

# Decolonizing Our Diet



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# Thomas Theorem

- “If men define situations as real, they are real in their consequences” (W.I. Thomas, 1928).



# Decolonizing Diet Project (DDP)

- In 2010, I asked myself a question about the foods we were serving at our First Nations Food Taster on campus at Northern Michigan University, a tradition we have had in place since 2001.
- I wondered to what extent my Indigenous ancestors would recognize the foods that we think of as Indigenous food today.
- I then asked a question that would ultimately grow into the DDP, “If I wanted to eat the foods my Indigenous ancestors ate, what would I have to know and do?”

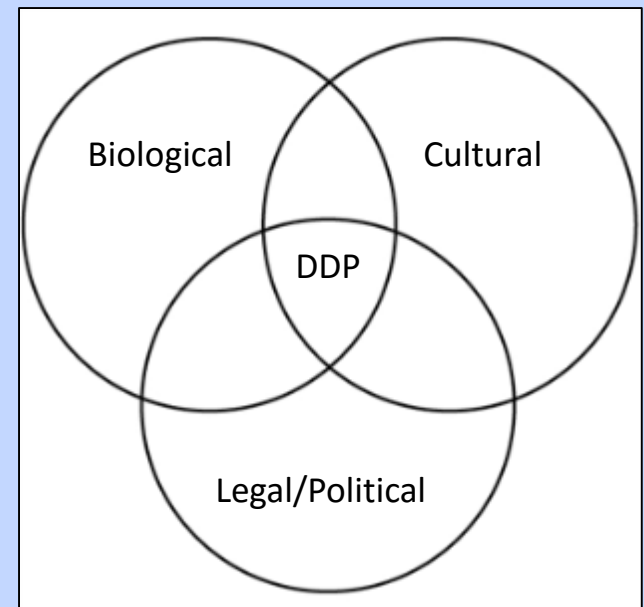


# Why Decolonizing?

- I chose the term “Decolonizing” for a multiple reasons
  - Colonization has severely disrupted our very healthy lifeways.
  - We are still in a state of colonization.
  - We have been forever changed as a result of colonization.
  - We can act to resist the ongoing colonial forces that continue to undermine our traditions.

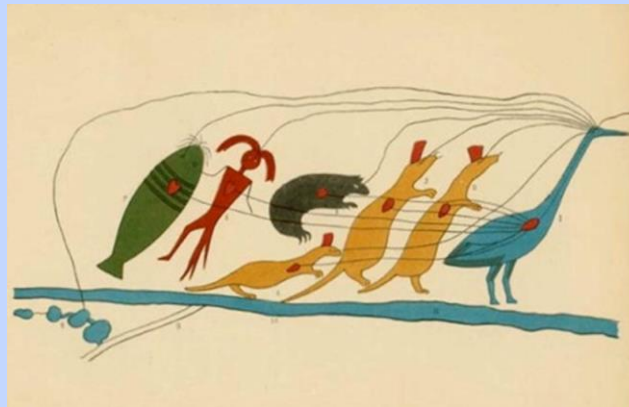
# What is the DDP?

- The Decolonizing Diet Project (DDP) (approved by IRB: project # HS11-415) is an exploratory study of the relationships between people and Indigenous foods of the Great Lakes Region.
- Multi-dimensional study



# Goals of the DDP

- 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.
- To provide food-related data for tribal communities and others that are working toward the revitalization of Indigenous cultures.

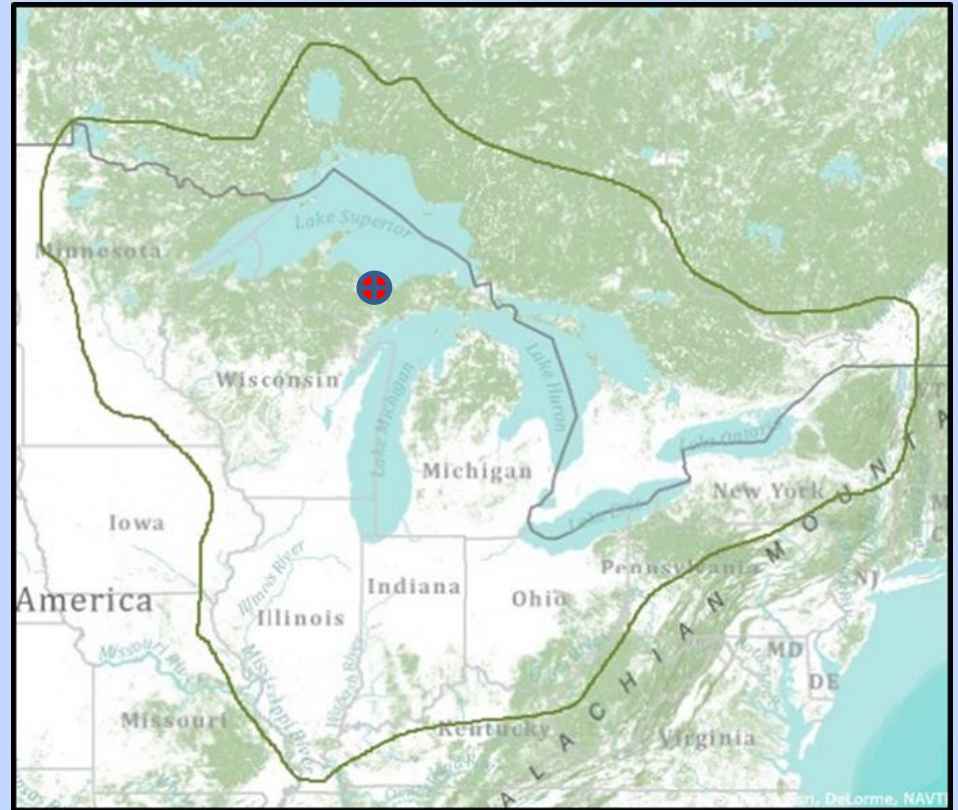


# Hypotheses and Predictions

- Individual participants in the DDP will experience significant changes in health and social relations as a result of participating in the DDP.
- Individuals eating only Indigenous species of plants and animals in the Great Lakes Region, who follow an exercise regimen equivalent to a pre-colonial lifestyle, will show significantly greater positive effects in health, as compared to individuals who eat a mix of indigenous/non-indigenous species, or only non-indigenous species, and follow an exercise regimen equivalent to a pre-colonial lifestyle.
- Individuals eating only indigenous species of plants and animals in the Great Lakes Region, who follow an exercise regimen equivalent to a pre-colonial lifestyle, will experience significantly more social and legal/political barriers in accessing food, as compared to individuals who eat a mix of indigenous/non-indigenous species, or only non-indigenous species, and follow an exercise regimen equivalent to a pre-colonial lifestyle.

