

A Food-First Approach to Cardiometabolic Health

Part 3 - Fiber: Role in Cardiometabolic Health and Tips for Patient Care



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A Food-First Approach to Cardiometabolic Health

3-Part Webinar Series – Sponsored by Avocados - Love One Today

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MARCH
25

Personalized Food and Nutrition
Strategies for Patient Care



APRIL
15

Good Fats – Role in Cardiometabolic
Health and Tips for Patient Care



MAY
6

Fiber – Role in Cardiometabolic
Health and Tips for Patient Care

HOW GOOD FOOD WORKS

We teach people how to **grow**, **prepare**, and **share** food that encourages lifelong health and well-being through hands-on evidenced-based classes taught across our garden, kitchen, clinic, and community.

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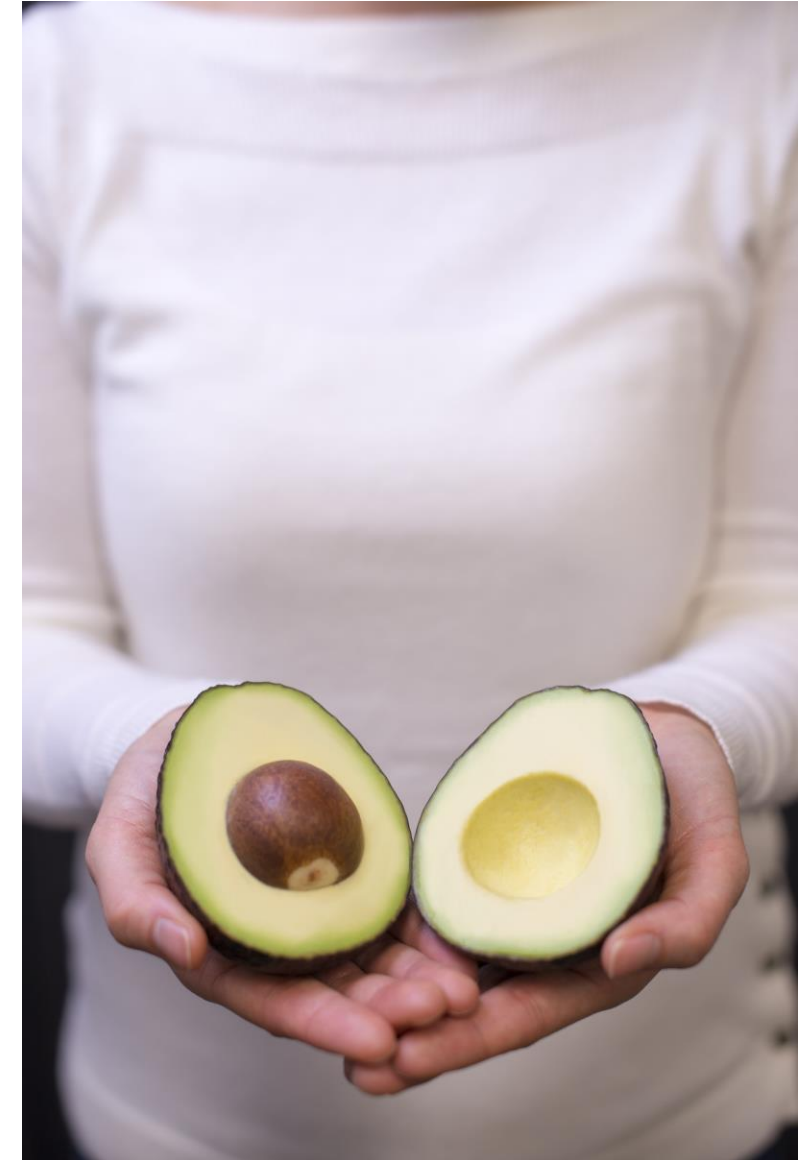
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STRATEGIC PLAN GOALS



A Food-First Approach to Cardiometabolic Health

Part 3 – Fiber: Role in Cardiometabolic Health and Tips for Patient Care



Rupa Mahadevan, MD, FAAP, ABOIM
Assistant Professor
Community and General Pediatrics



Dolores Woods, MA, RD, LD
Nutritionist Supervisor

1. Describe the connection between dietary fiber intake and reduced risk of cardiovascular disease and type 2 diabetes, supported by scientific evidence.
2. Explain the impact of dietary fiber, particularly soluble fiber, on cardiometabolic health including its role in improving cholesterol, glycemic response, satiety, and gut microbiota diversity.
3. Discuss the scientific evidence on avocado consumption and its effects on cardiometabolic risk factors, diet quality, and gut microbiota diversity.
4. Identify practical strategies to help patients incorporate more fiber into their diets using nutrient-dense foods.

