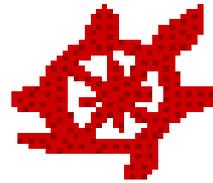


# Applying Indigenous Approaches to Reduce Diabetes Risk Factors



Terry Maresca, M.D.

# Objectives

- Describe the contribution of Indigenous “Original Instructions” concepts in patient education to support motivation for change.
- Describe the pros and cons of at least two patient resources for reclaiming an Indigenous diet.
- Explain potential advantages and side effects of three herbal medicines used to treat pre-diabetes or its common co-morbidities.
- Identify one change you can make in your clinical or public health practice.

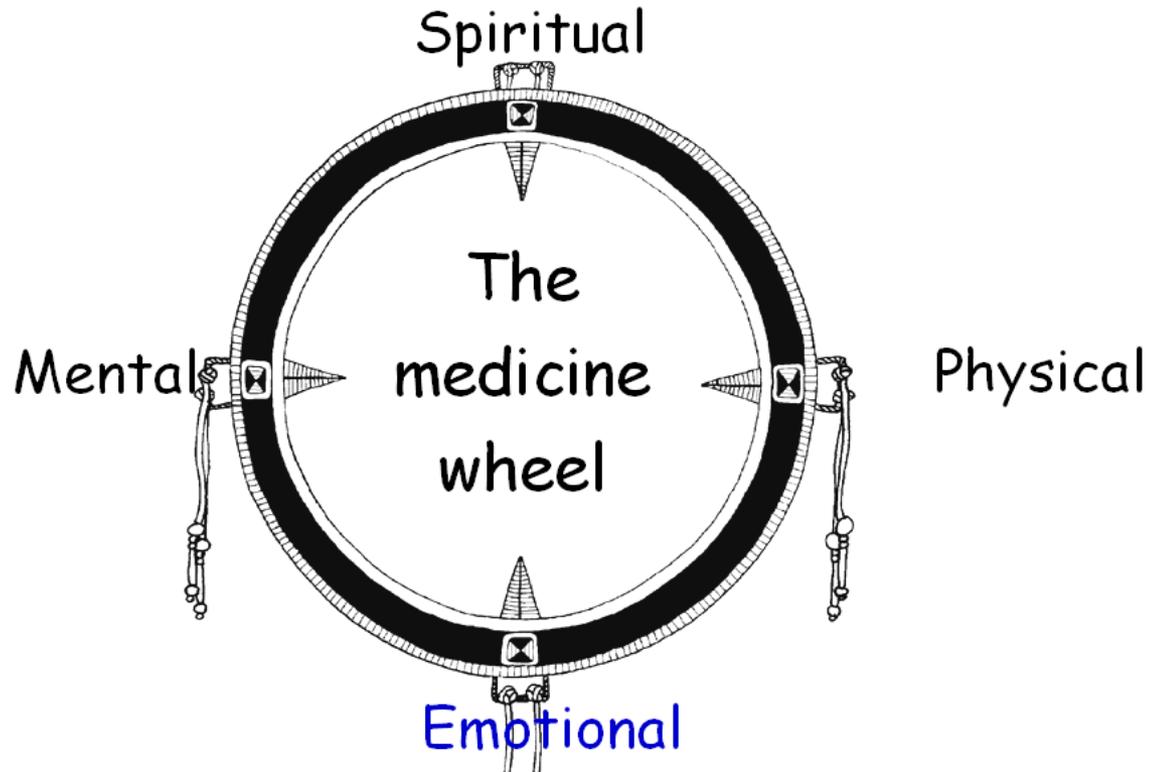
# What is Traditional Medicine?

“The sum total of knowledge, skills, and practices indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement, or treatment of physical and mental illness.”

