



Healthy Roots Pilot Study Results

FIRST NATIONS FOOD NUTRITION AND ENVIRONMENT FORUM

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SIX NATIONS HEALTH SERVICES

NOV 6, 2019

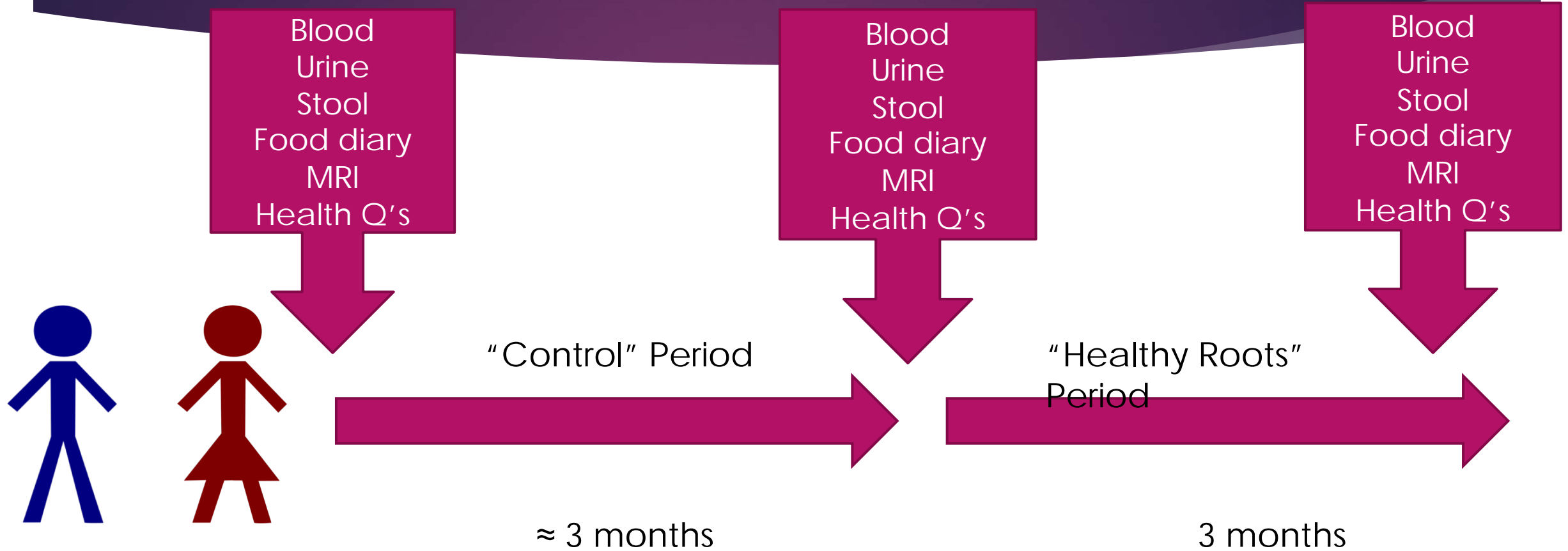
How the research project came to life:



The study design

- ▶ Participants recruited into the Canadian Alliance for Healthy Hearts and Minds
- ▶ Prospective, pan-Canadian study of Canadians designed to uncover early causes of stroke and dementia
- ▶ For 3 months, participants entering the Healthy Roots Research Study were asked to eat and go about life as usual, after which time, they were to begin the program
- ▶ The 3-month “pre-study” period was a comparator against which their progress during Healthy Roots was assessed

The study design




Healthy Roots: Who

- ▶ We recruited 22 participants from the 6 Nations community
- ▶ also enrolled in the Canadian Alliance for Healthy Hearts and Minds