# DDP Food Map

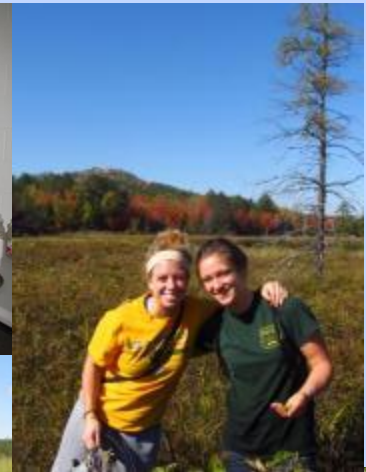
- A Three Part Definition
  - Cultural
    - The epicenter of the DDP was located in Gichi-namebineziibing (aka, Marquette, Michigan). This area is almost central to Anishinaabe-aking.
    - Helen Hornbeck Tanner in the Atlas of Great Lakes Indian History refers to the Great Lakes Region as a “principal theatre”.
  - Ecological
    - The Great Lakes Basin is defined by all of the waterways that feed into the Great Lakes.
    - Height of the land and tributaries.
  - Vernacular
    - We asked people if they thought of themselves as living within the Great Lakes Region.





# Who was involved in the project?

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



# Selecting Research Subjects

- We recruited research subjects using a snowball method.
- Interested volunteers attended a mandatory orientation and filled out a pre-assessment.
- Known physical illnesses reported amongst the research subjects included cases of gall stones, allergies, skin disorders, and ulcerative colitis.
- Two research subjects were nursing mothers.
- Began with a good balance of diversity along the lines of Native/non-Native, male/female, and younger/older.

# 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

# DDP Time Table

Research and Planning Phase	Implementation Phase	Analysis/Reporting Phase	DDP Extensions
November 2010—Spring 2012	Spring 2012—Spring 2013	Spring 2013—Summer 2014	Summer 2014--Present
<ul style="list-style-type: none"> <li>*Formed advisory group.</li> <li>*Hired staff.</li> <li>*Developed indigenous foods database.</li> <li>*Created a DDP blog site.</li> <li>*Identified Indigenous food providers and consultants.</li> <li>*Held informational gatherings.</li> <li>*Recruited and select research subjects.</li> <li>*Research subjects determined diet level and exercise plan.</li> <li>*Began stocking up on frozen and dried Indigenous foods.</li> <li>*Investigated the possibility of having an Indigenous foods garden</li> <li>*Presented on DDP.</li> </ul>	<ul style="list-style-type: none"> <li>*Research subjects got annual physicals at the beginning and end of the diet.</li> <li>*Research subjects got regular 3 month check-ups.</li> <li>*We were to begin diet when maple sap ran in the spring, and end diet when it ran again the following spring. Actual start was March 25, 2012, end will be March 24, 2013.</li> <li>*Research subjects kept a daily log of DDP activity.</li> <li>*Consultants provided training on accessing, storing, and preparing Indigenous foods.</li> <li>*Presented on DDP.</li> </ul>	<ul style="list-style-type: none"> <li>*Completed a statistical analysis of group data and my individual data.</li> <li>*Compiled quantitative and qualitative data into a final report.</li> <li>*Developed a manuscript about the study.</li> <li>*Presented on the outcomes of the DDP at multiple venues.</li> </ul>	<ul style="list-style-type: none"> <li>*Article on DDP published in <i>Indigenous Innovation: Universalities and Peculiarities</i>.</li> <li>*<i>DDP Cookbook</i> published.</li> <li>*Conducted several DDP related presentations and workshops.</li> <li>*Continued <i>Week of Eating Indigenous Foods</i> tradition.</li> <li>*Nim Reinhardt conducted a DDPO Three Year Follow-Up Study.</li> <li>*Tina Moses and I are developing a chapter on our memoirs for a book called <i>Living Seeds</i>.</li> <li>*Have discussed a DDP Gut Biome Study.</li> </ul>

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

# DDP Food Criteria

Descriptor	Native Pre-Colonial (NPreC)	Introduced Pre-Colonial (IPreC)	Native Pre-Colonial Derivation (NPreCD)	Introduced Pre-Colonial Derivation (IPreCD)	Introduced Post-Colonial (IPostC)	Introduced Post-Colonial Derivation (IPostCD)	Genetically Modified Organisms (GMOs)
<b>Explanation</b>	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 IPostC foods, does not include GMOs.	These foods have been deliberately genetically modified from NPreC, IPreC, NPreCD, IPreCD, IPostC, and IPostCD foods.
<b>Included in DDP?</b>	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