*World Health Organization*

<http://www.who.int/medicines/areas/traditional/en/index.html>

# The Medicine Wheel



Modified from Phil Lane Jr., *The Sacred Tree*, Four Worlds Development Press, Lethbridge, Alberta, Canada, 1984 p. 11

# Traditional Practices are an Integral Part of the IHS System

Traditional Cultural Advocacy Program, 1994:

*“It is the policy of the IHS to facilitate the right of American Indian and Alaska Native people to their beliefs and health practices as defined by the tribe’s or village’s traditional culture.”*

# Traditional Medicine Practices

- Indigenous Language
- Food & Drink
- Plant Medicine
- Spiritual Practices
- Caring for Place
- Storytelling
- Song & Dance
- Healers & Elders



# Original Instructions or Laws

- Above the laws of man
- May be tied to tribal creation stories
- Directions on how to live a balanced healthy life
- Intimately tied to ecology of place and spirituality
- Fundamental to who we are as a people
- First foods may be mentioned

# Haudenosaunee Thanksgiving Address

- Lists core elements of what makes life possible for humans.
- Appreciation of these is crucial to wellness.
- Relationship is central.
- People, water, animals, trees, birds, food plants, herbs, sky world.



# First Foods As Medicine

- Gifts of Creator.
- Implied relationship to them.
- Promotes healthy next generation & prevents chronic disease.
- Indigenous food sovereignty and water rights movements.

# First Foods and Health

- Confederated Tribes of Umatilla (Oregon)
- Following their original law in modern policy
- Protecting ecologic landscape of men and women's traditional foods
  - Water, salmon, elk, roots, and huckleberries
- ***“Eat the landscape, not a pyramid”***
  - Supports a way of life

<http://www.umatilla.nsn.us/dnr.html>

# How might this promote Patient Motivation to Change?

- Does the tribe you serve have a first foods concept?
- Do your patients know this?
- Do they relate to this?
- Holistic nature of these teachings may intuitively address stress, depression, or inactivity.
- Some struggle to reclaim this ancestral knowledge.



# Two Row Wampum Treaty Belt of Six Nations (Guswenta)

- Two ways of life to choose from.
- Avoid interference.
- Mutual support.



# My Native Plate

**An Easy Way to Help Your Family Know How Much to Eat**

**Helping your family eat in a healthy way is EASY!**  
**Remember these 3 steps:**

1. Use a 9-inch plate or 9-inch area of a larger plate.
2. Divide into quarters.
  - 1/4 plate is fruits
  - 1/4 plate is vegetables
  - 1/4 plate is grains or starch
  - 1/4 plate is meat, fish or poultry
3. Stack food no higher than 1-1 and a half inches.

**Pictured Here**

- Canned peaches, no syrup
- Baked squash and peppers
- Steamed white and brown rice
- Baked deer meat with garlic
- Low-fat, nonfat, lactose-free or soy milk

**Printed Placemats**  
 Large, full-color, printed placemats will be available by fall 2012 at [www.diabetes.tns.gov](http://www.diabetes.tns.gov), click on "Online Catalog." There is no charge for placemats or shipping.

Produced by: Indian Health Service, Division of Diabetes Treatment and Prevention, and based on the USDA My Plate. For more information, go to [www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov)

