



CARDI•OH

Ohio Cardiovascular and Diabetes Health Collaborative



In partnership with:



Cardi-OH ECHO

What's New in Cardiovascular Prevention? A Series of Case-Based Discussions

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Person-Centered Language Recommendations



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The ADA and the APA recommend language that emphasizes inclusivity and respect:

- **Gender**: Gender is a social construct and social identity; use term “gender” when referring to people as a social group. Sex refers to biological sex assignment; use term “assigned sex” when referring to the biological distinction.
- **Race**: Race is a social construct that is used broadly to categorize people based on physical characteristics, behaviors, and geographic location. Race is not a proxy for biology or genetics. Examining health access, quality, and outcome data by allows the healthcare system to assist in addressing the factors contributing to inequity.
- **Sexual Orientation**: Use the term “sexual orientation” rather than “sexual preference” or “sexual identity.” People choose partners regardless of their sexual orientation; however, sexual orientation is not a choice.
- **Disability**: The nature of a disability should be indicated when it is relevant. Disability language should maintain the integrity of the individual. Language should convey the expressed preference of the person with the disability.
- **Socioeconomic Status**: When reporting SES, provide detailed information about a person’s income, education, and occupation/employment. Avoid using pejorative and generalizing terms, such as “the homeless” or “poor.”
- **Violent Language**: Avoid sayings like ‘killing it,’ ‘pull the trigger,’ ‘take a stab at it,’ ‘off the reservation,’ etc.



Plant-Based Diets

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Learning Objectives



1. Define a plant-based diet.
2. List the benefits of plant-based diets in mitigating cardiovascular risk.
3. Describe a practical approach to introducing patients to a plant-based diet.

The Importance of Diet



- The leading predictor of health outcomes globally
- The leading predictor of total chronic disease risk
- The leading predictor of premature death

Inconsistent Messages



- Dietary advice for health and weight loss often focus on specific macro/micronutrients; messages are often contradictory
- Media coverage of dietary research is oversimplified
- Dietary recommendations can be confusing to the public
- Underfunding of nutrition research
- *“Advice on what constitutes a healthy diet is more prevalent and more inconsistent than ever.”*

Consensus



- There is scientific consensus on an optimal pattern of eating for most people:
 - “Eat food. Not too much. Mostly plants.”
- There is no ‘single best diet’ for everyone
- Specific health problems may require specialized diets

Pollen M. *The Omnivore's Dilemma: A Natural History of Four Meals*. Penguin, 2007.

Katz D. Diet is the single most important predictor of health. *Alt Com Ther*. 2019; 25(6):280-284.

Plant-Based Diets: Mostly Plants



- A plant-based diet aims to maximize the consumption of nutrient-dense plant foods while minimizing processed foods and animal foods.
- The DASH diet, the Mediterranean diet, American Heart Association's recommendations, WHO recommendations, USDA MyPlate, vegetarian and vegan diets, and others
- Foods high in nutritional quality, unprocessed or minimally processed foods; low-calorie density and high nutrient density
- Mostly fruits, vegetables, whole grains, legumes (beans, peas, lentils, peanuts), nuts, and seeds; mostly drink plain water
- Low intake of sweetened beverages, highly processed/junk food, and foods high in saturated fats (high-calorie density and low nutrient density)
- May include:
 - Fish, lean meats, eggs, dairy

Constituents in Animal-Based Foods



- Saturated fats
- Dietary cholesterol
- Antibiotics
- Insulin-like Growth Factor-1
- Heme iron
- Polycyclic aromatic hydrocarbons, advanced glycation end products, heterocyclic amines
- Carnitine (TMAO)

Plant-Based Diets



Vegan	Fruits, vegetables, grains, beans, nuts and seeds. Avoids all animal-based products.
Whole-foods, low-fat plant-based	Plant foods in their whole form : vegetables, fruits, grains, legumes, and seeds and nuts. Avoids animal-based products, restricts total fat intake, and often limits added salt, sugar and oil.
Lacto-vegetarian	Dairy products , fruits, vegetables, grains, beans, nuts and seeds; avoids other animal-based products.
Ovo-vegetarian	Eggs , fruits, vegetables, grains, beans, nuts and seeds; avoids other animal-based products.
Lacto-ovo vegetarian	Dairy products, eggs , fruits, vegetables, grains, beans, nuts and seeds; avoids other animal-based products.
Pescatarian	Fish and other seafood , fruits, vegetables, grains, beans, nuts and seeds; avoids other animal-based products.
Flexitarian	Fruits, vegetables, grains, beans, nuts and seeds, but occasionally consumes animal-based products (meat, fish/seafood, dairy products, eggs).

Cardiometabolic Findings



Cardiovascular risks

- Pooled data from seven prospective cohort studies -- reduced CHD incidence of 28% and reduced CHD mortality of 22% associated with vegetarian diets. No association with CVD or stroke mortality.
- Adventist-2 Study -- prevalence of hypertension significantly lower in the plant-based groups vs. non-vegetarian comparison group.
- Blood lipids findings are mixed with generally lower total cholesterol, LDL, and triglycerides but also lower HDL.

Cardiometabolic Findings



Diabetes risk

- A 2017 systematic review and meta-analysis of 14 studies found a pooled odds ratio of 0.73 for diabetes in vegetarians vs. non-vegetarians

BMI

- Vegans and vegetarians typically have the lowest BMIs or lowest prevalence of overweight and obesity in studies that compare multiple dietary patterns, followed by omnivores
- In a 6-month plant-based diet RCT mean weight loss was 9.7 lb. in the whole foods plant-based diet group vs. 0.4 lb. in the control group.