Agenda

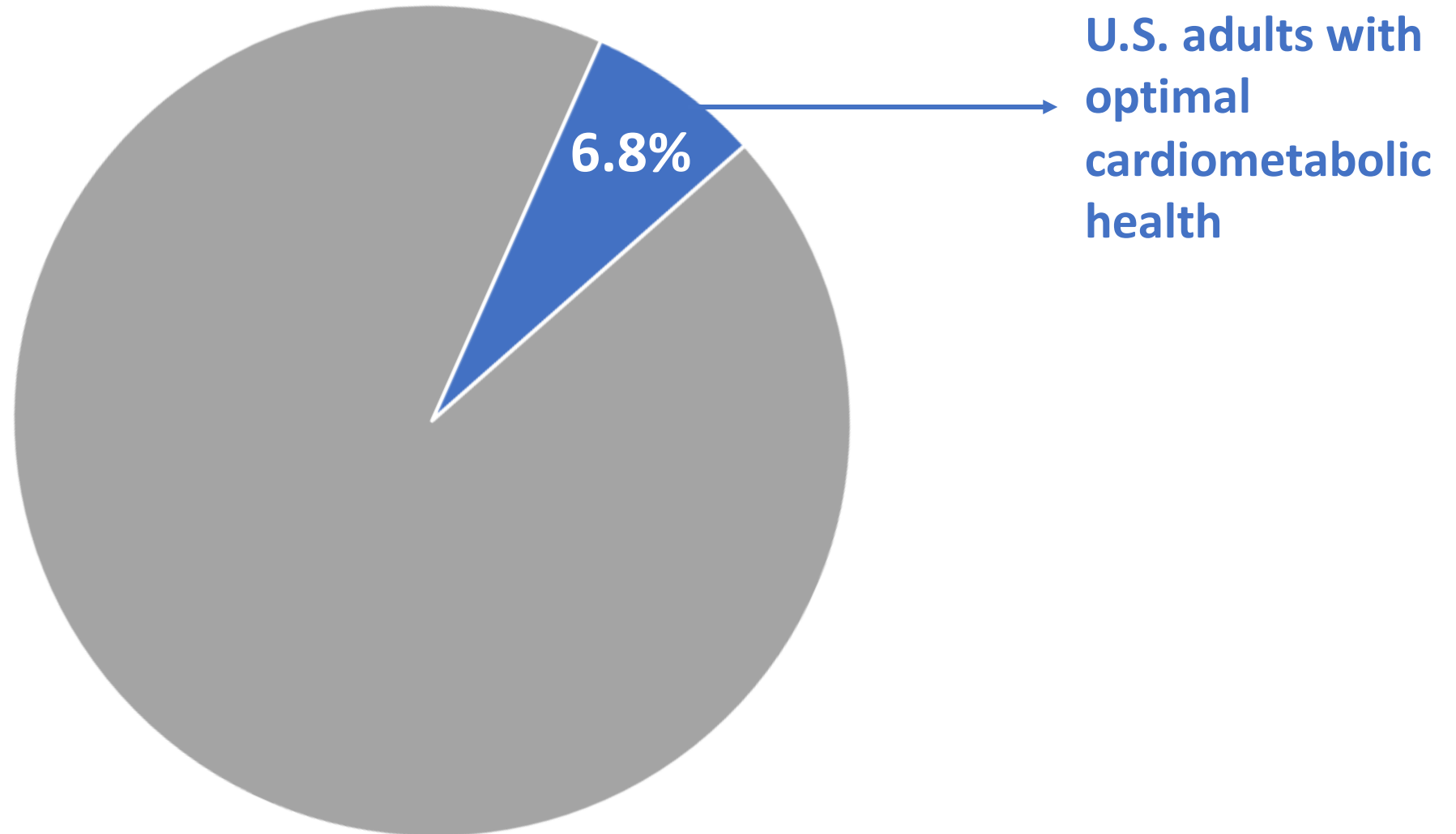
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- I. Fiber 101
- II. Intake Recommendations
- III. Role of Fiber in Cardiometabolic Health
- IV. Toolbox for Providers
- V. Culinary Demo

