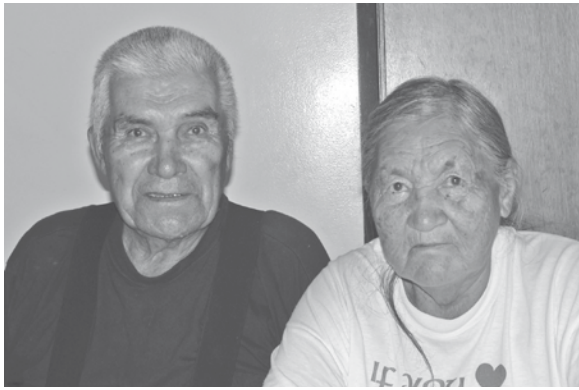


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Information for the Regional Elders' Conference

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ግብርና ግብርና
June 2008





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Why have a project on anti-diabetic plants?

The liyiyiuch know that plants come from the Creator and are to be used to help all liyiyiuch. Some people have been given this knowledge so they can help others to stay healthy. These days, many liyiyiuch want their health centre to offer traditional medicines along with the western ones. This project is a first step in that process.

The project is a joint effort between elders and healers and scientists. The healers are bringing the knowledge of traditional medicines that was passed down to them from their ancestors and that they have built up from a lifetime of observation. The scientists are bringing western teachings about diabetes, drugs, plant chemistry, nutrition, and how the body works. They

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built up this knowledge by reading reports that have been checked by other scientists, and they will pass it on in the same way.

The purpose is to make healing plants available to liyiyiuch and other people who need them to help fight diabetes. The partners want to:

- Find out which liyiyiu healing plants could help fight diabetes
- Learn how the plants fight diabetes
- Find out how liyiyiuch prefer to take these plant medicines (e.g. as teas, drops, etc.)
- Find ways to pass the knowledge of healing plants on to the next generation.

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They looked at two different kinds of questions. First, they looked at whether the plants could act to control diabetes itself. Second, they looked at whether the plants might help reduce some of the other health problems that diabetes causes (like numb feet or eye problems). At this stage, they were not looking for definite answers to these questions. Instead, they just wanted to identify which of the eight plants had the most promise and should be tested further.

DO ANY OF THE PLANTS ACT DIRECTLY ON DIABETES?

When we eat, the amount of sugar in our blood goes up. Then our bodies store this extra sugar in our cells so we can use it to produce energy later on. To do

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this, our bodies usually make insulin, which helps to store the sugar in the cells. When we have diabetes, either our bodies don't produce enough insulin or the cells do not accept the insulin very well. As a result, the sugar stays in our blood and does damage. So the first two questions the scientists looked at were:

1. Do any of the plants actually help people's bodies to produce more insulin?
2. Even if they don't increase insulin levels, do these plants help the body to store sugar in the cells in some other way? That is, do the plants produce the same effects as insulin?





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Parts of the Anti-diabetic Plant Project



Looking at ways to combine traditional and "western" diabetes care (Education/ Integration)
(CBHSSJB, Coonishish, Torrie, Linton)

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Sugar tests and interviews with people being treated by healers in Mistissini (Observational study)
(Healers, Dannenbaum, Torrie, Chiasson, Yale)

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Looking at how the traditional plants and foods could help people with diabetes to stay healthy (Nutrition)
(Johns lab)

Working with healers to decide which plants to look at (Ethnobotany)
(Healers and Cuernier lab at MtI Botanical Gardens)

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Identifying the different ingredients in the plants (Phytochemistry)
(Armason lab)

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Looking at how the plants act on diabetes and the health problems that go with it (Pharmacology)
(Haddad and Bennett labs)

EXAMPLE 3:

LOOKING AT HOW WHITE SPRUCE MIGHT PROTECT AGAINST THE NERVE DAMAGE THAT DIABETES CAUSES (DIABETIC NEUROPATHY)

אַבְרָם בְּרָכָה וְלָשׁוֹן בְּרָכָה וְרֵיבְרֵיב וְשֶׁבֶט אֶרֶץ אֵלֶּיךָ וְהָיָה לְךָ כִּי תֵּיטֵן לְךָ אֵת הַשְּׂבָבִים וְהָיָה לְךָ

אַבְרָם בְּרָכָה וְלָשׁוֹן בְּרָכָה וְרֵיבְרֵיב וְשֶׁבֶט אֶרֶץ אֵלֶּיךָ וְהָיָה לְךָ כִּי תֵּיטֵן לְךָ אֵת הַשְּׂבָבִים וְהָיָה לְךָ

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vomiting, nausea, constipation, dizziness, or fainting. People may also feel hot or cold.

