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## Understanding the DASH Diet: A Unique Approach to A Healthy Diet

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Authors	Ogunlana, Emmanuel O
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# Understanding the DASH Diet: A Unique Approach to A Healthy Diet

EMMANUEL OGUNLANA

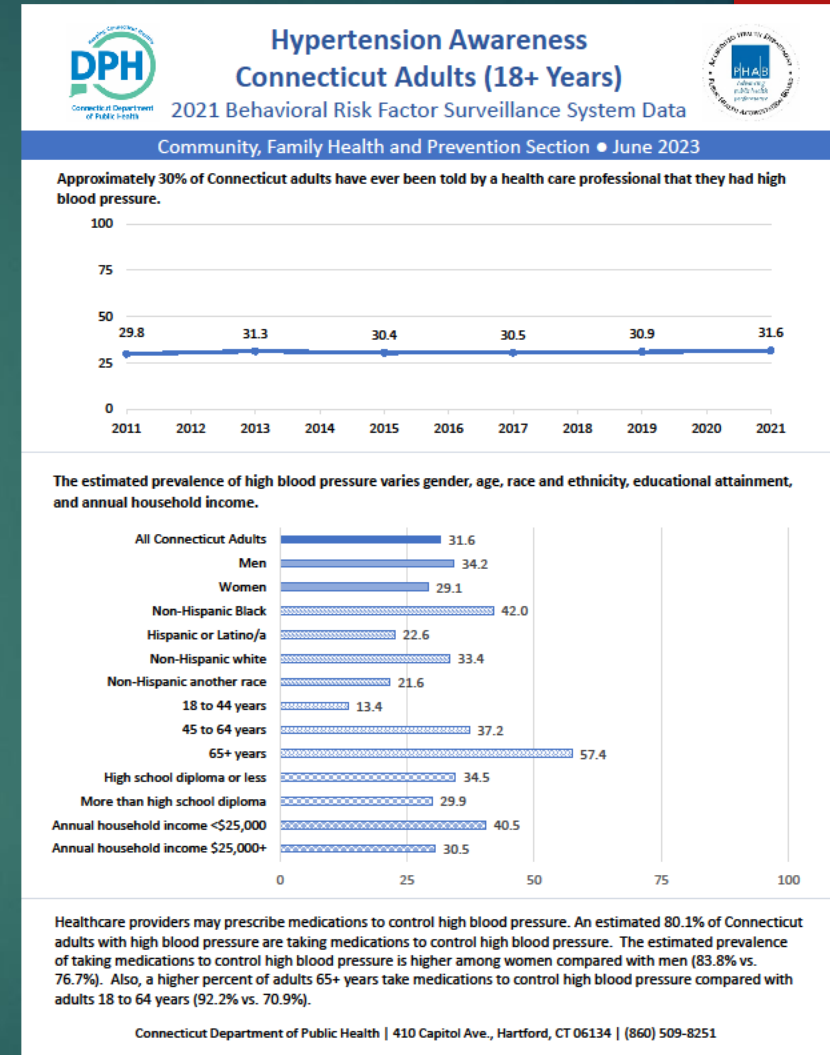
NEW FAIRFIELD PRIMARY CARE

AUGUST 2024

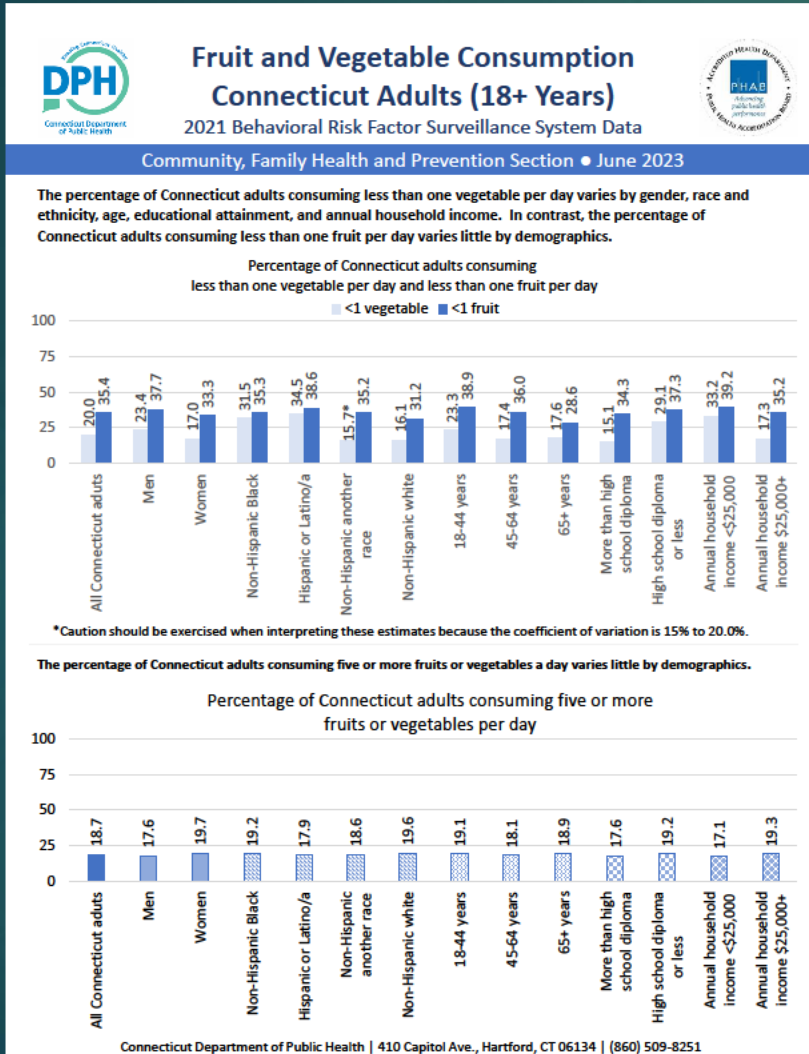
MENTOR: DR. WILLIAM KAPLAN

# Epidemiology

- ▶ Around 30% of US adults are hypertensive. [1]
- ▶ About 1 in 4 adults with high blood pressure has their blood pressure under control (22.5%, 27.0 million) [2]
- ▶ In 2021, 31.6% of adults have been told by a healthcare professional that they had high blood pressure [3]



# Problem Identification



- ▶ Poor nutrition is a significant risk for the development of hypertension [4]
  - ▶ 1/3 of CT's adults consume less than one fruit a day.
  - ▶ Nearly 20% consume less than one vegetable a day.
- ▶ The Dietary Approaches to Stop Hypertension (or DASH) diet is a highly efficacious, healthy diet that involves the incorporation of many nutritious foods all geared to lower blood pressure. [1]
- ▶ Nationally, the adherence to the DASH diet is low, for a variety of reasons. [5]

# Reasons for Non-adherence

- ▶ An article titled “Perceived Barriers to Following Dietary Recommendations in Hypertensive Patients” analyzes the most common reasons for non-adherence [6]:
  - ▶ Social and environmental barriers
  - ▶ Social gathering
  - ▶ Compliance with recommended diet and preference of other family members
  - ▶ Palatability of the recommended diet
  - ▶ Emotional statuses and psychological factors
  - ▶ Cost

# Public Health Cost

- Annual medical costs for people with high blood pressure are up to \$2,500 higher than costs for people without high blood pressure. [7]
- As a preventable and treatable risk factor for cardiovascular disease, high blood pressure it is a large contributor to increased health care costs and inability to work.
  - About 1 in every 8 health care dollars is spent on cardiovascular disease (about 12% in 2019–2020).
  - Cardiovascular disease drives substantial Medicare costs. In 2018, national per-capita Medicare costs for all fee-for-service beneficiaries living with heart disease or surviving a stroke were \$19,693 and \$31,882, respectively.