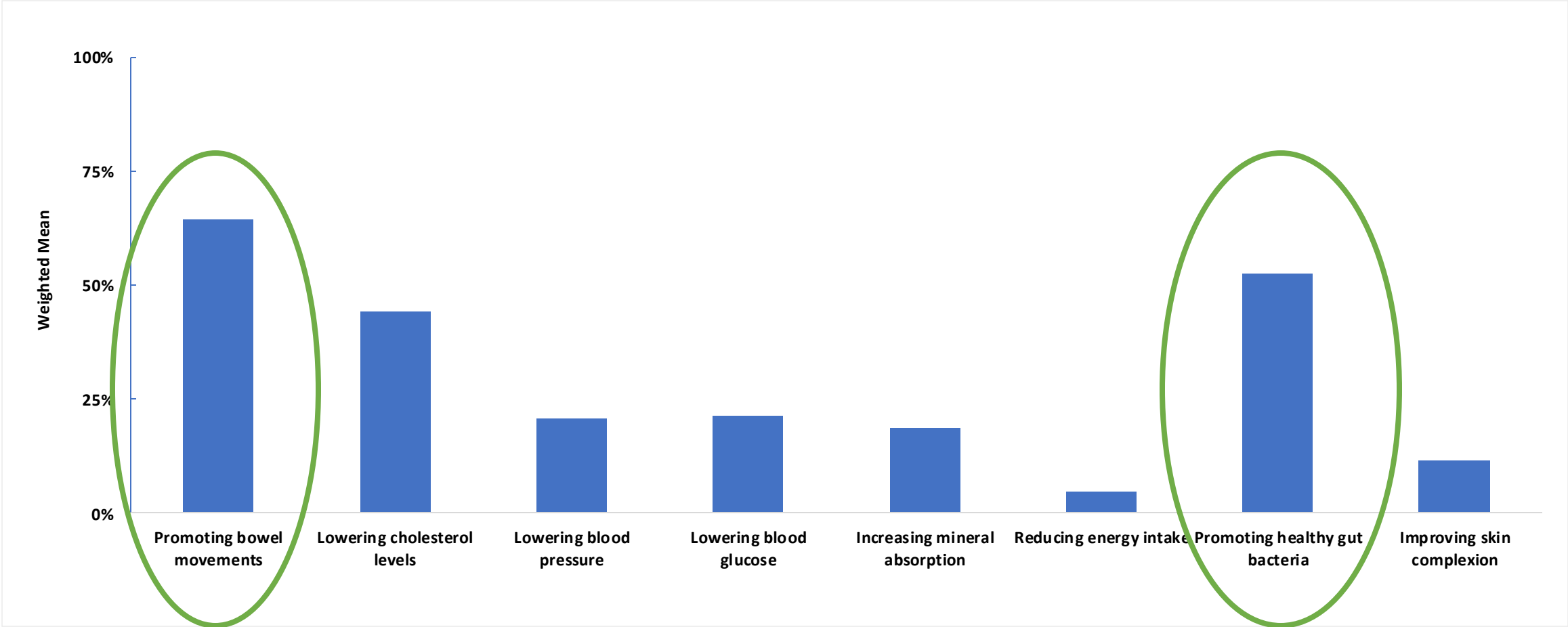


Cardiometabolic Health in Adults is Declining

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When We Think Fiber, We Think Digestion—But There's More



Gustafson and Rose. Nutrients. 2022.

Fiber Consumption Associated with Reduced Risk of Cardiometabolic Diseases & Risk Factors

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Prospective studies

↓ **15-31%** in all-cause and cardiovascular-related mortality

↓ **16-24%** incidence of coronary heart disease, stroke, type 2 diabetes

Clinical trials

↓ Bodyweight, systolic blood pressure, total cholesterol

The Fiber Gap

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I. Fiber 101

A top-down view of a variety of plant-based foods arranged on a light-colored wooden surface. The items include a round loaf of whole-grain bread with seeds, a bowl of uncooked oatmeal, a bunch of yellow bananas, several stalks of green broccoli, a whole green cucumber, a red bell pepper, a small bowl of red kidney beans, a bowl of orange lentils, a small bowl of brown lentils, a small bowl of almonds, a small bowl of walnuts, a small bowl of quinoa, and a small bowl of flax seeds. A blue rectangular text box is overlaid in the center of the image.

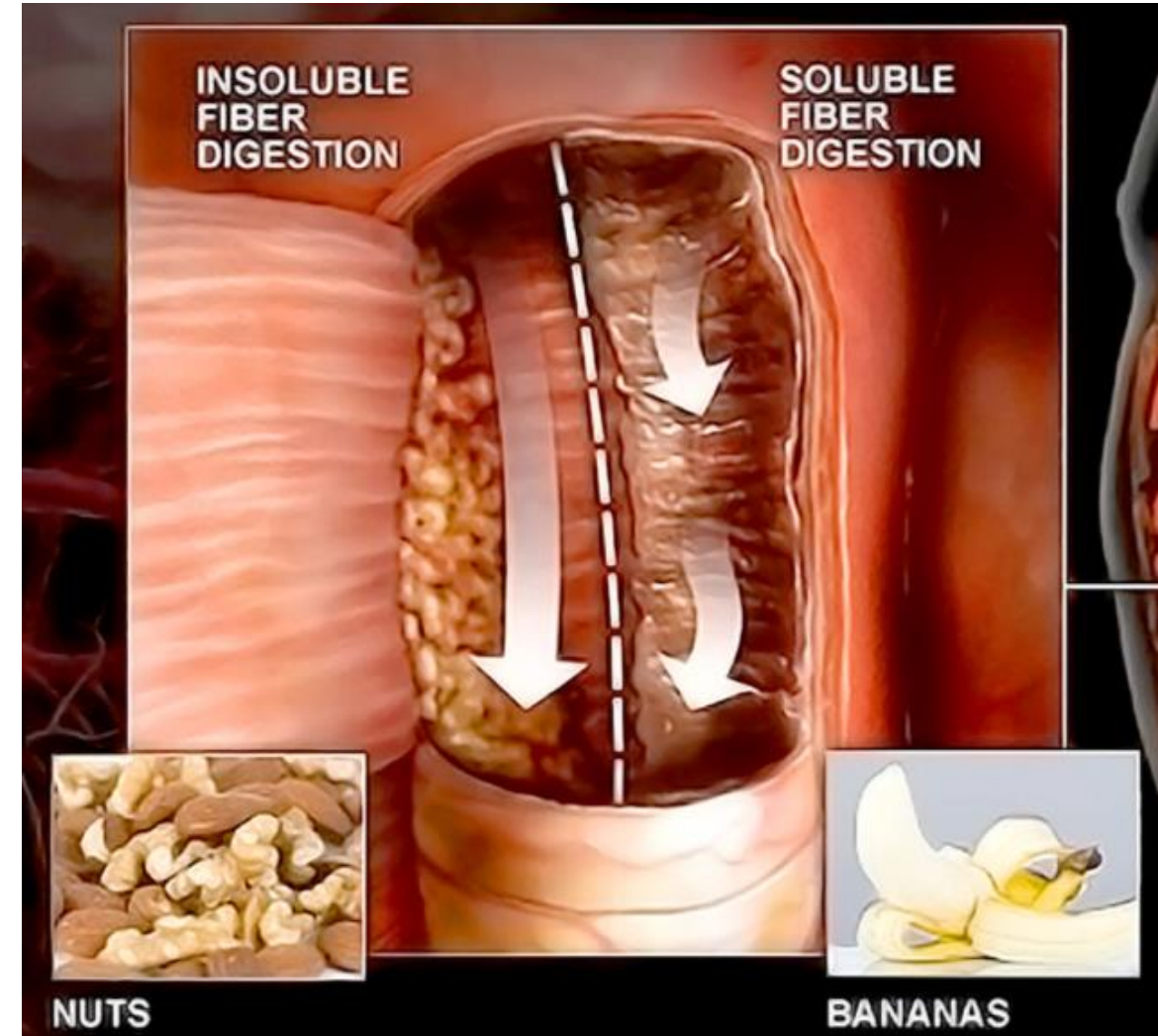
Dietary fiber is a group of non-digestible carbohydrates found in plant foods.

