

Advice from the heart

Pekka Puska has spent his life fighting heart disease – other people's, not his own. He ran the stunningly successful health drive in the Finnish region of North Karelia, which reduced deaths from coronary heart disease by more than 80 per cent. Now director-general of Finland's National Public Health Institute, he is still stopped in the street by people who say he saved their lives. **Pelle Neroth** finds out how he did it

Why North Karelia?

In the 1970s North Karelia had the highest mortality rate from heart disease in the world. The local governor signed a petition to the government demanding that something be done about it. At the time I was a young assistant in the department of public health in Turku. I had degrees in political science and medicine. I was also a member of President Urho Kekkonen's Centre party – he was one of my heroes, he had many radical ideas.

I had been active in student politics, and was president of the national students' union. I was part of the generation that all over the world wanted more democracy – in Finland there were riots in 1968. The Centre party was strong in rural areas. In 1972, as a result of the petition, Kekkonen sent me and other young researchers to North Karelia.

What was it like?

North Karelia is a remote, cold, rural area on the Russian border. Finland had had a very difficult second world war, fighting the Russians. The country was poor; it was not the "Nokia country" you see today.

But in the 1950s and 1960s, people started to dream of a better life. Before the war, their diet had been simple and healthy. People died mainly of infectious diseases. After the war, people started to eat more and more dairy products. They had more money. In 1972, a typical meal in North Karelia consisted of high-fat dairy products and sausages. Anything green was dismissed as "animal food".

I said to people: "You are eating as if every day was Sunday." When I went to

the province, one-third of the young children had fathers who had died of chronic heart disease.

So what did you do?

Our researchers discovered that most risk factors came from the environment and from lifestyle. The Finnish focus at the time was very much on hospital treatment – the old cardiological establishment was very sceptical of our approach. I told North Karelians to reduce saturated fats, salt, meat and sugar, and to add fibre, bread, vegetables and fruit. "What is the difference between fruit and vegetables?" I asked them. They defined fruit as "something you import". They said eating fruit would not be supporting Finnish agriculture.

Our policy was "boots deep in the mud": really going deep into the rural communities. I visited dairy farmers and lumberjacks and tried to persuade them to adopt a diet low in saturated fat. I encouraged them to diversify into crops such as berries and apples. We had to visit them many times to persuade them. People said: "Why deny us our small pleasures?" But one sausage maker who had had a heart attack agreed to make sausages out of mushrooms instead of pork. And I persuaded one bakery owner to halve the salt content in his bread, and switch to vegetable oil instead of animal fat.

How did you get the message through at the community level?

We went to churches, where priests were very supportive of us. We stood in supermarkets issuing health leaflets. We had a non-smoking pledge in schools, for which pupils promised not to smoke for a year. Community

competitions featured cooking courses and the local grocer was asked to persuade customers to buy fewer sausages and to cook with vegetable fat instead of animal fat. I also worked with small companies to develop juices and jellies. At the housewives' organisation called Marta, I organised recipes using less salt, more vegetables, lower fat. And I told housewives to start substituting low-fat milk for high-fat. When their husbands complained, I said they should pour low-fat milk into high-fat containers and serve this at the breakfast table, which they did.

How did people take to your campaign?

I was on a weekly TV programme that measured the blood pressure of 10 North Karelians. The series was very popular and ran for 15 years. It became a talking point – people all over Finland followed it. When a new episode was about to air, people would say, "Dr Puska, I'm curious. Has that girl from the previous show managed to stop smoking?" I remember after one of these programmes a Helsinki bus driver stopped his vehicle and called me up to the front. He took a cigarette packet from his shirt pocket, crushed it and put it in my hand. Then he said: "That was my last cigarette."

A lot of people did not realise there was a connection between blood pressure and heart disease. I introduced yellow cards for every health clinic visitor, and every time patients visited a doctor or nurse they took a new reading and entered the new figure on their card. It was a simple step but it enabled people to take control of their lives. People used to show me their cards in the street and were very proud.

I have a collection of newspaper cartoons about the project. One has a waiter pointing to a customer at a table and telling another waiter, "Make sure he doesn't try to sneak his own salt into the food." The joke is funnier if you appreciate that Finns used to smuggle small bottles of spirits into restaurants and pour them into their drinks.

Did all this effort pay off?

