INSPQ INSTITUT NATIONAL DE SANTÉ PUBLIQUE DU QUÉBEC

The Diet of Québec First Nations and Inuit Peoples

Québec

The Diet of Québec First Nations and Inuit Peoples

REFERENCE DOCUMENT

Vice-présidence aux affaires scientifiques

April 2015

Institut national
de santé publique
Québec

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TRANSLATION

The translation of this publication was made possible with funding from the Public Health Agency of Canada.

This document is available in its entirety in electronic format (PDF) on the Institut national de santé publique du Québec Web site at: http://www.inspq.qc.ca.

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LEGAL DEPOSIT – 4th QUARTER 2015
BIBLIOTHÈQUE ET ARCHIVES NATIONALES DU QUÉBEC
LIBRARY AND ARCHIVES CANADA
ISBN: 978-2-550-74187-9 (FRENCH PDF)
ISBN: 978-2-550-74540-2 (PDF)

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Highlights

- The diet of Québec's First Nations and Inuit has changed significantly in a few decades. It passed from a diet based on local natural resources to a mixed diet or one relying exclusively on commercial food.

- When adding a sedentary lifestyle and the social conditions of many families and communities, the commercially-based diet, which is high in refined sugars, trans fat, and sodium and low in essential nutrients, contributes to chronic illnesses like obesity, diabetes and cardiovascular disease.

- The traditional diet is healthy and high in a variety of essential nutrients (iron, zinc, and vitamins A, B, C and D). The foods in this regimen generally contain abundant animal proteins as well as essential fatty acids. Eating these foods is advocated for their positive effects on individual global health.

- A healthy and varied diet includes products obtained from hunting, trapping, fishing and gathering, but also through access to a variety of quality and reasonably-priced store-bought foods.

- Remoteness and geographic isolation, as well as access to resources, may be major obstacles for First Nations and Inuit to securing a healthy nutrition.

- Access to healthy and varied food in Aboriginal communities is already being supported and sustained efforts must continue. A variety of strategies already at work in communities illustrate community vitality and empowerment that come when sufficient resources are made available to them.

- Early childhood must be the target for healthy lifestyle promotion efforts, with the goal of reaching the family and community environments. Children must be taught very early the importance of good eating habits, and their elders must also have the opportunity to teach them cultural habits through nutrition.

- Numerous families experience food insecurity on a regular basis due to a particularly unfavourable socio-economic context. Still today many Aboriginal families and communities in Quebec are forced to deal with poverty, along with its harmful effects.

- Unless concrete action is taken to end these iniquities, promoting healthy eating habits will be a futile exercise.

Summary

The diet of Québec's First Nations and Inuit has changed significantly in a few decades. The transition from a local natural resource-based diet to a mixed or relying exclusively on commercial food one has had major repercussions on the health of these peoples. Add a sedentary lifestyle to this mainly commercially-based diet, which is high in refined sugars, trans fat, and sodium and low in essential nutrients, and the outcome is more chronic illnesses like obesity, diabetes and cardiovascular disease.

In addition, many Inuit and First Nations communities are still plagued with adverse socioeconomic conditions, with numerous families dealing with environments that jeopardize both their physical and psychological health and their sense of identity and cultural values. Many communities deal with substandard housing and infrastructures, difficulties accessing health and education services, poverty, unemployment and low education levels. Numerous families even experience food insecurity on a regular basis. On his visit to Canada in May 2012, the U.N. Special Rapporteur raised the issue of food insecurity in Aboriginal communities and called it a major concern.

There is very little room, in such a scenario, for consideration of a healthy diet and healthy living.

Project background

As part of the development of the future Policy for a Healthy Diet for Québec, the Ministère de la Santé et des Services sociaux (MSSS) invited the Aboriginal health unit of the Institut national de santé publique du Québec (INSPQ) to produce a reference document on the diet of First Nations and Inuit in Québec. To this end, the unit enlisted the collaboration of some of its main partners, including the First Nations of Quebec and Labrador Health and Social Services Commission (FNQLHSSC), the Nunavik Regional Board of Health and Social Services (NRBHSS) and the Cree Board of Health and Social Services of James Bay (CBHSSJB).

Main findings

Health status

First Nations and Inuit health have markedly improved in both Québec and the rest of Canada; nevertheless, the discrepancies between these peoples and the general population remain troubling.

For Québec's Aboriginal peoples:

- Life expectancy at birth is five years shorter;
- The prevalence of overweight is significantly higher than for the general population;
- Diabetes rates are disturbing, especially among First Nations;
- Cardiovascular disease is increasing, even for Inuit who are better protected from these illnesses by a high-omega-3 diet;
- Anaemia and iron deficiency are often reported in Nunavik.

In addition to physical health issues, Aboriginal peoples grapple with numerous psychosocial difficulties which impact their health and their individual and collective physical, social, emotional and mental well-being. These problems are not merely individual afflictions and must not be viewed as

such. The social and health inequality faced by Aboriginal peoples is the legacy of decades of institutionalized assimilation.

Lifestyle changes

Although the role of traditional diet varies considerably with each nation, this diet is nevertheless highly valued, and highly coveted when conditions permit. Nevertheless, decreased frequency of traditional food consumption is amply documented across the board.

Several factors are cited to explain this decrease or even disappearance of traditional foods in the Aboriginal diet over time. The sources consulted list colonization, past trauma, political and legal barriers to accessing land, declining wildlife, the costs of hunting and fishing, and natural resource development projects. In some areas, public health warnings concerning risks of contamination from certain animal species have sometimes served to diminish public trust in consuming them. Today, experts nevertheless agree that the nutritional benefits of consuming these foods generally outweigh the risks.

Traditional diet

Many experts have demonstrated that the traditional diet is high in a variety of essential nutrients (iron, zinc, and vitamins A, B, C and D). The foods in this regimen generally contain abundant animal protein as well as essential fatty acids. For instance, traditional seafood is a very good source of omega-3 fatty acids, which are well-known for their cardioprotective effects.

It should also be pointed out that the nutrition value of traditional foods extends beyond merely the act of eating. The entire process of acquiring, preparing and processing these foods enhances not only a healthy diet, but also the vitality of social, cultural and identity values.

Consumption patterns and food supply

Land access is a key physical determinant in promoting the consumption of traditional foods. The geographical location of communities found in urban settings, however, makes access to land a challenge.

Conversely, many remote or isolated communities face major obstacles to accessing a variety of healthy, quality and reasonably-priced foods in grocery stores. Residents of remote or isolated communities are usually limited to grocery stores on their land for their supplies. Many experts have shown that the more isolated the community, the higher the cost and the lower the quality and variety of available food products, especially fruits and vegetables. Residents of communities near major cities, on the other hand, have access to greater food variety and quality, and sometimes lower prices.

The high price of food in grocery stores and the costs of hunting and fishing are a further burden to the poverty in many Québec Aboriginal communities. Numerous families even experience food insecurity on a regular basis, which jeopardizes their physical and mental health and quality of life.

Initiatives

Many Aboriginal communities have introduced initiatives in their communities designed to improve their citizens' diets and dietary choices. Some of these include community kitchens, food banks, home food delivery for seniors, potlucks, outdoor activities such as walks in the woods, berry picking, and hunting and fishing excursions, social and cultural events, and seasonal celebrations.

Canadian and Québec activities designed to promote healthy diet and active lifestyles or, in fragile environments, meet basic food needs, can also be made available to Aboriginal communities who request them.

All of these initiatives definitely enhance the health and well-being of communities who use them. In Nunavik and Eeyou Istchee, these projects have been implemented in every community. In many other cases, however, they rely on local commitments and can be undermined by non-recurrent funding.

Conclusion

The literature consulted and the data used in this document emphasize the urgency of supporting First Nations and Inuit in their efforts to reclaim a varied and healthy diet and all of the associated benefits for their overall health and quality of life. Successful courses of action cannot be identified without their participation and leadership.

Improving First Nations and Inuit diets can only happen if support is provided for activities promoting the advantages of foods from the land as well as initiatives that facilitate access to these foods. Continued efforts to this end must also bolster access to a variety of health, quality and affordable food in every community.

Numerous Inuit and First Nations families and communities still face poverty and its damaging effects. Improving the diets of their members will be a losing battle until concrete action is taken to end these inequalities.

1 Introduction

The Ministère de la Santé et des Services sociaux (MSSS) invited the Aboriginal health unit of the Institut national de santé publique du Québec (INSPQ) to contribute to the development of the future Policy for a healthy diet in Québec by producing a reference document on the diet of Québec's First Nations and Inuit Peoples. In response to this invitation, the team enlisted the help of some of its main partners, including the First Nations of Quebec and Labrador Health and Social Services Commission (FNQLHSSC), the Nunavik Regional Board of Health and Social Services (NRBHSS) and the Cree Board of Health and Social Services of James Bay (CBHSSJB).

The connection between the growing burden of chronic illnesses around the world and lifestyle changes (occurring at varying rates and time periods, depending on populations), is no longer disputed: these changes include high fat, sugars and sodium intake, combined with an overall decline in physical activity. But the individual and environmental determinants of eating habits are complex and fluctuate from one milieu to another. Any efforts to reduce the burden of chronic illnesses in these societies thus require approaches to nutrition that are consistent with the social, cultural and economic specificities of each.

This observation applies to the Aboriginal populations in Canada, Québec and elsewhere in the world. In fact, much of the increased risk of chronic illnesses such as obesity and diabetes in these populations can be traced to the Aboriginal populations' rapid transition from eating habits and a way of life based exclusively on a close relationship with the land to a "commercial" or mixed diet and a sedentary lifestyle. Furthermore, the frequently adverse socioeconomic conditions and remote locations of some of these communities restrict access to a healthy diet.

The impact of these factors on the substantial increase in obesity and diabetes in many Aboriginal populations in Québec shows the importance of choosing strategies that take into account the distinct cultures, transitions and challenges experienced by these peoples today and throughout history.

The first section of this document offers an overall portrait of the Aboriginal peoples of Québec. The second section describes the sociocultural and identity dimensions of diet and offers a general overview of the food supply available to Aboriginal communities.

2 Québec's Aboriginal Peoples

2.1 Overview

In Québec, the term Aboriginal refers specifically to First Nations and Inuit peoples. The 11 Aboriginal nations account for just over 93 541 persons, or more than 1% of the population[105]. These 11 nations are divided into one Inuit nation and ten First Nations: the Abenaki, the Algonquin, the Atikamekw, the Cree, the Huron-Wendat, the Innu, the Malecite, the Mi'kmaq, the Mohawk and the Naskapi (see map in Appendix 1). Aboriginal peoples live in one of 55 communities scattered throughout most regions of Québec.