Online Journals



Potlucks

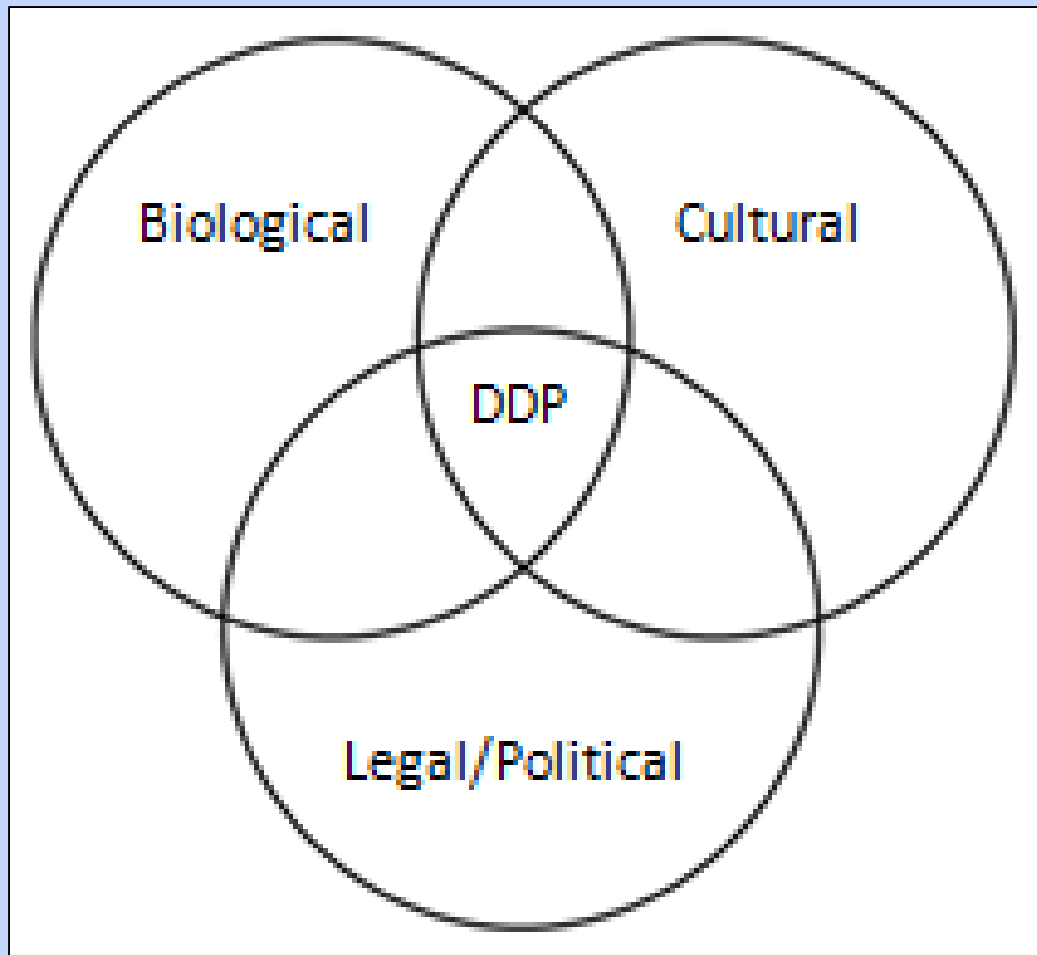


Recipe Forum





# 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



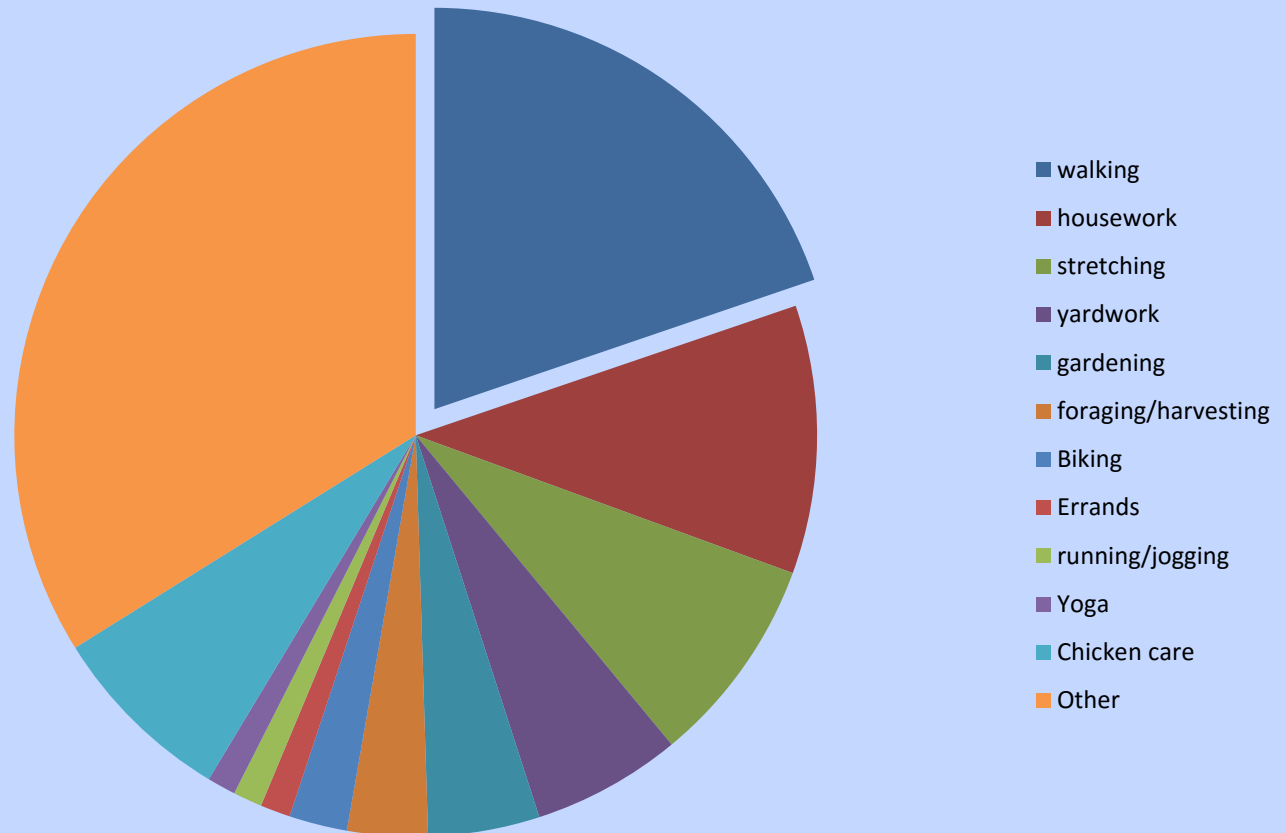
- Beaver
- Grasshopper
- White Pine Bark
- Crab Apple
- Squirrel
- Porcupine

# 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

# Most Common Forms of Physical Activity

Frequency of Activities



- Other smaller categories included things like snow shoveling, cooking, workouts on gym machines, child care, animal care, and every day activities associated with jobs.
- Chicken care was reported for one research subject only.

# 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

Metric	n	Baseline	End	Diet Avg.	Change			Change		
					Base - End	t	P	Base - Average	t	P
Systolic BP <sup>1</sup>	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 <sup>1</sup>	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	<b>0.037*</b>
Weight <sup>2</sup>	6	164.7 ± 29.0	151.0 ± 25.6	151.5 ± 26.0	-13.7 ± 11.0	3.067	<b>0.014*</b>	-13.2 ± 9.9	3.802	<b>0.011*</b>
BMI <sup>2</sup>	7	28.1 ± 3.2	25.8 ± 3.1	26.3 ± 2.8	-1.8 ± 1.8	2.803	<b>0.016*</b>	-2.3 ± 2.2	2.671	<b>0.018*</b>
Waist <sup>1</sup>	4	99.3 ± 2.1	92.0 ± 4.7	93.4 ± 4.3	-7.3 ± 4.6	3.170	<b>0.025*</b>	-5.9 ± 2.3	5.123	<b>0.007*</b>
Hip <sup>3</sup>	4	113.5 ± 10.3	101.3 ± 4.8	104.4 ± 7.0	-12.2 ± 9.8	2.485	<b>0.044*</b>	-9.1 ± 4.5	3.502	<b>0.020*</b>
Cholesterol <sup>1</sup>	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 <sup>1</sup>	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 <sup>3</sup>	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 <sup>1</sup>	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 <sup>1</sup>	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

