 10 North Karelians put butter on their bread. Today it is less than 1 in 10. The dietary changes have led to about a 17% reduction in the mean serum cholesterol level of the population. Elevated blood pressures have been brought well under control and leisure time physical activity has been increased. Among women, similar changes in dietary habits made important changes in cholesterol and blood pressure levels.

Because of the Project, North Karelian men and women are living longer. By 1995 the annual mortality rate of coronary heart disease among men under 65 years old was reduced by about 73% from the pre-program years (1967-71). Among women, the reduction in deaths from cardiovascular disease has been of the same magnitude as among men.

Since the 1980's these favorable changes began to develop throughout all Finland. Greatly reduced cardiovascular and cancer mortality has led to greater life expectancy: approximately 7 years for men and 6 years for women. Associated with these risk factor and lifestyle changes, the general health status of the people has greatly improved. A separate analysis has shown that the reduction in serum cholesterol level has been the strongest contributor. According to Dr. Pekka Puska, there were difficulties all along the way.

In a summary of the Project, he writes:

In the early years the concept of community based prevention was alien, especially to the cardiological community that wasn't happy about the funding of the project. North Karelia was also a low socio-economic area with scarcity of medical resources and with many socio-

economic problems in the 70's. The local culture was in many ways traditional, resisting change. Dairy farming was a major source of livelihood; butter was the local product much liked. The national dairy industry made major efforts and used resources to protect their economic interests.

Other Causes and Cures for Heart Disease

According to medical historians, before 1900 very few people died of heart disease - heart attacks did not exist - at least not in the medical books. Doctors at that time never heard the word coronary thrombosis. The first reported heart attack occurred in 1896 and the condition did not even have a name. Several years later the New England Journal of Medicine did a write up about this new and curious but very rare condition and they called it myocardial infarct. Since then heart disease has become the number one killer in the United States. Today half the population of America dies from cardiovascular disease.

What happened during the last 100 years that has made heart disease the major cause of death? The North Karelian Project has shown that by dealing on a community wide level with the lifestyle issues of diet, tobacco, and exercise, the rate of death by heart disease can be reduced significantly.

It must be noted however, that other researchers into the causes of heart disease believe there are other very important factors to consider. For instance, genetic heredity plays a significant role according to some researchers.

One other factor also plays a large role according to others: overwhelming stress - not the everyday kind that we all have (and need according to some observers), but the kind that could best be termed "distress". Those who believe that stress is a major reason for heart disease argue that we have become a planet of human beings who are isolated from each other. The result is that we become lonely people with, literally, "broken hearts" that lead to malaise and disease.

Mental, emotional, and even physical distress, according to many commentators such as Dr. Dean Ornish, create conditions that lead to heart disease, heart attacks, and even death. **This approach to reversing heart disease does not appear to play a specific role in the North Karelian model.**