The Health Regions of Nunavik (17), the James Bay Cree Lands (18) and North Shore (09) alone account for 50% of the Aboriginal population. One quarter of the communities have a population of fewer than 500 people, and over half have more than 1 000. The Aboriginal demographic is young, with more than half under age 30[104].

Each of the 11 nations is distinct from the others in cultural, linguistic and geographic terms as well as legal and political status. In Québec, the James Bay and Northern Quebec Agreement (Cree and Inuit) and the Northeastern Quebec Agreement (Naskapi Nation) conferred special status on these three nations, granting them different legal status than the province's eight other First Nations (see Appendix 2). These three nations reside on territories covered by agreement. These structural factors combined result in a broad spectrum of socioeconomic, political and social and health environments in Aboriginal communities.

2.1.1 Agreement territories

- Nunavik is a vast territory of over 500 000 km^2 located north of the 55th parallel, in the Arctic region of Québec. Bordered on the west by Hudson's Bay, on the north by Hudson Strait and on the east by Ungava Bay and Labrador, this region is inhabited by close to 11 000 Inuit living in 14 municipalities. Since the villages are at least 100 kilometres apart, they are connected to each other only by plane and boat.

- The Cree territory Eeyou Istchee covers 344 854 km^2, or two-thirds the size of France. In 2012, the population totaled 16 010, spread over the nine communities located either inland (Mistissini, Nemaska, Oujé-Bougoumou and Waswanipi) or along the shores of James Bay (Chisasibi, Eastmain, Waskaganish, Wemindji, Whapmagoostui)[36, 57, 103]. The last 30 years have seen a demographic explosion in the territory[57]. The population is expected to reach 25 000 inhabitants by 2028.

- Kawawachikamach, a Naskapi community, is located about 50 kilometres north of Schefferville. Secrétariat aux affaires autochtones data put its population in 2011 at 1 155 persons, 853 of whom are considered residents[105]. As signatories of the Northeastern Québec Agreement (NEQA), the Naskapi have jurisdiction over 326 km^2 of land. They also have exclusive hunting, fishing and trapping rights for a larger area. The Cree-Naskapi Act, passed in 1984, exempts them and the Cree Nation from the Indian Act and grants them greater administrative authority[104].

2.1.2 Non-agreement territories

According to data presented on the Secrétariat aux affaires autochtones website, in 2011, 82 658 persons defined themselves as belonging to a First Nation in Québec[105]. The vast majority of these people live in a community. Québec's 41 First Nations communities grouped into ten nations are established in the province's various administrative regions[104]. The eight First Nations that are not signatories of the James Bay and Northern Quebec Agreement or the Northeastern Quebec Agreement are subject to the provisions of the *Indian Act*. Under this legislation, the vast majority of communities have reserve status and are administered by elected band councils.

In addition, more and more Aboriginal peoples in Québec are now living outside their community of origin. Although this phenomenon is less prevalent in Québec than elsewhere in Canada, the numbers are clearly on the rise. Between 2001 and 2006, Aboriginal people living in urban areas represented over 60% of the Québec's total Aboriginal population[24]. In 2010, it was estimated that over 80 000 First Nations or Inuit people were living in Québec's cities. Thus, 70% of regional cities such as Trois-Rivières, Gatineau, Baie-Comeau, Sept-Îles, Val-d'Or and Saguenay are a temporary or permanent home to Aboriginal people, while the major cities like Montreal and Québec City are home to 30% of them[24]. It should also be noted that many First Nations members considered as living outside their communities sometimes live in a community other than their own or close to their community due to housing shortages (personal communication M. Sioui, FNQLHSSC).

Harsh living conditions in communities partly explain why people move to the city, but many also go there to work, study, join friends and family members and to have access to the specialized services they need. One of the features of the relocation of Aboriginal people to cities is that these moves can be transitory in nature. People alternate between spending time in cities and returning to their communities, sometimes in search of social connections[71, 72]. Urban Aboriginal people live in highly varied environments. Certain individuals adapt fairly easily to the urban context, finding postsecondary education and jobs there, while others, compelled to escape a difficult family or social situation (spousal violence or lack of housing), may find themselves caught in the exclusion and marginalization of homelessness[72]. Aboriginal people who live far from their community of origin generally have no access to the services and programs offered in their communities, with the exception of federal programs such as non-insured health benefits (NIHB) and the post-secondary program of Aboriginal Affairs and Northern Development Canada.

2.2 Health profile

Canadian Aboriginal populations, like those elsewhere in the world, are less healthy than non-Aboriginal populations[39, 45, 89, 90, 113]. Although the health of Aboriginal populations in Canada and Québec has improved noticeably in a few decades, it is clear that the disparities observed between these populations and the general population remain worrisome or even alarming in certain cases.

Gap in life expectancy at birth between Aboriginal and non-Aboriginal populations

In 2001, the life expectancy at birth of First Nations in Canada was 70 years for men and 76 for women, an increase of 8 years in the past two decades. On the other hand, it was still 7 and 4 years shorter, respectively, than that of the Canadian population[87]. These disparities may be surprising, but they are in the same range as those generally observed elsewhere in the world. The data show that First Nations life expectancy at birth in Québec is 6 to 7 years shorter than in Canadian First Nations[26].

Gap in life expectancy between indigenous and non-indigenous people (in years)

Guatemala	Panama	Mexico	Nepal	Australia	Canada	New Zealand
13	10	6	20	20	7	11

Source: Hanemann (2006), 5 & Health Canada (2007).

The situation for the Inuit in Canada, however, is quite different. While the life expectancy at birth was 68 years in 1991, it had dropped by one year by 2001. Thus at 67 years, the life expectancy of Inuit populations corresponded to life expectancy in Canada in 1946[106]. In Québec, Nunavimmiut life expectancy at birth is 66.7 years[74]. Among the Cree, life expectancy in 2003 was 77.2 years[69].

The health and social situation of Aboriginal populations in Québec is uneven, but the most marked disparities are generally seen in the categories of injuries (intentional and unintentional), chronic illnesses (such as obesity, diabetes and cardiovascular disease), and certain infectious diseases (such as sexually transmitted infections and tuberculosis)[3].

Today, for example, a First Nations person has a two to three times higher risk of diabetes, an eight to ten-fold higher risk of tuberculosis and a five-fold higher risk of dying by suicide than the rest of the Canadian population[26].

It is difficult to paint a general picture of Aboriginal health in Québec as a whole because each nation is distinct. Overall evidence is hard to find because "average" rates often mask variations between peoples (and even between communities on the same territory). In addition, because of jurisdictional differences connected to health, health indicators (and the methodology used to measure them) can differ significantly and make comparisons across regions difficult. However, data from health surveys can provide an overview of trends that seem to be emerging.

2.2.1 Obesity

Although our statistics are drawn from health surveys conducted some years apart on different populations and using a variety of methodologies, the rate of overweight still seems to be markedly higher in Aboriginal populations than in the general population in Québec at the same date (47% overweight or obese in 2003)[58].

- In Nunavik, the 2004 health survey *Qanuippitaa?* showed that 30% of adults were overweight and 28% were obese[45]. In a study conducted in 1992, the rates were 21% and 19%, respectively. This increase primarily affects men and young adults from 18 to 29 years old. However, the highest rates are found among women and adults from 50 to 74 years old. As for abdominal obesity, 37% of participants had a waistline measurement indicative of an increased risk of health

problems (23% in 1992). Once again, many women and older adults had an at-risk waist size (71%).

- In the Eeyou Istchee region, obesity is very prevalent[46, 83, 119]. In 2003, the Canadian Community Health Survey revealed that 84% of the region's population was overweight (51% obese and 33% overweight)[7, 69]. This is a sharp increase since 1991, when the prevalence of obesity was 39%. A healthy weight was found in 23% of those surveyed in 1991, and 13% in 2003[84]. On average, women are more affected than men[84]. As for children, a recent study reports that 28% are overweight and 37% obese[118].

- The results of the 2002-2003 First Nations Regional Longitudinal Health Survey for the Quebec region (FNRLHS 2002-2003) showed that in 2002, more than two thirds of First Nations adults aged 18 years and older residing in non-Agreement communities in Québec reported being overweight or obese[25]. Only a slightly more than one-quarter of the population were at a healthy weight. The results of this survey tended to show that obesity varied according to the level of geographic isolation (urban region, remote, semi-isolated and isolated). Thus, the proportion of persons who report suffering from obesity was higher in the isolated communities (43%) than in urban communities (27%). This same study reported that the trend seemed to show a worrisome rate of obesity in children aged 0 to 6 years, with 40% of them being obese (statements from parents or guardians). Once again, it seems that children living in isolated regions were more affected than those in urban settings (66% versus 37%). Among adolescents, 21% suffered from obesity, the boys in particular (26% versus 16% of girls). Finally, persons age 55 and older are more likely to be overweight (51%) than obese (29%).

2.2.2 Diabetes

Just as for obesity, the prevalence of diabetes is generally of concern in the Aboriginal populations. By way of comparison, the prevalence of diabetes for the general Québec population aged 20 years and older in 2003-2004 was 6%[58].

- In 2004, in Nunavik, the prevalence of diabetes was 5%, comparable to the rate observed in the Canadian population overall. As for the risk factors associated with this disease, the results showed that most diabetics in this survey were obese (65%) and close to one quarter were overweight. The prevalence of diabetes was higher in women, who also showed a higher prevalence of diabetes risk factors, which include obesity and hyperinsulinemia[43].

- In the Eeyou Istchee region, the prevalence of diabetes among people age 15 years and older is 29%, which is four times higher than in the general Québec population[66, 67]. The four inland communities (Mistissini, Nemaska, Oujé-Bougoumou and Waswanipi) have high rates of diabetes, sometimes reaching 27%[67]. With an incidence rate of 16.7/1 000, the prevalence of diabetes increases each year[67].

  In 2006, it was reported that 50% of the population living with diabetes had been diagnosed before the age of 40[65]. As for young people aged 20-29 years, 5.5% had been diagnosed with diabetes.

  Finally, women seemed to be suffering from diabetes more than men (25% versus 18%, respectively)[67]. These high rates are disturbing, in particular for pregnant women, since they can be associated with significant risks for the health of the mother and her child.