Healthy Roots Food List

HAUDENOSAUNEE FOODS





HEALTHY ROOTS
THE HAUDENOSAUNEE PEOPLE
YOU WILL BECOME HEALTHY

YOU WILL BECOME HEALTHY AGAIN



HEALTHY ROOTS
THE HAUDENOSAUNEE PEOPLE
YOU WILL BECOME HEALTHY

FROM THE WATER	FROM THE FIELDS	FROM THE GARDEN	FROM THE WOODS
<p>Salmon Lake Trout Sturgeon Walleye Common Carp Rainbow Trout Northern Pike Lake Whitefish Pickeral Brook Trout Brown Trout Yellow Perch Sunfish Long Perch White Suckers Channel Catfish Rainbow Smelt Pantail</p> <p>Largemouth Bass Black Crappie White Bass Smallmouth Bass Muskegunge Oysters Clams Mussels Pike Eel Turtle Wild Rice Cranberries Pond Lilies Cattail Roots Beaver Muskrat Frogs Eggs From Fish</p>	<p>Blackberries Black Raspberries Blueberries Burdock Cowslip Currants Dew Berries Elderberries Fiddleheads Gooseberries Grapes Honey Huckleberries Partridgeberry Junberries Leeks Mulberries Mushrooms Mustard Milkweed Nannyberries Wild Celery Spring Greens Partridge Vine</p> <p>Pigweed Pokeberry Plant Rabbit Red Raspberries Sorrel Spicebush Sumac Berries Sumac Sprouts Sunflower Seeds Wild Asparagus Wild Onion Wild Leeks Wild Garlic Potato Jerusalem Artichoke Indian Turnips Skunk Cabbage Wild Rhubarb Wild Carrot Wild Peas Wild Strawberries Wintergreen Yellowdock</p>	<p>Beans Rush Beans Wampum Beans Purple Kidney White Kidney Marrowfat String Beans Cortstalk Beans Cranberry Beans Chestnut Lima Beans Hummingbird Beans White Beans White Navy Beans Wild Pea Bean Vines Pole Beans Squash</p> <p>Crooked Neck Hubbard Squash Bush Buttercup Scalloped Squash Winter Squash Hard Pumpkin Melons Water Melons Cucumbers Musk Melons Zucchini Summer Squash Corn Corn Soft Corns Tuscarora White Corn Short Eared Tuscarora</p> <p>Purple Soft Corn Red Soft Corn Flint Corns Hominy Or Flint Long Eared Hominy Calico (It Is Spotted) Yellow Sweet Corns Sweet (Puckered Corn) Black Sweet (Black Pluckers) Pod (Husk) Corns Red Pop Corn White Pop Corn</p>	<p>Acorns American Chestnut Apples Bear Beechnuts Black Walnuts Butternuts Chestnuts Choke Cherries Common Burdock Common Mallow Corn Lily Cowslips Deer Elk</p> <p>Evening Primrose Fireweed Glasswort Goat's Beard Hard Stem Bulrush Hazel Nuts Fungi And Lichens Mandrake Maple Sugar Moose Opossum Pawpaw Pear Plums</p> <p>Pokeweed Porcupine Pussy Willow Quince Raccoon Red Dock Vine Sassafras Sow Thistle Spicebush Squirrel Stinging Nettle Sugar Maple Sap Western Hemlock Wintercress Yellow Dock</p>
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 20%;">   </div> <div style="width: 60%; text-align: center;"> <h3>FROM THE SKIES</h3> <p>Goose Duck Passenger Pigeons</p> <p>Partridge Quail Turkey</p> <p>Grouse Eggs From Birds</p> </div> </div>			
<h3 style="text-align: center;">SAMPLE MEALS</h3> <ol style="list-style-type: none"> 1. Rainbow Trout, Wildrice, Maple Roasted Squash 2. Venison Stew With Carrots, Celery, Potato 3. White Corn, Kidney Bean, Green Bean, Squash Soup 4. Eggs, Sautéed Zucchini, Cornbread 5. Corn Muff With Berries And Walnut Sweetened With Maple Syrup 6. Perch With Mashed Potato/Jerusalem Artichoke And Green Beans 7. Ground Turkey Meatballs (With Corn Flour And Egg As Binder) Served On Zucchini 'Noodles' With Sautéed Mushrooms And Onions 			

Healthy Roots food baskets:





What
changed
during
Healthy
Roots?



AS
NUTRIENTS...

