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የኢትዮጵያውያንድ ቅድመ ስራተኞች
Information for the Regional Elders' Conference

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የኢትዮጵያውያንድ
June 2008





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Information for the Regional Elders' Conference

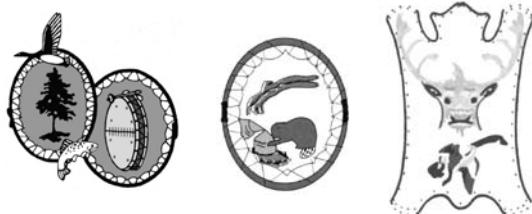


CIHR Team in Aboriginal Anti-Diabetic Medicines
Équipe IRSC sur les médecines autochtones antidiabétiques

፳፻፲፭ ዓ.ም. 24-27, 2008

CIHR Team in Aboriginal Anti-Diabetic Medicines

Mistissini, June 24-27, 2008



↳ $\sigma \rightarrow \text{C}_d \text{C}_c$ $\cap \langle r_j r_a | \Delta b^a \rangle$: $\nabla c^a \cdot \langle v^a$

Plain-language summaries: **Ellen Bobet**

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Cree translations: **Brian Webb**

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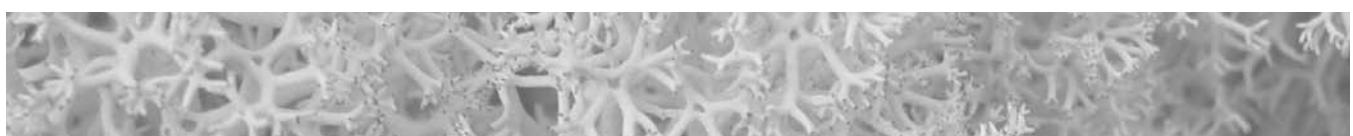
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Canada's university

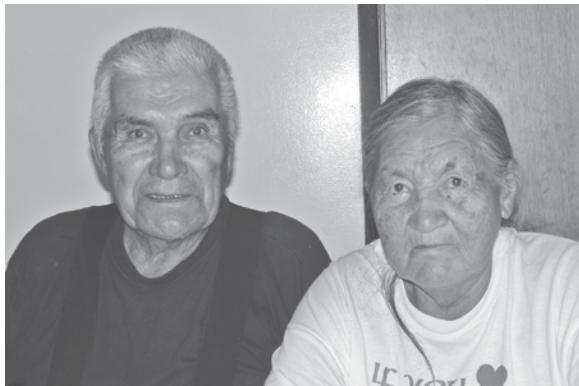
ΓΡΑΦΗΜΑΤΑ

Photos: **Alain Cuerrier**

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Design and page layout: **Katya Petrov**





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Why have a project on anti-diabetic plants?

The liiyiuch know that plants come from the Creator and are to be used to help all liiyiuch. Some people have been given this knowledge so they can help others to stay healthy. These days, many liiyiuch 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

Ն.Ե՞ և Ն.▷"Ր ԾՀՐԱՆՇՐ"ՀՊԾ.ՃԱ" Ծ"Հ▷Ր"ՐԲԱ" Ե.Ե.Ե՞ և Ր.ՃՐ"Ճ.ՃԼՀԱ" Ճ.ՃՊՐՄ"ԵԾ.ՃԱ"?

▷ ለ እ .እግዚ አገለሁኝርያ-Ծ-ል, እኩ-Ծ-ል ስ የ አገለሁኝር
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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 liyiyuch and other people who need them to help fight diabetes. The partners want to:

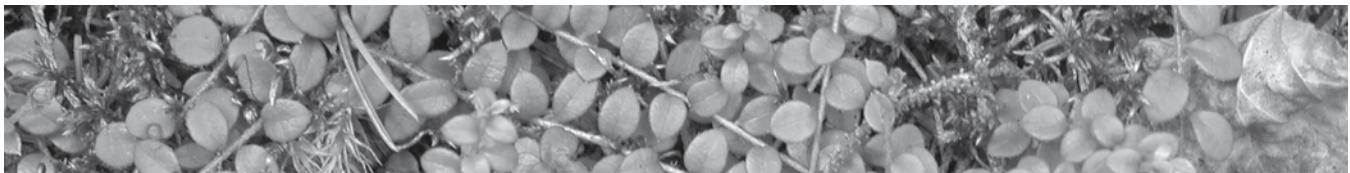
- Find out which liiyiu healing plants could help fight diabetes
 - Learn how the plants fight diabetes
 - Find out how liiyiuch prefer to take these plant medicines (e.g. as teas, drops, etc.)
 - Find ways to pass the knowledge of healing plants on to the next generation.

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ት.ኩ. ስ. ተ"በዕስ-ል" የ እ ፌይ
መጀሪያዎች"ርዕስ-ል"

ԴՐԱ ՈՅ ՃՆՆԱՐԴՐԵ ԱԾՐ Ե ՏԵՐԻՆԴՐՈՒՄ
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«**Ա**ՌՅՈՒՄ ԵՎ ԵՐԱՎԵՐՆ ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆ, ԱՌՅՈՒՄ ԵՎ ԵՐԱՎԵՐՆ ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆ»:



What the project will do

The scientists will work together with the elders and the healers who are experts in traditional medicine. Together, they will identify plants that the healers use to treat the problems that people get when they have diabetes.

The scientists will then carry out many different kinds of tests on these plants:

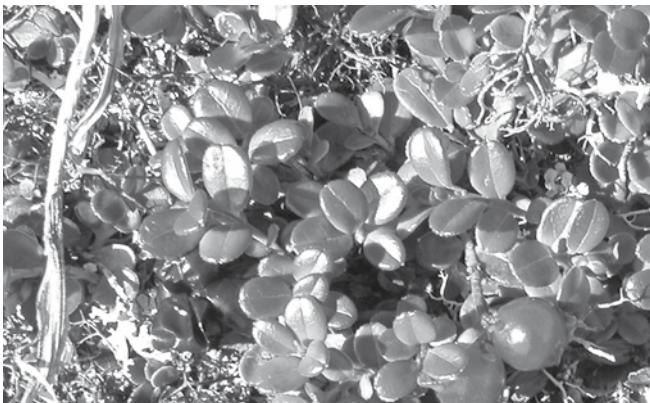
- They will look at the plants in the lab to try to identify their active ingredients.
 - They will do lab tests to see what effects the plants might have on diabetes. This means looking at things like:

- o Whether the plants help our bodies to store sugar better
 - o Whether the plants help protect against health problems that diabetes causes (like heart disease or damage to the nerves)
 - o Whether the plants are safe to take, and whether they can be taken along with other diabetes medicines.

They will test the plants on animals that have diabetes-like conditions.