**Fruits**

**Grains/ Starch**

**Dairy**

**Vegetables**

**Protein**

**Remember:**

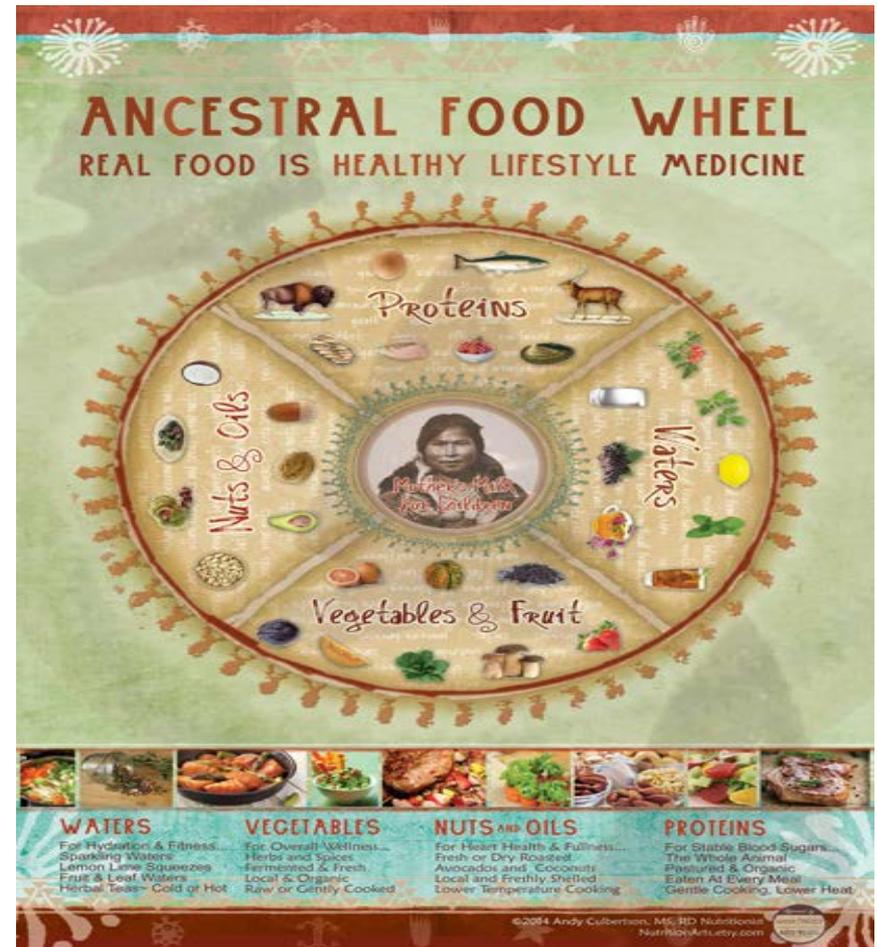
1. Use a 9-inch plate or 9-inch area of a larger plate.
2. Divide into quarters.
3. Stack food no higher than 1-1 and a half inches.

**= 9" diameter**

# Ancestral Food Wheel

<http://nativepaleo.com/>

- Center: breastfeeding mother
- Available for a fee



# Think about the types of foods you've eaten in the last month

- How many:
  - Roots
  - Shellfish or fish
  - Animals: land or marine
  - Birds
  - Berries or fruits

did this include?

# Archeology Uncovering the Diets of Ancestors Past

- Lape & Kopperl, University of Washington, 2007
- Research on middens in Puget Sound (WA) between 2000-5000 years old
- Over 80 types of shellfish, 70 fish
- 50 mammals: marine & terrestrial
- 35 birds
- 20 berries, 7 roots

<http://faculty.washington.edu/plape/tradfoods/tradfoodresearch.htm>

# Access to Traditional Foods

- Puget Sound Traditional Food and Diabetes Project:
  - Tulalip Tribes, Muckleshoot Tribe, King County (WA), and Burke Museum (Seattle).
  - Assessing therapeutic value of native food diets in treatment and prevention.
  - Involves archeologists, health professionals, and tribal members.

<http://faculty.washington.edu/plape/tradfoods/tradfood.htm>

# Advantages and challenges of this approach

- Not all tribes have or desire such research opportunities.
- Loss of some of these foods from landscape.
- Loss of food preparation knowledge.
- Lack of hunting/gathering skills or access to land.
- Stimulates natural curiosity.
- Pride in ancestral knowledge.
- Encourages relationships to contemporary groups reclaiming traditions.
- Consider linking to a project in your area.

# Reclaiming Indigenous Diets



# Indigenous Food Challenge (1)

- Restricting yourself to food and drink of Native American ancestors pre-Columbian contact.
- It can include foods from other tribes throughout the Americas (W. Hemisphere).
- Timeframe: a day, week, or longer.
- Can be one meal per day, or all meals.
- This is not “Native Paleo.”