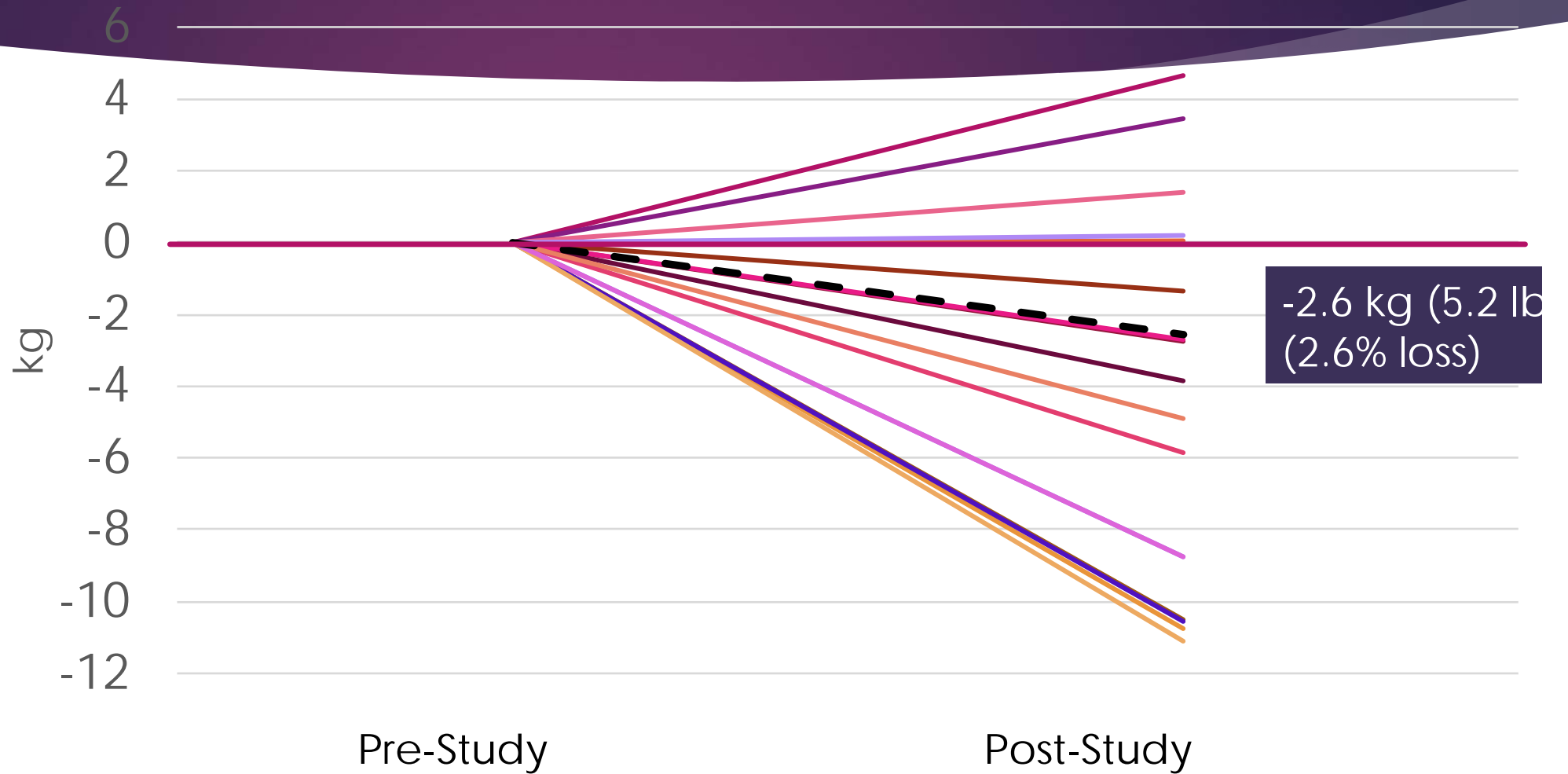
The Healthy Roots diet...

- ▶ Was higher in protein and polyunsaturated fats
- ▶ Was lower in refined carbohydrate (sugar and starch)
- ▶ Was lower in saturated and trans fats
- ▶ Was higher in potassium
- ▶ Was lower in sodium