Types of Dietary Fiber

SOLUBLE

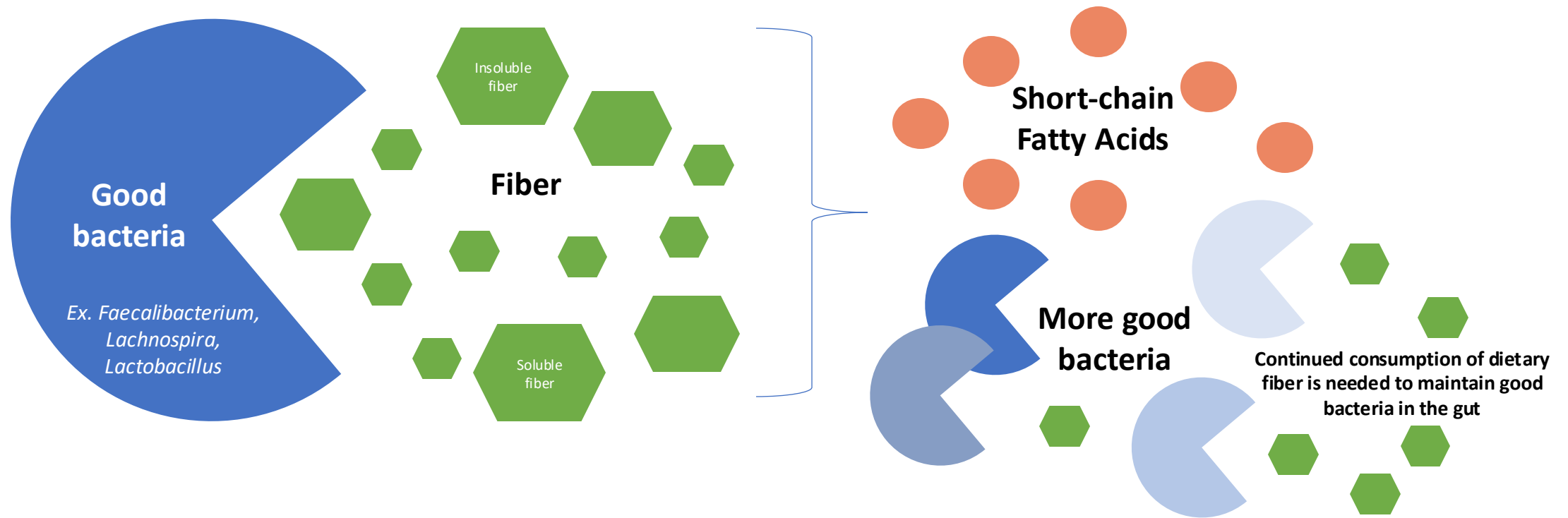


INSOLUBLE



Fiber Fuels Good Bacteria in Gut Microbiome

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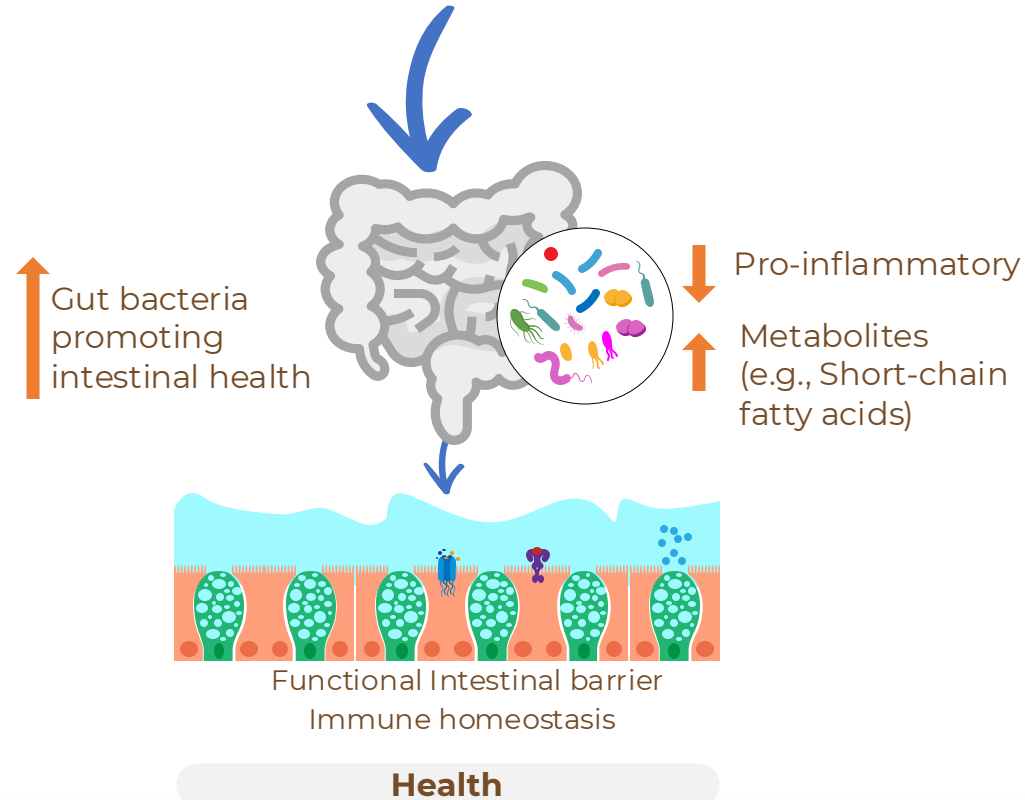


Some soluble fibers are considered PREBIOTICS which are selectively utilized by gut bacteria and provide a health benefit.