# Indigenous Food Challenge (2)

- Popularized by Native college faculty:
  - Northern Michigan University, Martin Reinhardt
  - “Decolonizing Diet Project”
  - Great Lakes region only diet

<http://decolonizingdietproject.blogspot.com/>

  - University of Kansas, Devon Abbott Mihesuah
  - American Indian Health and Diet Project
  - Multi-tribal approach

<http://www.aihd.ku.edu/>

# Indigenous Food Challenge (3)

- “Would your ancestor recognize it as food?”
- No processed food, spices, herbs, or substances introduced by colonizers:
  - No caffeine (coffee or post-contact teas), or alcohol
- Some participants include post-contact foods
- Requires advance preparation:
  - Trade, gathering, growing, hunting, etc.

# Which of these are pre-contact Western Hemisphere Foods?

- Mutton
- Almonds
- Fry bread
- Garlic
- Black tea
- Grapefruit
- Chocolate
- Strawberry
- Peppers
- Potatoes

# Answer

- Grapefruit
- Chocolate
- Strawberry
- Peppers
- Potatoes

# Why Might Someone Consider a Challenge?

- To spiritually reconnect with the natural world, the ancestors, and seasonal cycles.
- To contrast the impact of today's diet and a traditional one on your own health.
- To jump start a fast or other life change.
- To empower our communities by reclaiming our food legacy and treaty rights.
- To strengthen Native pride and traditions.

# Encouraging Intertribal Trade: The case of Tepary Bean

- Traditional food of Sonoran Desert region.
- Higher in protein, carbs, and fiber than common beans (9 gm protein per 100gm vs. 8.2 gm pinto beans).
- Low glycemic index (30).
- High in beneficial salts, less “gut issues.”
- Supports tribal economic growth.



# Alpha Lipoic Acid and Ancestral Diets

- Antioxidant involved in glucose metabolism.
- Increases insulin sensitivity in T2DM.
- Natural Medicines Comprehensive Database: “strong scientific evidence” for use in DM prevention and treatment.
- Found in organ meats (kidneys, liver, heart) and very dark greens (spinach or chard-like).

<http://naturaldatabase.therapeuticresearch.com/home.aspx>

# Decolonizing Diet Project

- Dr. Martin Reinhardt's study: preliminary data:
  - 1 year of Great Lakes only foods: 25-100% of diet.
  - 25 college students, Native and non-Native.
  - Biometrics and labs followed, food diaries, psychological response.
  - Variable outcomes:
    - Weight loss for some, gain for others
    - Lowered cholesterol, triglycerides, HDL

<https://prezi.com/83acyx4dafi1/decolonizing-diet-project-a-six-month-overview/>

<http://america.aljazeera.com/articles/2013/10/24/eating-indigenouslychangesdietsandlivesofnativeamericans.html>

# Consider how you Weave Indigenous Food Discussions into Patient Care

- Motivational interviewing techniques
- Diplomatic inquiry into traditional wellness teachings
- Use after-visit summaries with resources:
  - “Bibliotherapy” that may be inter-tribal
- Support community partnerships with Indigenous knowledge holders
- Participate in the Week of Eating Indigenous Foods: 1st week November

# Resources (1)

- Devon Mihesuah's American Indian Health and Diet Project at University of Kansas  
<http://www.aihd.ku.edu/>
  - 1st week of November Indigenous Food Challenge
  - Mihesuah, Devon. Reclaiming Our Ancestor's Gardens. University of Nebraska Press, 2005.
- Dr. Reinhardt's Decolonization Diet Project  
<http://decolonizingdietproject.blogspot.com/>
- Moerman, Daniel E. Native American Food Plants: An Ethnobotanical Dictionary. Portland: Timber Press, 2010.

# Resources (2)

- Agricultural Research Service, United States Department of Agriculture:
  - National Nutrient Database
  - American Indian/Alaska Native subset

<http://ndb.nal.usda.gov/ndb/search>

- Look up nutrients in traditional and contemporary foods
- Muckleshoot Tribe Food Sovereignty project

<http://nwicplantsandfoods.com/muckleshoot>

- Valerie Segrest's TED talk

<http://www.tedxrainier.com/speakers/valerie-segrest/>

# Resources (3)

- “Store Outside Your Door”: Alaska Native Tribal Health Consortium:  
<https://www.storeoutside.com/>
- Native Circle, Mayo Clinic:  
<http://www.nativeamericanprograms.org/index-circle.html>
- Native cookbooks and other materials.