They may do studies to look at what happens when people take the plants for their diabetes.

ՀԾՍ Դ ԱՄ ՔԵՐ.ՎՐԱՅԵՐ. ՀԾՈՒՅԹ. ԱՄ ՀԱՅԱՀԱՅ

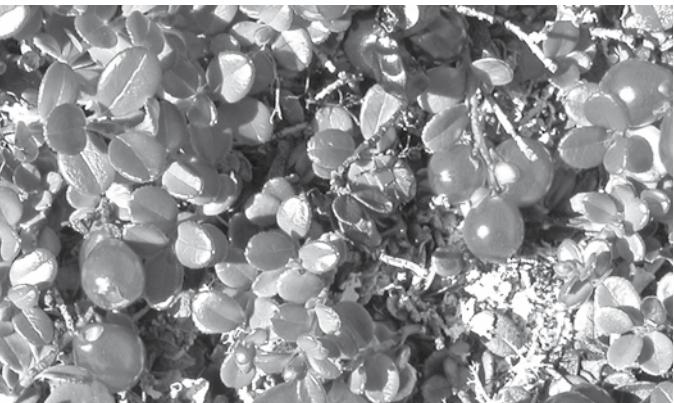


- In the long term, they may carry out clinical studies to be sure the plants really help with diabetes. This means they will carefully compare results between people who use the plants and people who take other medications.

How traditional knowledge will be protected

Some of the information that the elders and healers provide might be confidential (for instance with respect to the traditional medicines). Also, researchers might produce new information, based on what the elders said, that should be kept confidential. To make sure the traditional and scientific knowledge is protected,

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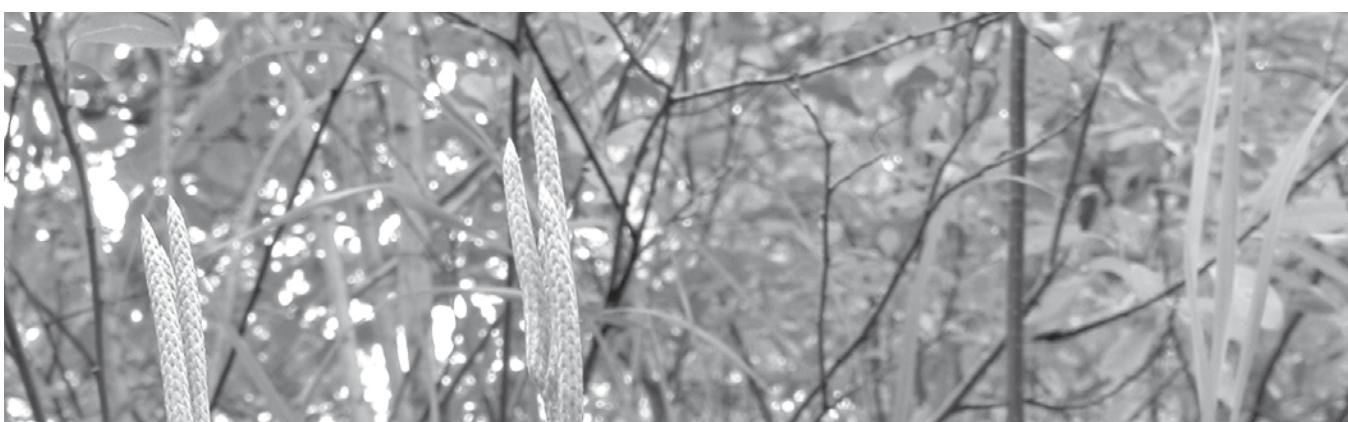


the people involved are signing a detailed Agreement. This Agreement will be between the Mistissini First Nation, the Whapmagoostui First Nation, the Cree Health Board, the Grand Council, and the university researchers. The university researchers have already signed the Agreement. Other liiyiu communities might decide to join the project later. If this happens, they will be added to the Agreement.

▷ $\vdash^{\sigma \dashv \Delta \vdash}$, $\nabla \triangleright^{\sigma} \cdot \nabla^{\Delta} \vdash \Delta \cap^{\sigma \vdash}$:

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ՋՄ ԱԿՀՐՄԵԿ. Ե՞ս ԵԿԱԿԱ. Վ ԱՋՄՎԱԴ
 - Ղ Ր ԼՐԺԱՄՆ Վ. Վ ՋՄ ԱՐՀԵՐՄԱՆ Վ ԱՐԺԵՐՄԱՆ
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 - Ղ Ր ԼՐԺԱՄՆ ՀՍՍ Ղ ՋՄ ԱՐՀԵՐՄԱՆ Վ ԱՐԺԵՐՄԱՆ
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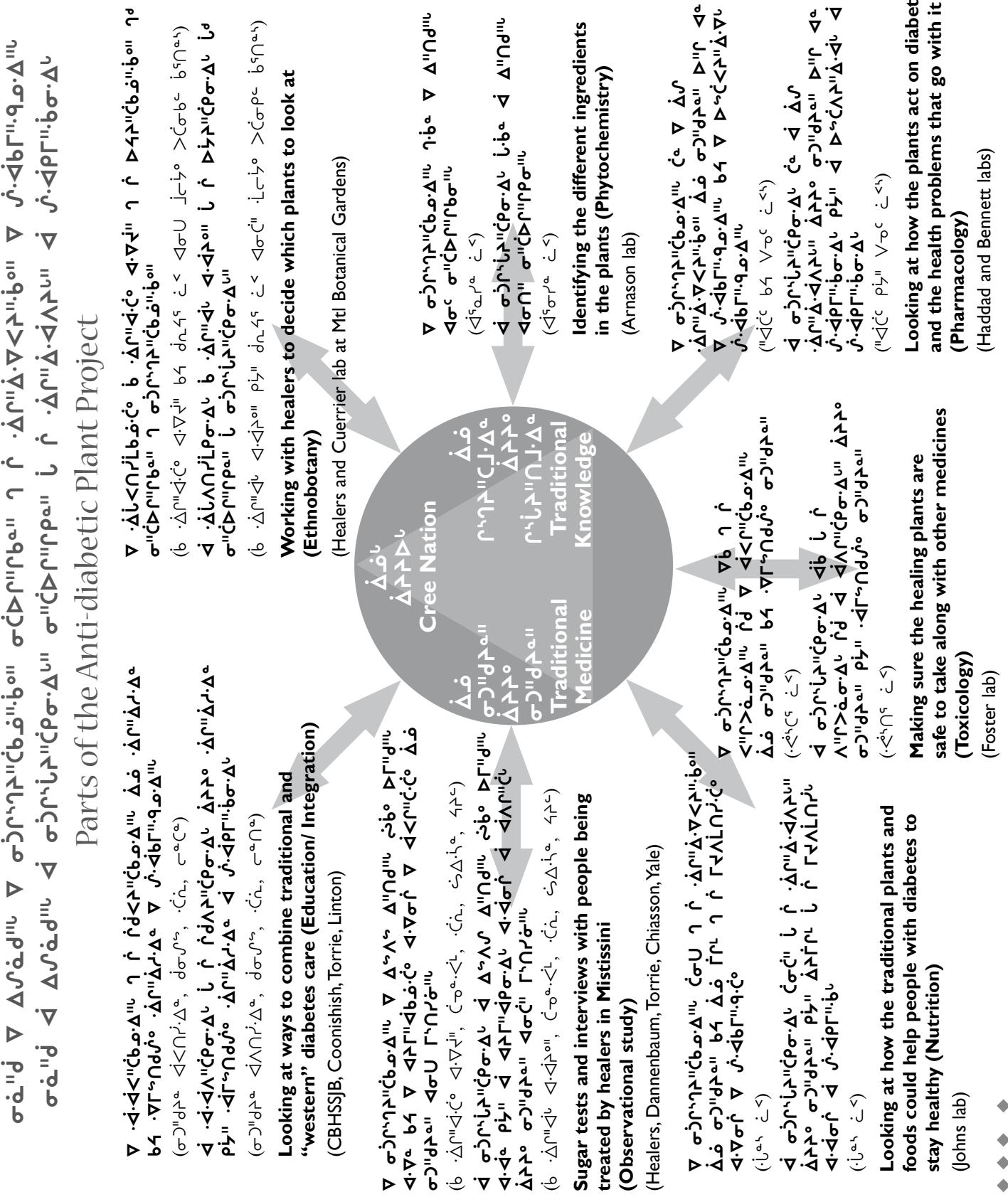
▷ $\vdash^{\sigma \vdash p \sqsubseteq \Delta^a}$, $\Diamond \Box^d \cdot \Diamond^{\Box^a} \cap \Delta^a \cap \Box^{\Box^a}$:



The purpose of the Agreement is to:

- Describe the Anti-diabetic Plant project and its objectives
 - Set out the roles of the different partners
 - Set out who can use the information that the project produces, and how
 - Describe the ways that liyiyiu ownership of their traditional knowledge will be protected.

The Agreement says that before the researchers can make their findings public, they first have to check with the other parties to the agreement. They will do this using a detailed Review Process. This review process will give the community a chance to withdraw its traditional knowledge if it doesn't think it should be made public. It will also allow liyiyiuch and the researchers to interpret the findings together. No names will be made public without the consent of the person concerned.



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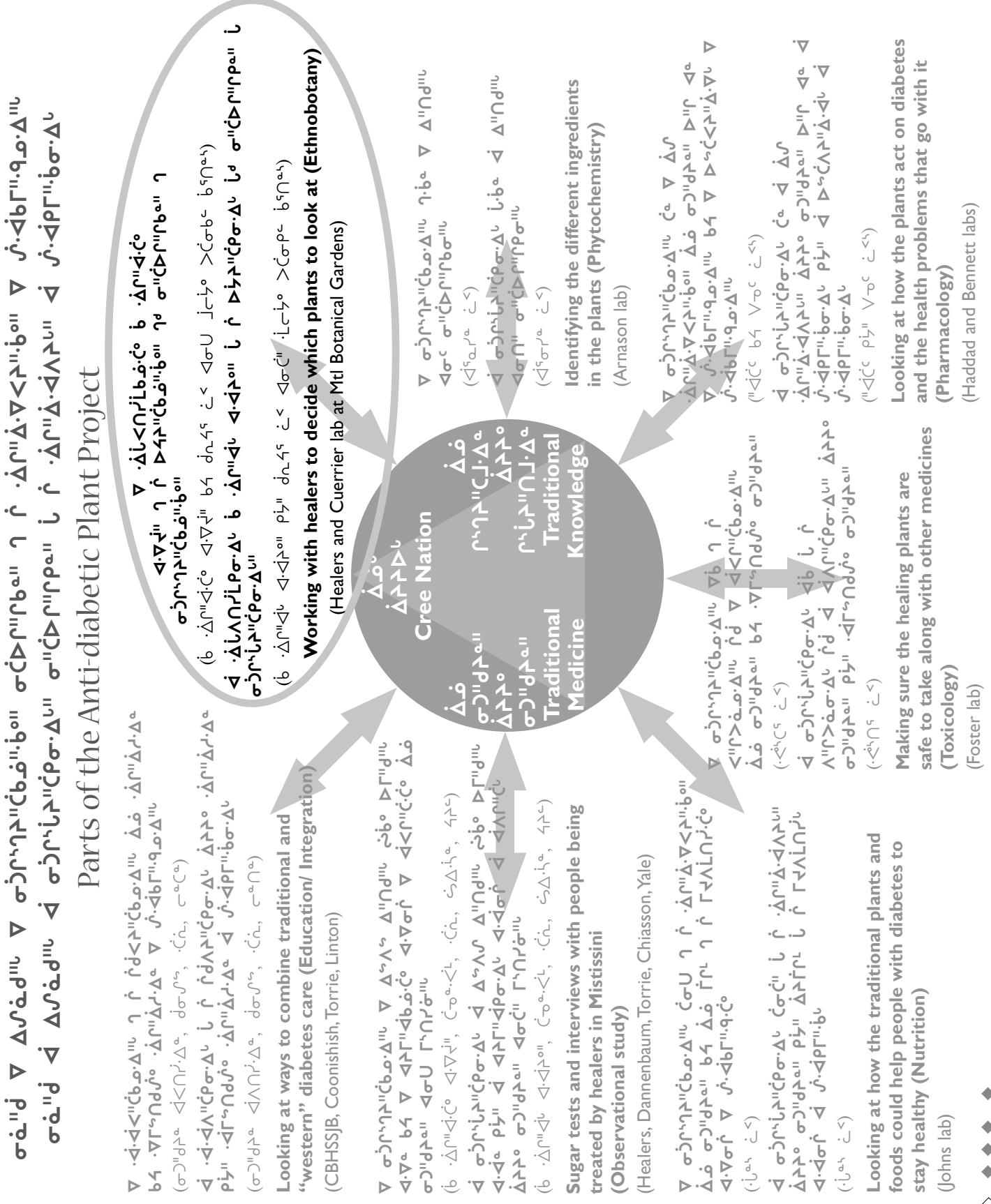
Some examples of the work being done as part of
the anti-diabetic plant project



