Spirit Food

An Overview of the Decolonizing Diet Project

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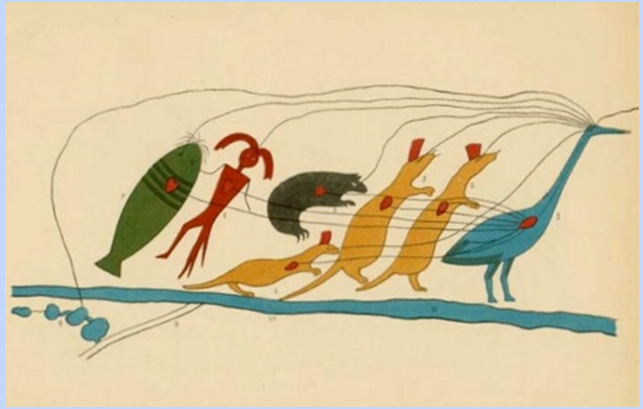
Goals of the DDP

- The Decolonizing Diet Project (DDP) (approved by IRB: project # HS11-415) is an exploratory multi-dimensional study of the relationships between people and Indigenous foods of the Great Lakes Region.
- It was intended to connect, or reconnect, humans with foods that are Indigenous to the Great Lakes Region and that were part of Indigenous peoples diets prior to colonization, and to provide food-related data for tribal communities and others that are working toward the revitalization of Indigenous cultures.



Where and when did the DDP take place?

Research and Planning Phase	Implementation Phase	Analysis/Reporting Phase
November 2010—Spring 2012	Spring 2012—Spring 2013	Spring 2013—Summer 2014

Who was involved in the project?

- 25 diverse voluntary research subjects
- Staff
- Volunteers
- Advisors
- NMU Community
- GLR Community
- Others

Individual Commitment to the DDP

- Between 25%-100% of their daily diet consisted of Indigenous foods from the GLR
- Adhered to an exercise regimen based on pre-colonial physical activities or their equivalents
- Ate and exercised according to this plan for one year
- Used multiple forms of media to record their experiences including a written journal, photos, and video/audio
- Got regularly scheduled health checks

How did people know what to eat?

- Master list of DDP eligible foods identifies many species of plants, mammals, birds, fish, fungi, and insects.

	A	B	C
124	*Nelumbo lutea*	American Lotus	
125	*Nemopanthus mucronatus* L.	Catberry	
126	*Nymphaea odorata* Ait.	American White Waterlily	
127	*Osmunda regalis*	Royal Fern	
128	*Oxalis montana* Raf.	Mountain Woodsorrel	
129	*Parmelia physodes* Ack.	Lichen	
130	*Parthenocissus quinquefolia* (L.) Planch	Virginia Creeper	manidoo-biimaakwad
131	*Pedicularis canadensis* L.	Canadian Lousewort, Wood Betany	
	Phaseolus lunatus	Lima Bean	
	Phaseolus polystachios (*polystachyus*)	Thicket Bean, Genuine Cornfield Bean	
134	*Phaseolus vulgaris* (var. *vulgaris* and subsp. *aborigineus*)	Common Green Bean, Kidney Bean, Cherokee Trail of Tears, Navy Bean, Pinto Bean, Great Northern Marrow Bean, Yellow Eye Bean, Black Bean	
135	*Photinia melanocarpa* (Michx.)	Black Chokecherry	
136	*Phytolacca americana*	American Pokeweed	
137	*Picea glauca*	White Spruce	
138	*Picea mariana*	Black Spruce	
139	*Pinus strobus* L.	Eastern White Pine	kah-be-sah-dah-ge-set
140	*Podophyllum peltatum*	Mayapple	zhaabozigan
141	*Polygonum achoreum* S.F. Blake	Leathery Knotweed	
142	*Polygonum amphibium* L.	Water Knotweed	
143	*Polygonum arifolium* L.	Halberdleaf Tearthumb	
144	*Polygonum buxiforme* Small	Box Knotweed	
145	*Polygonum careyi* Olney	Carey's Smartweed	
146	*Polygonum douglasii* Greene	Douglas' Knotweed	