# Herbal Medicines used to Prevent Diabetes or Treat Pre-diabetes

- Oregon Grape root
- Goldenseal
- Burdock root/fruit
- Juneberry
- Sumac berry
- Greasewood
- Many others

# Huckleberry

- Blueberries included in this family.
- Leaf medicine as tea.
- Used with/without meals, TID typical.
- Mild hypoglycemic effects.
- Little information on adverse effects.



# Huckleberry (cont.)

- Younger leaves have more active components.
- Research on commercial product 300mg TID reduced fasting glucose and C-reactive protein.
- Caution with hypoglycemic medicines.



# American Ginseng (*Panax quinquefolium*)



- Root medicine.
- Endangered in S.E. where it has long been used.
- Extracts reported as safe adjunctive therapy in Type 2 diabetics.

(Mucalo, I. et al. Evid Based Comp Alt Med, 2014).

# American Ginseng

- Studies 100-3000mg a day, 2 hours before meals, up to 12 weeks does < PP glucose
- Single doses up to 10 grams reported safe
- 100-200mg a day doses also < BG levels in T2DM
- Commercial products exist (Cold FX)
- Drug interaction with anti-diabetes meds, immune suppressants, warfarin (<INR)
- Estrogen effects may not be desirable
- Insomnia; agitation in schizophrenia reported

# Devil's Club

## (*Oplopanax horridus*)

- Grows in Pacific NW, SE Alaska, MI, Ontario
- Ginseng family
- Roots and stem bark
- Multiple Native uses
- Documented to lower blood sugar in vivo and in vitro



# Devil's Club and Diabetes Research

- Practically non-existent in clinical trials  
Thommasen HV et al. *Can Fam Physician*. 1990;36:62–65.
- Ethnobotanical reviews  
Lantz TC, Swerhun K, Turner NJ. Devil's club (*Oplopanax horridus*): An ethnobotanical review. *HerbalGram*. 2004;62:33–48.
- Chemical and pharmacologic studies show evidence of efficacy in glucose pathways:
  - Root and stem bark differences  
Calway T. *J Nat Med*. 2012;66(2), 249-256.

# Devil's Club

- Safety: little reliable data.
- Dosing: varies based upon preparation and plant part used.
- No commercial standardized products.
- Side effects: weight gain with chronic use rarely reported.

# Stinging Nettle (*Urtica dioica*)

- Common wetland plant
- Inexpensive, easy to identify
- Mineral rich: calcium, potassium, magnesium
- Used as drink, stews, steamed, pesto
- “Indian Gatorade”
- High cultural use in Pacific NW superfood



# Stinging Nettle

- One 8 week trial using 100mg/kg daily of an extract did not affect insulin sensitivity in patients with diabetes on oral agents.
- One case report of hypoglycemia in a diabetic person.
- Animal research suggests it reduces blood glucose levels.
- Can lower blood pressure.
- Monitor if using hypoglycemic meds.

# Resource

- Natural Medicines Comprehensive Database.

<http://naturaldatabase.therapeuticresearch.com/home.aspx>

- Limited information on many American Indian/Alaska Native botanicals.
- Regularly updated and easy to read for clinicians.
- Has patient handout section.

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“The sum total of knowledge, skills, and practices indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement, or treatment of physical and mental illness.”

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# The Importance of Community Knowledge

- Tribal Colleges
- Elders and Traditional Knowledge Keepers
- Ceremonial Cooks and Hunters
- Native Non-profits
- Natural Resource Departments

# Herbal Medicine in a Tribal Clinic Setting: Snoqualmie Tribe

- Medicinal garden on site of a tribal clinic.
- Jump starts patient discussion of Western vs. ancestral approaches to care.



# Many Indigenous Approaches to Diabetes Prevention

- Traditional Games and Exercise
- Breastfeeding
- Stress Reduction
- Periodic Fasts
- Ceremonies

# In Conclusion

- Consider what actions you might take to support Indigenous approaches to diabetes prevention in your healthcare setting.

# Nia:wen! Thank You!

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