Many studies have shown that obesity and diabetes are increasingly common among indigenous peoples in the Arctic region. If arctic populations previously were studied to find genes that protected against diabetes and atherosclerosis, it is likely that nowadays you would look for predisposing genes in the same populations. However, the rapid increase in prevalence has paralleled the rapid change in living conditions in these populations, which clearly tells us that lifestyle factors rather than genetic factors are responsible for the changing disease pattern. It is well known that environmental and socioeconomic factors influence an individual’s life at an early age, contributing to the development of unhealthy behaviour patterns over the life course, which in turn promotes obesity and diabetes.

Physical inactivity and high calorie intake are among the most important behavioural risk factors. Not only total calorie intake, but also the dietary pattern and specific nutrients may influence risk factors such as inflammation and fat distribution associated with insulin resistance and diabetes. Among Inuit populations much of the science over the last 40 years has focused on health effects of n-3 fatty acids, because of the high amount of sea mammals in the traditional diet. Consequently, evidence on the extent to which modern dietary factors contribute to insulin resistance and diabetes is needed in light of the changing dietary pattern, where imported foods containing high amounts of saturated fatty acids have replaced fatty acids of marine origin. The study Ebbesson et al. provides further insight into the role of saturated fatty acids in insulin resistance among Inuit in Alaska (1). Dietary epidemiology is complex and changes in dietary fat composition may also be a proxy marker of other dietary changes such as intakes of carbohydrate, sugar, starch and fibre, glycaemic load as well as micronutrients such as vitamin D. Hopefully the recent and ongoing population-based studies of Inuit in Greenland, Canada and Alaska will add more information about other dietary factors involved in chronic diseases in these populations.

Obesity is the major biological risk factor for insulin resistance and diabetes, and obesity is furthermore associated with cardiovascular risk factors. While some studies have shown that the Inuit are at lower cardiovascular risk for a given level of obesity compared to western populations, this apparent low risk is fully “compensated” by the fact that the prevalence of obesity and particularly abdominal fat distribution among Inuit rank among the highest in the world. The study by Chateau-Degat et al. (2) clearly demonstrates that hypertension is as frequent as in western populations, and furthermore strongly associated with obesity. Rather than continuing the focus on to which extent international definitions of obesity are applicable to Inuit populations, it may be time to switch to another approach – to study how we can manage the emerging epidemic of obesity and its associated health problems in the arctic region.
While environmental risk factors for obesity and Type 2 Diabetes are reasonably well established, the impact of early risk factors is not fully understood in relation to these.

Low birth weight is considered a marker of intrauterine malnutrition. Studies of western populations have indicated that intrauterine malnutrition leads to foetal re-programming of the metabolism, resulting in insulin resistance, obesity and diabetes in adulthood. In arctic populations birth weight has generally increased since the 1950's, most likely due to better living conditions in general, better food supplies and a modern health care system. This may potentially reduce diabetes prevalence among people born after the 1950's. Pedersen et al. (3) suggest that the unexpected low prevalence of gestational diabetes found in Greenland – despite a very high prevalence of diabetes in the adult population in Greenland - could be the beginning of a decrease in diabetes prevalence as a consequence of lower rates of low birth weight over the last decades. If the risk of diabetes associated with birth weight has decreased, as the study indicates, this has adverse implications for the future incidence of diabetes. Unfortunately, such a positive trend has not been observed in other high-risk populations where data on birth weight are available.

The same study however showed, that the screening procedure for gestational diabetes was insufficient – particularly among obese women. The only positive thing to say about it is that such data are now available in Greenland after the establishment of a diabetes register.

This register is linked to the personal register system and has a coverage of almost 100%. A number of publications over the last years have demonstrated that this database offers a unique possibility to follow the incidence of diagnosed diabetes, diabetes complications and quality of care. Studies of chronic disease care in the arctic region are warranted, and the article by Bhattacharyya et al. (4) is an excellent example of the challenges we are facing in the management of diabetes and other chronic diseases. Most chronic diseases are new in arctic populations and co-exist with social problems and other diseases, and the disappointing outcome from this intervention study in a Canadian Cree emphasises the need for re-thinking processes and organisation of chronic care.

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