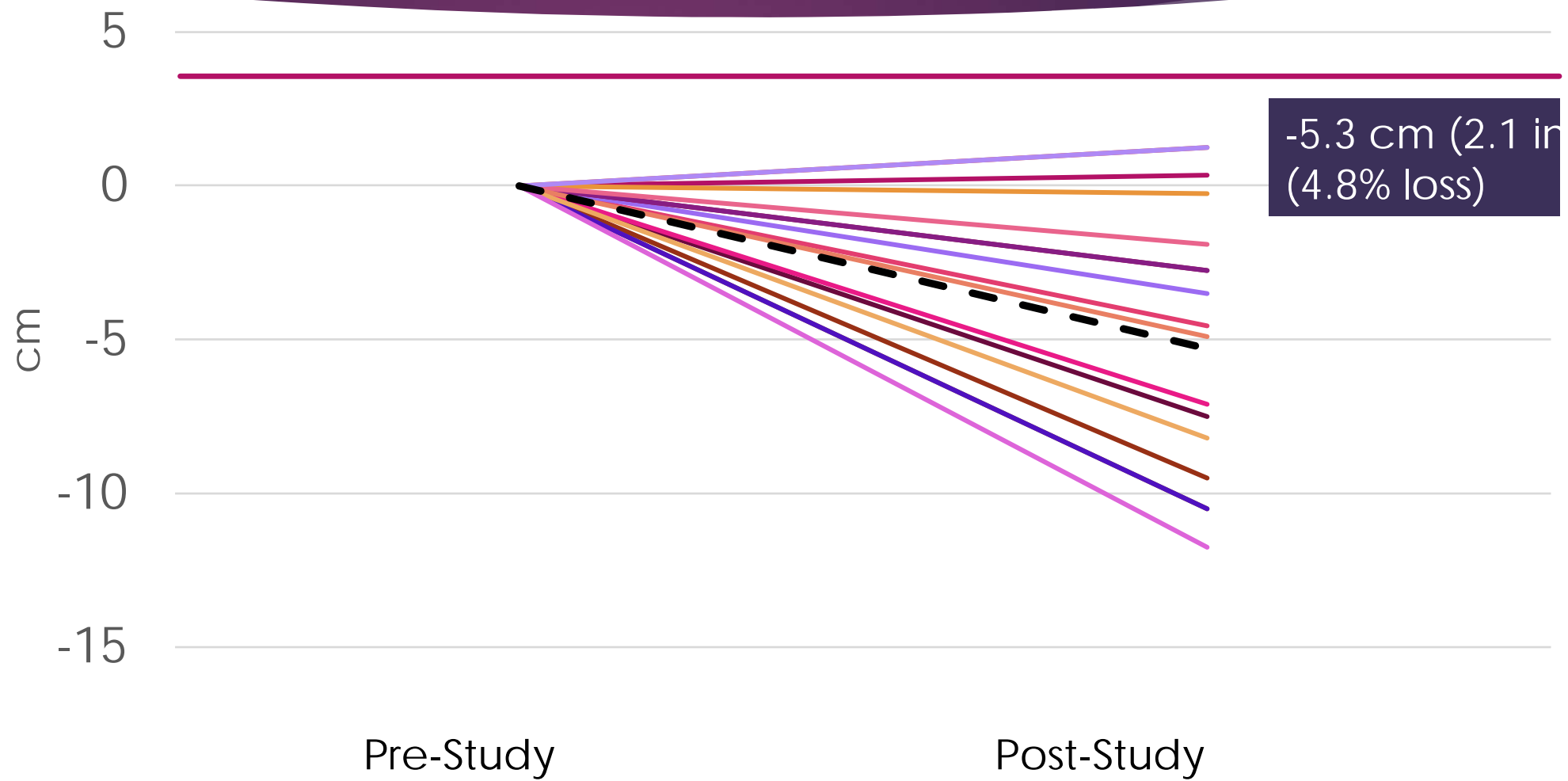
Physical
changes

THINGS
THAT WE
COULD SEE

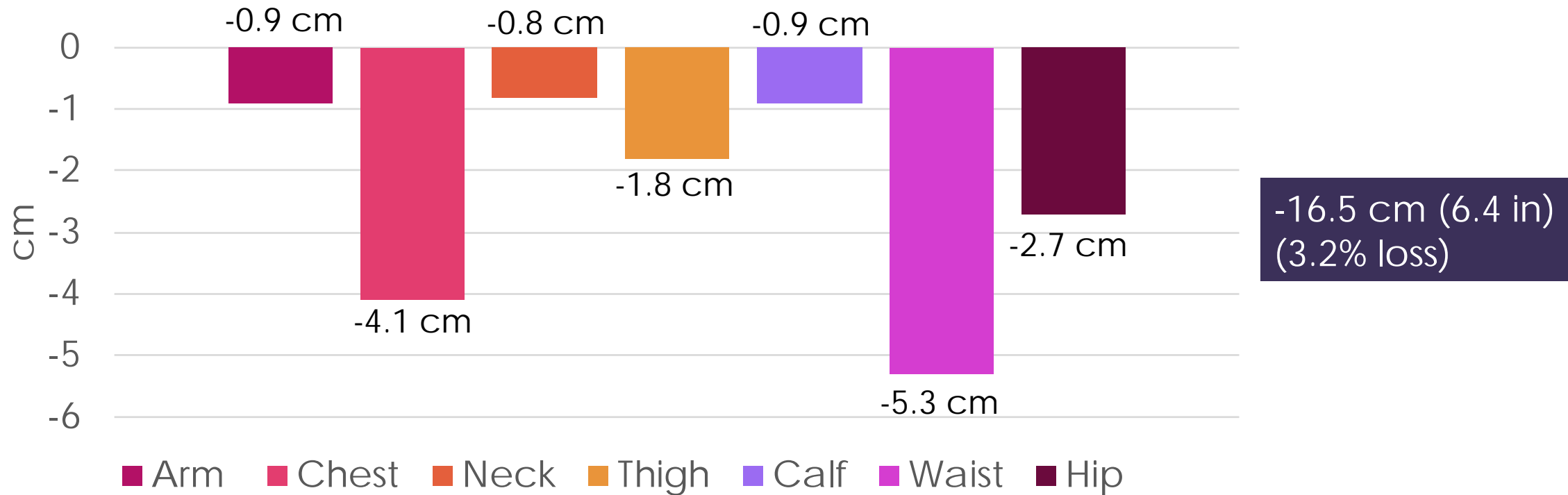
Body weight



Waist circumference



Body Circumferences