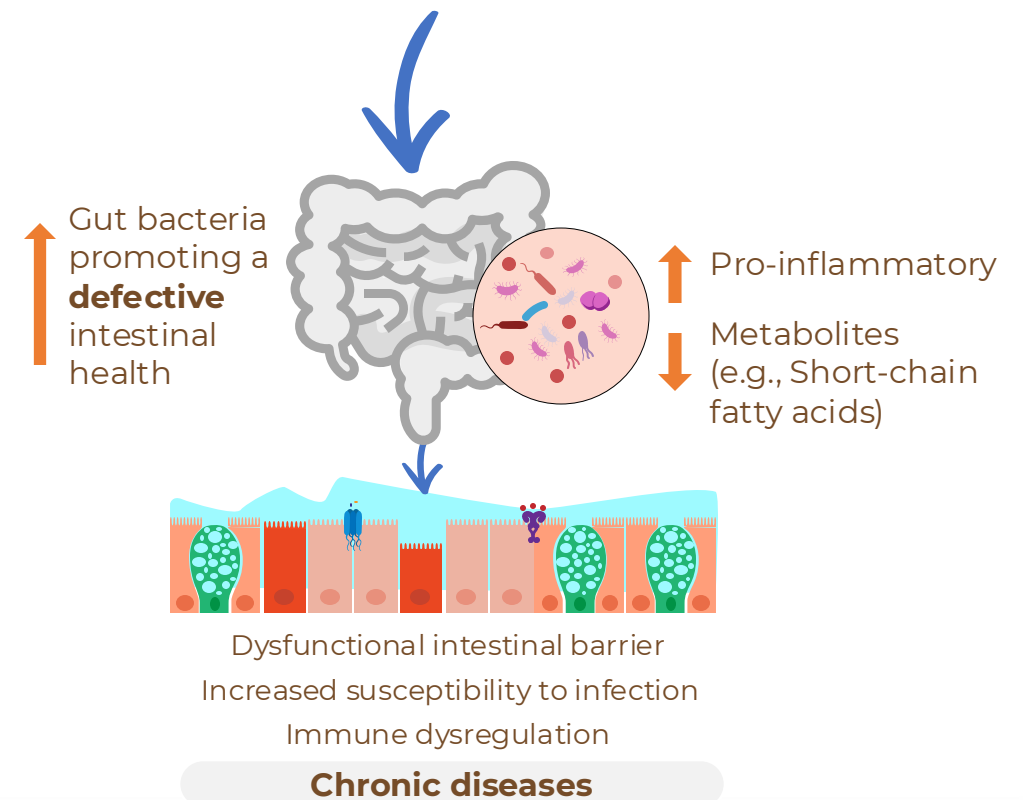
Fuels the Microbiome & Promotes Intestinal Health

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HIGH DIET QUALITY & HIGH FIBER



LOW DIET QUALITY & LOW FIBER



Sources of Fiber

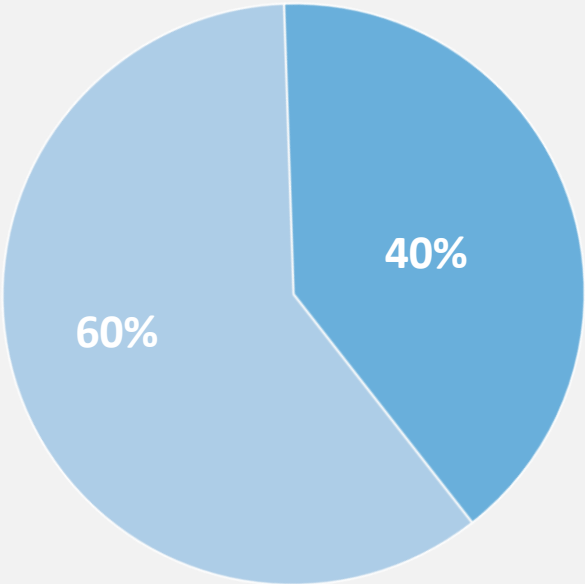
Soluble Fiber



Insoluble Fiber



1/3 of a medium
avocado = 3g of fiber
A good source!