- About 14% of First Nations adults in non-Agreement communities reported having diabetes in 2002, a proportion two to three times higher than in the Québec population[25]. In 2011, the First Nations of Quebec and Labrador Health and Social Services Commission (FNQLHSSC) published the *Scan on diabetes in First Nations Communities of Quebec*[30]. This study was conducted in ten First Nations communities. According to the survey, the prevalence of type 2 diabetes and prediabetes seems to be growing in First Nations populations. In fact, the average proportion of diabetic persons is 16%, and 14% for prediabetics[30]. Among the respondents in the sample, women appear more likely than men to report having prediabetes (59%) or diabetes (56%). As indicated in the literature, age is one of the main risk factors for diabetes. Thus, in the survey, 63% of people aged 55 years and older are diabetic. The proportion drops to 35% among adults between 35 and 54 years old. While the survey results did not reveal diabetic persons younger than age 17, they indicate a higher proportion of prediabetics among 18-to-34-year-olds and among 35-to-54-year-olds. Finally, the highest diabetes rates were observed in remote and semi-isolated regions, whereas prediabetes is more common in isolated regions.

Diabetes: a relatively recent phenomenon among Aboriginal peoples

The presence of obesity and diabetes is a recent phenomenon among the Aboriginal peoples of Québec. Among the Cree, for example, there seem to have been no cases of diabetes until the mid-1970s. The illness then appears to have evolved rapidly, growing in prevalence from 2% to 13% in 20 years (from 1983 to 2003)[107]. Far from being unique to Québec or Canada, the extreme vulnerability to diabetes of Aboriginal populations is found around the globe[39].

While the exact reasons for this phenomenon have long been debated, it now seems that they may result from a combination of metabolic and environmental factors as well as historic and sociopolitical ones[39].

The fact that obesity and diabetes today are present in nearly all populations throughout the world (Aboriginal and non-Aboriginal) casts doubt on the legitimacy of a simple genetic theory. Many believe that diabetes results from harsh living conditions in Aboriginal communities, where junk food is often available at a fraction of the cost of a healthy meal. Jeff Reading, director of the Centre for Aboriginal Health Research at the University of Victoria, reminds us that what links the Aboriginal peoples of New Zealand, Finland and Canada, aside from their high levels of diabetes, is not so much their genetic baggage as the social problems they face. In his words, diabetes is "not about race. It's more about colonization"[1].

2.2.3 Cardiovascular disease

- Until now, the Inuit have been relatively well protected against cardiovascular disease. While the rate of hypertension rose from 6% in 1992 to 12% in 2004, hypertension is still less common among Inuit adults compared to the rate observed among the overall Québec population in 2006-2007 (22%)[11]. What is more, research of atherosclerosis among the Inuit in 2004 showed that they are relatively well protected against this disease. However, the alarming rise in cardiovascular disease risk factors (tobacco use, glucose intolerance, overweight and abdominal obesity) predicts a rise in cardiovascular problems over the coming decades[43].

- A recent cross-sectional study conducted of 172 Cree in Mistissini showed that metabolic syndrome was present in 54% of them, 90% of whom suffered from abdominal obesity and 70% from hyperinsulinemia[22].

- In Québec, the FNRLHS 2002-2003 showed that about 36% of Abenaki adults and 36% of Mohawk adults have cardiovascular problems (stroke, hypertension and heart problems). The number for the Algonquin and Mi'kmaq is 24%, and for the Huron-Wendat it is 23%. Finally, 20% of Innu adults and 13% of Atikamekw had cardiovascular problems. Additionally, close to half of older First Nations people had cardiovascular problems[25].

2.2.4 Anaemia and iron deficiency

Iron-deficiency anaemia can affect physical abilities, cognitive performance and resistance to infection. It is caused in part by decreased consumption of traditional foods in favour of commercially available products of lower nutritional quality.

- In Nunavik, the data reported by Blanchet et al. showed that on the day preceding the survey, 88% of Inuit (81% of women and 93% of men) had an acceptable iron intake[12].

  In 2004, nearly 38% of non-pregnant women of childbearing age (18-49 years old) were anemic (Hb<120 g/L) (33% - pregnant women and 53% - women age 50 years and older)[90]. Moderate anaemia was found in 20% of these women, while 11% had severe anaemia[90]. Furthermore, the prevalence of iron deficiency was estimated at 35% among the women of Nunavik. Among non-pregnant women of childbearing age, iron-deficiency anaemia was the most common form of anaemia, reaching a level of 50%. In addition, this rate reached 66% in young women from 18 to 29 years. Anaemia is nine times more prevalent among women in Nunavik than among Canadian women[82].

  Anaemia is also problematic in the children of Nunavik. A study conducted in the late 1980s showed the extent of anaemia in this age group[115]. At 2, 6 and 12 months, the rate was respectively 21%, 47%, and 38%. Certain authors believe that overcrowded housing and the prevalence of infections may contribute to the presence of anaemia in children[88].

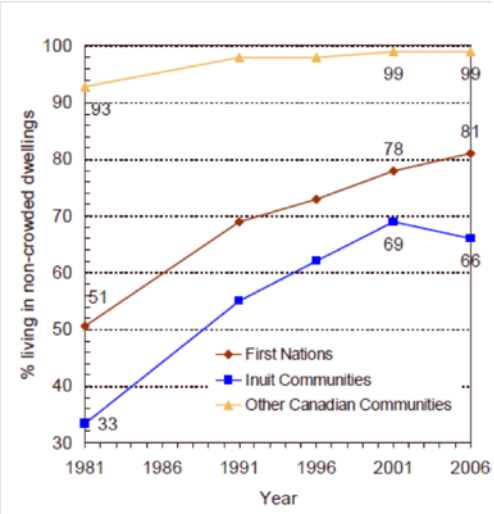
- In the region of Eeyou Istchee, a recent study showed a sharp improvement in anaemia rates since 1995, with a prevalence (Hb<110 g/L) of 12.5% in newborns[114]. This improvement is probably connected to the practice of universal screening in the region, coupled with dietary advice offered during pre- and post-natal appointments[114]. However, it should be kept in mind that these rates are still high compared to the rate in non-Aboriginal newborns in Québec (8%).

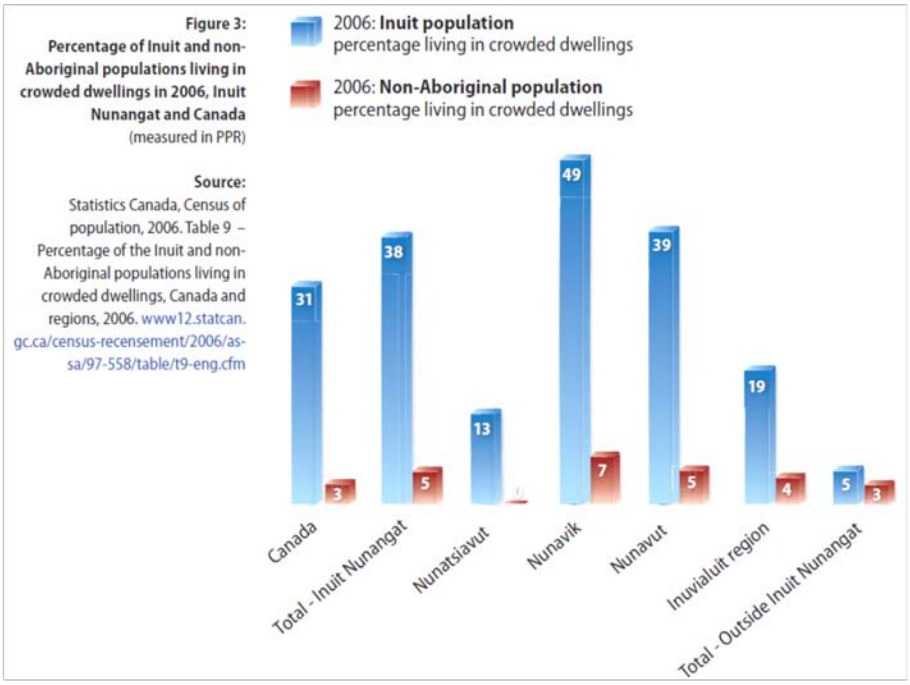
2.2.5 Social environment

The physical health problems experienced by Aboriginal peoples usually occur in conjunction with various problems of a psychosocial nature, such as mental health problems (ranging from psychological distress to suicide), various forms of addiction (alcohol, drug addiction and gambling), and spousal violence and abuse. Today, the material living conditions that persist in many Inuit and First Nations communities are still particularly arduous, and include overcrowding and inadequate housing as well as lack of accessibility to essential services such as access to potable water, electricity or quality health and education services[93]. These populations often deal with an especially grim socioeconomic context marked by poverty, unemployment and low educational levels in their communities[53].

Health consequences of residential overcrowding in Aboriginal communities in Canada

According to census data, overcrowding in Aboriginal communities has improved substantially over the past 30 years. Nevertheless, it continues to be a public health problem, in particular in the country's Inuit regions. Statistics show that Nunavik has the highest rate of overcrowded housing in Canada (49%). There is an immediate need for at least 1 000 housing units (see graph below).





Source: Statistics Canada, 1981, 1991, 1996, 2001 and 2006 Census of Population.

Several studies tell of a very high correlation between overcrowded housing and the transmission of infectious diseases such as flu and tuberculosis, learning difficulties and behavioural adjustment at school, as well as physical violence and sexual assault of children. These conditions drive many people towards cities, where they end up homeless, uprooted and marginalized. Thus, while Inuit make up only 10% of the Aboriginal population living in Montreal, they represent nearly half (45%) of homeless Aboriginal people (Donat Savoie, unpublished document).

It is now clearly acknowledged that the social and health disparities that beset Aboriginal populations are merely a reflection of a long history of assimilationist policies that have characterized relations between non-Aboriginal governments and Aboriginal peoples since the earliest days of colonialism[53, 93].The accumulation of past and present Canadian colonialist actions have undermined the individual and collective physical, social, emotional and mental health and well-being of Aboriginal societies[53].