# Community Perspective

- ▶ Worked with fantastic MAs, nurses, and doctors at the Nuvance Primary Care clinic in New Fairfield, CT
- ▶ A physician and practice manager stated that certain patients struggled to attain their BP goals even on medication
  - ▶ Some of their patients do not have a good grasp of the DASH diet and how to approach it
  - ▶ Brochure provides a clear, concise way to educate on DASH diet and provide healthy simple recipes that adhere to the diet
- ▶ They also recommended establishing more consistent nurse visits that educate patients on managing their hypertension and providing actionable and interesting resources for patients to refer to

# Intervention and Methodology

- ▶ Provided a pamphlet that described the basic of DASH diet, healthy outcomes associated with it, and examples of recipes one could try
- ▶ These pamphlets were given to patients directly in the waiting room, regardless of hypertension diagnosis
- ▶ Option to provide anonymous feedback was provided on the pamphlet
- ▶ 5-point Likert scale on 3 question items:
  - ▶ Is the pamphlet helpful?
  - ▶ Is the level of detail in the pamphlet reasonable?
  - ▶ After reading the pamphlet, will you be more likely to follow physician's recommendations on diet?

# Pamphlet

Front side

Back side

A Community Health Improvement Project for Connecticut Residents

## DASH DIET DIGEST

Some Delicious, Heart-Healthy Recipes That Can Help Lower Blood Pressure



Nuvance Health/University of Vermont Larner College of Medicine

### What is the DASH diet?

Dietary Approaches to Stop Hypertension (or DASH) diet was founded in the 1990s, and its sole purpose is to create a nutrition plan focused on managing blood pressure and being heart healthy. This diet promotes the consumption of vegetables, fruits, lean meat and dairy products, and the reduction of sodium to about 1500 mg/day.



### What's the serving guide like?

A typical serving guide for a patient following the DASH diet is as follows:

1. Vegetables: about five servings per day
2. Fruits: about five meals per day
3. Carbohydrates: about seven servings per day
4. Low fat dairy products: about two servings per day
5. Lean meat products: about two or fewer servings per day
6. Nuts and seeds: 2 to 3 times per week



### Diet is essential to caring for your health

### Get a closer look!

#### Carbohydrates

Healthy starches or "carbs" have to be included in the diet, not just for the energy supply but also for the protective micronutrients. Low carb diets are not as healthy as that may lead to decreased caloric intake than recommended or consumption of unhealthy fats as a substitute.

Healthy carbohydrates included under DASH include:  
Green leafy vegetables: kale, broccoli, spinach, collards, mustards  
Whole grains: cracked wheat, millets, oats  
Low glycemic index fruits  
Legumes and beans

#### Fats

Good fats prevent inflammation, provide essential fatty acids, and promote overall health. When consumed in moderation, these fats have been shown to reduce bad cholesterol and improve good cholesterol. Some of the sources of good fats also included in DASH include:  
Olive oil  
Avocados  
Nuts  
Hempseeds  
Flax seeds  
Fish rich in omega-3 fatty acids

#### Proteins

DASH recommends more servings of plant proteins like legumes, soy products, nuts, and seeds. Animal protein in the diet should mainly compose of lean meats, low-fat dairy, eggs, and fish. Processed and cured meats are not recommended as they have shown to cause hypertension and also contain carcinogens.

DASH diet also talks about the inclusion of certain foods rich in potassium, calcium, and magnesium. Some of the foods rich in potassium include bananas, oranges, and spinach. Calcium is rich in dairy products and green leafy vegetables. Magnesium is present in a variety of whole grains, leafy vegetables, nuts, and seeds.

### Where do I start?!

It can be overwhelming to start a new diet, especially if you don't know where to start. Fortunately, this pamphlet is for you. We've provided 2 excellent recipes that can help you start a new foundation for a healthier lifestyle. QR codes of direct links to the full recipes are included below.