Insoluble

Soluble

II. Intake Recommendations

14 grams of fiber per 1,000 calories



1/3 med. avocado
= 3g of fiber



1 med. apple
= 4.5g of fiber



½ cup instant oatmeal
= 4g of fiber



¼ cup walnuts
= 2g of fiber

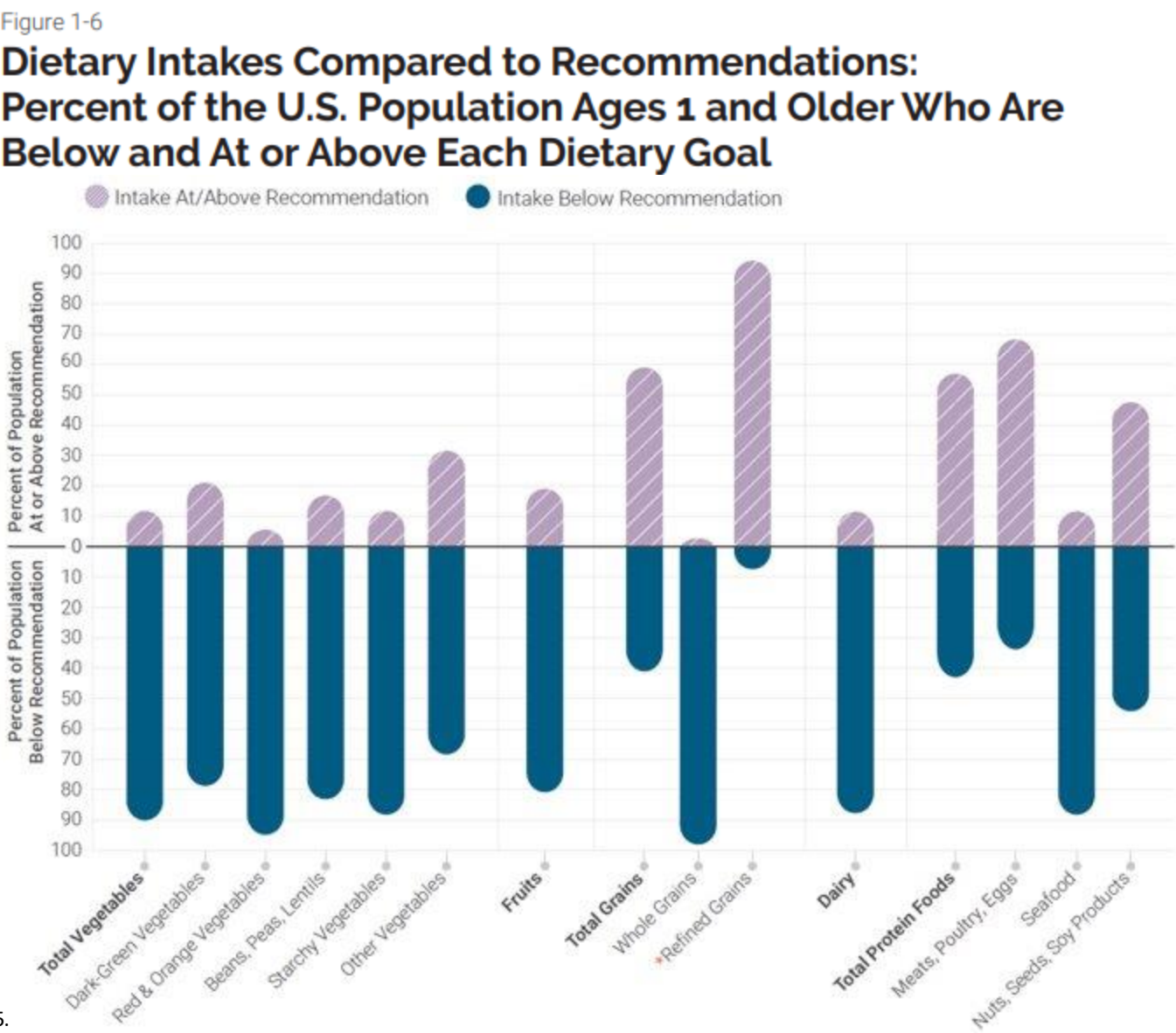


½ cup beans
= 5g of fiber



1 med. ear of corn
= 3g of fiber

Actual Intakes Compared to Recommendations



III. Role of Fiber in Cardiometabolic Health

LDL Cholesterol

- Soluble fiber binds to cholesterol in the digestive tract, preventing the absorption of cholesterol into the bloodstream and promoting their excretion.

Glycemic Response

- Soluble fiber slows down digestion and delays gastric emptying, leading to a lag in glucose absorption.

Satiety and Weight Management

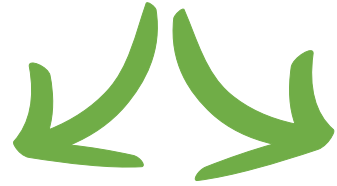
- By slowing digestion, fiber increases the feeling of fullness, which can help lower caloric intake and keep you satisfied longer.

Gut Microbiome

- Fiber fuels the gut microbiome and emerging evidence has linked gut health to cardiometabolic health.

Habitual diet and Avocado Trial

1008 patients for 6 months



A large
avocado daily

Habitual
diet



REDUCED
total cholesterol
LDL-cholesterol

Habitual diet and Avocado Trial

230 patients for 6 months



A large
avocado daily

Habitual
diet

HIGHER
gut microbiota
diversity



IV. Toolbox for Providers

Principles of a Food-First Approach for Patient Care



Whole, Nutrient-Dense Foods: Emphasizing the consumption of nutrient-dense foods that provide natural vitamins, minerals, and fiber.



Personalized Nutrition: Tailoring dietary recommendations to an individual's specific health needs, genetics, lifestyle, and culture including flavor preferences can help achieve long term health goals.



Sustainability: Encouraging long-term dietary changes that are not overly restrictive and can be maintained. This could include making small swaps/changes over time.