Violence in Aboriginal populations: physical and psychological survival conditions that detract from healthy eating

Many studies demonstrate that Aboriginal women are proportionally more likely to be victims of spousal violence. The statistics are disturbing, varying from 25% to close to 100%, depending on the measurement methodology used[37]. Contributing factors can include poverty, adolescent pregnancy and alcohol abuse in these populations[120]. On the subject of violence against women in Aboriginal settings, the report of the 1996 Royal Commission on Aboriginal Peoples (RCAP) emphasized the role of factors such as frustration in the face of institutional racism and assimilationist policies, as well as the breakdown of the Aboriginal family due to the Indian residential school system[4].

Suicide is also an extremely troubling problem in Aboriginal populations of Québec and Canada. Although the problem of suicide is extremely complex to define, this relatively recent phenomenon among young Aboriginal people is clearly a reaction to the historical trauma and repeated human rights abuses experienced for centuries by Aboriginal peoples[39].

Young Aboriginal people today face the twofold ordeal of having to define their place in both their community of origin and the Western society surrounding them. This in addition to dealing with poverty, abuse and racism in many forms, as well as the resulting feelings of distress and profound social exclusion. The suicide rates in certain Aboriginal communities in Canada are extremely high, sometimes reaching more than 30 times the Canadian average[106].

Key observations

- The problems discussed reflect the fact that many Aboriginal families are facing conditions that undermine not only their physical and psychological health, but also their identity and cultural integrity. This climate sometimes leaves little room for concerns about making healthy food choices and adopting healthy lifestyles.
- Overweight rates seem sharply higher in Aboriginal populations than in the general population of Québec. The prevalence of diabetes is also concerning for many Aboriginal nations. Consequently, cardiovascular disease is on the rise, even among the Inuit, who are more protected against these illnesses due to a diet that is very high in omega-3 fatty acids. In addition, anaemia and iron deficiency are often reported in this population of Nunavik.
- It is also important to understand that none of these problems are individual ailments, and they cannot be treated as such[3]. This analysis will demonstrate the irrefutable connections between the political, economic, cultural and social inequities experienced collectively by these populations throughout history and the health of the individuals comprising them today.

3 Nutritional Challenges Common to all Aboriginal Populations in Québec

3.1 Lifestyle changes among Aboriginal peoples

The diminished regularity, quantity and variety of traditional food consumed by Aboriginal populations over the last few decades have been amply demonstrated. The transition from a traditional diet to a commercial one, frequently high in refined sugars and trans fats, has contributed to the emergence of chronic diseases such as obesity, diabetes and cardiovascular disease[30, 50, 53, 112, 116]. In addition, it is now known that the gradual abandonment of the traditional way of life, including its diet, has impacts on mental health[101]. Furthermore, living with disabilities caused by chronic illness can also have repercussions for mental health[60, 63].

At the turn of the 20th century, malnutrition disorders were prevalent. Today's most common health problems are connected to diets low in nutrition and high in calories, leading to overweight and obesity[32, 54, 94]. The high incidence of infectious disease used to lead to high mortality and morbidity levels; today these high levels are attributable to chronic diseases (cancer, cardiovascular disease, diabetes, etc.)[32, 54].

From a historical perspective, the effects of colonialism on these phenomena can be traced to the beginning of the fur trade, when access to and appropriation of land and resources underwent profound changes. The practice of hunting, trapping, fishing, gathering and agriculture as means of both subsistence and identity building underwent gradual, profound changes[53, 93, 116] that were compounded when the creation of reserves led to a loss of access to territories and to a traditional diet. Aboriginal populations went from independent people meeting their own needs to State-imposed dependence on others for their food, clothing and lodging[17, 53].

In Québec, the Aboriginal diet first began to change with the introduction of new foods such as flour, sugar and tea by European explorers and colonizers. Aboriginal peoples did, however, also help to change the diet of those Europeans. Colonists began eating Aboriginal foods based on meats, fats, plants, berries and bread, which allowed them to adapt to the survival conditions of long expeditions under harsh conditions and to survive the many health problems they encountered[78].

Later dietary changes would result instead from the loss of land, the decline in certain animal species, a forced sedentary lifestyle and historical trauma[86, 111]. For example, many First Nations people who were forced to eat various types of vegetables in residential schools later refused to eat them again. Others may have adopted eating behaviours associated with past experiences such as famines described to them by elders.

Access to a hunting ground is an important physical determinant for a traditional diet[68]. But this access is not easy for everyone. Residents of First Nations communities located in a more urban setting have difficulty accessing hunting grounds. The high cost of hunting activities (weapons, ammunition, snowmobile, boat or all-terrain vehicle, fuel), insufficient knowledge of the necessary techniques, lack of interest or time to practice them (due to family, school or professional reasons)[56], the remoteness of these hunting camps or the presence of non-Aboriginal hunters on the hunting grounds at certain times of year can deter some people[68]. When species grow scarce, migration routes change or communities are poor, it is easy to see why hunting, fishing and gathering for food gradually diminish[30, 50, 56].

Finally, the impacts of climate change can affect the diet of populations located primarily in the northern region, such as the Inuit, Cree, Naskapi and Innu. Ice thinning, changes in migration routes, the decline or disappearance of certain animal species, climate fluctuations or water access issues can restrict Aboriginal peoples' access to their territories and resources[52, 59].

Today, the relationship to food categorized as traditional has changed considerably. It varies significantly from one nation to another, and with location (proximity and access to commercial foods, decline in animal populations) as well as sociodemographic factors such as the costs associated with hunting and fishing and access to hunting territories[50].

Nevertheless, the transformation of eating habits has not only changed lifestyles, but has also been associated with dramatic shifts in many other health determinants, including the loss of economic and political autonomy, as well as altered cultural and social signposts[50, 116].

3.2 The traditional Aboriginal diet

Willows defines traditional foods as "culturally accepted foods derived from local natural resources[113]. They usually come from locally available plants or animals obtained through activities like hunting, trapping, fishing, gathering or agriculture[113]. The type of food varies widely depending on the ecosystem in which the populations live (arctic, plains, forest or coastal region) and on seasons, migration routes and land and resource use (nomadic, semi-nomadic or settled). For example, in the Eeyou Istchee region, the snow goose and the Canada goose are hunted in fall and spring[38]. In summer, hunting is less common, and fish becomes the main source of traditional foods[38].

The Abenaki, Huron-Wendat and Mohawk used to subsist primarily on agriculture as well as hunting, trapping and gathering[104].The Mi'kmaq ate mostly seafood, while the Algonquin, Cree, Inuit and Naskapi built their lives around seasonal camps that followed game movements and migration. Still today, the edible parts of many species available on hunting grounds (caribou, moose, beaver, goose, partridge, ptarmigan, duck, trout, sturgeon, walleye, Arctic char, seal, beluga, crustaceans, etc.) are prepared with the techniques specific to each culture (boiled, simmered, roasted, smoked, fried, raw). Additionally, in Québec, strawberries, raspberries, blackberries, gooseberries, blueberries, cloudberries and other berries have always been part of the Aboriginal diet[27]. Finally, these foods can also be processed, and appear in such foods as the various types of bread made by different nations.

Today, experts agree that a traditional diet is healthy and high in a variety of nutrients. Traditional foods generally have a high level of animal protein and are often high in essential fatty acids. Traditional marine foods are a source of omega-3 fatty acids, well known for their cardioprotective properties[50, 62, 64, 81, 95]. This food also provides all of the essential nutrients like iron, zinc and vitamins A, B, C and D[75].

Traditionally, in the Eeyou Istchee region, bone or fish broths were a source of calcium.

For a number of years, the rapid decline in the frequency of traditional food consumption by all Aboriginal populations has been well documented in the literature[62, 80].

- In 1992, the Santé Québec Health Survey conducted in Nunavik showed that the consumption of traditional foods among Inuit accounted for 21% of energy intake. In 2004, this figure was 16%[12]. The *Qanuippitaa?* results also show that consumption of hunting and fishing products had fallen between 1992 and 2004, dropping from eight times a week to five[12].

- The situation in the Eeyou Istchee region is similar to that of Nunavik. In 2002, in an internal report of the Cree Board of Health and Social Services of James Bay (CBHSSJB), Receveur estimated that while in the 1950s, the daily consumption of game meat or waterfowl in the Eeyou Istchee region was 1.3 kg, it fell to .41 kg per day in the 1980s, dropping as low as .23 kg in the 1990s[107].

- The 2002 RHS conducted among the First Nations describes the consumption of traditional foods by age group over the 12 previous months. Youths 12 to 17 years old living in small and medium-sized communities eat more traditional foods than young people in larger communities. Large game, small game and feathered game were consumed by 26%, 10% and 13% of respondents, respectively. 15% of youths reported that they ate freshwater fish often. In the 18-to-34-year-old group, the consumption of traditional foods was lower than in the other groups. However, it is important to note that the consumption of traditional foods varies greatly by location. Adults living in isolated communities (no year-round road access to a service centre) are the biggest consumers of game and fish. Thus the closer people live to a service centre, the less traditional food they consume.

This change in eating habits is troubling, since a mere 5% of total daily energy intake consumed in the form of traditional foods is required for a significant association with increased vitamin A, protein, iron and zinc and reduced consumption of carbohydrates, sucrose, lipids and polyunsaturated and saturated fats[8, 42, 61, 62, 80].

But the nourishing value of traditional Aboriginal foods goes beyond the simple act of eating[50]. As the following section will illustrate, everything surrounding the procurement, preparation and processing of traditional foods fosters not only a sound diet, but also sustained social and cultural values.

3.2.1 Sociocultural and identity features connected to food

Although sources of food from hunting, fishing, trapping, gathering and agriculture are not the sole foundation of the Aboriginal diet, and these activities no longer take up most of the these people's time, they are still of significant identity value, as well as spiritually, socially, and culturally. This type of food is about much more than simply eating, and must in fact be viewed as the source of a series of culturally significant rules and steps leading to a complex process of exchange involving various human, animal, plant and invisible entities[113].

Being part of these steps is a doorway to grasping what it means to be "Aboriginal": to understanding the traditions, values, knowledge and norms these peoples have defined for themselves. Hunting and fishing are still important activities in Nunavik. These activities represent a source of renewal enabling their practitioners to strengthen relationships and cultural roots through cooperation, sharing, generosity and knowledge exchange. Families play a very important role at these moments, because families are the setting for these activities and for traditional meals. To this day, certain nations will mark the young hunter's first catch by sharing the news on the radio or in the local newspaper, or by inviting family and community members to share a meal.

"The hunting, fishing and gathering of traditional food and the subsequent sharing of these items within the community are social activities bringing together individuals, families and generations. Traditional foods create and sustain an important social and cultural fabric among individuals which supports community health and well-being"[109].