- ◆
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- Ճ.Ճ.Ճ. 1:** Ե .ՃՐ"Ճ.Ճ. Ճ.Ճ.Ճ. ԹՆ" Ե ԾՅՐԻՏՁ"Պ" Ծ"ՃՐՐ"ՐԵԱ" Ճ .ՃՆՀՈՐԴԿԵ Ն
ՃԼՂ"Պ" Ս Ծ"ՃՐՐ"ՐԵԱ" Ն ԾՅՐԻՏՁ"ՃՔՏ.ՃԵԱ"

EXAMPLE 1: HEALERS AND SCIENTISTS WORKING TOGETHER TO DECIDE WHICH PLANTS TO LOOK AT



ገብረመድና ተስፋዎች ስምምነት አለው እና የሚከተሉት ማረጋገጫዎች የሚያሳይ ይችላል፡፡



A new way to look at the plants that Iliiviuch traditionally used for diabetes*

In the past ten years, diabetes rates have more than doubled among adults in liiyiu Aschii. The clinics have tried the usual treatment programs, but without much success. Some people think that liiyiuch might do better using traditional remedies. At the beginning of the Anti-diabetic Plant Project, a team of healers and plant scientists worked together to develop a list of plants that might help diabetes. They also tried to find out which ones are likely to be the most useful. Later studies looked at these plants in the lab, to find out more about how they work inside the body.

Ճ ՇԱՅԵԼ Ճ ՃՄ ԹԾ-ՃՎՀ"ՃՊԾ-ՃՄ" Գ"ՃՌՐ"ՐՊԱ" Ճ ՃՎՐ"ՃՆ ՃՐՃՌԵ ՃԾԵԼ Ճ Ճ.ՃՊՐ"ՃԵԼ



First, the scientists developed a list of 15 problems that often go along with diabetes— like being thirsty all the time, or having lots of headaches. They asked a group of experts to say which of these problems were strongly related to diabetes, and which were only sometimes related to it.

Then they talked with 34 Elders in Mistissini about what kinds of plants they would use to treat these 15 problems. Among them, the Elders identified 18 different plants that they might use for these kinds of problems.

- $\dot{\zeta} \sigma \zeta'' \cdot \dot{\zeta}' \circ \quad \dot{b} \quad \cdot \dot{\Delta}'' \cap \cdot \dot{b}' \circ \quad \cap \cap \dot{\Delta} \cdot \dot{\sigma}''' \cap \quad \triangleleft \sigma \rightleftharpoons$
 $\sigma'' \dot{\zeta} \triangleright \cap \cap \sigma \rightleftharpoons$
 - $\dot{\zeta} \sigma \zeta'' \cdot \dot{\zeta}' \circ \quad \nabla \quad \dot{\Delta} \cap \quad \cdot \dot{\Delta} \cap \cdot \dot{\Delta} \cdot \nabla < \dot{\gamma}''' \cap \quad \triangleleft \alpha$
 $\sigma'' \dot{\zeta} \triangleright \cap \cap \sigma \rightleftharpoons \cap \alpha$
 - $\dot{\zeta}' \circ \quad \nabla \quad \dot{\Delta} \cap \quad \cdot \dot{\Delta} \cap \cdot \dot{\Delta} \cdot \nabla < \dot{\gamma}''' \cap \quad \triangleleft \alpha \quad \sigma'' \dot{\zeta} \triangleright \cap \cap \sigma \rightleftharpoons \cap \alpha$
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Next, the team wanted to narrow the list down, so they would know which plants to look at first in the lab. They ranked the plants based on a combination of

- How many different Elders mentioned the plant
 - How many different problems the plant was used to treat
 - Whether the plant was used to treat the kinds of problems that were most strongly related to diabetes

The final list looked a lot like one that researchers working with Cree communities in western Canada came up with. This suggests that Cree people across

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ՏԵՐԻՆԵՐԻ ՀՔԾԱ-ՃՐ Ն. Ե. ԼՇԵ Լ և ՃՐ ՌԵՄԱՌԵԼ
ԱԾՔ Օ ՀԾԵՂ ՌՈՒՍՏ

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 - የሸጠና ስም ነው በአዲስ የሸጠና ስም ነው
 - የሸጠና ስም ነው በአዲስ የሸጠና ስም ነው

Canada used many of the same remedies for the same problems.

One plant might be used to treat many different problems. Or, a single problem might be treated with many different plants. But are there problems for which most Elders recommend one particular plant and no others? Are there plants that are only used to deal with one type of health problem? The scientists used statistics (math) to see if the Elders tend to recommend just one plant for a particular problem. This wasn't always the case. However, there were three cases where there was a lot of agreement that a specific plant was good for a specific problem.



Like humans, plants that are part of the same family tend to be a bit alike. Because of this, the scientists wondered if the different plants that Elders use to treat a particular problem might all be from the same family. But when they used statistics to check, this was not true. It turns out that Elders use plants from several different families to treat the same problem.



can be routinely offered to people in liyiyiu Aschii. They would like liyiyiuch to have a choice between traditional and western medicine.