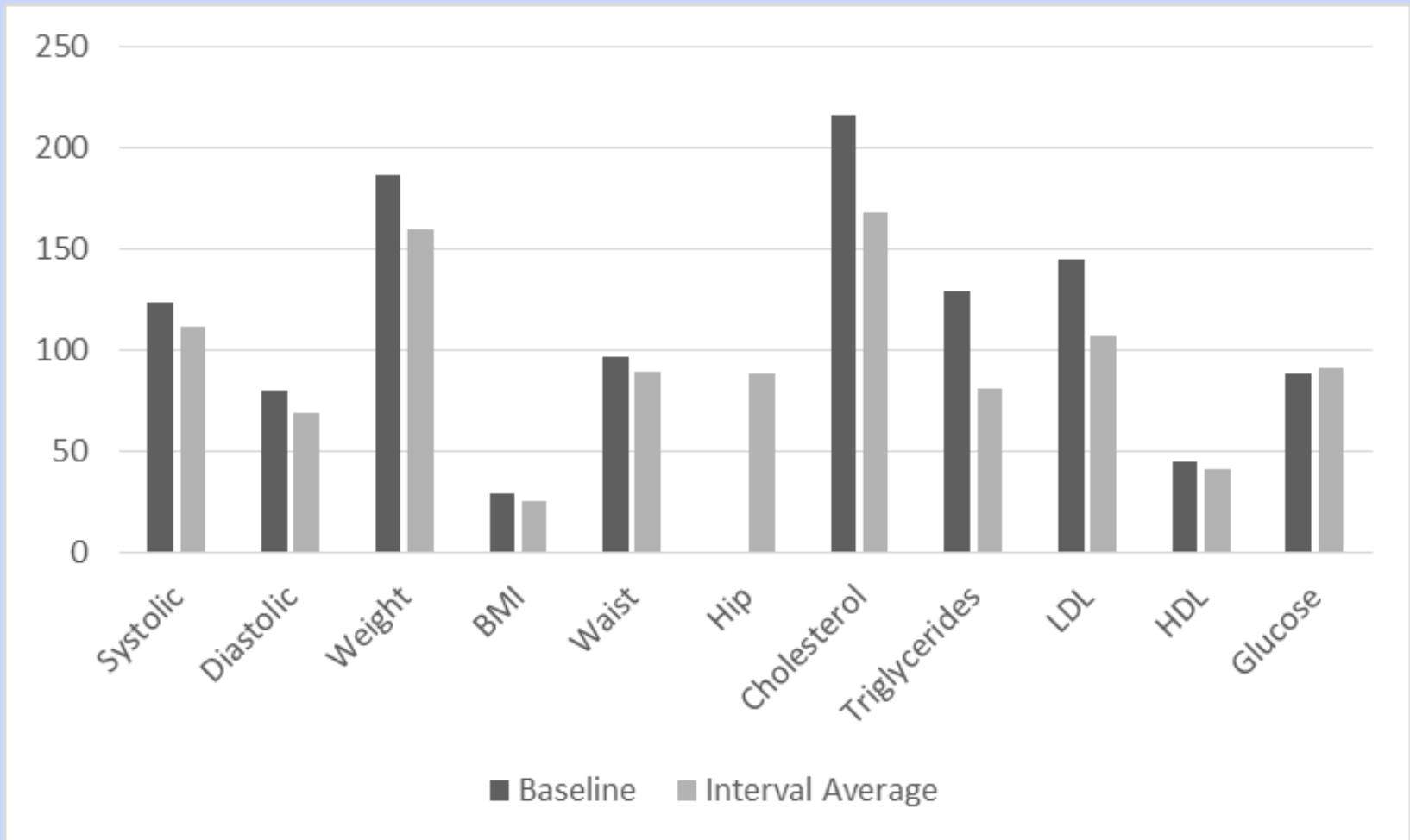
# Case Study 1: Dr. Martin Reinhardt

## 100 Percent Commitment Level

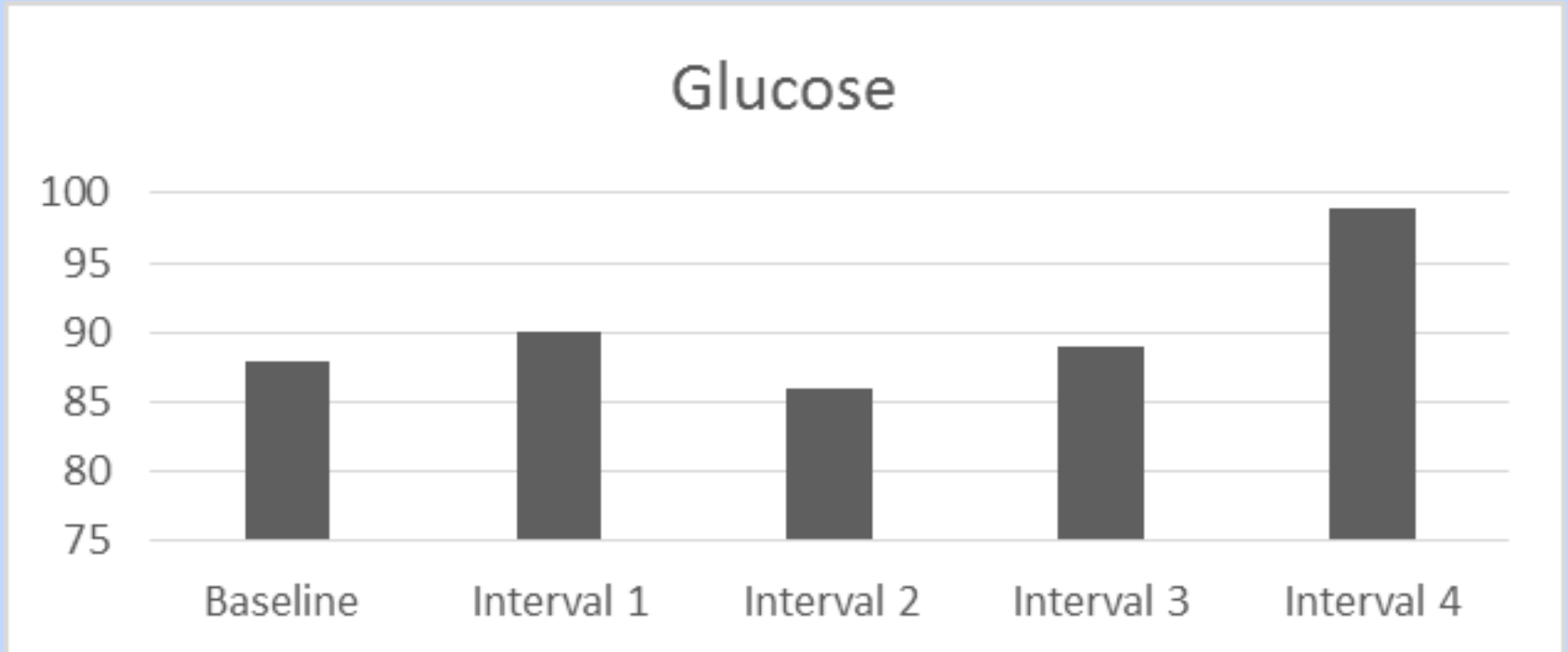
Measurement	Baseline	Interval Average	Difference
Systolic Blood Pressure	124 mm/Hg	111.5 mm/Hg	-12.5 mm/Hg
Diastolic Blood Pressure	80 mm/Hg	68.8 mm/Hg	-11.3 mm/Hg
Weight	186.5 lbs	160 lbs	-26.5 lbs
BMI	29.2	25.5	-3.8
Waist	97 cm	88.9 cm	-8.1 cm
Hip	NA	NA	NA
Cholesterol	216 mg/dL	168 mg/dL	-48 mg/dL
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