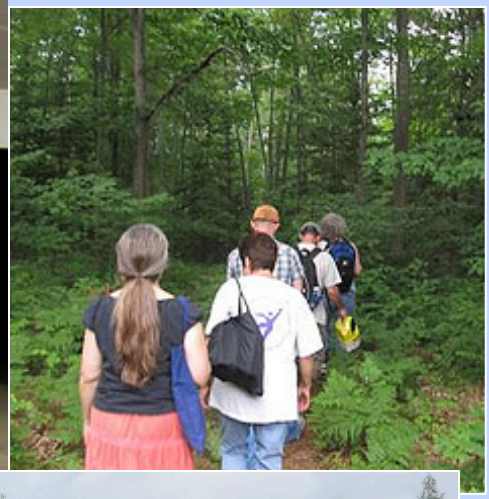
Plants | Plants_Asters | Mammals | Birds | Fish | Fungi | Insects | Amphibians & Reptiles | Mussels | Other

DDP Food Criteria

Descriptor	Native Pre-Colonial (NPreC)	Introduced Pre-Colonial (IPreC)	Native Pre-Colonial Derivation (NPreCD)	Introduced Pre-Colonial Derivation (IPreCD)	Introduced Colonial (IC)	Introduced Colonial Derivation (ICD)	Genetically Modified Organisms (GMOs)
Explanation	These foods were not introduced by humans, deliberately or accidentally, into the Great Lakes Region (GLR), and they existed in the GLR prior to European colonization of the Region.	These foods were introduced by humans, deliberately or accidentally, into the GLR, and they existed in the GLR prior to European colonization of the Region.	These foods have been derived from NPreC foods, and although the species existed in the GLR prior to European colonization of the Region, this particular variety did not, does not include GMOs.	These foods have been derived from IPreC foods, and although the species existed in the GLR prior to European colonization of the Region, this particular variety did not, does not include GMOs.	These foods were introduced by humans, deliberately or accidentally, into the GLR, and they did not exist in the GLR prior to European colonization of the Region.	These foods have been derived from IC foods, does not include GMOs.	These foods have been deliberately genetically modified from NPreC, IPreC, NPreCD, IPreCD, IC, and ICD foods.
Included in DDP?	Yes	Yes	Yes	Yes	No	No	No

How did people find their food?

- DDP research subjects employed multiple methods of accessing Indigenous foods including:
  - Hunting
  - Fishing
  - Gathering/Foraging
  - Gardening
  - Purchasing
  - Trading
  - Sharing
  - Other



How did people know how to prepare the foods?