To make matters worse, the diabetes can damage nerves in certain parts of the eye and this can lead to blindness.

Canada's Aboriginal populations are particularly devastated by these kinds of complications from diabetes. In Iiyiyiu Aschii, about one adult in five is suffering from diabetes and more have pre-diabetes.

- ◆
- ◆ White Spruce was one of the plants that the healers identified as having potential to protect against diabetes.
- ◆
- ◆

In the laboratory, we showed that most of the protection from White Spruce is in the needles and not in the cone or bark. We showed that this protects against both too much and too little sugar in the blood.

This study provided new insight into the power of Iiyiyiu medicine plants to protect against the damages caused to nerves by diabetes.

*This is a plain language summary of an article by Harris, Lambert, Bennett, et al that was published in the journal Pharmaceutical Biology in 2008 (vol 46: 124-134). The article was called "Antidiabetic activity of extracts from needle, bark, and cone of Picea glauca: Organ-specific protection from glucose toxicity and glucose deprivation."

Anti-Diabetic Plant Project

Update: Mistissini Observational Study

July 2007



The Anti-diabetic plant project studies the anti-diabetic potential of traditional medicines. As part of this larger project, the observational study will help us understand more about how people are using traditional medicines for diabetes care.

Interviews with Healers

Ménaïque Légaré-Dionne, research assistant for the Cree Board of Health, has conducted 8 interviews with Elders (individuals or couples) who have knowledge about traditional medicines.

Some of these Elders are involved with treating diabetes, others treat different kinds of health problems, while still others used to be involved in healing work but are no longer active as Healers.

In these interviews, the Elders discussed their life stories, their involvement in traditional activities, their knowledge of traditional medicines, the transmission and sharing of knowledge, their involvement with healing and with traditional medicines in general, and in the specific case of diabetes for those who do treat it.

These interviews were done in Cree, with the help of an interpreter. Different interpreters have been used for the first few interviews, until Sam Etapp began working as an interpreter for the interviews on a regular basis.

All of the interviews were recorded except one, in which the Elders preferred not to be recorded. These interviews were to be translated by the CNM translators at the Band office, but, since they did not have time to work on this, Brian Webb, translator for the Cree Board of Health, is currently working on translating the interviews.

A few more interviews are to be conducted during the month of August, depending on availability of the Elders.

Patient involvement

3 sets of Healers (couples or individuals) that were interviewed are currently involved in treating diabetes and have regular patients.

These Healers will start telling their patients about this study and send those who are interested to see Harriet Linton, the Diabetes CHR at the clinic, to sign a consent form and fill out a questionnaire about their experience managing their diabetes. The patients will then go to the clinic to have their blood and urine tests done.

Any person living with diabetes who approaches an Elder or a member of the Mistissini Local Coordinating Committee about traditional medicines will be directed to a Healer. Those new patients who want to participate in the study will also be sent to see the Diabetes CHR to sign the consent form, fill out the questionnaire, and have their blood and urine tests done at the clinic.

The patients who agree will also be interviewed by the CHB research assistant about their life story and experience with traditional medicines and with diabetes.

The patients' treatment with traditional medicines will likely begin in August, when all the medicinal plants are ready. The time frame for treatment will be entirely in the hands of the Healers.

The patients will then be followed through 6 months of treatment, during which they will note any particular events in their life or feelings which may affect their sugars, or any side effects from the medicines. They will go back to the clinic for blood and urine tests after 3 and 6 months of treatment. They will also be interviewed again by the CHB research assistant about their experience using traditional medicines for their diabetes care.



For more information, please contact:
Jason Coonishish, CNM: 418-923-3461 ext. 262
Jill Torrie, CHB: 514-953-8283 ext. 231