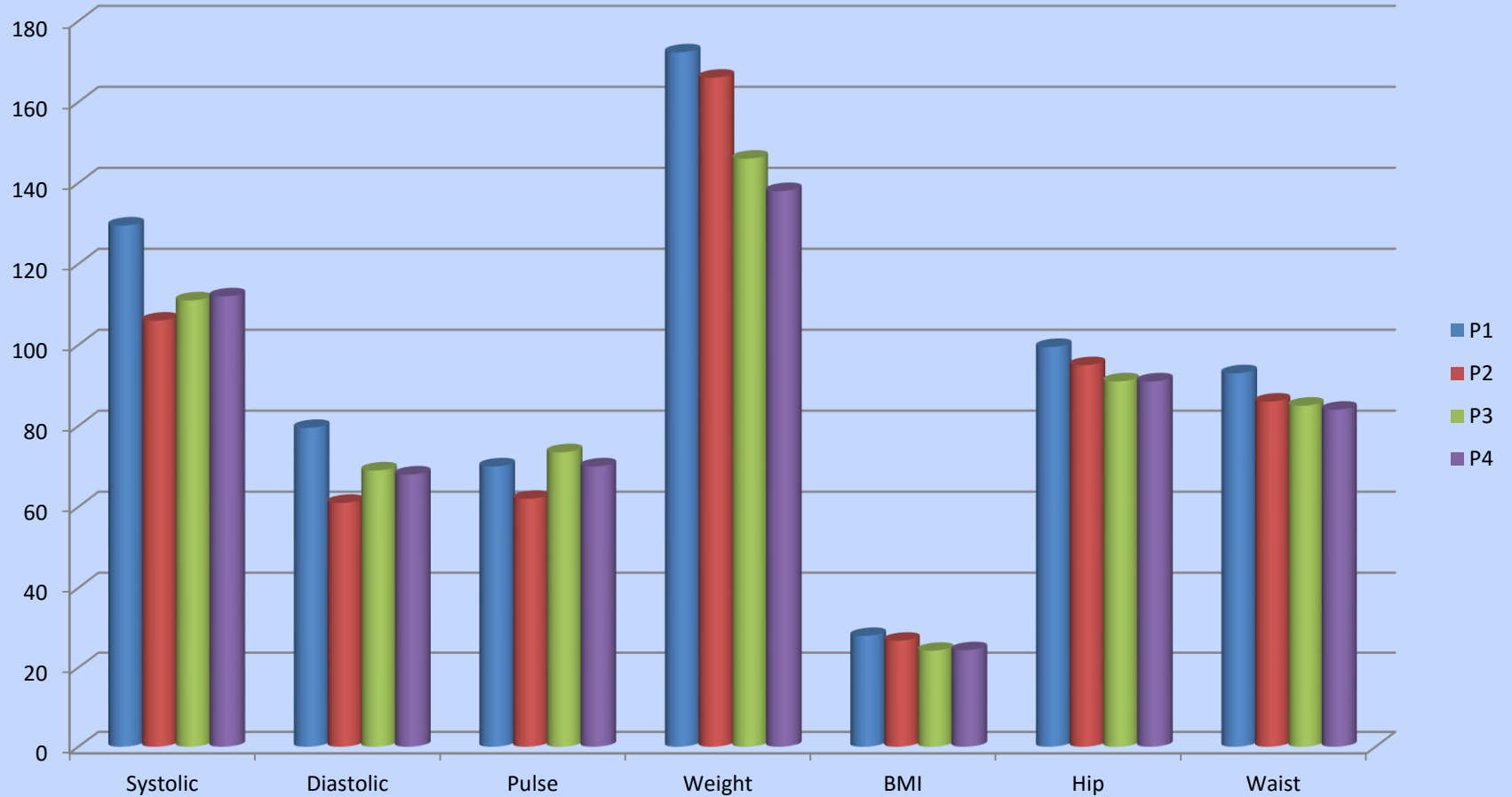
# Reinhardt Data Cont.



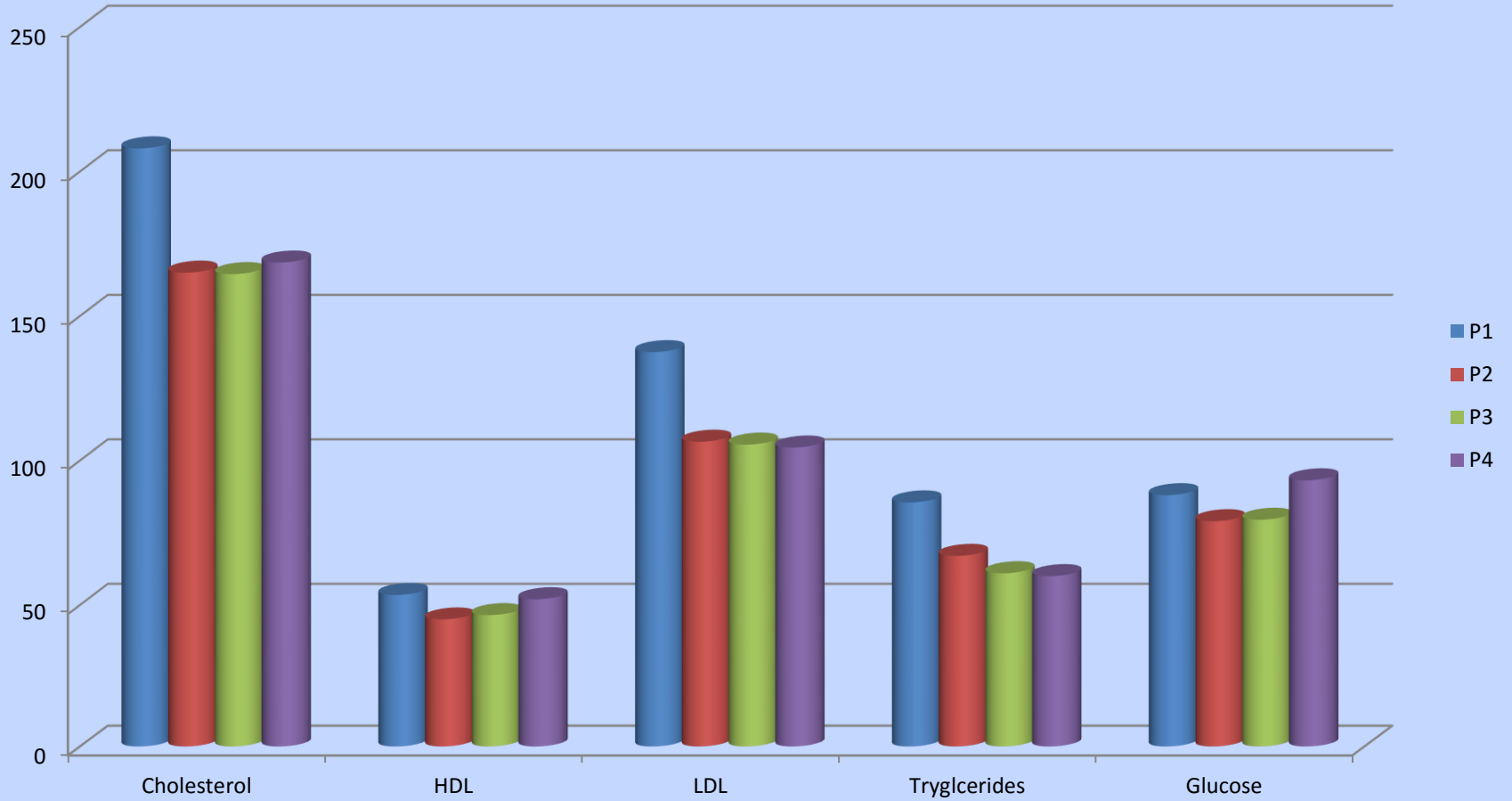
# Reinhardt Data Cont.