Between 1972 and 1997, when the North Karelia project ended, the number of deaths from coronary heart disease dropped by 82 per cent. Life expectancy among men went up eight years, from 65 to 73. Blood cholesterol in the population dropped 20 per cent. It was

Pekka Puska was born in Vaasa, northern Finland, in 1945. He was director of the North Karelia Project in eastern Finland from 1972 to 1997. Between 2001 and 2003 he was director of the department of non-communicable disease prevention at the World Health Organization in Geneva, Switzerland. He has a PhD in epidemiology and has published more than 400 scientific papers. He has also served as a member of the Finnish parliament. He is married with two young children

like putting the whole population on cholesterol-reducing drugs. The consumption of fruit and vegetables went from the lowest in Europe to the highest in northern Europe. In 1972, 90 per cent of the population put butter on their bread; now only 7 per cent do. Salt consumption halved. Smoking went down drastically among men, though it increased among women. In Finland as a whole, between 1969 and 2002 deaths from chronic heart disease dropped by 76 per cent among men aged 35 to 64. People used to come up to me and shake my hand and say, "Thank you Dr Puska, you have saved my life." It amused me. Perhaps health experts are the modern priests.

And people lost weight?

We never targeted weight or calories. These were big men in hard-working physical occupations from farming communities. Finland's body mass index – a measure of body fat based on

height and weight – has remained constant among women and risen a little among men in the past 30 years.

Would deaths have dropped even more if you'd also had a weight-loss programme?

Coronary heart disease is the biggest global killer today. The greatest risk factor is high blood pressure, and that has nothing to do with obesity. Cholesterol, the second biggest risk factor, is slightly related to obesity. Smoking, the third-biggest contributor, has nothing to do with obesity. Obesity is a sign that diets are going wrong, and not itself a cause of ill health. Weight-reduction programmes that aim just to lose weight without changing diets are a waste of time.

Have any of your family suffered heart disease?

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Is anyone trying to do what you did in North Karelia? Can it be done elsewhere?

Over the years I have helped to develop pilot projects in Tianjin in China, the island of Mauritius, Valparaiso in Chile, Isfahan in Iran and Nizwa in Oman, after their health experts came to Finland to study the North Karelia project. Nowadays it is much more difficult to do what I did. In the *International Journal of Epidemiology* in 1973 they described what I was doing as "shotgun prevention". They said I was using mass action without evidence. Nowadays everything has to be evidence-based.

These countries had some of their own challenges. For example, how can women get enough exercise if they have to wear veils? And exercise is difficult in countries where summer temperatures are more than 50 °C. The Chinese had serious problems with hypertension because soy sauce is high in salt; they started using low-salt sauce

in schools. In Mauritius they eat a lot of unhealthy palm oil so the government encouraged use of sunflower oil instead.

Did it work for them?

The pilot projects led to a drop in coronary heart disease. But the real problem is translating a pilot project into a national project: getting industry and business to collaborate in developing and selling healthy foods, getting non-governmental organisations and the media to promote healthy living. In this, other countries have been less successful: they are much bigger than Finland. We have had a lot of interest from western European countries such as the UK but these societies are much more heterogeneous than ours. On the other hand, they are more open to new ideas. North Karelia was a very traditional area, hostile to innovation. Campaigners have to use the specific strengths of each culture to push through their goals.

What has happened in Finland recently?

The fall in the Finnish heart disease rate has levelled off and has a long way to go: we are still only average in Europe. Joining the European Union in 1995 affected things: our schools went from low-fat milk to high-fat because the EU paid farmers subsidies for high-fat milk. But in the past few years the EU has been positive at promoting restrictions on tobacco smoking. Today it is harder to change people's habits because there are many more lifestyle choices: more TV channels, for example, and too much choice of processed and high-fat food in the supermarkets. But the global food industry is increasingly on my side – the guy who said hello to me just now is a very senior director at Nestlé. That company realises that healthy foods can be profitable.

What do you remember most about your time in North Karelia?

Visiting farmers in the snow and wind at -40 °C. I remember an elderly man in a small village near the Russian border who came to me after my talk and said: "Doctor, I have a question: you keep telling us what kind of fat we should use on our bread. You never tell us if what I put on my bread is healthy or not." What do you put on your bread, I asked. "Bear's fat," he replied. ●