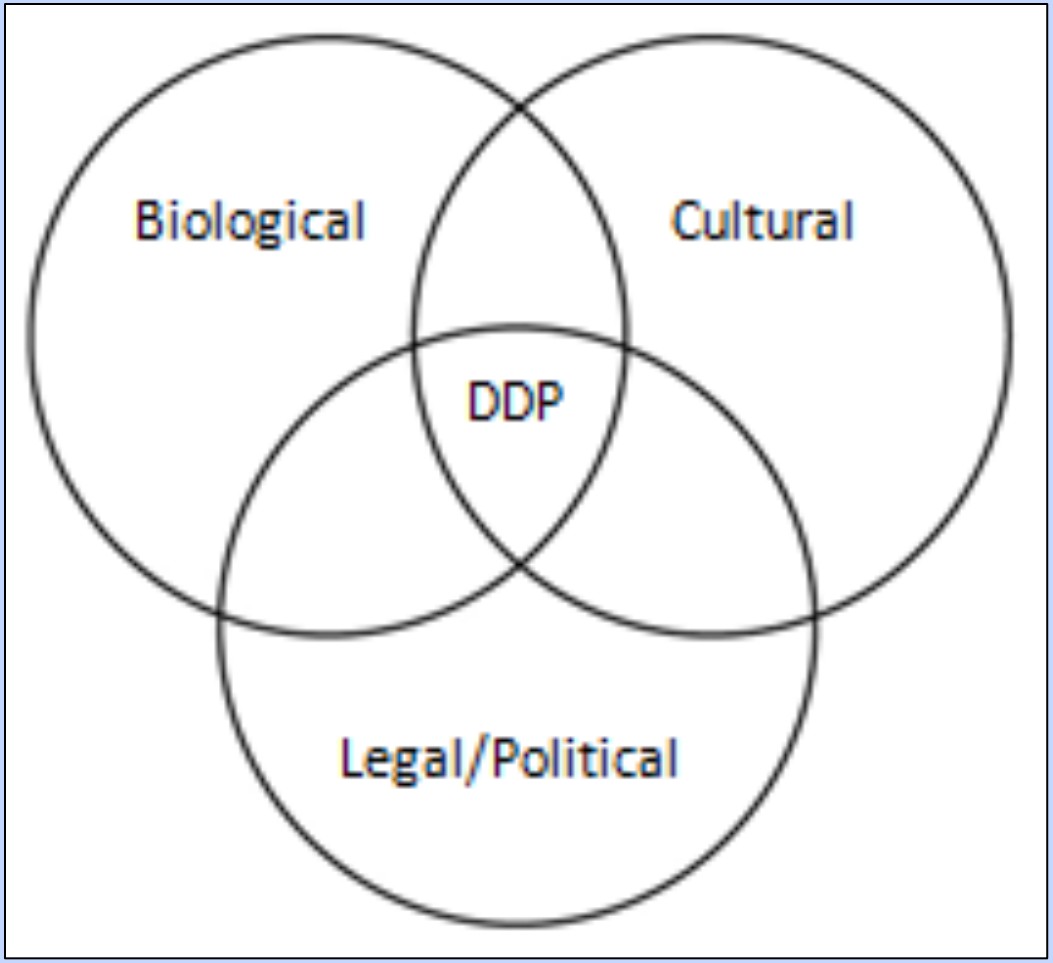
Cooking Demos

Potlucks

Online Journals

Recipe Forum

Outcomes



Some Common Foods

- Wild rice
- Corn
- Maple
- Sunflower
- Pumpkin
- Squash
- Berries
- Wild Leeks
- Beans
- Sweet potatoes
- Pecans
- Turkey
- Sunchokes
- Venison
- Bison
- Fish

Some Uncommon Foods

- Beaver
- Grasshopper
- White Pine Bark
- Crab Apple
- Squirrel
- Porcupine

Example 3 Month Food Frequency

Food	Frequency	Breakfast	Lunch	Dinner	Snack
Bison	74	8	27	36	3
Blueberries	67	28	10	11	18
Corn	224	60	61	67	36
Duck Eggs	153	61	31	31	30
Green Beans	50	2	20	24	4
Leeks	154	9	60	71	14
Maple	393	157	79	83	74
Pecans	52	9	7	3	34
Pumpkin Seed Flour	98	37	27	22	22
Sea Salt	237	52	64	60	51
Sweet Fern	58	3	23	34	3
Sweet Potatoes	51	3	21	25	2
Turkey	81	6	35	36	3
Wild Rice	223	64	69	51	39

Biological Outcomes

- Based on a statistical analysis of group data, we are able to report that research subjects experienced significant:
  - Reductions in weight
  - Reductions in girth
  - Reductions in BMI
- Individuals also experienced noteworthy or significant:
  - Reductions in blood pressure
  - Reductions in cholesterol
  - Reductions in blood glucose levels