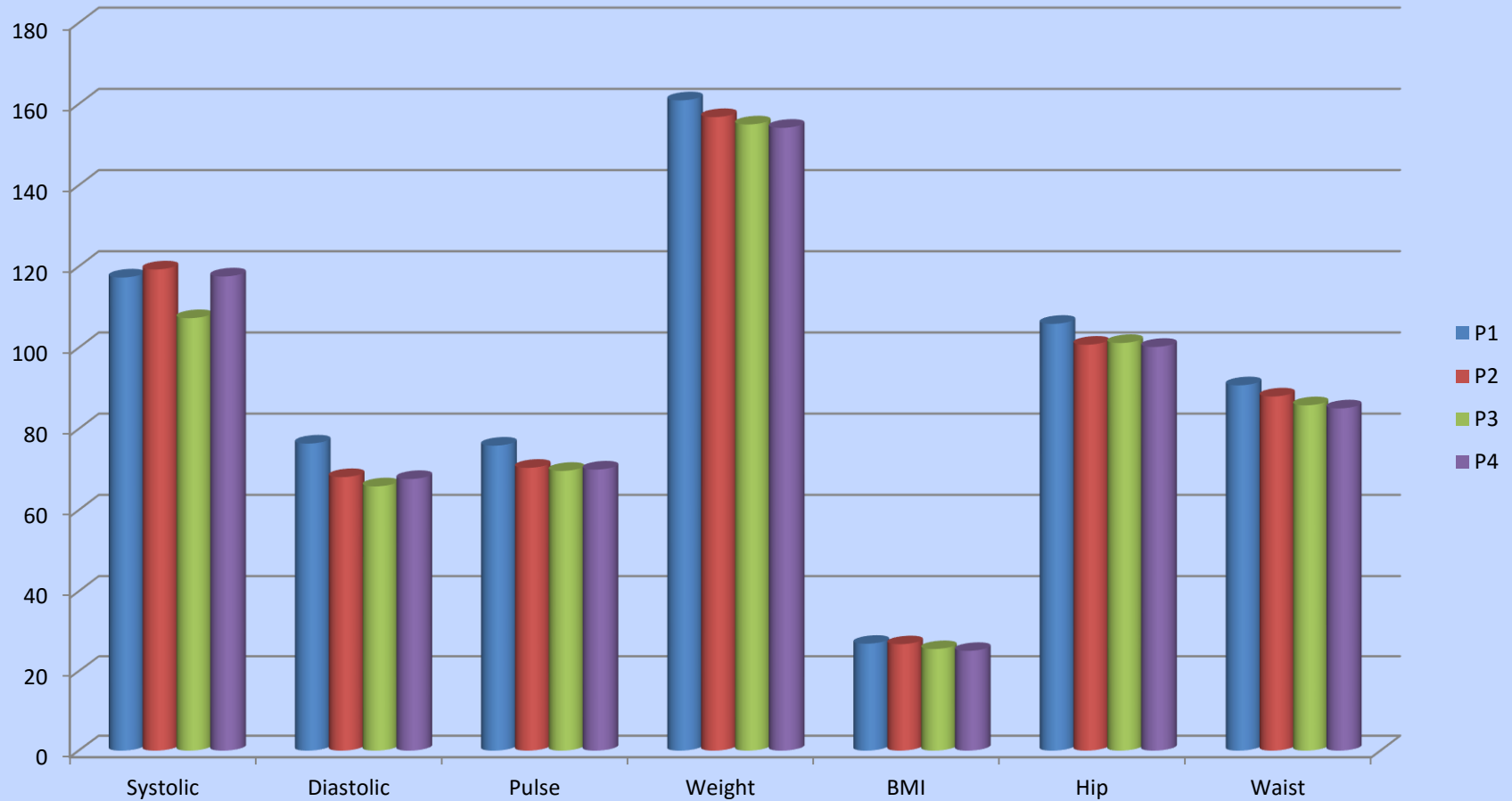
# Aggregate 100 Percent



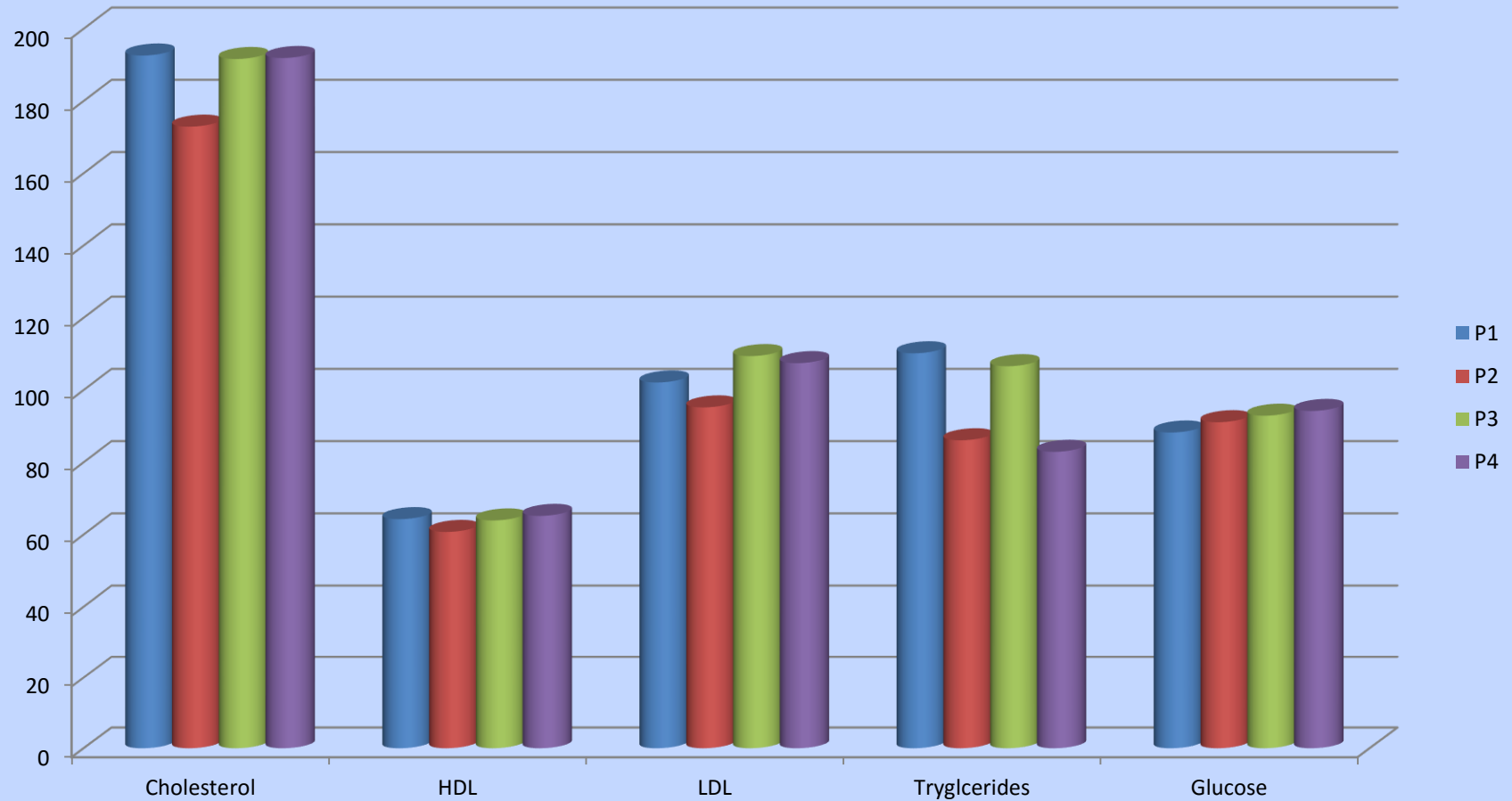
# Aggregate 100 Cont.