On healthy roots, weight was lost from many areas of the body

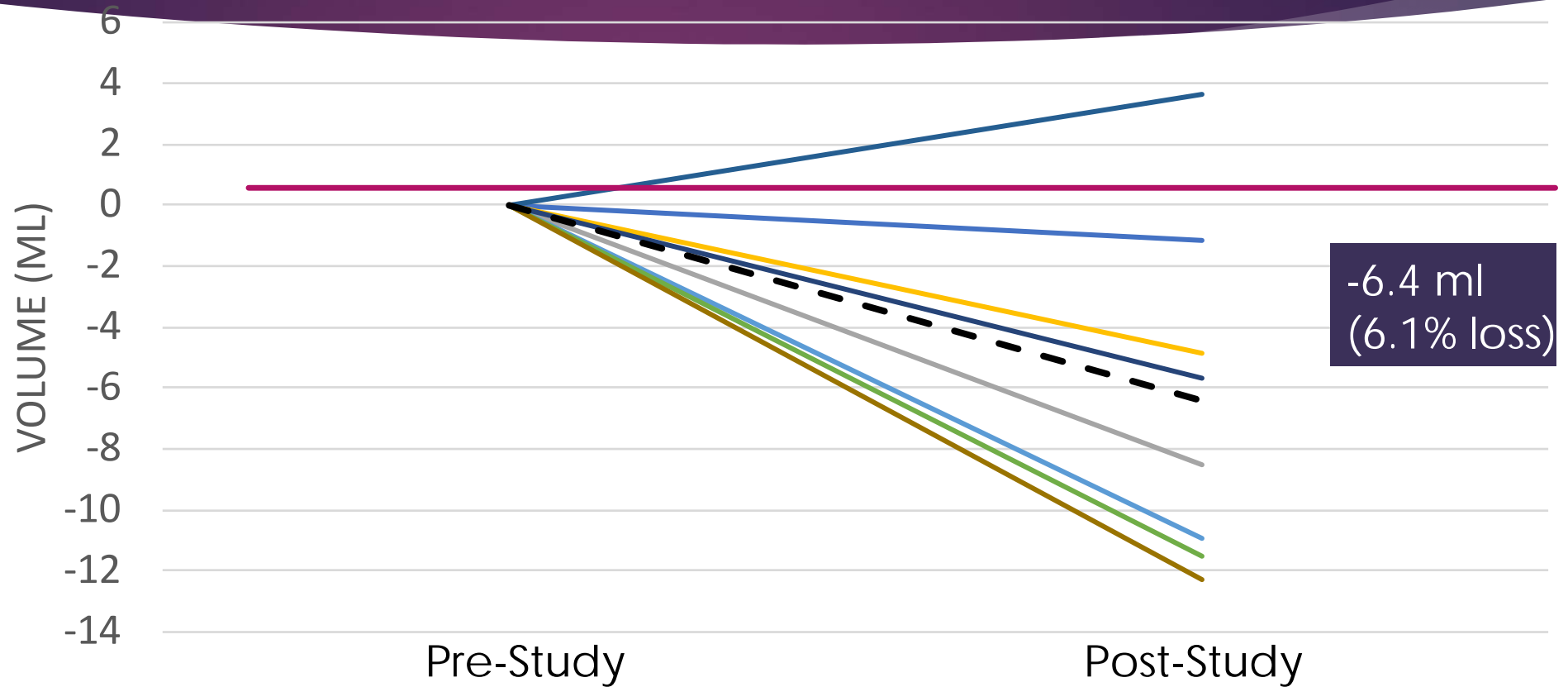
- Including belly fat, which is the most harmful to health