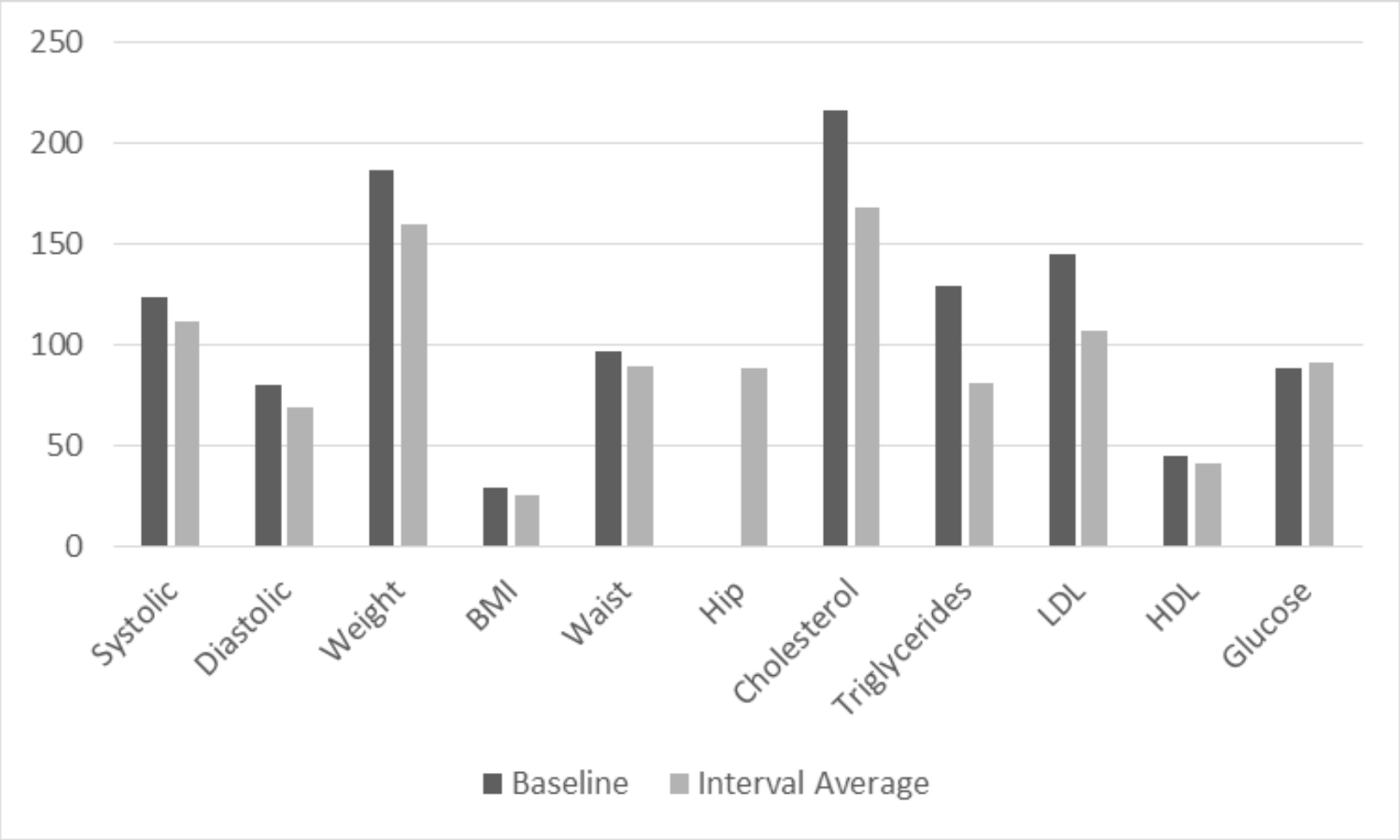
Aggregate Data

					Change			Change		
Metric	n	Baseline	End	Diet Avg.	Base - End	t	P	Base - Average	t	P
Systolic BP[1]	4	122.0 ±9.9	120.5 ± 23.7	117.8 ± 12.7	-1.5 ± 12.7	0.311	0.388	-4.3 ± 13.1	0.648	0.281
Diastolic BP[1]	4	77.5 ±3.0	71.0 ± 9.6	70.7 ± 4.0	-6.5 ± 9.3	1.399	0.128	-6.8 ± 5.1	2.691	**0.037***
Weight[2]	6	164.7 ±29.0	151.0 ±25.6	151.5 ± 26.0	-13.7 ±11.0	3.067	**0.014***	-13.2± 9.9	3.802	**0.011***
BMI[2]	7	28.1 ±3.2	25.8 ±3.1	26.3 ±2.8	- 1.8 ±1.8	2.803	**0.016***	-2.3 ±2.2	2.671	**0.018***
Waist[1]	4	99.3± 2.1	92.0 ±4.7	93.4 ±4.3	-7.3 ±4.6	3.170	**0.025***	-5.9 ±2.3	5.123	**0.007***
Hip[3]	4	113.5 ±10.3	101.3 ±4.8	104.4 ±7.0	-12.2 ±9.8	2.485	**0.044***	-9.1 ±4.5	3.502	**0.020***
Cholesterol[1]	8	193.8 ±23.5	188.6 ± 13.3	183.8 ± 15.2	-5.1 ± 13.3	0.635	0.276	-9.6 ± 20.1	1.34	0.111
LDL[1]	6	112.7 ±26.8	101.1 ±7.7	104.9 ±7.8	-11.6 ±26.2	1.167	0.144	-7.8 ±22.2	0.932	0.193
HDL[3]	8	59.9 ±13.0	61.1 ±14.2	60.3±12.1	+ 1.3 ±7.8	-0.455	0.331	+0.4 ± 4.1	-0.279	0.394
Triglyceride[1]	6	141.7 ±95.7	114.8 ±70.8	102.0 ± 48.2	-26.8 ± 60.5	1.086	0.164	-39.7±69.1	1.405	0.109
Glucose[1]	5	92.4 ±13.2	91.8 ± 8.1	91.5 ±6.0	- 0.6 ±10.6	0.127	0.453	-0.9 ± 8.4	0.242	0.410

Case Study 1: Dr. Martin Reinhardt
100 Percent Commitment Level

Measurement	Baseline	Interval Average	Difference
Systolic Blood Pressure	124 mm/Hg	111.5 mm/Hg	-12.5 mm/Hg
Diastolic Blood Pressure	80 mm/Hg	68.8 mm/Hg	-11.3 mm/Hg
Weight	186.5 lbs	160 lbs	-26.5 lbs
BMI	29.2	25.5	-3.8
Waist	97 cm	88.9 cm	-8.1 cm
Hip	NA	NA	NA
Cholesterol	216 mg/dL	168 mg/dL	-48 mg/dL
Triglycerides	129 mg/dL	81 mg/dL	-48 mg/dL
LDL	145 mg/dL	107.3 mg/dL	-37.8 mg/dL
HDL	45 mg/dL	41.3 mg/dL	-3.8 mg/dL
Glucose	88 mg/dL	91 mg/dL	+3 mg/dL

Reinhardt Data Cont.