# Aggregate < 100 Percent



# Aggregate < 100 Cont.



# 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
- Large Impact for Certain Businesses
- 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



# DDP Groupings

- 100 percenters
- Less than 100 percenters
- Original DDPers
- Replacements
- Staff
- Volunteers
- Families
- Friends



# Micro-Ethnography Sub-Study

- April Lindala conducted a micro-ethnographic sub-study on the female perspective on the DDP
- Societal expectations for males to hunt and fish
- Community and connection more important for female research subjects than males

# Legal/Political Outcomes

- Treaty rights and boundaries made a difference in access to foods between Native and non-Native and between tribes
- Policies 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 End-Of-The-Year Celebration

- A final DDP feast made by DDP staff and volunteers.
- Music provided by Tom, April, and Marty
- DDP Preliminary Outcomes Presentation
- DDP Story by Nancy, Karen, and Andrew
- DDP Giveaway



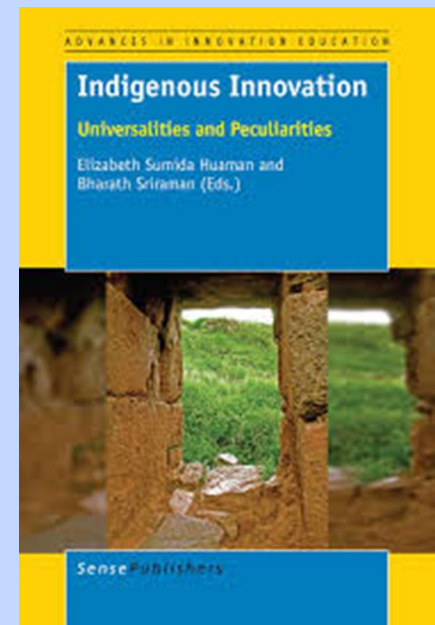
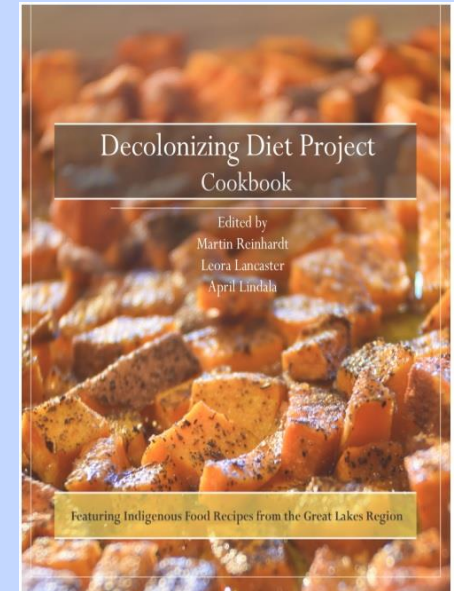
# DDP Extensions

- Presentations
- Demonstrations
- Invited Chapters
- Cookbook
- Gardens
- Camps
- Foraging
- Etc.