Simple Ways to Increase Fiber Intake



1. Elevate Snacks

- Snack on nuts/seeds/trail mix or add a fruit or vegetable snack time

2. Blend in Fruits and Vegetables

- Blend into smoothies, soups, sauces and salad dressings

3. Add Beans

- Swap in beans in place of some ground meat or add as a topping on a salad

4. Focus on Whole Grains

- Choose whole grain options for breads, pastas, and cooked grains like quinoa and barley



Reminder: Drink plenty of water when increasing fiber intake

Reading Labels

Nutrition Facts	
21 servings per container	
Serving size 1 Slice (28g/1.0oz)	
Amount per serving	
Calories	60
% Daily Value*	
Total Fat 1g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	0%
Sodium 105mg	5%
Total Carbohydrate 14g	5%
Dietary Fiber 3g	12%
Total Sugars 3g	
Includes 3g Added Sugars	5%
Protein 3g	2%
Vitamin D 0mcg	0%
Calcium 20mg	0%
Iron 0.6mg	4%
Potassium 60mg	0%
*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	

- Look at “dietary fiber” under “total carbohydrates” to find amount of fiber in product
- In ingredients list, look for the word “whole” – whole grain, whole wheat, OR names of grains such as oats, oatmeal, brown rice, wheatberries
- 5:1 rule can also be useful
 - Divide grams of total carbohydrates by grams of fiber and aim for 5 or less
 - Example: $14 / 3 = 4.6$

For defining & achieving specific objectives

S – Specific

M – Measurable

A – Achievable

R – Relevant

T – Time-bound

For facilitating client-centered conversations & encouraging change

O – Open-ended questions

A – Affirmations

R – Reflections

S – Summarize

A Full Day of Fiber

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Total fiber = 33 grams

Breakfast
9 g fiber



**Breakfast Street Tacos
with Smoky Chipotle
Guacamole**

Lunch
9 g fiber



**Avocado and Chicken
Fajita Salad Bowl**

Snack
5 g fiber



**Jicama Strips with Spicy
Lime Guacamole**

Dinner
10 g fiber



**Pumpkin Enchiladas with
Avocado Crema**

A Full Day of Fiber

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Total fiber = 27 grams

Breakfast
6 g fiber



Avocado Toast with Egg

Lunch
9 g fiber



High-Protein Tuna &
Chickpea Salad Sandwich

Dinner
5 g fiber



Chicken & Broccoli Stir-Fry

Snack
7 g fiber



Avocado Dark Chocolate
Mousse

Key Takeaways from the Webinar Series



Unsaturated Fat and Fiber – a Winning Combo



Whole grain bread



Avocado



Apple



Nut butter



Oatmeal



Nuts & Seeds



Tuna



Quinoa



Whole grain tortilla



Black beans



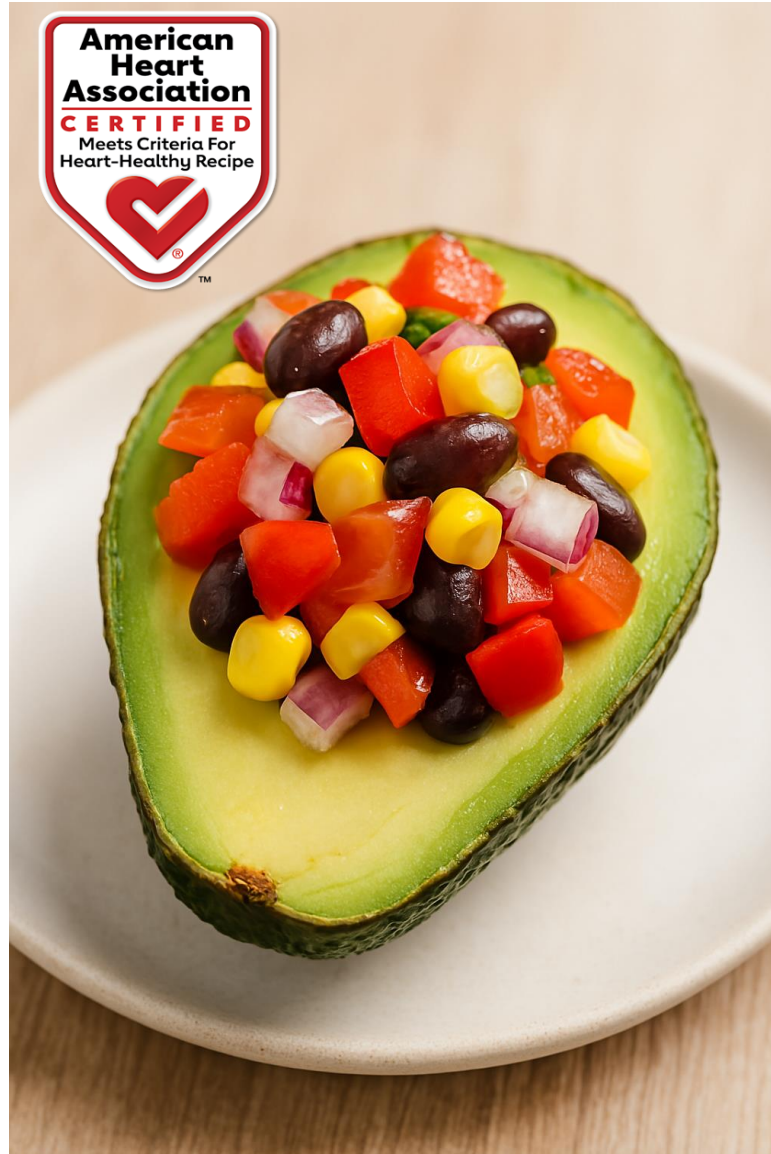
Avocado

V. Let's Get Cooking!

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Stuffed Avocados

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Questions?

Post your Questions in the Q&A section!