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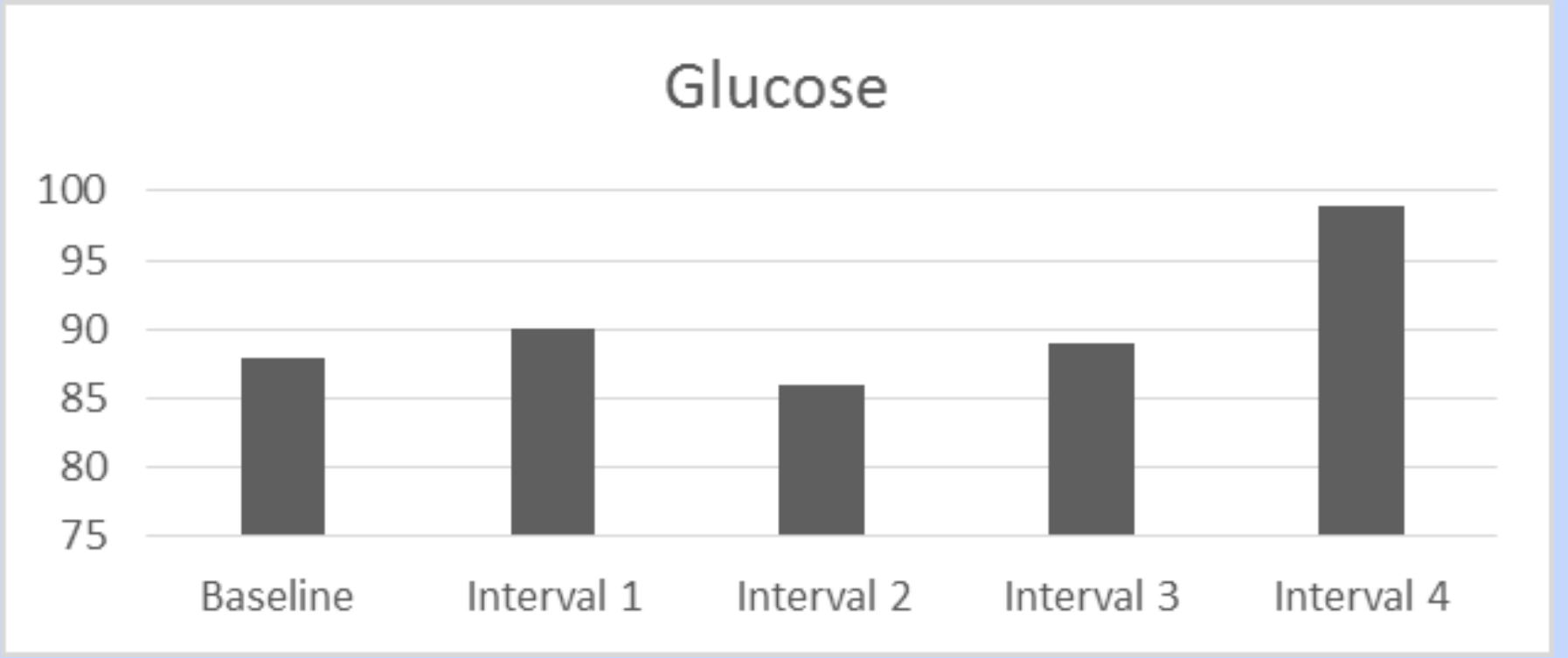


Social/Cultural Outcomes

- Family/Community Support Very Significant
- Transformation of Space to Accommodate DDP Needs
- Time Commitment was Major Source of DDP Anxiety
- Small Impact on Local Markets but Large Impact for Certain Businesses
- Expectations for Males and Females
- Price and Convenience were Major Factors
- We started out with ten Native research subjects and fifteen non-Native research subjects. By the end of the implementation phase, twelve were Native and seven were non-Native.

DDP Guilt

- Resulted from straying from commitment level, failure to journal, inability to share, dreams, cravings, etc.