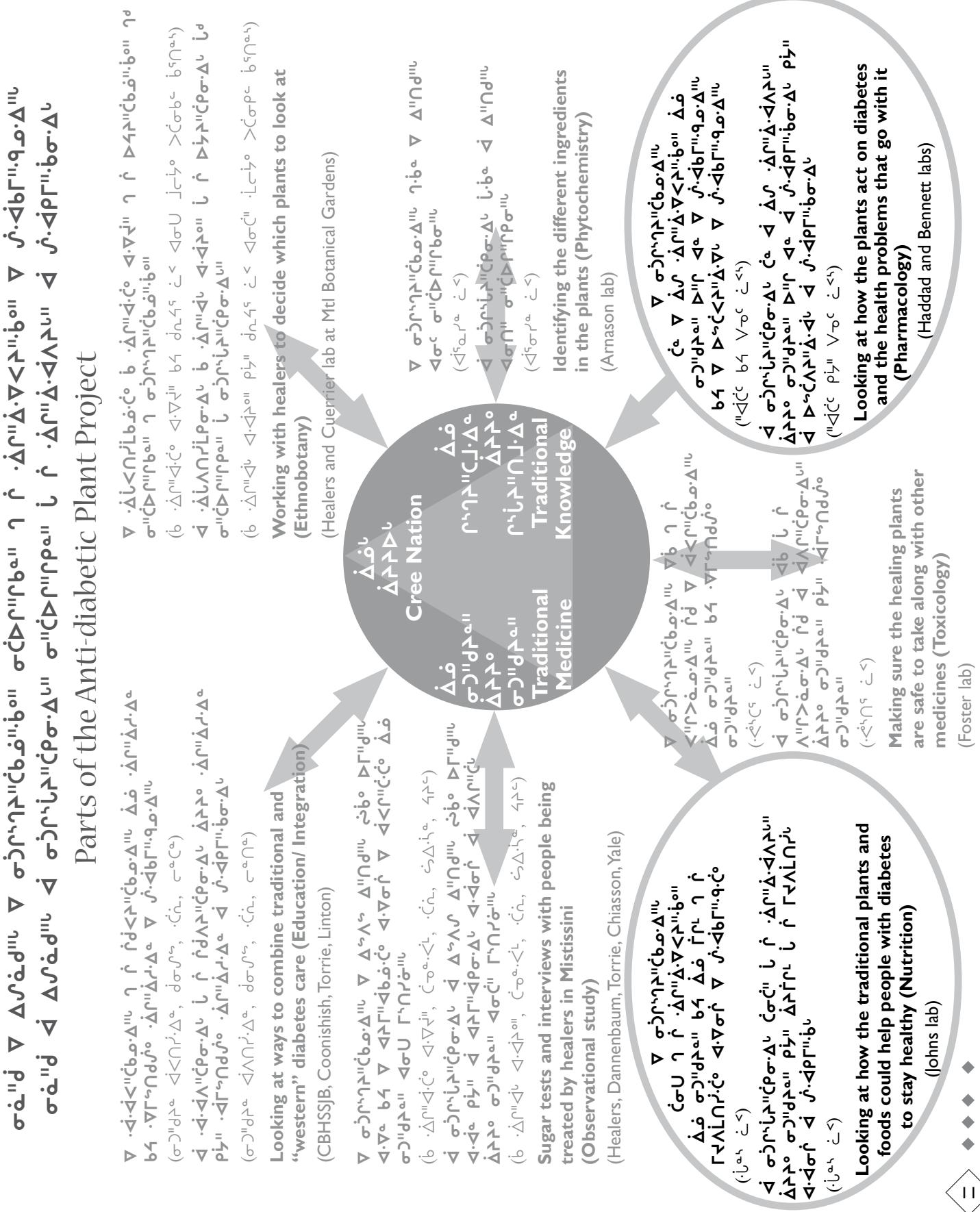
*This is a plain-language summary of a technical article by C. Leduc, J. Coonishish, P. Haddad and A. Cuerrier called “Plants used by the Cree Nation of Eeyou Istchee (Quebec, Canada) for the treatment of diabetes: a novel approach in quantitative ethnobotany.” It was published in the *Journal of Ethnopharmacology* in 2006.

- The team members felt that this combination of interviews and statistical methods worked well. It allowed them to come up with a list of plants that were traditionally used to treat diabetes, and to identify which plants should be looked at first. In the longer term, they hope that some of these traditional remedies

•**Ճ**<"Ո-Վ-Ճ" 2: ▷աեւ Ն ՏՀՐԻՂՅՌ"ՀԵՄ-Ճ" Հ՞ Ն Ճ ՃՄ ՃՐՄ"Ճ-ՎՀՀ-ԵԵ" Ծ"ՃՐՄ"ՐԵԱ" ▷"Ր ՃԱ
Ն Ժ-ՃԵՐՄ"Գ-ԳԵ-Ճ" ԵԿ ՃԾՎ Ն Ճ ՃՄ ՃՐՄ"Ճ-ՎՀՀ-ԵԵ" Ճ-ՎՀՀ-ԵԵ" Ճ-ՎՀՀ-ԵԵ"
•**Ճ**Ղ"Ո-Ճ-Ճ" 2: ▷արս Ճ ՏՀՐԻՂՅՌ"ՀՔՄ-Ճ" Հ՞ Ճ ՃՄ ՃՐՄ"Ճ-ՎՀՀ-ԵԵ" Ծ"ՃՐՄ"ՐԵԱ" ▷"Ր ՃԱ
Ճ-ՎՀՀ-ԵԵ" Ճ-ՎՀՀ-ԵԵ" Ճ-ՎՀՀ-ԵԵ"

EXAMPLE 2:

A FIRST LOOK AT HOW SOME OF THE PLANTS AFFECT DIABETES AND THE HEALTH PROBLEMS THAT GO WITH IT



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 - አገልግሎት
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A first look at how eight liiyiyu medicinal plants affect diabetes*

HOW DID THE STUDY BEGIN?

In 2003, Elders in liiyiu Aschii and a group of plant scientists started to work together to learn more about the plants that liiyiu use for healing. The Elders told the scientists which plants are used to treat the kinds of problems that people get when they have diabetes. Eight of the plants were mentioned by many different Elders, or were used to treat many different symptoms. So the team began by looking at these eight plants:

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ՏԵՐՆԵՐԸ ՀՔԾԱ-ՃԱ?

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- Balsam fir
 - Speckled alder
 - Tamarack
 - Black spruce
 - Jack pine
 - Labrador tea
 - Pitcher plant
 - Showy mountain ash

The plant scientists wanted to test these plants in the lab to find out more about how they work inside a person's body to make their diabetes better. For instance, do the plants work the same way as some of the "western" medicines used to treat diabetes? If they do, then maybe we should be careful about combining the western medicines and the liyiyu ones.

1. ◊σ̄τ̄ σ̄"C̄D̄R̄"R̄b̄", C̄.V̄"d̄ ·Δ̄R̄Δ̄.Δ̄V̄Δ̄<R̄" گ Ր̄
D̄S̄"D̄R̄b̄"ւ ◊d̄ Ե ՞ Ր̄.d̄b̄Ḡ"Δ̄V̄<R̄"ւ ◊σ̄c Հ"ւ
d̄.Δ̄V̄a ·Δ̄R̄"ւ?
 2. ◊d̄c Վb̄ ·Δ̄R̄Δ̄.Δ̄V̄<R̄"ւ گ Ր̄ D̄S̄"D̄R̄b̄"ւ Ե
՞ Ր̄.d̄b̄Ḡ"Δ̄V̄<R̄"ւ, C̄.V̄"d̄ ·Δ̄R̄Δ̄.Δ̄V̄Δ̄<R̄" Ր̄.d̄
σ̄"C̄D̄R̄"R̄b̄" گ Ր̄ Ե Ե Ր̄.Δ̄V̄"C̄d̄"ւ ՀԵ՞ Շ ◊σ̄c Հ"ւ
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◊σ̄τ̄ σ̄"C̄D̄R̄"R̄b̄" .Ղ"ւ ◊d̄ Վ ՃՄ ◊d̄<ŪR̄"ւ
Ե ՞ Ր̄.d̄b̄Ḡ"Δ̄V̄<R̄"ւ?