#### Appetizers

#### Marinated portobello mushrooms with provolone



Ingredients

- 2 portobello mushrooms, stemmed and wiped clean
- 1/2 cup balsamic vinegar
- 1 tablespoon brown sugar
- 1/4 teaspoon dried rosemary
- 1 teaspoon minced garlic
- 1/4 cup grated (1 ounce) provolone cheese

#### Nutrition Highlights

- 82 calories
- 4g fat
- 6g protein
- 15g total carbs

SCAN ME TO LEARN MORE!



#### Main Dish

#### Crilled chicken salad with olives and oranges



#### Ingredients

- For the dressing:
  - 1/2 cup red wine vinegar
  - 4 garlic cloves, minced
  - 1 tablespoon extra-virgin olive oil
  - 1 tablespoon finely chopped red onion
  - 1 tablespoon finely chopped celery
  - Cracked black pepper, to taste
- For the salad:
  - 4 boneless, skinless chicken breasts, each 4 ounces
  - 2 garlic cloves
  - 8 cups leaf lettuce, washed and dried
  - 16 large ripe (black) olives
  - 2 navel oranges, peeled and sliced

#### Nutrition Highlights

- 250 calories
- 50 added sugars
- 27g protein
- 1g saturated fat

SCAN ME TO LEARN MORE!



### Improving the diet depends on us



Want to learn more about the DASH diet? Scan me!



Want to see more incredibly delicious recipes? Scan me!



We would appreciate any feedback you may have. This survey is ANONYMOUS.

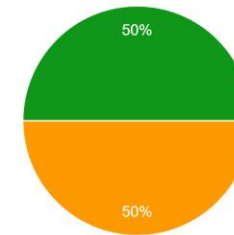
Pamphlet created by  
Emmanuel Ogunlana, MS3

# Results/Response Data

- ▶ 4 responses were received
- ▶ “Helpfulness of pamphlet” score: 3.5
- ▶ “Level of Detail” score: 4.25
- ▶ “Likeliness to adhere to diet” score: 4
- ▶ Anonymous qualitative feedback includes: “very clear, easy to understand, recipes look fun to make, feels encouraging to try out new recipes”

I found that this pamphlet was helpful.

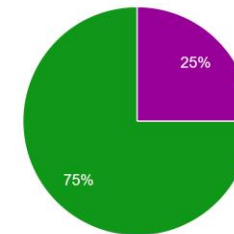
4 responses



● Strongly disagree  
● Disagree  
● Neutral  
● Agree  
● Strongly Agree

The level of detail in the pamphlet was reasonable.

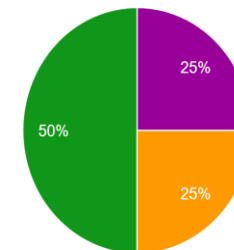
4 responses



● Strongly disagree  
● Disagree  
● Neutral  
● Agree  
● Strongly Agree

After reading this pamphlet, I will be more likely to follow my doctor's recommendations on diet.

4 responses



● Strongly disagree  
● Disagree  
● Neutral  
● Agree  
● Strongly Agree

# Evaluation of effectiveness and limitations

- ▶ Mildly effective intervention that could have utilized a more targeted population that is hypertensive/high risk of ASCVD and are struggling to adhere to a healthy diet
- ▶ Could have received feedback and guidance from a local nutritionist who may have a unique perspective on the nutritional needs of the area
- ▶ Limited on sample size and variety of questions; could have asked more questions regarding barriers that could lead to non-adherence

# Recommendations for future interventions/projects

- ▶ Focused community outreach towards Black/Latino adults who face a significantly higher hypertension burden and are at greater risk compared to other races/ethnicities
  - ▶ Barbershops and historically Black churches have been shown to be extremely effective places to establish health care interventions
- ▶ Broaden the scope of the intervention and include information on other heart-healthy diets including the Mediterranean diet
- ▶ Establish nurse visits that provide this pamphlet and get active feedback from patients during the visit

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