> “I've lost too many hours of sleep over DDP guilt to ignore it any longer!
>
> My version of DDP guilt isn't about my diet commitment, which I've kept, but about logging it. I'm disappointed in myself for not keeping that part of the deal, but there it is, here I am, and here I go with what I'm hoping will be a strong finish.’”
>
> -Nancy Irish, blog entry November 27, 2012

Legal/Political Outcomes

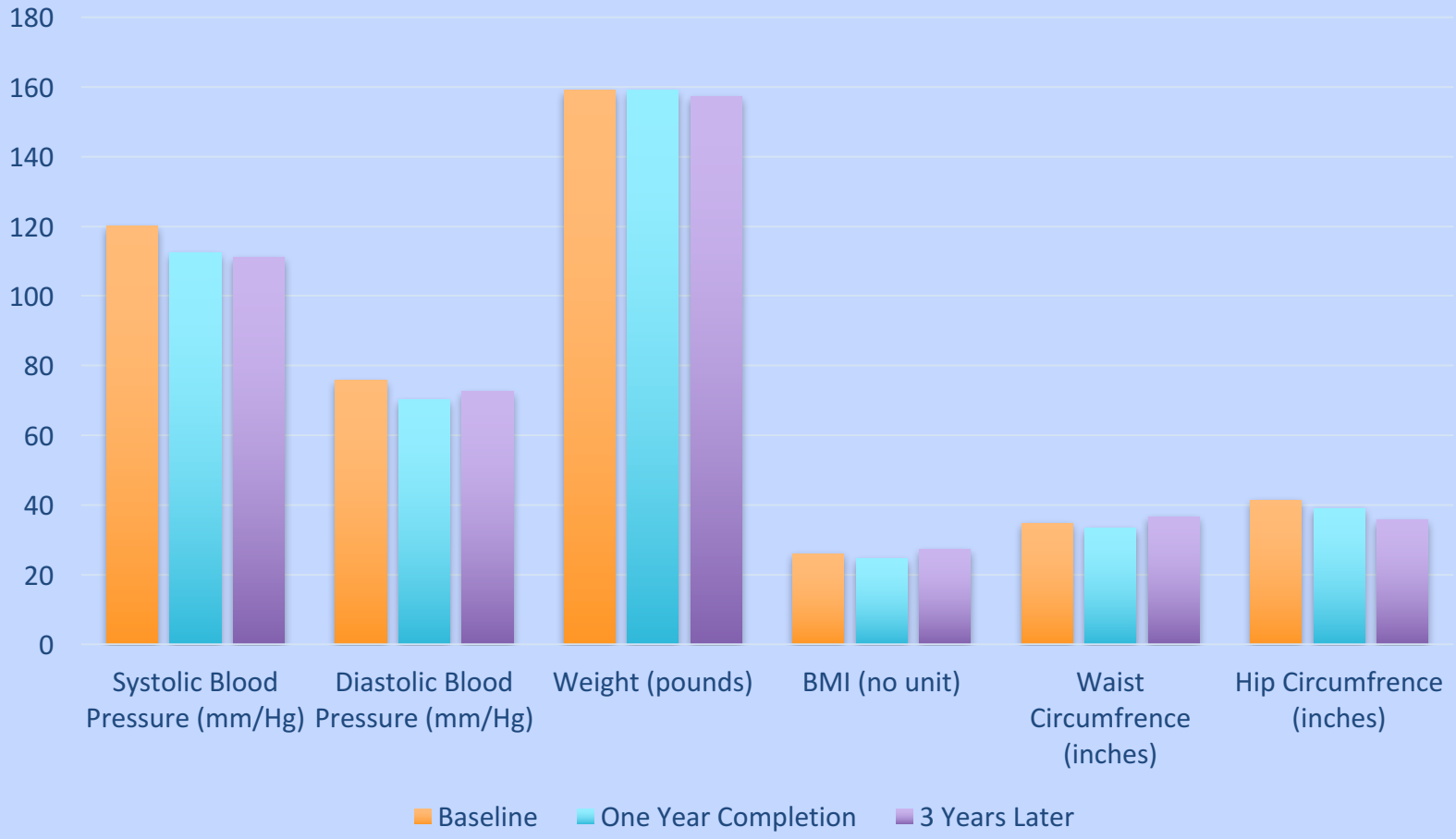
- Treaty rights and boundaries made a difference in access to foods between Native and non-Native and between tribes.
- Differences in limits, seasons and other rules.
- Organizational policies also limited DDP interactions
  - Parking limited for DDP events
  - Website access limited for non-NMU
  - Potlucks not allowed
  - No outside food or drinks allowed