Mediterranean Diet



- 5-year PREDIMED Study, RCT, n=7447
- ‘CVD events’ - a composite of myocardial infarction, stroke, or CVD death
- CVD events: hazard ratios 0.70 for the Mediterranean diet (Med+olive oil) and 0.70 (Med+nuts) vs. control group (advice for low-fat diet)
- Diabetes incidence: hazard ratios 0.60 (Med+olive oil) and 0.82 (Med+nuts) vs. control
- Improvements in blood pressure, insulin sensitivity, lipid profiles, lipoprotein particles, inflammation, oxidative stress, and carotid atherosclerosis

Health Benefits

Dietary Qualities

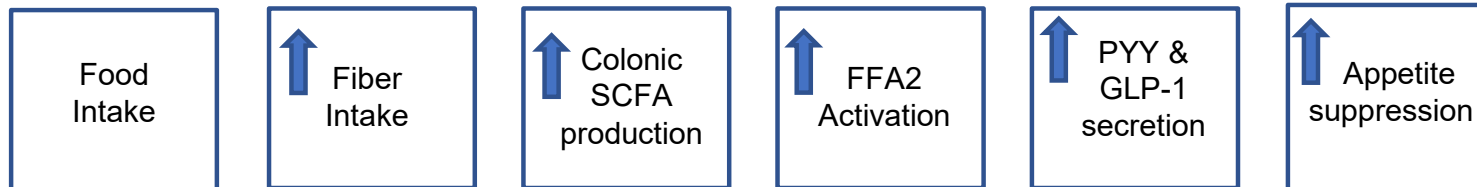
- Low energy density
- High dietary fiber
- Low in saturated fat, high in unsaturated fat
- High levels of antioxidants
- High levels of micronutrients
- Low levels of heme iron, nitrates, nitrites

Health Benefits

- Enhanced glycemic control
- Weight loss/maintenance
- Improved lipid profile
- Lower blood pressure
- Improved vascular health
- Decreased inflammation
- Reduced oxidative stress
- Improved gut microbiome

Fiber and Appetite

High Fiber Meal



Low Fiber Meal



Ultra-Processed Foods



- UPFs: formulations of ingredients resulting from industrial processes (e.g., sweet and savory snacks, reconstituted meats, pizza dishes, confectionery)
- Significantly associated with obesity and related cardiometabolic disorders
- Comprise more than 50% of daily energy intake in high income countries
- Only 0.06% of the U.S. population consumes no ultra-processed food on a daily basis

Monteiro CA, Cannon G, Levy RB, Moubarac JC, et al. *Public Health Nutr.* 2019;22:936–941.

Kim H, Hu EA, Rebholz CM. *Public Health Nutr.* 2019 July; 22(10): 1777–1785.

Poti JM, Braga B, Qin B. *Curr Obes Rep.* 2017 December ; 6(4): 420–431.

Diet Quality Matters



- Study of individuals from the Nurses' Health Study 1 and 2 and the Health Professionals Follow-up Study (n = 116,969)
- Healthy plant-based diet: high in whole grains, fruits, vegetables, nuts, legumes, water, coffee, tea
 - -25% risk of CVD; -44% risk of T2DM after BMI adjustments
- Unhealthy plant-based diet: high in refined grains, fruit juice, potatoes, desserts, sugar-sweetened beverages
 - +32% risk of CVD, +15% risk of T2DM

Nutrient Concerns



- Vitamin B12
- Calcium
- Iron
- Zinc
- Vitamin D
- Omega-3 Fatty Acids
- Protein
- Academy of Nutrition and Dietetics: “vegetarian, including vegan diets are appropriate for all stages of the life cycle, including pregnancy, lactation, infancy, childhood, adolescence, older adulthood, and for athletes.”

Craig WJ, Mangels AR, Fresán U. The safe and effective use of plant-based diets with guidelines for health professionals. *Nutrients* 2021, 13, 4144.

Farmer B, Larson BT, Fulgoni VL, et al. A vegetarian dietary pattern as a nutrient-dense approach to weight management: an analysis of the national health and nutrition examination survey 1999–2004. *J Am Diet Assoc.* 2011;111(6):819–27.

Helping Patients Get Started



- “Opening the Door” method to initiate the conversation
- Link to the patient’s current health problems and/or concerns
- Explain the health benefits of a plant-based diet using “ask, tell, ask”, elicit motivation, revisit
- 5-10% weight loss is a clinically meaningful target that patients notice

Information and Support



- Dieticians
- Weight management programs
- Cardiac rehabilitation programs
- Health coaches, personal trainers
- Supportive family members & friends to ally with

Information and Support



- Books and DVDs at public libraries: Mediterranean diet, DASH diet, plant-based diet, recipes
- Cooking courses – online, local community centers
- Meatless Mondays – information and weekly email reminders from Johns Hopkins
- YourMediterraneandiet.com: information, recipes, resources
- Physicians Committee's for Responsible Medicine: 21-Day Vegan Kickstart – phone app, cooking videos, meal plans, recipes, and guidance from nutrition experts; Starter Kit
- Forks Over Knives: free documentary on website, Beginners Guide, recipes, recipe app

Communities



- Social Media: Facebook groups -- Plant-based Eating for Beginners, Mediterranean Diet for Beginners, DASH Diet groups, etc., YouTube
- Weight management programs
- Some cultures have plant-based traditions with which patients can connect
- Long history of plant-based eating in southeast Asia; flexitarian diets reported to be rapidly increasing in urban centers
- Growing African American community of plant-based chefs, bloggers, cookbook authors, social media influencers, athletes, celebrities

Plant-Based Diets



- Lower overall mortality
- Reduce ischemic heart disease mortality
- Support sustainable weight management
- Lower the risk of most chronic diseases
- Decrease the severity of diabetes, obesity, hypertension, hyperlipidemia, and hyperglycemia
- Reduce medication needs



Thank you!

Questions/Discussion