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

1. $\Delta \sigma'' \dot{\Delta} \sigma'' \dot{\Delta} \Gamma'' \Gamma \rho^a''$, $\dot{C} \cdot \dot{C}'' \dot{\Delta} \cdot \dot{\Delta} \Gamma'' \dot{\Delta} \cdot \dot{\Delta} \Lambda \Gamma^0''$ և $\dot{\Delta} \Gamma'' \dot{\Delta} \Gamma \rho''$ $\dot{\Delta}^a$ և $\dot{\Gamma} \cdot \dot{\Gamma} \cdot \dot{\Delta} \Gamma'' \dot{\Delta} \dot{\Delta} \Lambda \Gamma^0$ $\dot{\Delta} \sigma \Gamma'' \dot{\Lambda}^a$
 $\dot{\Delta} \cdot \dot{\Delta}^a \cdot \dot{\Delta} \dot{\Delta}^a?$
 2. $\dot{\Delta} \Gamma \dot{\Delta}^a \cdot \dot{\Delta} \Gamma'' \dot{\Delta} \cdot \dot{\Delta} \Lambda \Gamma^0$ և $\dot{\Delta} \Gamma'' \dot{\Delta} \Gamma \rho''$ և
 $\dot{\Gamma} \cdot \dot{\Gamma} \cdot \dot{\Delta} \Gamma'' \dot{\Delta} \dot{\Delta} \Lambda \Gamma^0</math>, $\dot{C} \cdot \dot{C}'' \dot{\Delta} \cdot \dot{\Delta} \Gamma'' \dot{\Delta} \cdot \dot{\Delta} \Lambda \Gamma^0''$ $\dot{\Delta} \sigma'' \dot{\Delta} \sigma'' \dot{\Delta} \Gamma'' \Gamma \rho^a''$ և $\dot{\Gamma} \cdot \dot{\Gamma} \rho \sigma \cdot \dot{\Delta} \Gamma'' \dot{\Delta} \sigma'' \dot{\Delta} \rho^a$ $\dot{\Delta}^a \dot{\Delta}^0$ $\dot{\Delta} \sigma \Gamma'' \dot{\Lambda}^a$ և $\dot{\Delta} \cdot \dot{\Delta}^a \cdot \dot{\Delta} \dot{\Delta}^a$
 $\dot{\Delta} \Gamma'' \dot{\Delta} \Gamma \rho''</math> $\dot{\Delta} \cdot \dot{\Delta} \Gamma'' \dot{\Delta} \cdot \dot{\Delta} \Lambda \Gamma^0$.$\dot{\Delta}^a$ $\dot{\Delta} \Gamma'' \dot{\Delta} \Gamma \rho''$ և $\dot{\Gamma} \cdot \dot{\Gamma} \cdot \dot{\Delta} \Gamma'' \dot{\Delta} \dot{\Delta} \Lambda \Gamma^0$ $\dot{\Delta} \dot{\Delta} \Gamma'' \dot{\Delta} \Gamma \rho''$? $\dot{\Delta} \dot{\Delta} \Gamma'' \dot{\Delta} \sigma \Gamma'' \dot{\Delta} \sigma \Gamma'' \dot{\Delta} \Gamma'' \dot{\Delta} \Gamma \rho''$ $\dot{\Delta} \dot{\Delta} \Gamma'' \dot{\Delta} \sigma \Gamma'' \dot{\Delta} \sigma \Gamma'' \dot{\Delta} \Gamma'' \dot{\Delta} \Gamma \rho''$.$\dot{\Delta}^a$ $\dot{\Delta} \cdot \dot{\Delta}^a \cdot \dot{\Delta} \dot{\Delta}^a$$$

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?

σ"ζ▷ρ"ηβα" ՚ .Δ"η".బు రుణాఫల, ద్వారా జీ.వు ని ఇస్తు
 .ధరు"ధ.న్య<చసు".బు .గ్రు" దిగ్రాన్ ని ఇస్తు .ధరు"ధ.న్య<చసు"
 ՚ గ్రూ.దీగ్రు"ధగ్<చసు" ఏంపి"జీ లు ఇస్తు<చసు" దిగ్రాన్ ని
 ఇస్తు లు.బు.ఎి.చె.చె, గ్రు" లు గ్రు.న్య .ధరు"ధ.న్య<చసు" దిగ్రాన్
 σ"ζ▷ρ"ηβα" గ రు బ్రూ.న్య"జె" ఏంపి" ఏంపి" దిగ్రాన్ ని

These first tests suggested that all eight plants that the Elders identified have some of the same effects as insulin. To a greater or lesser extent, they may all help the body to store sugar.

COULD ANY OF THE PLANTS HELP REDUCE THE COMPLICATIONS OF DIABETES?

Diabetes can damage the nerves that are far from the centre of the body. This happens because nerve cells die when a person's blood sugar is too high. Nerve cells also die when blood sugar is too low (for instance, if a person takes too much insulin by mistake). When the nerve cells die, people get effects like tingling, numbness, pain, or weakness in their feet and hands. If the nerves in the eye get damaged, people get vision problems and may even go blind.

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In the long run, the scientists want to know if any of the plants can reduce the nerve damage that diabetes causes. The tests they did were a first step in this direction, to see which plants seem to have some effects on nerves. First, they put nerve-like cells in a dish with a lot of sugar, and counted how many of them died. Then they did the same thing again, but also adding the plant extracts, to see if fewer nerve cells would die. It turned out that five of the plants helped to protect the nerve cells against being killed by high sugar levels.

Besides causing nerve damage, diabetes can affect the circulatory system—the heart and the way blood flows through the body. When this happens, people get heart disease. One of the things that

contributes to heart disease are tiny particles called “free radicals” that can damage the cells. We all have these particles, but our bodies continually mop them up using other particles called “anti-oxidants.” However, when a person has diabetes, their defences are not as strong, and they may need to get extra anti-oxidants from their food.

Most plants contain some anti-oxidants (this is one of the reasons vegetables are good for you). The scientists wanted to see if the eight plants in this study were especially high in anti-oxidants. They put them in a test tube with some "free radicals" to see how many they would mop up. Three of the plants turned out to be very high in anti-oxidants. They mopped up

almost as many free radicals as Vitamin C, which is one of the strongest known anti-oxidants.

Our bodies can store sugar in fat cells, in muscle cells, or in the liver. Some types of anti-diabetic drugs (like Avandia) seem to work by helping people to store sugar mainly in their fat cells rather than elsewhere. When this happens, we notice that the fat cells grow quickly. So the scientists checked to see if any of the eight plants made fat cells grow faster than usual. Four of the plants did this. The scientists think this may mean that these four plants work in the same way as drugs like Avandia.

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SUMMARY

In sum, the plant scientists found that all eight plants had the potential to help with diabetes and are worth further study. Their attempts to come up with a "short list" of particularly promising plants failed, because all the plants had promise. The study showed that the different plants help in different ways. Many of them act the same way as insulin in lab tests, which may mean they can help with diabetes. (These plants will be tested on live animals next). Some of the plants help keep nerve cells in a test tube from being killed by too much sugar. Some are anti-oxidants, meaning that they help destroy particles that could damage the heart and veins. And some seem to encourage

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the body to store sugar in certain places rather than others, in the same way that some anti-diabetes drugs do.

