

## Reversing the Nutrition Transition among Native North Americans\*\*

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### Summary

The nutritional transition is the most important issue affecting the health of indigenous peoples worldwide. It entails a change from gathered, farmed, fished, and hunted foods to industrialized energy-dense diets. This has been accompanied by population shifts from physically active to sedentary lives. Indigenous foods combined with the exercise required to procure them are strongly associated with good physical and mental health. Therefore, the introduction of policies to encourage land-based activities provides a means to reverse the negative effects of adverse nutritional transitions affecting indigenous cultures. In the United States and Canada, many indigenous groups have available lands for this purpose. Severe diet-related health problems can be tackled through more robust support for land-based activities and associated programs in experiential education, educational exchanges, and revenue-generating enterprises based on indigenous ecological literacy and knowledge. While governments, schools, charities, and businesses would be needed to affect positive changes, indigenous groups themselves would need to be the main partners.

### Current realities

It is well documented that Native North Americans suffer from high rates of long-term chronic diseases and poor mental health that all occur at rates vastly surpassing those of other populations. The afflictions that beset native peoples are of relatively recent origin. The general conclusion that indigenous peoples in North America enjoyed excellent health before being displaced from largely self-reliant lives on their lands is clear from historical and anthropological research as well as from the testimonies of native peoples themselves. We can see this occurrence continue to unfold in many parts of Northern Canada and Alaska where, within living memory, people were relocated to government-built villages and reserves. Similar patterns of ill health accompanied the movement of Native Americans onto reservations in the United States from the 19<sup>th</sup> century onwards. As reservation agriculture often failed, and with their subsistence lives undermined by Westward expansion, reservation dwellers became welfare recipients on low incomes, entitling them to commodity foods in generic packaging with a long shelf life (e.g., cheese in orange bricks, canned beef, chicken and pork, canned vegetables and fruit, flour, sugar, beans, rice, powdered and tinned milk). Still avidly consumed today, commodity foods are very high in salt and carbohydrates and on some reservations are referred to as "*Free Junk Food*." As one outcome of this, Native Americans in the U.S. are 420% more likely to die from diabetes than the general population and almost entirely caused by bad diets and lack of exercise.

### Scientific opportunities and challenges

Diet-related impairments to health begin in childhood. According to research, obesity is now one of the most serious public health problems facing American Indian children, hovering at a rate of 25% (Samson, 2013). Among Aboriginal populations in Canada, obesity rates of 52% in Aboriginal children and adolescents have been recorded in selected communities in Quebec. Chronic illness may arise from nutritional deficiencies of iron, iodide, folic acid, vitamin D, and omega-3 polyunsaturated fatty acids, but most are due to excess consumption of energy and fat (causing obesity), sodium as salt (high blood pressure), saturated and trans fats (heart disease), and refined sugars (diabetes and dental caries).

The change in subarctic and Arctic populations from consuming fat with high amounts of omega-3 fats in marine and land mammals (e.g., seal, fish) to fats in processed foods containing omega-6 fatty acids raises the blood serum cholesterol and triglyceride levels and is associated with the onset of diabetes and arteriosclerosis. Agricultural food products and junk

foods are composed of fast-release carbohydrates that rapidly dump sugar into the metabolism and increase the risk of obesity, dental caries, colon-related diseases, and diabetes. Indeed, recent scientific research has shown that Arctic peoples have genetic and physiological adaptations to diets rich in omega fats. Tohono O'odham people, for example, have the highest incidence of diabetes per capita of any group on the planet. Before the changes in their diets in the early 20th century, diabetes was unknown to the O'odham. Their native foods, including drought-resistant desert beans, cacti, and nuts, all release carbohydrates slowly, protecting them against the onset of diabetes.

There is evidence that dietary change may also be implicated in the high rates of poor mental health among indigenous populations that are now above national averages by factors ranging from 20 to 100. While there are important contextual reasons for this, including the loss of meaning and purpose as traditional cultures eroded, the decline in consumption of omega-3 fatty acids has important implications for neuronal and brain development, function, and health, which have been associated with increased levels of aggression, depression, postpartum depression, and suicide. Omega-3s are also essential for mental functioning and visual acuity in babies, and because they are important for brain function, they may reduce neurodegenerative disorders such as Alzheimer's. It is no surprise that scientists are finding that the gut, sometimes called 'the second brain,' has an influence on mental functioning. Physical activity is further known to be beneficial to both mental and physical health.

