

POPULATION STUDIES, GENETICS AND SIFTING REALITY FROM MYTH

Peter Bjerregaard

For more than a generation, it has been a largely undisputed truth that, via its high contents of n-3 fatty acids, the unique diet of the Inuit caused a similarly unique low incidence of ischemic heart disease. Studies of the effects of (relatively low doses of) n-3 fatty acids in white populations seem to support the alleged biological effect. Studies of disease incidence and mortality among the Inuit, however, do not present a clear picture, and analytical epidemiological studies of IHD among the Inuit are virtually absent.

Studies among the Greenland Inuit have shown a significantly increased mortality from stroke and other heart diseases and a marginally lowered mortality from IHD, but the validity of the diagnoses was not high. Furthermore, as risk factors for IHD increase in the course of the westernisation process, mortality from IHD would also be expected to increase – but, in fact, it decreases similarly to what is happening in the rest of the western world.

On this background, longitudinal studies, like the GOCADAN study described by Howard and co-workers in this issue of the journal (1), are necessary to throw light on the relative importance of genetics, n-3 fatty acids, other dietary components, and other

risk factors for the development of chronic disease. A strong focus on genetics may – or may not – be a sound scientific approach, but it might raise a few eyebrows among the Arctic residents.

The participants in large epidemiological studies offer a considerable amount of their time to humour us scientists and would of course like to get something in return – improved health, for instance, if not for the individual, then for the community, and if not now, then for future generations. Genetics is not a modifiable risk factor like diet, physical exercise, or smoking, and it is difficult to see what advice to the community may come out of the genetic results.

We must realise that genetics is perceived by many people (somewhat unjustly) as the biological key to the individual and the ethnic group. The concept of neo-imperialists disguised as scientists on the rampage to steal and patent valuable genetic information is not far-fetched. Before including genetics in our studies, we should therefore take the time to thoroughly discuss with the individuals and groups involved what the information will be used for, and to agree on what limitations should be put on the scientists' use of the results.

With these caveats it is a pleasure to welcome the next generation of epidemiological investigations among the peoples of the Arctic, studies that integrate the contribution of genetics and environmental determinants of health and that, right from the start, build on a mutually beneficial relationship with the local residents and their health facilities. It is my solemn wish that these studies will be able to sift reality from myth concerning the beneficial affects of the traditional Inuit diet.

1. Howard B et al. A Genetic and epidemiologic study of cardiovascular disease in Alaska Natives (GOCADAN): design and methods. *Int J Circumpolar Health* 2005; 64(3):206-221.

Peter Bjerregaard
Centre for Health Research in Greenland
National Institute of Public Health
Copenhagen, Denmark
Email:p.bjerregaard@dadlnet.dk