

Country Foods Health Benefits in a Changing Canadian Arctic

Summary

Project Leader

Ayotte, Pierre

To survive in the Arctic, Inuit had for centuries to rely on fish, mammals and some plants such as wild berries and seaweeds. However, since the 1990's, the consumption of country food has decreased markedly, and the rapid food transition towards a western diet has led to excessive intake of sugar, salt and trans-fatty acids. Global environmental changes also disproportionally affect Inuit dietary patterns in many ways including the availability of local animal and plant species and/or the concentration of environmental contaminants. Once thought to be protected from diabetes and cardiovascular diseases, the current dietary and lifestyle transitions combined to the severe food insecurity context occurring in the Inuit population of Nunavik may change the situation in the near future. The traditional country food diet in Nunavik is very rich in key protective nutrients such as omega-3 polyunsaturated fatty acids and selenium. Wild berries, seaweed and other plants found in Nunavik may also provide plant-derived nutrients and secondary metabolites that also offer unique potential for the prevention or treatment of metabolic disease and associated cardiovascular complications and to offset some deleterious effects of environmental contaminants exposures. With a better understanding of the overall benefits of nutrients present in the different country foods consumed in Nunavik, we can better develop community-based interventions and public policies aiming at improving country food consumption and food security, promote Inuit culture and youth empowerment, minimize the risks from environmental contaminant exposure and the emergence of obesity, diabetes and cardiovascular diseases in this population and across the Arctic.

People

Network Investigators

Ayotte, Pierre - Institut national de santé publique du Québec

Cuerrier, Alain - Université de Montréal Harris, Cory - University of Ottawa Julien, Pierre - Université Laval

Lucas, Michel - Centre de Recherche du Centre hospitalier de l'Université Laval

Marette, André - Université Laval

Collaborators & Research Associates

Bjerregaard, Peter - National Institute of Public Health - Denmark
Bouchard, Amélie - Nunavik Regional Board of Health and Social Services
Déry, Serge - Nunavik Regional Board of Health and Social Services
Gauthier, Marie-Josee - Nunavik Regional Board of Health and Social Services
Grey, Minnie - Makivik Corporation
Labranche, Elena - Nunavik Regional Board of Health and Social Services
Young, Kue - University of Toronto

Post-Doctoral Fellows

Lemire, Mélanie - Université Laval



Northern Research Staff

Kwan, Michael - Makivik Corporation

Partners

Aboriginal Affairs and Northern Development Canada - Northern Contaminants Program Canadian Institutes of Health Research
Fondation LEPARCQ
IPY Federal Program Office
Let's Talk Science
McGill University
Nasivvik Centre for Inuit Health and Changing Environments

Publications

Articles Published in Refereed Publications

Dudonné S, Dubé P, Anhê FF, Pilon G, Marette A, Lucas M, Lemire M, Harris C, Dewailly E, Desjardins Y, 2015, Comprehensive analysis of phenolic compounds and abscisic acid profiles of twelve Nordic berry species, Plant Foods for Human Nutrition, NA, Submitted

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Lemire M, Dumas P, Tremblay PY, Achouba A, Kwan M, Laird B, Chan L, Dewailly E, Ayotte P, 2012, Country foods and cardiovascular health in Nunavik (Part A): New biomarkers of selenium to study the complex balance between selenium and environmental contaminants., ArcticNet conference, x, Accepted

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Lemire M, Kwan M, Laouan-Sidi AE, Muckle G, Pirkle C, Ayotte P, and Dewailly E, 2015, Local country food sources of methylmercury, selenium and omega-3 fatty acids in Nunavik, Northern Quebec, The Science of the Total Environment - Special issue on mercury Canada's North, 509-510, 248-59, Published

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Owens, S., De Wals, P., Egeland, G., Furgal, C., Mao, Y., Minuk, G.Y., Peters, P.A., Simard, M., Dewailly, É., 2012, Global Changes and public health in the Canadian Arctic, Climatic Change, , Submitted



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Riva, M., Lemire, M., 2012, Plan Nord et santé au Nunavik : au-delà de l'accès aux soins, l'importance de l'alimentation traditionnelle et des conditions de logement., Revue Dialogue, numéro spécial sur le Plan Nord, , Accepted

Valera, B., Dewailly, E., Anassour-Laouan-Sidi, E., Poirier, P., 2011, Influence of n-3 fatty acids on cardiac autonomic activity among Nunavik Inuit adults (northern Quebec, Canada), International Journal of Circumpolar Health, v, 70, no. 1, 6-18, Published

Zhou, Y. E., Kubow, S., Egeland, G.M., 2011, Highly unsaturated n-3 fatty acids status of Canadian Inuit: International Polar Year Inuit Health Survey, 2007-2008, International Journal of Circumpolar Health, , Submitted

Zhou, Y. E., Kubow, S., Egeland, G.M., 2011, Is iron status associated with highly unsaturated fatty acid status among Canadian Arctic Inuit?, Food & Function, 381-5, Accepted

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Lemire, M., Chateau-Degat, M.L., Ayotte, P., Dewailly, E., 2011, Selenium – a key element in Nunavik traditional diet, Annual meeting of the International Network for Circumpolar Health Research, x, Published

Lemire, M., invited speaker, 2011, Selenium and mercury interactions: epidemiological evidence from Amazonian and Inuit populations., Institute of Environmental Medicine, x, Published

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Proust F, Dewailly É., 2011, Relation entre oméga-3 membranaires et lipides plasmatiques dans deux populations maritimes géographiquement distinctes en transition nutritionnelle : résultats de l'Arctique canadien et du Pacifique Sud., Med. Sci. Suppl. 1, 2011, 19, Published

Proust, F., Dewailly, É., 2012, High Dietary Intake of Long-chain n-3 Fatty Acids of Marine Origin May Lower Circulating Concentrations of Inflammatory Biomarker C-reactive Protein in the Nunavik Inuit Adults, IPY Conference From Knowledge to Action, x, Accepted



Specialized Publications

Lemire M., Riva M., Ruiz-Castell, M., 2012, Our Living Ecosystems: What are the Interconnections among the Elements Surrounding Us?, Journal of Aboriginal Health, x, Submitted

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Valera B, Dewailly E, Anassour-Laouan-Sidi E, Poirier P., 2012, Influence of n-3 fatty acids on cardiac autonomic activity among Nunavik Inuit adults, Int J Circumpolar Health. 2011 Feb;70(1), 6-18., Published