Indigenous Foods Cook-Off

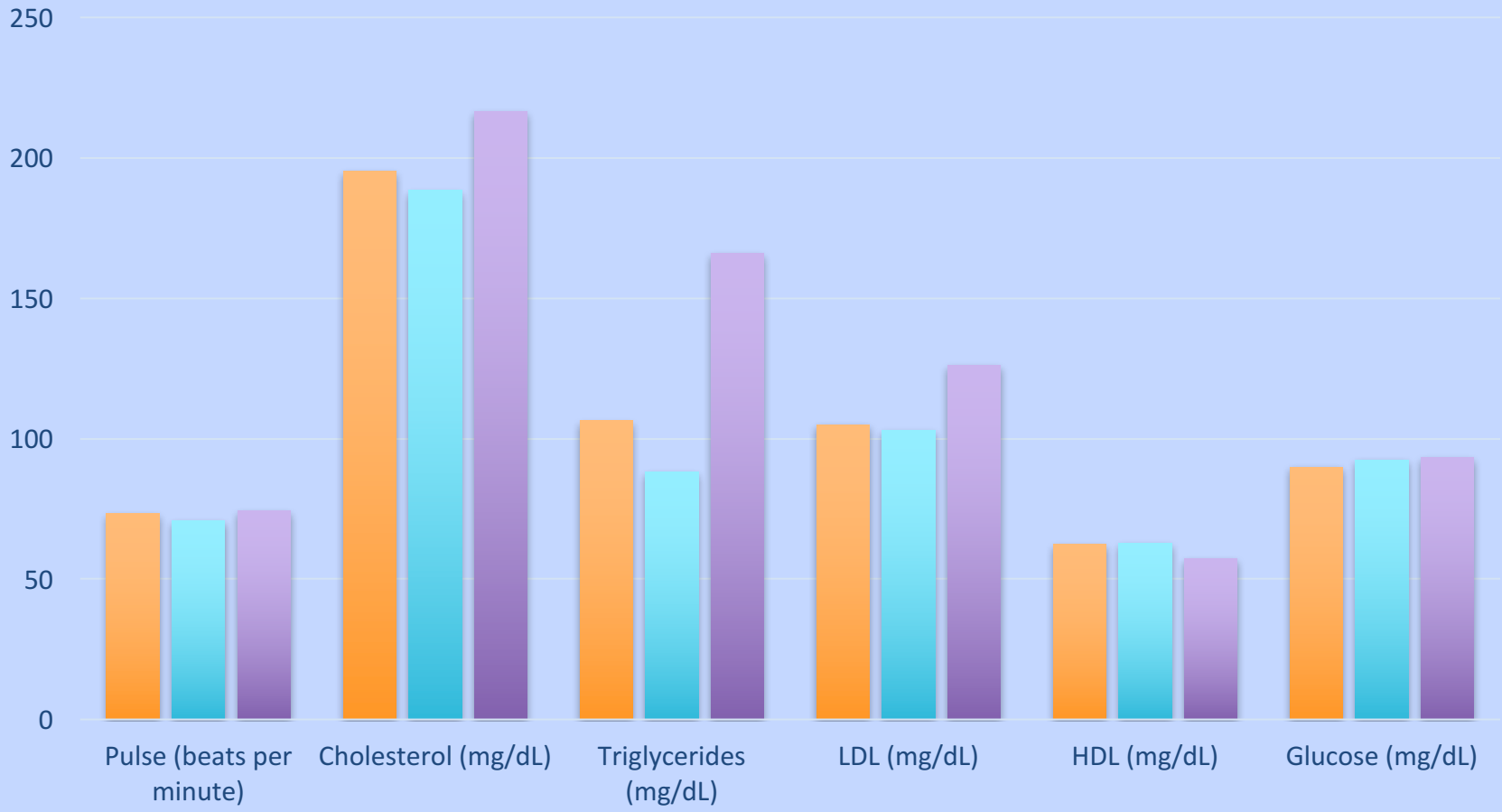
- Three Teams:
  - Elder Berries
  - Nishin Miidjim
  - Maized and Confused
- Provided with mystery ingredients
- 5 hours to prepare an entre, a side, and a dessert
- Judged by professional food tasters and audience members

Indigenous Foods Cook-Off Cont.

DDP Three Year Follow-Up Study
(by Nim Reinhardt)



Three Year Follow-Up Study (Cont.)



Three Year Follow-Up Study (Cont.)