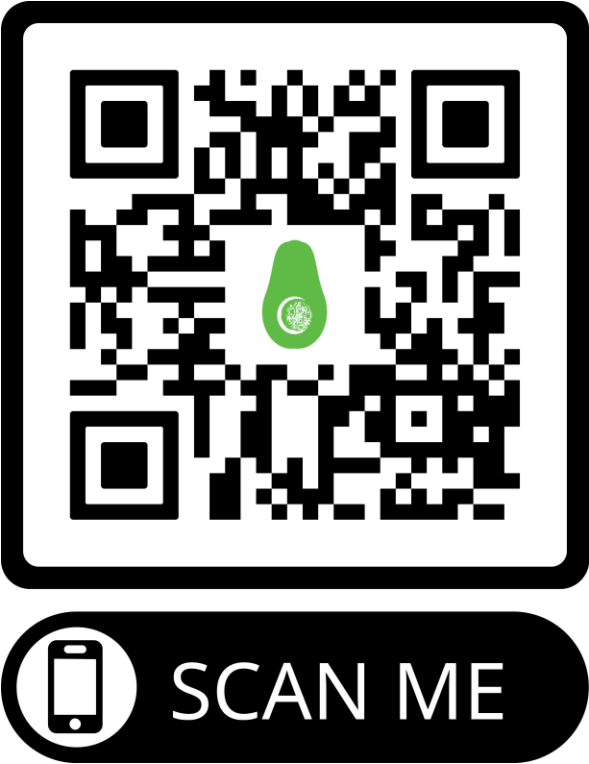
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avocados
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heart-healthy • naturally good fats

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References:

- O'Hearn M, Lauren BN, Wong JB, Kim DD, Mozaffarian D. Trends and Disparities in Cardiometabolic Health Among U.S. Adults, 1999-2018. *J Am Coll Cardiol*. 2022 Jul 12;80(2):138-151. doi: 10.1016/j.jacc.2022.04.046. PMID: 35798448; PMCID: PMC10475326.
- Gustafson CR, Rose DJ. Consideration of nutrients of public health concern highlighted in the Dietary Guidelines for Americans 2020-2025 among a large sample of US primary shoppers. *Appetite*. 2023 Feb 1;181:106399. doi: 10.1016/j.appet.2022.106399. Epub 2022 Nov 29. PMID: 36460120.
- Grooms KN, Ommerborn MJ, Pham DQ, Djoussé L, Clark CR. Dietary fiber intake and cardiometabolic risks among US adults, NHANES 1999-2010. *Am J Med*. 2013 Dec;126(12):1059-67.e1-4. doi: 10.1016/j.amjmed.2013.07.023. Epub 2013 Oct 15. PMID: 24135514; PMCID: PMC3865784
- [Dietary Fibre for the Primary Prevention of Cardiovascular Disease](#). Hartley L, May MD, Loveman E, Colquitt JL, Rees K. The Cochrane Database of Systematic Reviews. 2016;(1):CD011472. doi: 10.1002/14651858.CD011472.pub2.
- [Dietary Fibre Intake and Risk of Cardiovascular Disease: Systematic Review and Meta-Analysis](#). Threapleton DE, Greenwood DC, Evans CE, et al. *BMJ (Clinical Research Ed.)*. 2013;347:f6879. doi:10.1136/bmj.f6879.
- [Position of the Academy of Nutrition and Dietetics: Health Implications of Dietary Fiber](#). Dahl WJ, Stewart ML. *Journal of the Academy of Nutrition and Dietetics*. 2015;115(11):1861-70. doi:10.1016/j.jand.2015.09.003.
- U.S. Department of Agriculture and U.S. Department of Health and Human Services. Dietary Guidelines for Americans, 2020-2025. 9th Edition. December 2020. Available at [DietaryGuidelines.gov](https://www.dietaryguidelines.gov).
- Suriano, F., Nyström, E. E. L., Sergi, D., & Gustafsson, J. K. (2022). Diet, microbiota, and the mucus layer: The guardians of our health. *Frontiers in immunology*, 13, 953196. <https://doi.org/10.3389/fimmu.2022.953196>
- <https://medlineplus.gov/ency/article/002470.htm>. Accessed 4/29/24
- Barber TM, Kabisch S, Pfeiffer AFH, Weickert MO. The Health Benefits of Dietary Fibre. *Nutrients*. 2020 Oct 21;12(10):3209. doi: 10.3390/nu12103209. PMID: 33096647; PMCID: PMC7589116. <https://www.sciencedirect.com/science/article/pii/S0963996925001802#f0005>
- Tang WH, Kitai T, Hazen SL. Gut Microbiota in Cardiovascular Health and Disease.
- Wang, L., Wang, S., Zhang, Q. et al. The role of the gut microbiota in health and cardiovascular diseases. *Mol Biomed* 3, 30 (2022). <https://doi.org/10.1186/s43556-022-00091-2> *Circ Res*. 2017 Mar 31;120(7):1183-1196. doi: 10.1161/CIRCRESAHA.117.309715. PMID: 28360349; PMCID: PMC5390330.
- Reynolds AN, Akerman A, Kumar S, Diep Pham HT, Coffey S, Mann J. Dietary fibre in hypertension and cardiovascular disease management: systematic review and meta-analyses. *BMC Med*. 2022 Apr 22;20(1):139. doi: 10.1186/s12916-022-02328-x. PMID: 35449060; PMCID: PMC9027105.
- Lichtenstein AH, Kris-Etherton PM, Petersen KS, Matthan NR, Barnes S, Vitolins MZ, Li Z, Sabaté J, Rajaram S, Chowdhury S, Davis KM, Galluccio J, Gilhooly CH, Legro RS, Li J, Lovato L, Perdue LH, Petty G, Rasmussen AM, Segovia-Siapco G, Sirirat R, Sun A, Reboussin DM. Effect of Incorporating 1 Avocado Per Day Versus Habitual Diet on Visceral Adiposity: A Randomized Trial. *J Am Heart Assoc*. 2022 Jul 19;11(14):e025657. doi: 10.1161/JAHA.122.025657. Epub 2022 Jul 5. PMID: 35861827; PMCID: PMC9707833.