In the region of Eeyou Istchee, the health concept of miyupimaatisiiun (literally, "being alive well") is inextricably linked to a person's ability to eat "Cree" food, take part in daily activities such as moving around, eating and even hunting, and maintaining good interpersonal relationships[2].

Hunting, fishing and gathering, and the food that results from these activities, are also of great significance in contemporary Aboriginal identity. This is why Aboriginal people sometimes refer to traditional food as "real food," since it is more nutritious and better-tasting than non-Aboriginal food[30, 113]. A study conducted in the Eeyou Istchee region reported that foods described as healthy, such as wild goose fat or bear fat, are foods high in fat, which made it possible to survive long periods in the bush[14]. Eating game meat and animal fat also allowed people to stay healthy or heal themselves[14]. Conversely, some describe vegetables as "rabbit food," a pejorative description referring both to the fact that they don't create a "full" sensation, and to rabbits' low position on the food chain[14]. Moreover, under certain circumstances, the consumption of traditional foods and the cultural activities connected to them may be used to mark the various actions, behaviours, preferences and skills that distinguish the Aboriginal identity from the non-native identity[73, 100].

The same is true for cultural preferences regarding body size observed in certain communities. Excess weight, at one time a mark of "good hunters" and their families, is still seen by some as a sign of vitality, strength, success and health[14, 30, 100, 113].

On the other hand, the influence of Western popular culture leads some of the population to follow reducing diets. Cycle 2.1 of the Canadian Community Health Survey found that one half of the participants in the region of Eeyou Istchee chose or avoided certain foods based on concerns about their weight[84]. More specifically, 65% of women 30 years and older were concerned about their weight when making food choices[84]. In Nunavik, the results of the *Qanuippitaa?* survey show that among overweight adults (58%), more than one in two (54%) consider themselves of normal weight. Moreover, women are more likely to consider themselves overweight than men (32% vs. 24%). For instance, 15% of those whose body mass index (BMI) is lower than 25 see themselves as underweight, and 4% as too heavy. Finally, 20% of adults surveyed revealed that they were trying to lose weight, while the majority (71%) were not planning to take this kind of step[12].

3.2.2 Breastfeeding

Breastfeeding appears to be less common in Aboriginal communities[26]. The lack of certain community resources today seems to be rendering breastfeeding promotion inappropriate or out of step with the mothers' lives[26]. Further, initiation to breastfeeding may be undermined by the fact that women must give birth in hospital outside the community in a foreign environment, often without the support of their own mothers and grandmothers.

- The 2004 *Qanuippitaa?* survey showed that among women who had already given birth, 30% had breastfed their infants, 29% preferred the bottle and 40% combined the two. During the 1992 health survey, 64% of women stated that they had breastfed their last child.

- According to the Aboriginal Children's Survey conducted in 2006 in the region of Eeyou Istchee, 72% of child participants had been breastfed at least once. Historically, initiation to breastfeeding was more common in communities along the coast than in inland communities[86]. Nonetheless, there has been an increase in initiation in inland communities over the past few years[34, 55]. As for the duration of breastfeeding, 37% of mothers continued to breastfeed their children until the age of one to five months, and 45% continued until the age of six months and over[86]. The survey does not indicate whether the children were given breast milk alone.

- In 2002-2003, 39% of mothers living in one of the non-Agreement First Nations communities breastfed their children[26]. The results of the 2002 RHS also show that women who lived in the areas farthest from service centres were less likely to breastfeed their children than those living closer (16% vs. 85%)[25].

3.2.3 Contamination risks

Uncertainties around the presence of contaminants in the food chain can have an impact on the consumption of traditional food. In fact, it is well documented that certain traditional foods contain significant quantities of contaminants such as cadmium, lead, mercury, PCBs and pesticides[50]. Human activity such as hydroelectric dams, deforestation, climate change or industrial or agricultural soil contamination alters the ecosystems which produce the food, and is often the source of these contaminants[113].

In northern Québec, populations are exposed to a multitude of environmental contaminants which migrate to northern latitudes on atmospheric and ocean currents and accumulate in the food chain. This build-up occurs particularly in species of predator fish or marine mammals such as the seal and beluga, and in certain species of fish such as pike and lake trout[44].

- Exposure to heavy metals is still a major concern today for public health authorities and the residents of Nunavik[96]. A cohort study on the effect of prenatal and postnatal contaminant exposure on child development showed that prenatal mercury exposure is associated with a reduction in babies' attention spans and with a decrease in information processing speed in the memory. At the age of 11 years, it is associated with lower intellectual performance and attention deficits in class. Prenatal lead exposure is associated with a reduction in the newborn's overall size and head size, lower intellectual performance at school age and a higher risk of non-compliance and hyperactivity at school[96].

  In addition, it is recognized that persistent organic pollutants (POPs) are carcinogenic and hepatotoxic, and affect the reproductive, immunological and neurodevelopmental systems[40]. Due to their lipophilic properties, POPs are present in mother's milk and can cross the placental barrier[44]. The results of the 2004 *Qanuippitaa?* health survey show that for the overall population, levels of POPs in the blood fell from 1992 levels, but are still higher than the acceptable levels recommended by Health Canada[40]. This drop is consistent with the decrease in Arctic environment POP rates, and with a parallel decline in seafood consumption in favour of a diet more based on products purchased in food stores. However, pregnant women in Nunavik show levels that are almost 15% above the level of concern defined by Health Canada. In utero exposure can be harmful to child cognitive development.

- In the Cree population of Eeyou Istchee, mercury exposure has been a constant concern since the early 1970s. A study conducted by Health Canada on mercury exposure in Aboriginal populations during that period revealed high mercury levels associated with consumption of predatory fish. A mercury monitoring program was established in the early 1980s with two objectives: to identify

individuals whose high mercury levels could be harmful to their health, and to better define this exposure in the nine communities. Subsequent studies have sometimes shown weak links between exposure and neurological, neuropsychological or neurophysiological effects[102].

Numerous studies on the subject have resulted in reassuring messages that the benefits of consuming traditional foods, known for their great nutritional value, outweigh the risks of contamination[10, 18, 20, 21, 34, 40, 49, 50, 55, 60, 108, 112].

A study conducted in the three Atikamekw communities shows that traditional food is safe because there is generally only a very low concentration of contaminants in participants[18].

On the other hand, it is now known that the public health messages of the past few years promoting careful consumption of certain species of fish or marine mammals due to contamination and health effects have resulted in an overall reduction in fish consumption[112].

Fish, contaminants and health: results of a recent meta-analysis of various populations in North America

The authors successfully demonstrated that the beneficial effects of moderate fish consumption on the prevention of mortality due to cardiovascular disease outweigh the risks associated with contamination by mercury, dioxins and PCBs. Similarly, it appears that when women of childbearing age consume fish in moderation, the benefits of DHA (docosahexaenoic acid, a polyunsaturated fatty acid in the omega-3 family) for fetal neurological development usually exceed the risks associated with mercury contamination[79].

When these analysis results are combined with the extremely positive effects of traditional diet on the practice of physical activity, and on cultural identity and health-risk behaviour reduction, it seems clear that the often-uncertain risk of contaminants is low compared to the demonstrated risks of giving up the traditional diet.

3.3 Consumption habits and food supply

3.3.1 Consumption habits

In Aboriginal communities, access to and supply of a variety of quality and healthy foods sold in food stores vary from one region to another. Depending on the foods eaten, foods available in stores can be low in iron, folic acid, calcium, vitamin D, vitamin A and fiber[12, 113]. Conversely, they can contain significant quantities of fats, carbohydrates and salt[6, 9, 15, 16, 35, 45, 99, 107]. While traditional foods are most often eaten by elders, foods low in nutrient content seem to be more popular with the young[30, 33, 45].

Surveys conducted in Nunavik and in the Eeyou Istchee region, for example, show that fruit and vegetable consumption in these regions is sharply lower than levels consumed by the Québec population and recommended by Canada's Food Guide[13, 33, 45, 84].

- In Nunavik, the results of the 2004 survey showed that on the day before the survey, adult Inuit had not consumed enough fruits, vegetables, dairy products and grains. Only 11% of Inuit met the recommendations of Canada's Food Guide for fruits and vegetables, and only 6% for dairy products[33]. In addition, cold or frozen pork, beef or poultry are relatively popular purchases at the grocery store. It is also noteworthy that only 4% of the population consumed whole grain products; white bread and white flour were very popular.

- In the Eeyou Istchee region, Cycle 2.1 of the Canadian Community Health Survey found that an average of 21% of the population did consume the recommended five portions of fruits and vegetables, compared to 51% of the Québec population. In a study of more than 200 Cree children in grades 4 to 6, this rate climbed to 99%, based on a 24-hour diet recall[45].

In addition, consumption of sweetened drinks in Inuit and First Nations communities is a cause for concern, especially among the young. These drinks are sold in food stores in the overwhelming majority of communities. Vending machines selling soft drinks and energy drinks are also found in schools in certain First Nations communities close to large cities[30]. This significant consumption of sweetened drinks among the young may be explained in part by how easily accessible they are in communities.

- In Nunavik, the results of the 2004 survey showed that the "Other Foods" category was the main source of calories (36%). This category includes all foods and drinks covered by the recommendation “consume in moderation” (for example: butter, cooking oil, jam, honey, candy, soft drinks, tea, coffee, alcohol, etc.). Between 1992 and 2004, the consumption of sweetened foods and drinks continued to rise. Sweetened drinks such as soft drinks and fruit drinks made up the respondents' main source of carbohydrates on the day preceding the survey; this consumption level also proved to be very high among young adults[12]. Another study in Nunavik indicated that young people between 18 and 29 years old drink two cans of soft drinks per day (median). If sweetened *Gatorade*-type drinks are added, the consumption rises to 1.4 liters per day, or at least four cans[33].

- In the Eeyou Istchee region, the longitudinal study conducted in Mistissini in 2005 showed that 90% of children surveyed had consumed a sweetened drink (excluding 100% pure fruit juice) in the previous 24 hours. Still excluding 100% pure fruit juice, this survey found that one quarter of the total energy consumed by children came from sweetened drinks[16].

- The FNRLHS 2002-2003 found that 22% of First Nations children from 0 to 5 years drank soft drinks several times a week. This percentage rises to 50% among children from 6 to 11 years old. In addition, 31% of children from age 0 to 5 years and 54% from age 6 to 11 ate fast food several times per week. French fries and potato chips are equally popular and are consumed several times a week by close to half of young children and two-thirds of children 6 to 11 years old. Cakes and cookies are consumed in similar proportions by both groups.