* This is a plain-language summary of a report by D. Spoor, L. Martineau, C. Leduc and other members of the Anti-diabetic Plant Team that was published in the Journal of Physiological Pharmacology in 2006. The article was called "Selected plant species from the Cree pharmacopoeia of northern Quebec possess anti-diabetic potential".



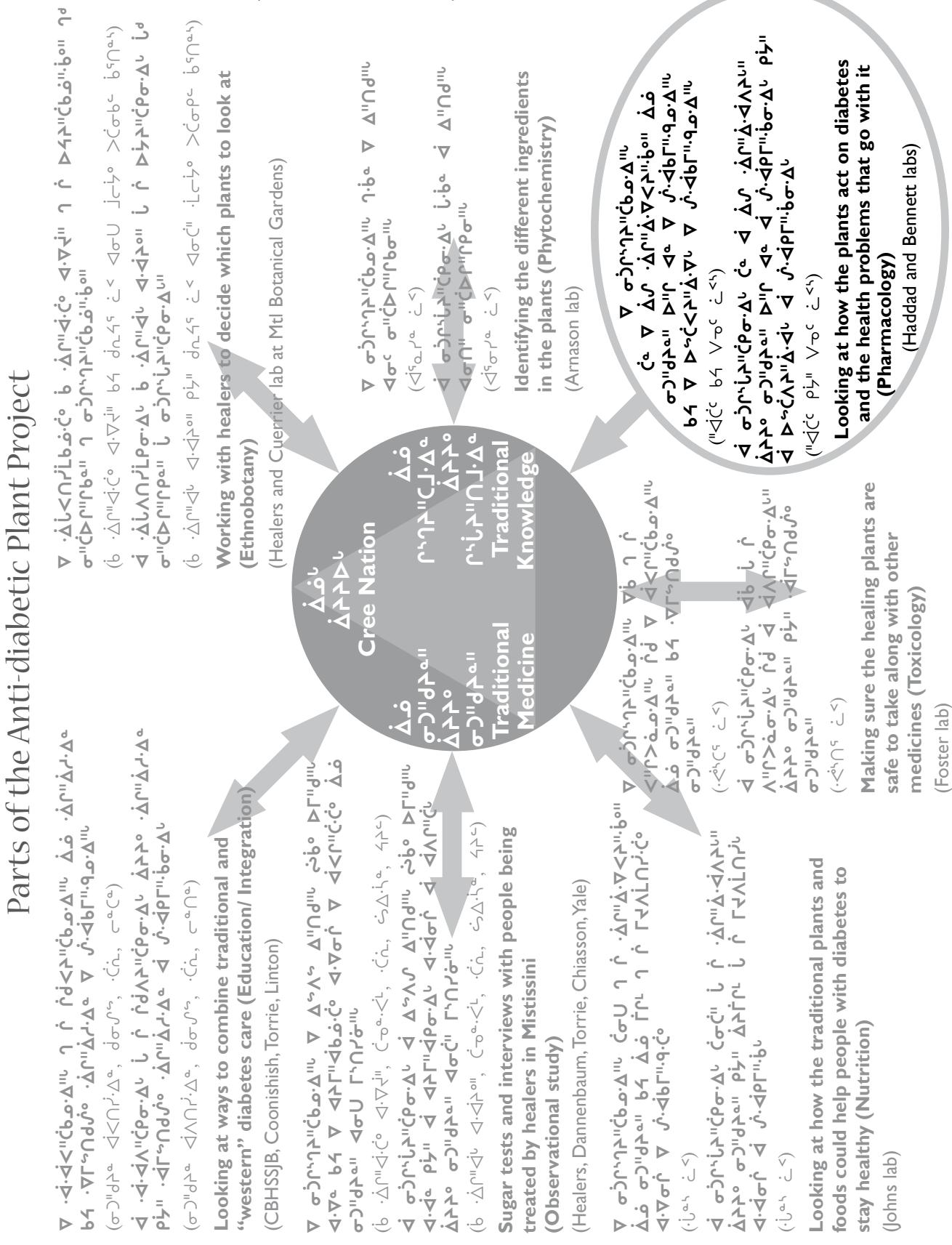


•**אָמַר**"**בְּנֵי** יִשְׂרָאֵל

•**אֶת** **בְּנֵי** יִשְׂרָאֵל

EXAMPLE 3:

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



◀σУ L⁶ α·"đ ▽ Δ"ηγ·σγ··C° Δ·đ· ▽ c ხ·C°
◀γ·R"ll, ▽x·"đ ▽x· ▽ Δ·σ Cđ"▷đ··C° ◀σx· ▽b
Γ<R··C° ▽"r ▽ j··**ხ**g"·q··C° ◀σУ L⁶ Δ·đ·
◀γ·R"ll, Vx·"đ Δ·đ ▽J·dL σ·"x·"a ΔUxL·"đ ▽x· ▽

Anti-diabetic activity of medicines made from needle, bark and cone of minhikw: how different parts of the tree protect from too much or too little sugar*

This study compared the needles, bark and cone of White Spruce (minhikw) as anti-diabetic medicines. They were compared to see how well they could protect specific parts of the body against damage from diabetes. When people have diabetes, their blood sugar levels go up and down. This can damage, or even kill, nerves in different parts of the body.

Ճ ԼՐՄՆԱՐՆ ԾՀ"ԺԲԱ" Ճ Ճ
Մ.ՃՊՐՄ".ԵՍ.ՃԵ ՃԾՈ" Ճ Շ"Ր ՇՄ"ՀՊԾ.ՃԵ
Մ"Հ"ԺՃԵՌ"ՌԵ, Ճ"ՃՆԵ ՔՆ" Ճ.Ճ.ԵՅՄԵ
ՃԾՈ" ՐՄ"ՃԵ Ճ Շ"ՐՄՂՋՄ: ՀԾՀ" Ճ ՃՄ
ՃՐՄ"Ճ.ՃՂՋԵ Շ ՐՄՌԵ ՃԾԵ Ճ.Ճ.Ճ ՃՂՋՄ
Ճ ՃՄՌՄ ՀԵ ՔՆ" ԼԵ.Ճ.Ճ.Ժ"Հ"Մ Ճ
ՃՄՌՄ ՀԵ