Physiological
changes

THINGS INSIDE
THAT WE CAN'T
SEE OR FEEL

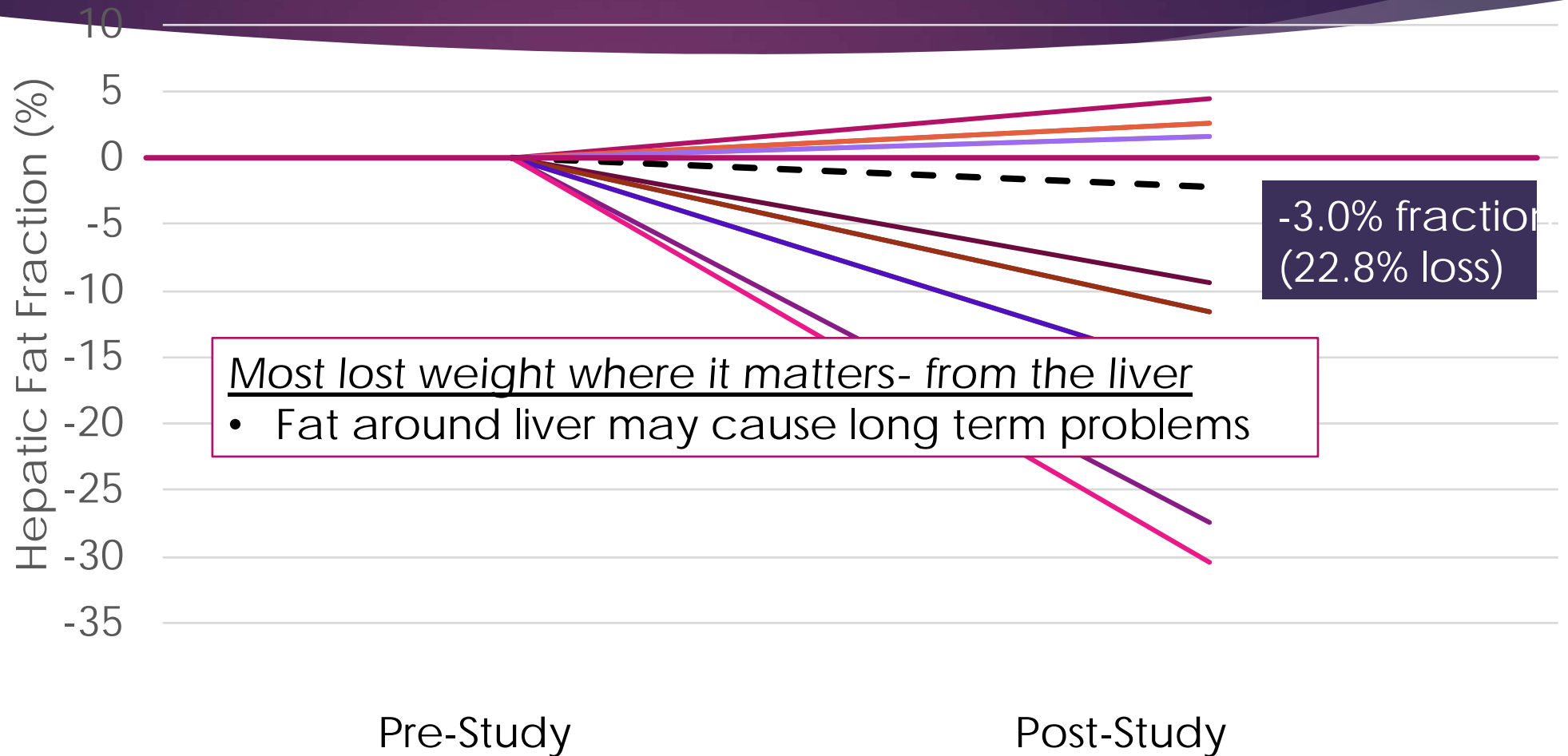
Visceral fat volume



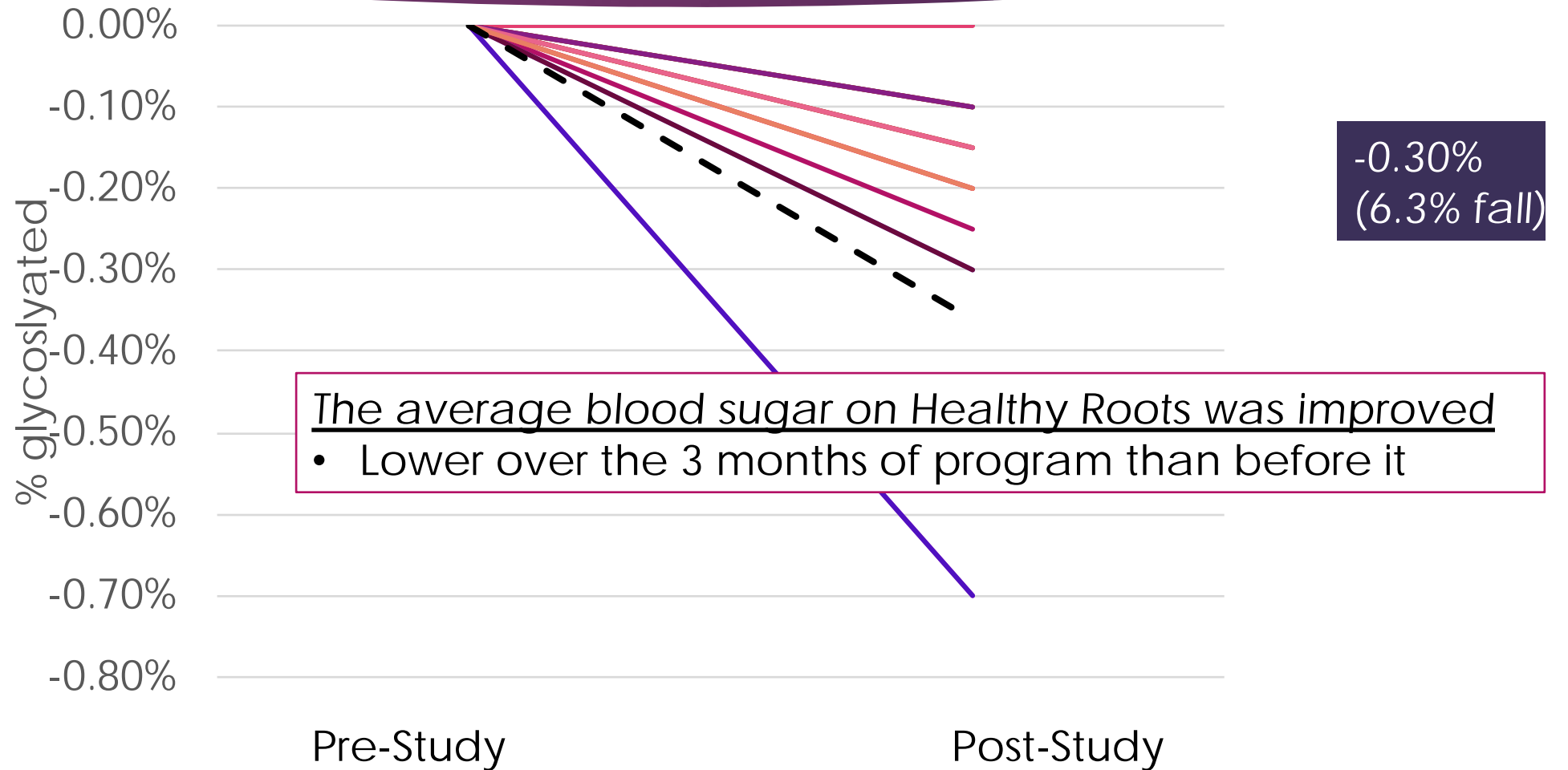
Most lost weight where it matters- from the belly