# DDP Publications

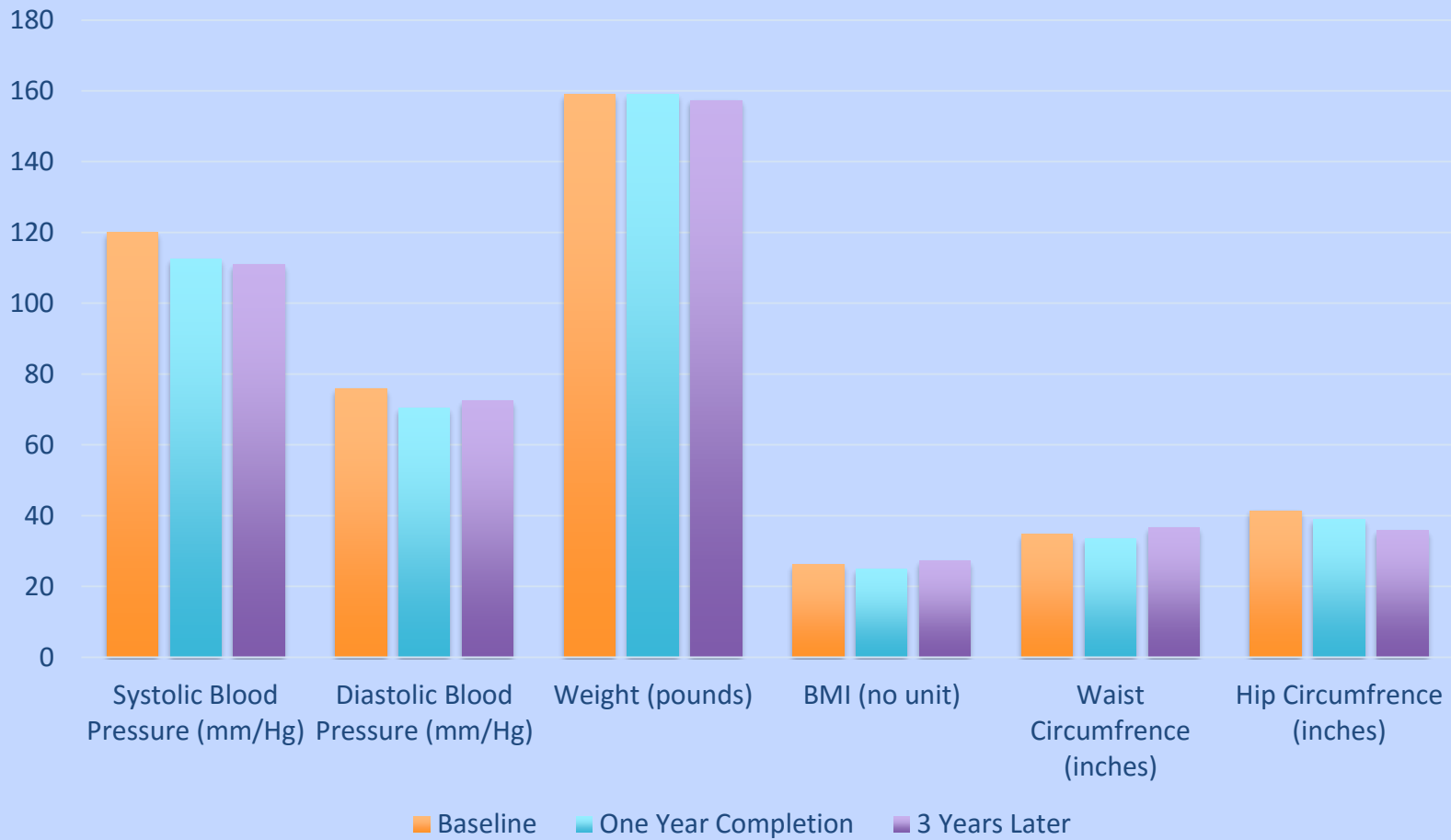
- Reinhardt, M., Lancaster, L., and Lindala, A. (2016). *Decolonizing Diet Project Cookbook. Featuring Indigenous food recipes from the Great Lakes Region*. Marquette, MI: Northern Michigan University, Center for Native American Studies.
- Reinhardt, M. (2015). “Spirit food: A multidimensional overview of the Decolonizing Diet Project”. *Indigenous Innovation: Universalities and Peculiarities*, eds., E. Sumida Huaman and B. Sriraman. Rotterdam: Sense.



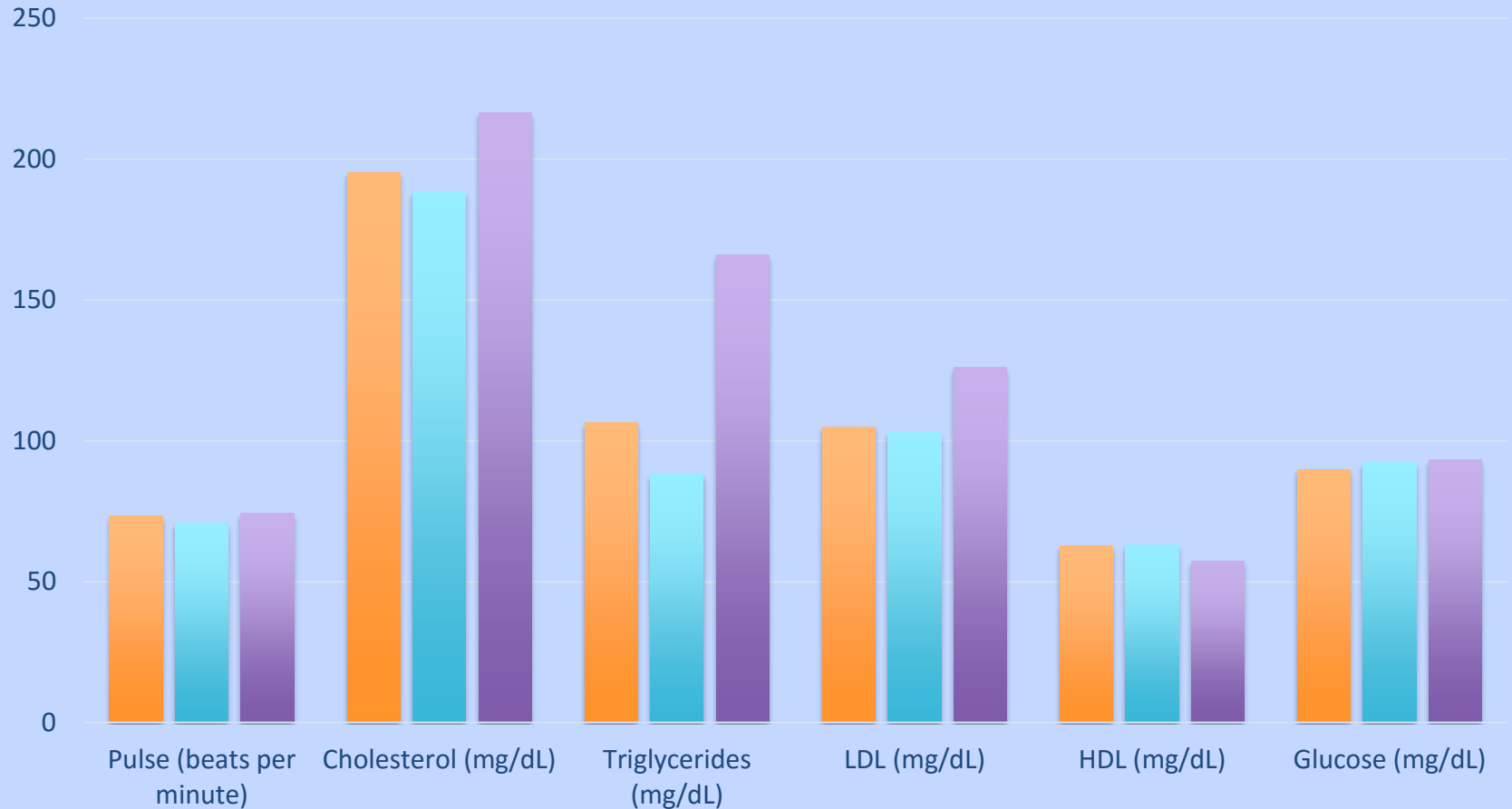


# Decolonizing Diet Project

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 DDP foods
  - 33% reported they no longer required medication(s)
  - 56% report including DDP foods in 25-49% of their daily diet
  - 78% eat a home cooked meal daily
  - 89% report learning about Indigenous foods from their experience with the DDP
  - 56-89% accessed these foods through growing them or foraging them
  - 44% exercise on a daily basis (walking, stretching, lifting, yoga)
  - 78% now drink tea as a daily beverage (white pine and wintergreen mainly)
  - Hunting, fishing, gardening and foraging skills all increased greatly

# 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 Links

## DDP Blog Site

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

## DDP Group Site

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

## DDP Facebook Site

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

## DDP Flickr Site

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

# Miigwech



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