3.3.2 Food supply

Generally, each of the Aboriginal communities has at least one store offering a variety of foods and consumer products. The variety and quality of products vary from one place to another, generally based on geographic isolation. For example, certain less isolated communities may have access to a local food centre, located inside or outside their territory[30]. Commercially available food may also be provided by restaurants, caterers and specialized stores such as produce stores or butchers[30].

- The availability of products in food stores in Nunavik varies from one community to another. Communities such as Kuujjuaq have two or three relatively well-stocked grocery stores, but in Ivujivik or Salluit, the northernmost communities, the choice of quality and fresh products is still very limited, and food must be flown in by airplane.

- In the Eeyou Istchee region, all communities except Oujé-Bougoumou have 1 or 2 grocery stores where different food products are available. Each community also features one or more restaurants offering a menu primarily consisting of foods low in nutritional value. Sports centres

with arenas often have a canteen where foods with little or no nutritional value are available. In the summer, chip stands may be set up temporarily in certain communities.

In addition, government policies prohibit public institutions as well as grocery stores from selling or serving traditional foods. This restriction is severely criticized by the population, who would like to be able to obtain local game meat in supermarkets or restaurants[14, 68].

In 2005, a study exploring the relationship between diet quality, weight and food environment in families in Mistissini and Waskaganish found that over a period of three days, 77% of young people had consumed a restaurant meal, and that 18% ate in restaurants three or more times a week[45]. The latter group consumed relatively more calories than those who seldom went to restaurants[45].

- In non-Agreement First Nations communities, 90% of those located close to cities have access to a grocery store and 10% to a general store. In the overwhelming majority of cases, this grocery store is located outside the community. In addition, 10% of the communities in this area can buy food from produce stores, butchers and bakeries. Communities located in remote regions have access to a grocery store within the community in 75% of cases. Half of the communities also have access to a general store. In semi-isolated regions, all communities have access to a grocery and a general store; half of grocery stores are located in the community. In isolated regions, food products can be purchased only in the general stores present in all communities. The inhabitants of these communities thus are dependent on these retailers for their food[30]. For example, an exercise seeking to compare the availability of a specific list of foods in the food retailers of communities located in the four geographically isolated areas revealed that only six varieties of vegetables (carrots, peppers, cucumbers, lettuce, cabbage and onions) are available in all grocery stores located in isolated regions.

  In addition, in certain communities, the grocery stores are outdated. People living close to a larger city can get higher quality, more varied food[30].

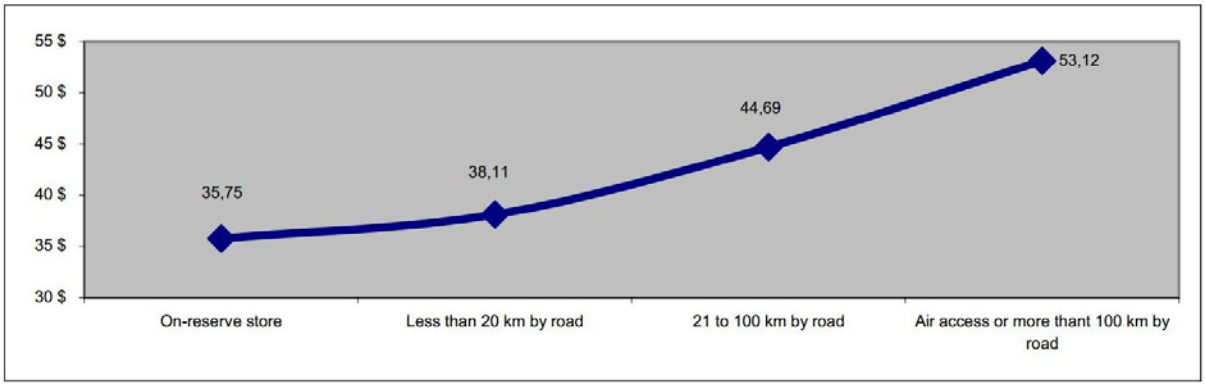
  Restaurant services are also available in several First Nations communities. Some offer nutritious menus, while other restaurants offer limited variety and nutritional content[30].

3.3.3 Cost and quality of food

The link between isolated communities and problems with access to high-quality, low-cost food is well known[30, 48]. And given that the vast majority of Québec's Aboriginal communities are found in rural or semi-rural areas, this is a significant phenomenon for these populations. For example, spoiled and suspect fruits and vegetables were found in 10% of grocery stores. In isolated and semi-isolated communities this situation occurs in 50% and 100% of food markets, respectively[30].

Figure 1 clearly shows that the greater a community’s distance from major centres, the higher the cost of food and the lower the quality of available fruits and vegetables[30, 48, 117]. The long distances between supplier and point of sale, problems storing perishable food and the absence of commercial competition curtail access to quality food[48, 84, 113].

Figure 1 Cost of the food basket based on access to fresh food



Source: First Nations of Quebec and Labrador Regional Longitudinal Health Survey 2002/03, Environmental Health Impact Assessment Survey.

- Similarly, a recent report aimed at identifying price differences in staple consumer products between Nunavik and Québec City shows that overall, consumer prices are higher in Nunavik than in Québec City. The study conducted in 22 grocery stores in Nunavik used three grocery stores visited in Québec City as reference. The data were collected in April 2011 in both regions. Although the results must be interpreted with care, since prices vary from one community to another, the study shows that the same grocery basket costs an average of $100 in Québec City and $181 in Nunavik. For food products, household cleaning items, and personal care products, the prices are 81%, 104% and 84% higher in Nunavik. Price disparities are significant in all product categories[48].

- In Eeyou Istchee, the preliminary results of a survey on food costs now in progress in the region reveal that the cost of a grocery basket is higher than the provincial average. This observation is similar to the results of a previous study. For example, it was shown that the same children's cereal costing $2.49 in Montreal cost an average of $3.91 in Cree communities. The same is true for milk: from $1.41 in Montreal, it climbs to an average of $1.75 in the Cree communities[117].

- For non-Agreement First Nations communities, the Scan on diabetes in First Nations Communities of Québec by the FNQLHSSC[30] shows that a grocery basket containing the same items costs $4.43 more in remote regions, $29.94 more in semi-isolated regions, and finally, $61.62 more in isolated regions, when compared to the urban region where the food was purchased for $92.80. The total cost of food in isolated regions is thus 66% higher than in the reference zone. The cost of frozen berries and bananas is more than twice that in urban regions. A kilogram of tomatoes and a carton of Oasis juice cost at least $1.28 more in isolated regions. Finally, in isolated regions, the cost of a kilogram of apples is 1.25 times higher than in the urban region. While the cost of food in remote regions is always higher than food in urban regions, there is some variation in the lower regions. For example, the price of apples and tomatoes is lower in remote and semi-isolated regions than in urban regions.

3.3.4 Food insecurity

On top of high commercial food costs, many Aboriginal communities in Québec live with poverty. As a result, many families regularly experience food insecurity: the inability to obtain an adequate and appropriate amount of safe food[12, 53, 84, 112, 116]. According to McIntyre, food security is not just about having enough food, but also being able to obtain safe and nutritional food[76]. Thus, a person who experiences food insecurity is at greater risk of obesity, chronic illness, mental health problems

and learning difficulties. In the long term, food security remains crucial to maintaining physical and mental health, as well as quality of life[23].

In Canada, food insecurity in Aboriginal communities was observed and designated as a major concern by the UN Special Rapporteur during his visit to the country in May 2012[108]. The regional longitudinal study on First Nations health conducted in Canada also revealed that First Nations people are more likely to be at risk of hunger and to cut down on food than the population in general[51].

- The data in the most recent health portrait created for the NRBHSS (unpublished) show that individual incomes are lower than in Québec City, in spite of a higher cost of living[97]. Thus, the median after-tax income for individuals 15 years and older is $20,971 in Nunavik and $22,471 in Québec City. Interestingly, unlike the province of Québec, the median income for women ($22,912) is higher than the one for men ($18,793). In 2004, survey results indicated that poverty affected 55% of households and 68% of the population[19].

  In 2004, the results of the *Qanuippitaa* study showed that 25% of the population had run out of food during the month preceding the survey. Some of the factors that may account for this risk include low income, the quality of imported food and uncertain access to food due to delivery delays, environmental changes and changing animal migration paths[47].

  A study carried out by Gina Muckle in Nunavik (Université Laval, 2011 – unpublished data) reveals that three out of ten families had not had enough food or money to buy food during the preceding month. Teachers of children from these families reported that they had lower intellectual capacities and exhibited more rule-breaking. Precarious economic conditions due to unemployment and low education levels as well as drug use are factors that can contribute to limited access to food.

- In 2003, Cycle 2.1 of the Canadian Community Health Survey in Eeyou Istchee described the various food insecurity situations. In total, 27% of the population had experienced a food insecurity situation, versus 15% in Québec[84]. 24% of adults feared that they did not have enough money to buy food and 23% had to restrict their food intake for that reason[84]. The 2001 census indicated an average income for the region of $20,814, about 30% ($27,125) less than the average for Québec[107].

  The prevalence of food insecurity determinants does not vary by age, community of residence or gender. But education level, household size and marital status do have an influence. Another important finding: the problem of dwindling traditional foods consumption is closely tied to food insecurity problems[91].

- Data collected during the last phase of the First Nations Regional Health Survey (RHS-2008) tell us that close to 25% of First Nations in Québec deal with moderate or major food insecurity. Although this problem is present in all age groups, it seems more troubling among young adults ages 18 to 34 years. Food insecurity is increasing in isolated regions, and it is households with children that suffer the most. Nearly 50% of these families are faced with food insecurity on a daily basis[31].

Financial problems also cause headaches for some Aboriginal people who leave their community to live in an urban setting[98]. For some of them, the struggle to meet their basic needs tapers off after they arrive in the city, while for others, it remains unchanged[98]. In a study report evaluating the psychosocial service needs of Aboriginal people who spend time at the Native Friendship Centres of Québec, 39% of respondents (out of a total of 340 participants) said that they went to one of the

Friendship Centres for food assistance at the time of the questionnaire (the percentage dips slightly to 37% during the last year).

