

Supplemental material

Information supplied to subjects asked to eat a low vitamin A, low carotenoid diet

Welcome to the Cassava Study. The purpose of this study is to find out how well you absorb vitamin A-forming carotenoids from a high-carotenoid variety of cassava, with or without oil, compared to a typical low-vitamin A variety of cassava.

Background

Cassava is a root vegetable—like a potato—and is a major source of food in the developing regions of the world, especially in Africa, South America, and Southeast Asia. It can survive droughts, floods, and hurricanes; is inexpensive; and is easy to grow.

The typical cassava, however, is not a good source of vitamin A; and as a consequence many people in these developing regions do not get enough Vitamin A.

In order to test the true effects of eating a high-carotenoid variety of cassava, this study requires that you avoid certain foods for a period of six days before each of the three test days.

During the first 3 days of each test week, it is important to **choose foods within the low-vitamin A / carotenoid eating guidelines** provided by the Research Dietitian. To help you do this, it is also important to **record everything you eat and drink for these three days**.

During the next 3 days of each test week, we will provide you with food and beverages. During these days, it is important to **eat only and 100% of the foods provided by the Metabolic Kitchen** at the WHNRC.

On the seventh day of each test week, it is important to **eat 100% of the cassava porridge at the WHNRC**. Below is an overview for each test week:

	Pre-Test Days 1, 2, and 3	Pre-Test Days 4, 5, and 6	Test Day 7
Test Week 1	Follow the Low-Vitamin A / Carotenoid Eating Guidelines &	Eat Only & 100% of the Research Meals Provided by WHNRC	Eat 100% of the Cassava Breakfast at WHNRC

	Record 3-Days of Food Intake		
Test Week 2	Follow the Low-Vitamin A / Carotenoid Eating Guidelines & Record 3-Days of Food Intake	Eat Only & 100% of the Research Meals Provided by WHNRC	Eat 100% of the Cassava Breakfast at WHNRC
Test Week 3	Follow the Low-Vitamin A / Carotenoid Eating Guidelines & Record 3-Days of Food Intake	Eat Only & 100% of the Research Meals Provided by WHNRC	Eat 100% of the Cassava Breakfast at WHNRC

To help you comply with the requirements of this study, we have compiled some “Quick Tips” for when you are in a hurry. We have also compiled a table with some examples of foods to ENJOY and AVOID during the test weeks of this study.



In a Hurry? Here are some “Quick Tip” Eating Guidelines for Choosing Study Foods:

Quick Tip #1:

Avoid Fruits and Vegetables (including sauces and juices).

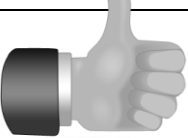
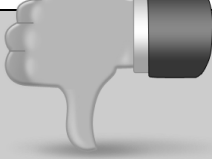
Quick Tip #2:

Think “plain” and “pale” when selecting foods.

Quick Tip #3:

Choose foods with no Vitamin A (0% DV) on the Nutrition Facts.

Low-Vitamin A / Carotenoid Eating Guidelines for First Three Days of Each Test Week

Food Groups	 Foods to <u>ENJOY</u>	Foods to <u>AVOID</u> 
Fruits	<p><u>ENJOY:</u> Peeled fruits with “white” or “tan/brown” or “pale green” flesh. Examples include:</p> <ul style="list-style-type: none"> ▪ Apples; ▪ Applesauce; ▪ Bananas; ▪ Coconut; ▪ Dates; 	<p><u>AVOID:</u> Fruits (and fruit-based products) that are red, orange, yellow, and/or have dark green flesh.</p>

	<ul style="list-style-type: none"> ▪ Figs (dried only); ▪ Grapefruit (white grapefruit only); ▪ Lemonade; ▪ Melon (honeydew only); ▪ Pears; ▪ Raisins; 	
Vegetables and Legumes	<p>ENJOY: Peeled vegetables with “white” or “tan/brown” or pale green” flesh. Examples include:</p> <ul style="list-style-type: none"> ▪ Beans (Pinto or Black only) ▪ Cauliflower (white florets only) ▪ Corn (white only) ▪ Garlic ▪ Hominy (white only) ▪ Jicáma ▪ Mushrooms ▪ Parsnip root ▪ Peanuts, Almonds, Cashews ▪ Potato ▪ Rutabaga root ▪ Turnip root ▪ Onions (yellow or white only) 	<p>AVOID:</p> <p>Vegetables (and vegetable-based products) that are red, orange, yellow, and/or have dark green flesh and/or dark green leaves.</p>
Grains	<p>ENJOY:</p> <p>Most.</p>	<p>AVOID:</p> <p>Fortified breakfast cereals; whole egg-containing baked goods (e.g., pancakes, waffles, muffins, doughnuts, cakes, etc.); cream-filled pastries.</p>
Meat, Poultry, Fish	<p>ENJOY:</p> <p>Muscle tissue of beef; chicken; pork; and/or lamb (e.g., breast, thigh, rib, loin, leg, etc.); egg whites (e.g., All-Whites)</p>	<p>AVOID:</p> <p>Organ meats (e.g., liver); skin; eggs (including Egg-Beaters or products with coloring added); fish; breaded (e.g., onion rings, fried chicken, etc.)</p>
Milk	<p>ENJOY:</p> <p>Non-Dairy Creamer (powdered or liquid); non-enriched or non-fortified soy, rice, almond or coconut milk.*</p>	<p>AVOID:</p> <p>Milk products (e.g., milk, ice cream, cheese, butter);</p>
Condiments	<p>ENJOY:</p> <p>Salt; flavored salts; oil-and-vinegar; soy sauce; vegan mayonnaise; wasabi;</p>	<p>AVOID:</p> <p>Margarine; salad dressings; horseradish sauce; egg-based mayonnaise; herbs and spices;</p>
Other		<p>AVOID:</p> <p>Dietary supplements and/or herbal remedies; medications containing beta-carotene; olives (all varieties).</p>

* Please see instructions for reading food labels.

Instructions for Reading Food Labels and Nutrition Facts

Nutrition Facts	
Serving Size 1 cup (240ml)	
Servings Per Container about 8	
Amount Per Serving	
Calories 190	Calories from Fat 80
% Daily Value*	
Total Fat 9g	13%
Saturated Fat 5g	27%
Trans Fat 0g	
Cholesterol 35mg	12%
Sodium 130mg	5%
Total Carbohydrate 13g	4%
Dietary Fiber 0g	0%
Sugars 12g	
Protein 9g	
Vitamin A 10%	Vitamin C 4%
Calcium 30%	Iron 0%
Vitamin D 25%	
<small>*Percent Daily Values are based on a 2,000 calorie diet.</small>	

Get into the habit of looking for Vitamin A in the Nutrition Facts and Ingredients listed on manufactured food products. Vitamin A can be identified under a few different names:

Beta-carotene

Vitamin A Palmitate (or Vitamin A Acetate)

Natural Color



Ingredients: Filtered Water, Whole Soybeans, All Natural Evaporated Cane Juice, Calcium Carbonate, Sea Salt, Natural Flavors, Carrageenan, **Vitamin A Palmitate**, Cholecalciferol, Riboflavin (B2), Vitamin B12.

Tips for Keeping a Food Record

Remember, recording is a **motivational tool** that will help you be successful at identifying problematic foods. It will also help you develop better self-discipline, and will force you to think twice about what you put into your mouth.

Medication, Supplements, and/or Other Remedies? No Yes (what? how much?):