አዲበ" ስ የ ጥርጋዋና ደደርግ ል-ፈጥሬ ል-ሰብ" ል ሌ-ገን
መ-ገዢር ዳ-ፈነኑ, ለዕስ ል-ሰብ" ሌ-ገንኑ የ ሌ-ገንኑ
ፈነ ስ- ል- ደ-ገኑ ል-ፈጥሬ ል-ሰብ" ቤ- ስ- የ-ገኑ
ፈ- ደ-ፈጥሬ ደ-ገኑ, የ-ሰብ" ቤ- ስ- የ-ገኑ

◀σՆ Լ Ե ԼԼ"ս Հ ԴԱՂՋՏՆ ՀՀ.ՀՀ ՀԵՔ ▷Γ"Ժ"Ս,
ՀԺՈՒ Լ Ր ԴՐԱՂ"ԺԺ ՀՀ.ՀՀ ՀԵՔ ▷ԾՈՒ" Հ
▷Դ"Ր ՀԱՂՈՒՐԾԱՆ Հ.Հ.Հ. ՀԵՔ ՀԾՈՒ" ▷ՈՐՈՇ
ՔՆ" Լ Ե ▷Ծ"ԺԽ ▷Ն Լ Ե Հ ԴՐԱՂ"ԺԺ ՀՀ.ՀՀ,
ՀԺՈՒ Լ Ր ▷ԿՀԱՂԲ ▷ՈՐՈՇ"Ս, Հ ՀՀ.ՀՀ ՀԵՔ ՀԾՈՒ" Հ
▷ԿՀԱՂԲ"Ր"Ժ, Հ ՐԱՊ"Ս, Հ Ի.Ե.ԵԼԱԼԵ ՔՆ" Լ Ե Հ
ՀՔ.ՀՔ"ՊԵԽ ՀՔ.Հ.Հ ՔՆ" Լ Ր ▷ԱՈՐԳ"Ժ ՀՀ.ՀՀ ՀԵՔ ՀԾՈՒ" Հ
ՐՄ.ՀՄ"ՊԵԽ ՔՆ" Լ Ե Հ ՀԵՔ"ՊԵԽ"ՊԵԽ

The nerves that are away from the centre of the body, like in the feet and hands can be damaged. When this is happening, a person can suffer chronic pain, tingling sensations, weakness in feet and hands, sharp and sudden pain or paralysis in the face, thigh, or hand.

Too much or too little sugar in the blood can also damage the nerves that keep the internal organs working, such as in the gut or heart. When these are damaged the person can have digestive problems,

வார்த்தை விடுதலை கீழ்க்கண்ட படிமத்தில் கொடுக்கப்படுகிறது:



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.

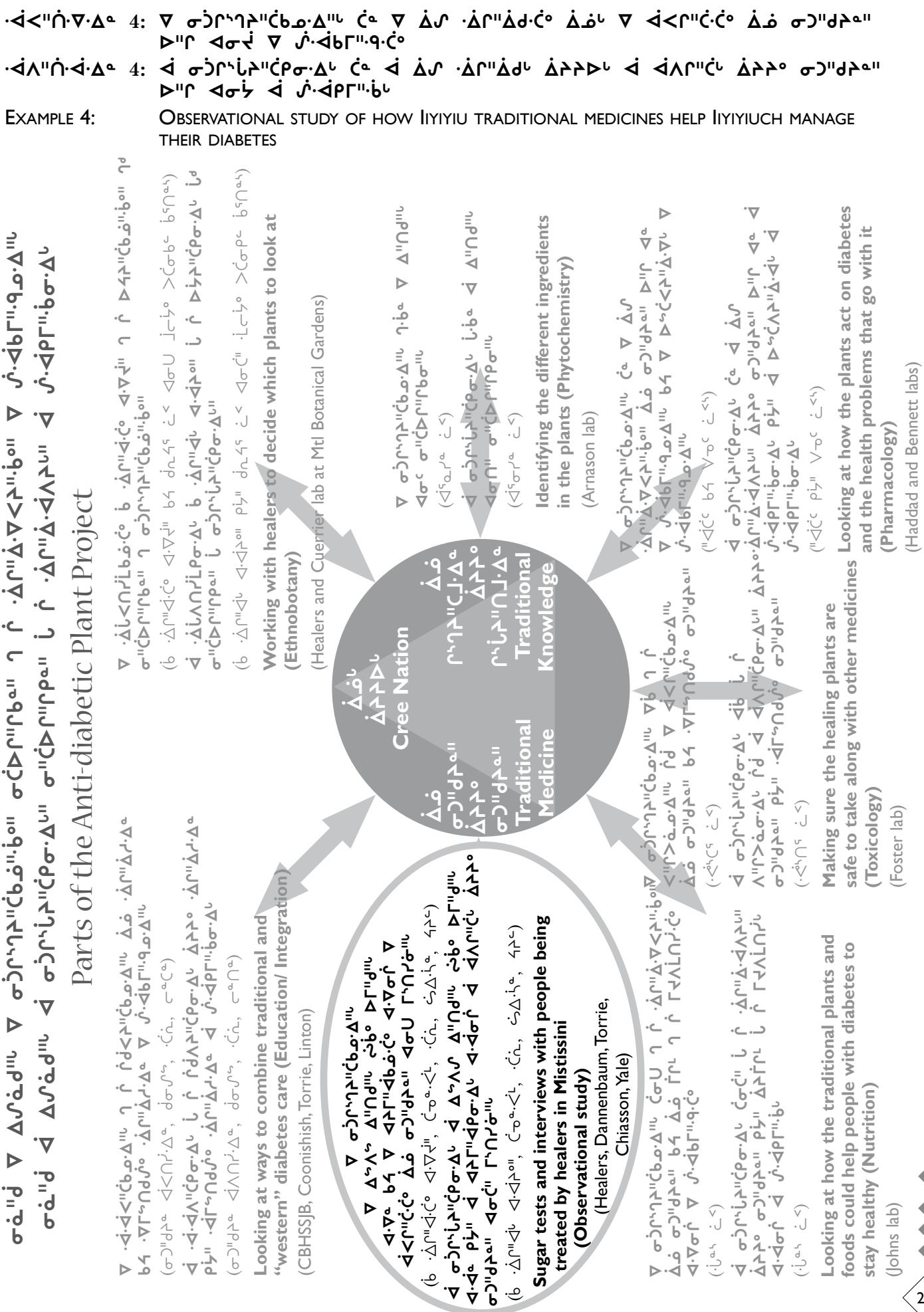
Canada's Aboriginal populations are particularly devastated by these kinds of complications from diabetes. In Iiyiyiu Aschii, about one adult in five is suffering from diabetes and more have pre-diabetes.

- ◆ 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 liyiyiu 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 “Anti-diabetic 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.



CIHR Team in Aboriginal Anti-Diabetic Medicines
Equipe IRSC sur les médecines autochtones antidiabétiques

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:
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Jill Torrie, CHB: 514-953-8283 ext. 231