Some communities have attempted to remedy this problem through food sharing networks that provide access to traditional foods, but they are not able to ensure appropriate and sufficient food for everyone[41, 113]. In general, these are one-time initiatives. In urban settings, the Native Friendship Centres offer soup kitchen or food bank services to Aboriginal persons living in vulnerable situations[98].

Health Canada created the Nutrition North Canada program to provide economic assistance for improved access to quality food for isolated northern communities.

Nutrition North Canada

Launched on April 1, 2011 to replace the Food Mail program, Nutrition North Canada is a contributions program designed to improve access to healthy food in isolated northern communities by reducing the costs of perishable nutritious foods. To be eligible for the program, a community must not have year-round access to land transportation, and must have used the former Food Mail program. In Québec, only the 14 Inuit communities of Nunavik, a Cree community and a few Lower North Shore villages, including the communities of Pakuashipi and Unamen Shipu, are taking advantage of Nutrition North Canada. Following harsh criticism from the Aboriginal communities concerned, the list of items eligible for subsidy was expanded between April 1, 2011 and September 30, 2012 to include all foods and several non-food items previously eligible as part of the Food Mail program[85].

Key observations

- Aboriginal peoples have lived through rapid changes that have profoundly altered the social structure of their societies. The transition from a diet and way of life based on hunting, gathering and agriculture to a mixed diet or one relying exclusively on commercial products has had major consequences for the health of these populations.
- Colonization, historical trauma, community location, socio-demographic factors, political and legal barriers to access to territories, the decline in certain species, impacts of environmental development projects or climate change are generally cited as reasons why many Aboriginal people reduce or discontinue traditional foods.
- Traditional food and the activities surrounding it nevertheless continue to hold major symbolic and identity value.
- There is abundant documentation on the contamination risks associated with certain forms of food obtained primarily from fishing or hunting marine and land mammals. The situation remains troubling in Nunavik. However, many agree that the nutritional benefits of eating these foods generally outweigh the risks.
- The range, cost and quality of foods sold in stores vary with the level of geographic isolation. These foods can have low nutritional value. Young Aboriginal people are generally major consumers of processed foods sold in stores or restaurants.
- The quality and diversity of fruits and vegetables decrease with geographic isolation.
- People living in remote and isolated communities have to get almost all of their supplies from the food stores on their territories. Conversely, people living in communities close to larger towns have access to a broader food diversity and quality, and sometimes better prices.
- The high cost of commercial foods and the considerable costs of hunting and fishing add to the conditions of poverty experienced in many Aboriginal communities in Québec. This situation produces food insecurity and all its attendant problems.

3.3.5 Initiatives

The following is an overview of some provincially, regionally and locally-funded initiatives designed to improve diet and eating habits in Québec's Aboriginal communities. The tables in Appendix 3 provide a brief, non-exhaustive overview of these initiatives.

Québec initiatives promoting good diet and an active lifestyle or, in vulnerable places, working to meet basic food needs, are available to Aboriginal communities that apply for them. These include Québec en forme, the Breakfast Club, Breakfast for Learning, the OLO Foundation, the Aboriginal Diabetes Initiative and the Canada Prenatal Nutrition Program.

When Canada's Food Guide was updated in 2007, Health Canada developed a guide adapted to the diet of First Nations, Inuit and Metis peoples (see Appendix 3). There are also guides developed by various nations in Québec, including the Innu and Atikamekw nations[27]. In addition, this year Nunavik put out its new Food Guide, replacing its 2005 version and taking the new recommendations of Canada's Food Guide into account. Copies of the guide were sent to each household, as well as to regional organizations such as the LCSCs, schools, day care centres and food stores. Several promotional tools, including advertisements and an information capsule published online in the Nunatsiaq News, have also been developed.

Some of the numerous food-related projects developed by Inuit and First Nations communities and organizations include collective kitchens, food banks, home food services for the elderly, and community meals, as well as lectures, training workshops or radio clips on diet and physical activity[30]. Additionally, in an effort to improve the health of elders and facilitate their access to traditional foods, certain First Nations communities offer targeted activities for seniors, such as walking in the woods, gathering berries, and hunting and fishing trips[29]. Social events, seasonable celebrations and cultural events are also opportunities to enjoy traditional foods[89]. For example, in the Eeyou Istchee region, special events like weddings, Walking Out ceremonies and band council banquets are very common. These events are a chance for the population to share a feast with a multitude of friends and family members.

For Aboriginal people living in urban areas, access to waterfowl or game meat, fish and other ocean products is limited to packages sent by mail from families living in the community or occasional activities offered by Native Friendship Centres.

4 Conclusion

Despite some notable improvements, the health status of Québec's Aboriginal peoples remains worrisome, sometimes even alarming. Changes to diet and lifestyles are directly linked to increases in chronic diseases among these peoples, who increasingly consume foods from grocery stores that are frequently of low nutrient value.

However, food obtained from hunting, trapping, fishing and gathering products is clearly healthy and high in a variety of essential nutrients, and indisputably beneficial for the holistic health of individuals and communities. Initiatives designed to promote these foods and reinsert them into the community's diet have been introduced to Inuit and First Nation communities. Continued initiatives and new activities will be essential if Aboriginal peoples are to reclaim healthy and varied diets.

At the same time, support is already in place for access to varied, healthy, quality and affordable food in Aboriginal communities, but sustained effort will be needed to ensure that all community members, regardless of their location, can consume quality food.

For a variety of reasons, processed foods and sweetened drinks sold in grocery stores seem to attract youth in particular. Efforts must be made to promote healthy lifestyles to young children, in an attempt to teach healthy diets at an early age and reach families and communities. Such activities would also enable elders to communicate cultural knowledge and skills to the next generation and thereby strengthen their identity.

It must be remembered that even today, many Aboriginal families and communities in Québec deal with poverty and its harmful effects. Many even experience food insecurity. It is thus clear that promoting healthy diets will be a futile exercise unless concrete action is taken to reduce these injustices.

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Appendix 1

Map of Québec's Aboriginal communities

Map of Québec's Aboriginal communities

Source: Secrétariat aux affaires autochtones.

Appendix 2

The Indian Act, the JBNQA and the NEQA

The Indian Act, the JBNQA and the NEQA

The Indian Act

First Nations members in Québec, like those elsewhere in Canada, are subject to the Indian Act. This legislation was passed in 1876 by the British Crown to assimilate First Nations to Euro-Canadian civilization, and defines the federal government's obligations with regard to Status First Nations (registered Indians). It provides the legal grounds for the government's management of First Nations matters including governance, taxation, land and resources, status identification, culture, and other questions. To be recognized under this legislation, individuals must meet certain criteria and be listed on the Indian Register held by Aboriginal Affairs and Northern Development Canada. In both Québec and Canada, individuals listed on the register have different rights and restrictions, such as on-reserve housing benefits, certain tax exemptions, and educational or health services, from those who are not registered and, obviously, from the general population[5, 70]. Registered status comes with band membership and the right to live on the land made available to the band, the reserve. However, registered persons may live outside the reserve for a variety of reasons. Some people, for instance, live in an urban setting. The political and administrative organization of First Nations communities rests with the Band Council, which governs areas such as health services, social services, education, fire protection and public safety which are normally provided by provincial and municipal governments elsewhere in Canada.

Unlike First Nations, the Inuit are not subject to the Indian Act.

James Bay and Northern Quebec Agreement (JBNQA) and Northeastern Quebec Agreement (NEQA)

Unlike other Québec Aboriginal nations, the Cree, Inuit and Naskapi nations are signatories of the James Bay and Northern Quebec Agreement and the Northeastern Quebec Agreement. Signed in 1975 and 1978 respectively, these agreements represent the first modern land claim settlements concluded in Québec and constitute a negotiating framework defining Aboriginal resource and land rights and responsibilities.

This legislation created a new governing framework, transferring to these three nations the responsibility for their territory's local and regional institutions in the areas of health, housing, education, justice, public safety and hunting, fishing and trapping[92]. It also gave the Cree and Naskapi access to provincial public services in addition to federal services. As for the Inuit, they mainly fall under Québec institutions, but still receive federal government subsidies[104].

The Cree, Naskapi and Inuit thus have access to all Québec health, public health and social services programs. The government of Québec is also responsible for funding health services not covered by Health Canada[77]. However, it should be noted that all Aboriginal peoples in the province are covered by the Québec Health Insurance Plan and are eligible for second- and third-line services. On reserves, only medical services are provided by the health and social services network. Aboriginal people living off reserve are entitled to all health system services, just as other Quebeckers are. Health Canada still provides non-insured health benefits[77].

Appendix 3

Local, regional or provincial initiatives for diet and physical activity enhancement and their availability in Québec Aboriginal communities - Non-exhaustive list

Local, regional or provincial initiatives for diet and physical activity enhancement and their availability in Québec Aboriginal communities - Non-exhaustive list

Physical access						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
Nutrition North Canada	Diet	Health Canada	Improve access to healthy perishable foods in northern communities	Funding contributions provided to retailers, suppliers and processors or traditional food distributors who apply for it A funding rate is assigned to communities based on geographic isolation	Isolated northern regions	Nunavik, Whapmagoostui, Unamen Shipu et Pakuashipi
Agri-food development	Diet	Regional and Local Development Department, Kativik Regional Government (KRG); Ministère de l'Agriculture, des Pêcheries et de l'Alimentation (MAPAQ); Ministère de la Santé et des Services sociaux (MSSS)	Promote sustainable production of a variety of foods, including traditional foods and locally-grown fruits and vegetables[a]	A greenhouse renovated in the summer of 2011 is used as a community garden Compost production in collaboration with village grocery stores and food services Experimental greenhouse potato cultivation with the goal of supplying northern residents	Tous	Nunavik

[a] Kativik Regional Government (KRG). *Bio-food bulletin*. Kativik Regional Government, Government of Quebec, June 2012.

Physical access						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
				A second greenhouse is expected to be built in 2012-2013 to meet the needs of Kuujjuaq residents[b] A greenhouse is also planned for the village of Salluit[c] Development and expansion of fish smokers is ongoing in the region, including the Isirisivik smoker in Kangiqsujuaq[d]		

[b] Avard, Ellen. *Final Report: Kuujjuaq Greenhouse Project Phase 1 – 2011*, Université Laval, February 1st, 2012.

[c] Regional and Local Development Department, Kativik Regional Government. *Project Proposal: Salluit Fresh Vegetable and Fruit Preference Survey*, December 2011.