The nutritional transition that occurred so rapidly in indigenous groups is not a *fait accompli*. Michael Pollan (2008) has reviewed a number of studies indicating that, "some of the most deleterious effects of the Western diet could be so quickly reversed ... at least to some extent, we can rewind the tape of the nutritional transition and undo some of its damage." Studies in Australia in which diabetic Aborigines volunteered to only eat and procure hunted, gathered, and fished foods showed striking improvement in all the metabolic abnormalities of diabetes in the group. Similar projects with groups in Canada and Mexico have yielded identical results, indicating that re-adopting foods that were partly displaced or became a smaller part of the diet might be a way to reverse the upsurge in chronic diseases among indigenous peoples.

### **Policy issues**

The magnitude of the health problems of indigenous populations in North America is associated with declining opportunities to procure and eat traditional, especially wild foods, and to participate in activities associated with them. Taking advantage of what opportunities exist has been reduced further by the demoralization occasioned by village and reservation conditions of high unemployment, chronically overcrowded housing, loss of intergenerational transmission of indigenous knowledge, and lack of physical activity. Apart from the immense costs from shortened lives and cultural dislocation, there are numerous costs to governments derived from having indigenous populations so visibly and collectively incapacitated. All following recommendations require in depth consultation with indigenous leaderships:

- It is better to incentivize people to improve their lifestyle choices rather than to castigate them for unhealthy habits. Government funding in many communities is still tied to activities that keep people in the communities and reinforce unhealthy lifestyles. However, one way in which Northern peoples maintained land-based activities after they were settled in villages was through an Outpost Program, whereby the Canadian government distributed payments to hunting families needing to buy equipment to spend time in the country. Unfortunately, many such programs were discontinued or fell into disarray about 15 years ago. It would be far cheaper for the government to reinstate such programs than to bear the costs of ill health associated with sedentary living. Private donors as well could be indispensable in redirecting funding, and renewing an Outpost Program. Alternately, the government could help to support the often-

fragmentary grassroots initiatives from communities engaged in land-based cultural revitalization projects. One successful model along these lines is the Hunters Support Program operated in Quebec, which releases funds to Aboriginal organizations that pay Inuit and Cree hunters for the meat and fish they bring home. It also helps to subsidize the purchase of hunting equipment and transportation while contributing a small fee for the hunters' time. After taking some of the food for themselves, the hunters then distribute free food throughout the villages. Country food consumption then replaces expensive and less healthy imported foods. At the same time, such a policy helps to promote the economic viability of indigenous communities. A similar program has been operational under Home Rule in parts of Greenland.

- A foundation for any reconfiguration of land-based livelihoods is education. This would mean supporting experiential education, enabling young people to learn indigenous knowledge and ecological literacy through pedagogy in outdoor skills, animal behavior, habitat conservation, and topography. In 1999, when I conducted a study on an Innu experiential learning project in Labrador, I found virtually unanimous support from adults among the 60 people I interviewed. Yet no changes followed my report, largely as a result of indifference from the mainstream school board and the Band Council being preoccupied with more immediate concerns. The obstacles to be overcome in such an initiative also include the poor health of many indigenous populations impairing outdoor activity, the school calendar, which runs on the European agricultural cycle, and receiving paid employment leave. These obstacles are surmountable, but require systematic coordination of health, educational and political authorities. They could be encouraged by student exchanges to enable non-Aboriginal students to learn indigenous knowledge and consider it as part of general scientific knowledge. Educational charities, independent and state schools, and the more ecumenical International Baccalaureate schools could be targeted.
- None of this will succeed without an economic base. Despite recent native involvement in lucrative (but short-term) extractive industries, there is no evidence that progress through ever-increasing material consumption generates improvements in well-being beyond a low base of per capita GDP. In fact, when increased standards of living come at the cost of cultural meaning and purpose, it does not make people happier or improve well-being (Pretty, 2013). A greener indigenous economy would create revenue-generating initiatives to help people return to vibrant health, and thus lessen the dependence on short-term economic growth through the selling of tribal lands. Therefore, eco-tourism and land-based education along the lines of the U.S.-based National Outdoor Leadership Schools (NOLS) could be introduced. Government agencies, businesses, banks, and marketing agencies would all need to be involved.

#### **References:**

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*\*\* A policy position paper prepared for presentation at the conference on Food Safety, Security, and Defense (FSSD), titled Equitable, Sustainable, and Healthy Food Environments, convened by the Institute on Science for Global Policy (ISGP), May 1-4, 2016, at Simon Fraser University, Vancouver, British Columbia, Canada.*