- Fat around internal organs raises your risk of heart disease

Hepatic Fat Fraction



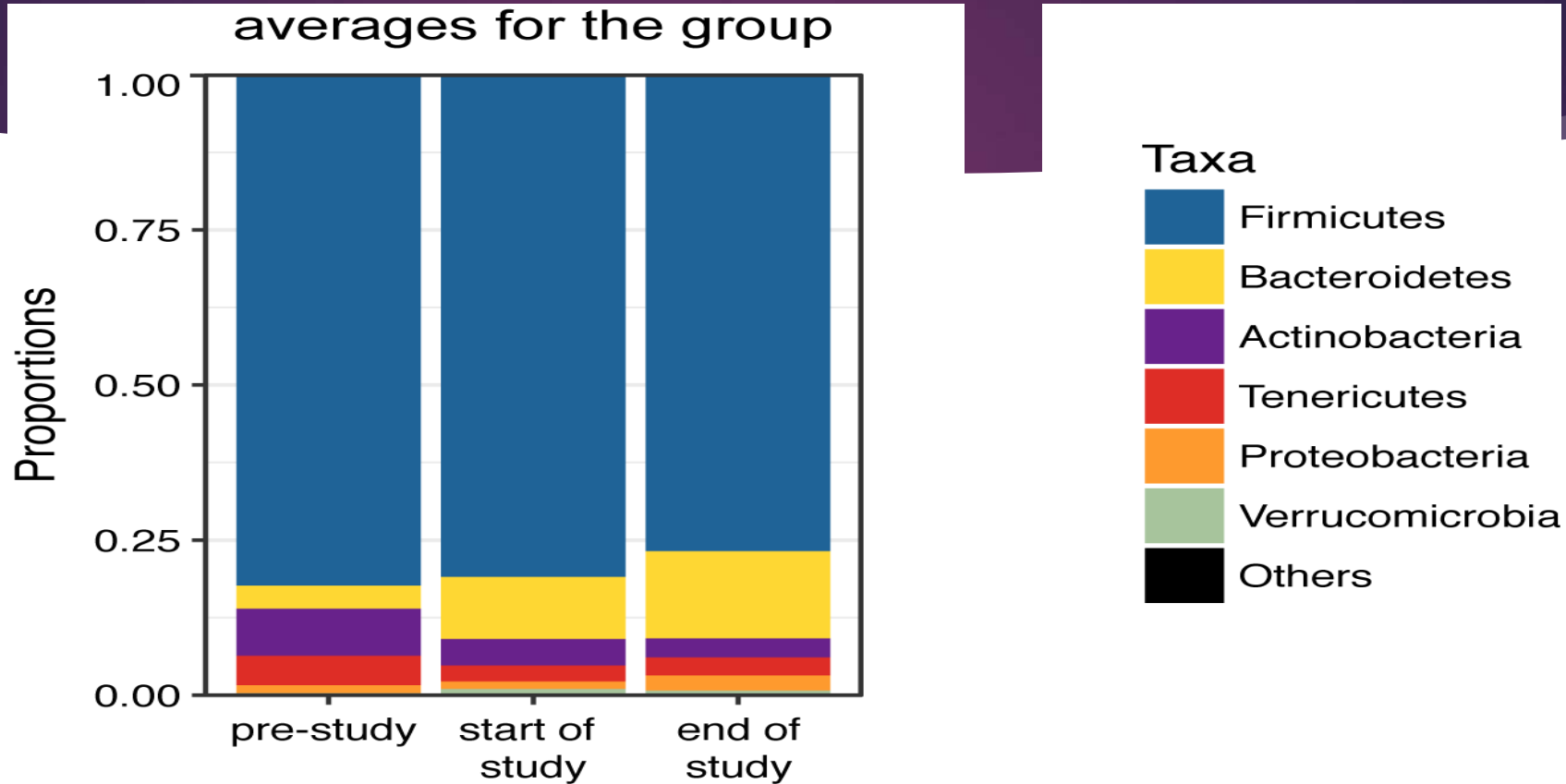
HbA1c



Physiological
changes

WHAT
HAPPENED
TO THE GUT
BACTERIA?

Microbiome – Composition



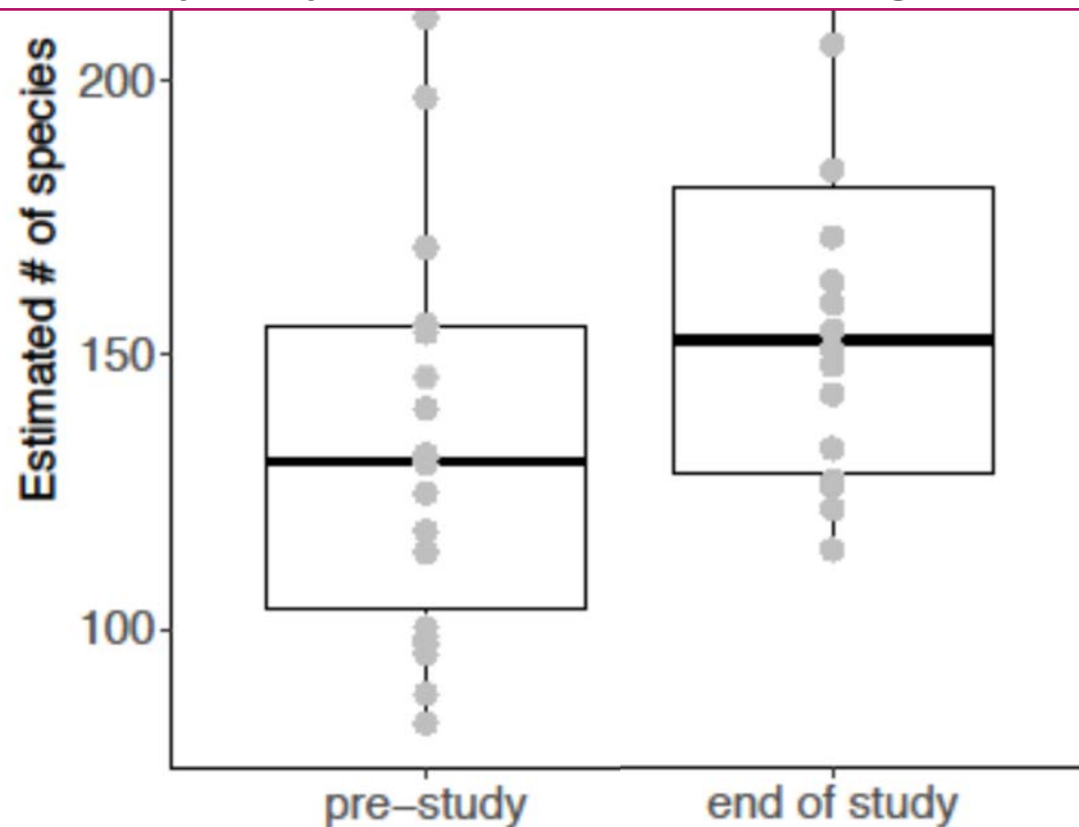
On Healthy Roots...

- The amount of *firmicutes* in your gut decreased
- The amount of *bacteroidetes* increased
- The amount of *actinobacteria* decreased

Microbiome - Diversity

On Healthy Roots...

- The variety of type of bacteria in the gut increased



Results from our journey...

- ▶ Favourable changes in measures of body size and adiposity, favourable changes in glycemic control, improvement in sense of well-being and happiness and no major negative gastrointestinal symptoms
- ▶ Addresses Indigenous social determinates of health: reconnection to land, culture and identity- reclamation/revitalization for Indigenous peoples
- ▶ Incorporates a non-diet/weight focus- statistics seem to focus on diet/weight change, but the entire study focuses more on body, mind and spirit supporting wellbeing- Our Haudenosaunee food is so much more than a physical impactor
- ▶ Demonstrates novel and/or sustainable partnerships and collaboration- this community-based participatory research was driven by our community, long standing research relationship but first time the question was driven by our community