[d] Kativik Regional Government (KRG). *Bio-food bulletin. Kativik Regional Government*, Government of Quebec, June 2012.

Quality						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
Healthy diet promotion in grocery stores	Diet	Nunavik Public Health	Increase nutrition awareness and knowledge Increase healthy food choice and preparation skills Enhance nutritional environments in grocery stores Offer training for community workers Develop nutrition education resources	Healthy diet promotion activities in grocery stores with nutritionists and local workers	Adults	Kangiqsujuaq and Puvirnituq
Cooking classes offered by Rebecca Veevee	Diet	Nunavik Public Health	Hold a week of cooking workshops in the community	Organize workshops in the Sungirtuivik family home and at the Pitakallak and Jaanimmarik schools Basic cooking techniques, cuisine exploration, health, traditional foods and cooking on a budget	Adults and children	Inukjuak and Kuujjuaq

Healthy lifestyle promotion						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
Québec en forme[e]	Diet and physical activity	NPO[f] Institutional partnership: MSSS Fondation Chagnon	Promote healthy habits among young Quebeckers	Mobilize communities to facilitate healthy diet access and choices and ensure the conditions necessary for physical activity Enhance communities' capacity to act through favourable social, economic, physical and cultural conditions	Birth to 17 years Disadvantaged areas (but not exclusively)	Pakua Shipi, Ekuanitshit, Essipit, Natashquan, Uashat mak Maliotenam, Kawawachikamach, Manawan, Wemotaci, Obedjiwan, Kahnawake Kateri MHC, Chisasibi, Mistissini, Whapmagoostui, Wemindji, Inukjuak, Salluit, Kitigan Zibi, Mashteuiatsh
Kirano[g]	Diet and physical activity	FNQLHSSC	Encourage healthy life habits through diet and an active lifestyle	Nutrition: participants meet once a week for an instructional session on diet given by a nutrition expert. Participants are also given time in the kitchen to apply what they have learned The program lasts 8 weeks	Adults	Wendake

[e] http://www.quebecenforme.org/.

[f] Non-profit organization.

[g] http://www.cssspnql.com/fr/nouvelles/kirano.htm.

Healthy lifestyle promotion						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
Update of Canada's Food Guide, 2007	Diet	Health Canada	Promote a healthy diet	Introduce a healthy eating model based on foods from the land and those available in stores. For example, include berries, wild plants, bannock, game, fish and beans in the model	All	All
Lory Project – Promotion of healthy lifestyles for young children	Diet and physical activity	Collaboration between KRG, Nunavik Public Health and Fondation Lory	Promote healthy lifestyles	Produce educational DVDs Hold awareness workshops	Children from 0 to 7 years	Nunavik
Diabetes month and World Diabetes Day	Diet and physical activity	Nunavik Public Health	Promote healthy life habits	Distribute banners displaying healthy lifestyles Displays in airports and radio ads	Adults	Nunavik
Healthy Environment and Active Lifestyle (HEAL)	Diet	Cree Health Board	Support local initiatives	Each year, roughly $5,000 in subsidies is offered to various initiatives from each community to promote physical activity and healthy eating	Community	Eeyou Istchee

Healthy lifestyle promotion						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
Maamuu Nakaahehtaau	Diet	Cree Health Board Partnerships: Grand Council of the Crees, Cree Nation Government, Band Councils	Mobilization of communities to act on the alarming rates of diabetes Engage communities to be accountable for providing environments conducive to healthy lifestyles	Mobilize community leaders to act globally In 2010, a resolution was adopted by the Cree General Assembly to support Maamuu Nakaahehtaau Encourage and guide communities	Community	Eeyou Istchee
Cree Diabetes Information System (CDIS)	Diabetes monitoring	Cree Health Board	Diabetes monitoring system	Diabetes monitoring system set up in every community	Diabetics	Eeyou Istchee

Day care centres and schools						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
Breakfast Club[h]	Diet	NPO[i] Institutional partnership: Schools Band councils Economic development agencies	Ensure healthy diet for students in disadvantaged areas Develop pleasure in healthy eating Discover and integrate new foods Develop an eating routine Increase academic success	Equip schools and communities to offer a healthy, balanced breakfast at very low cost Supply schools with healthy, high-quality food products Varied menu suggestions prepared by nutrition professionals Preparation methods Food management monitoring Training in food hygiene, safety and management Food management is passed along to communities	School age youth (5-17 years) Also reaches parents and adults who work on the project Disadvantaged areas	In 2011-2012, 140 000 breakfasts offered 10 988 children at schools in Inukjuak, Salluit, Kuujjuarapik, Kangirsuk, Lac-Simon, Kitigan Zibi, Pikogan, Wemindji

[h] Health Canada (2012) *Rapport d'activités du Club des petits déjeuners du Québec dans le cadre de l'initiative sur le diabète chez les Autochtones 2011-2012*: Ottawa.

[i] Non-profit organization.

Day care centres and schools						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
On the Path to Health[j]	Diet	FNQLHSSC	Promote traditional foods Help develop a taste for nutritious foods Develop cooking and good food choice skills Teach recognition of and responses to signals of hunger and of feeling full	Educational tool developed for use by nutrition professionals, community health representatives, teachers and any other community worker Workshops developed for school curriculum	Elementary school-aged children Also reaches parents Aboriginal elementary schools	Tested and evaluated in the communities of Listuguj, Wemotaci, Betsiamites, Pakua Shipi, Kawawachikamach and Matimekosh
Kahnawake Schools Diabetes Prevention[k]	Diet and physical activity	Kahnawake Funding: Aboriginal Diabetes Initiative	Prevent type 2 diabetes using Mohawk values	The response program favours a holistic approach Activities include a health education program, recreational activities and community activities Active lifestyle promotion Promotion of balanced diet; increase diabetes awareness	Elementary school-aged children Families Community	Kahnawake

[j] First Nations of Quebec and Labrador Health and Social Services Commission (2009) *On the Path to Health! Elementary School Nutrition Education Program for the First Nations communities in Quebec*: Wendake.

[k] http://www.ksdpp.org/.

Day care centres and schools						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
				The school program includes health lessons, increased physical activity and food policy reinforcement Community intervention is designed to have a ripple effect through use of available facilities. A variety of sports and outdoor activities are offered to adults. Strategies to encourage adults to eat better are also developed.		
Nutrition program in Nunavik daycare centres	Diet	Collaboration between the KRG, the Groupe d'étude en nutrition publique de l'Université Laval, the Kativik School Board and the NRBHSS	Improve child health through healthy eating	Provide children in daycare centres with complete meals and nutritious snacks, including both traditional and commercial food Train cooks and teachers Provide educational activities to children Research program aimed at a better understanding of the relationship between environmental contaminants,	Children in daycare centres and parents	Nunavik

Day care centres and schools						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
				nutritional intake and children's nutritional status		
Introduce a policy framework in schools	Diet and physical activity	Kativik School Board and the NRBHSS	Create a school environment that fosters a healthy diet and a more active life	Joint request to schools to work to improve the food offer Create a list of healthy choices for lunches, snacks and canteens (a noon meal is not usually offered)	Schoolchildren	Nunavik
Educational activity on nutrition and cooking for preschool- and school-age children	Diet	NRBHSS and Génup (public nutrition study group), l'Université Laval	Promote healthy eating habits including traditional foods and healthy commercial foods	Offer workshops on nutrition and introduction to cuisines using the Nunavik Food Guide, in local schools and daycare centres	Schoolchildren and daycare centres	Nunavik
Drop the Pop (Diabetes program)	Diet	Nunavik Public Health and schools Cree Health Board	Replace sweetened drinks with healthy drinks, either one day a week or one week a year Increase water and milk consumption Alert young people to the harm caused by pop and sweetened drinks	Offer subsidies to distribute promotional material and water dispensers Visit schools Partnerships with local grocery stores and restaurants to reduce access to pop Partnerships with local clinics	Elementary and secondary school-aged children Schools Grocery stores and restaurants	Nunavik and Eeyou Istchee

Day care centres and schools						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
Inuk to Inuk (Diabetes program)	Diet and physical activity	Nunavik Public Health	Week in the countryside to prevent diabetes and promote healthy lifestyles	Hold a talk in Inuktitut given by an Inuk woman with diabetes to secondary school students and on radio Encourage the organization of a potluck Hold a group meeting for people with diabetes	Youth and adults	Umiujaq, Kangiqsujuaq, Salluit, Tasiujaq
Nutrition program in daycare centres	Diet	Cree Health Board	Offer healthy and safe food in daycare centres	Support and training offered	Daycare centre staff	Eeyou Istchee

Social health inequalities						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
OLO program[I]	Diet	Québec Institutional partnership: OLO Foundation MSSS CPNP	Help pregnant women eat well so they can deliver healthy babies	Offered in all CSSSs Offer daily coupons that can be exchanged for staple foods (eggs, milk, orange juice) and vitamin and mineral supplements Nutritional, nursing and psychosocial monitoring offered in certain CSSSs	Pregnant women Disadvantaged areas	NunavikEeyou Istchee do not subscribe Mashteuiatsh et Obedjiwan do subscribe
Prenatal nutrition funding	Diet	Nunavik Public Health and Health Canada	Provide financial support to help pregnant women and young parents purchase healthy foods	Through the Health Canada program, make funding available to local hospitals for prenatal nutrition	Pregnant Women Young parents	Nunavik

[I] http://www.olo.ca/.

Sociocultural						
	Target	Origin	Mission	Methods	Target Populations and settings	Communities
Nutrition month and Traditional Foods Day	Diet	Nunavik Public Health and local partners	Use activities to highlight nutrition month (March) and Traditional Foods Day (March 25)	Offer funding of $750 to $1000 (based on number of inhabitants) and educational tools to each community Hold local activities such as education and cooking workshops, potlucks, radio broadcasts and quizzes, etc.	Adults	Nunavik
Traditional foods project at Chisasibi Hospital	Diet	Cree Health Board Institutional partnership: MSSS, MAPAQ	Serve local wild meat at Chisasibi Hospital	Pilot project Development of protocols	Chisasibi Hospital patients Health care facilities	Chisasibi
Sunday Walk	Diet	Mistissini Band Council	Promote traditional diet	Meal offered every Sunday	Community	Mistissini
Traditional activities	Diet	Band Councils	Promote traditional diet	Free traditional foods meal offered to all community members Teaching offered by elders	Community	Eeyou Istchee

Publication N°: 2065

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