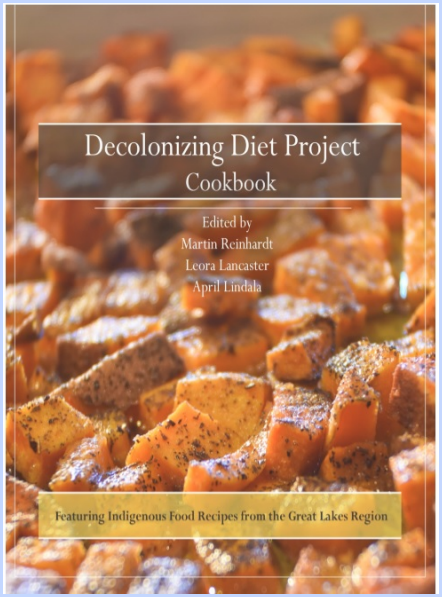
- Survey Outcomes
  - 100% reported continuing to consume some DDP foods
  - 56% reported that they continue to eat at least 25% or higher on a daily basis.
  - 89% report learning about Indigenous foods from their experience with the DDP including hunting, fishing, gardening and foraging skills.
  - 78% eat a home cooked meal daily
  - 44% exercise on a daily basis
  - 33% reported they no longer required medication(s)

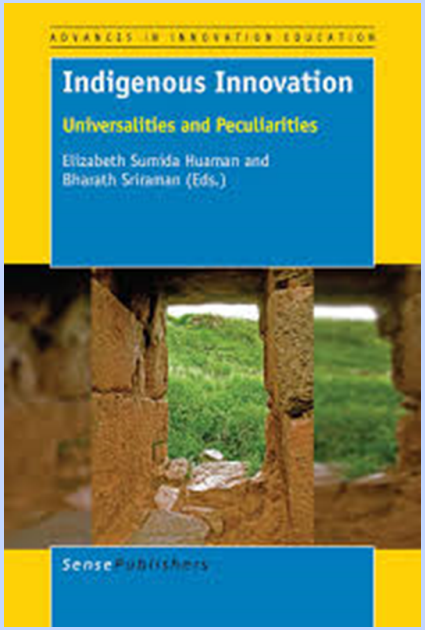
Three Year Follow-Up Study (Cont.)

- The results show that research subjects tended to show significant decreases in positive outcomes the further they drifted away from DDP foods.
- While all of the research subjects reported retaining many lessons from the DDP, they tended to drift away DDP foods nonetheless.
- This is most likely due to price and convenience factors which also played a major role during the original study.
- The biggest difference may have been that they were not committed to the diet after the DDP implementation phase, so they reverted back to many of their pre-DDP eating habits.

DDP Publications

- Reinhardt, M., Lancaster, L., and Lindala, A. (2016). *Decolonizing Diet Project Cookbook*. Featuring Indigenous food recipes from the Great Lakes Region. Marquette, MI: Northern Michigan University, Center for Native American Studies.
- Reinhardt, M. (2015). “Spirit food: A multidimensional overview of the Decolonizing Diet Project”. *Indigenous Innovation: Universalities and Peculiarities*, eds., E. Sumida Huaman and B. Sriraman. Rotterdam: Sense.
- Upcoming publications:
  - Manuscript titled “Food, Memories, and Connections: One Couple’s Reflections on the Decolonizing Diet Project” by Martin Reinhardt and Tina Moses.
  - Manuscript titled “Eating Our Words: Food Provisions in Treaties between the United States and American Indian Tribes” by Martin Reinhardt.
  - Proposed book titled *Indigenous Foods TEKnology in the Great Lakes Region* by Martin Reinhardt.





Recommendations

- Work with local food businesses, organizations, and governments to increase availability of, and access to, high quality/low cost Indigenous foods on a local level.
  - Encourage new Indigenous food start-ups
  - Request changes in established businesses
  - Introduce new ideas for government programs that provide food and/or other incentives
- Provide a broad range of ongoing educational opportunities for community members to learn about Indigenous foods.
  - Gardening classes/seed swaps
  - Hunting/fishing/foraging events
  - Posting shopping tips, recipes, and experiences on social media
  - Cooking demonstrations

DDP Links

DDP Facebook Site

http://www.facebook.com/groups/decolonizingdietproject/

DDP Group Site

https://share.nmu.edu/moodle/login/index.php

DDP Flickr Site

http://www.flickr.com/photos/decolonizingdietproject

DDP Blog Site

http://decolonizingdietproject.blogspot.com/

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