



Food as Medicine: The DASH Prescription

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Food as Medicine: The DASH Prescription

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- Co-author, Hypertension Cookbook For Dummies
- Co-author, DASH Diet For Dummies

My Food Philosophy

Food as Medicine



Only 25 percent practicing physicians report that they feel they received adequate training in counseling patients on diet



Less than 15 percent of medical visits include counseling for nutrition

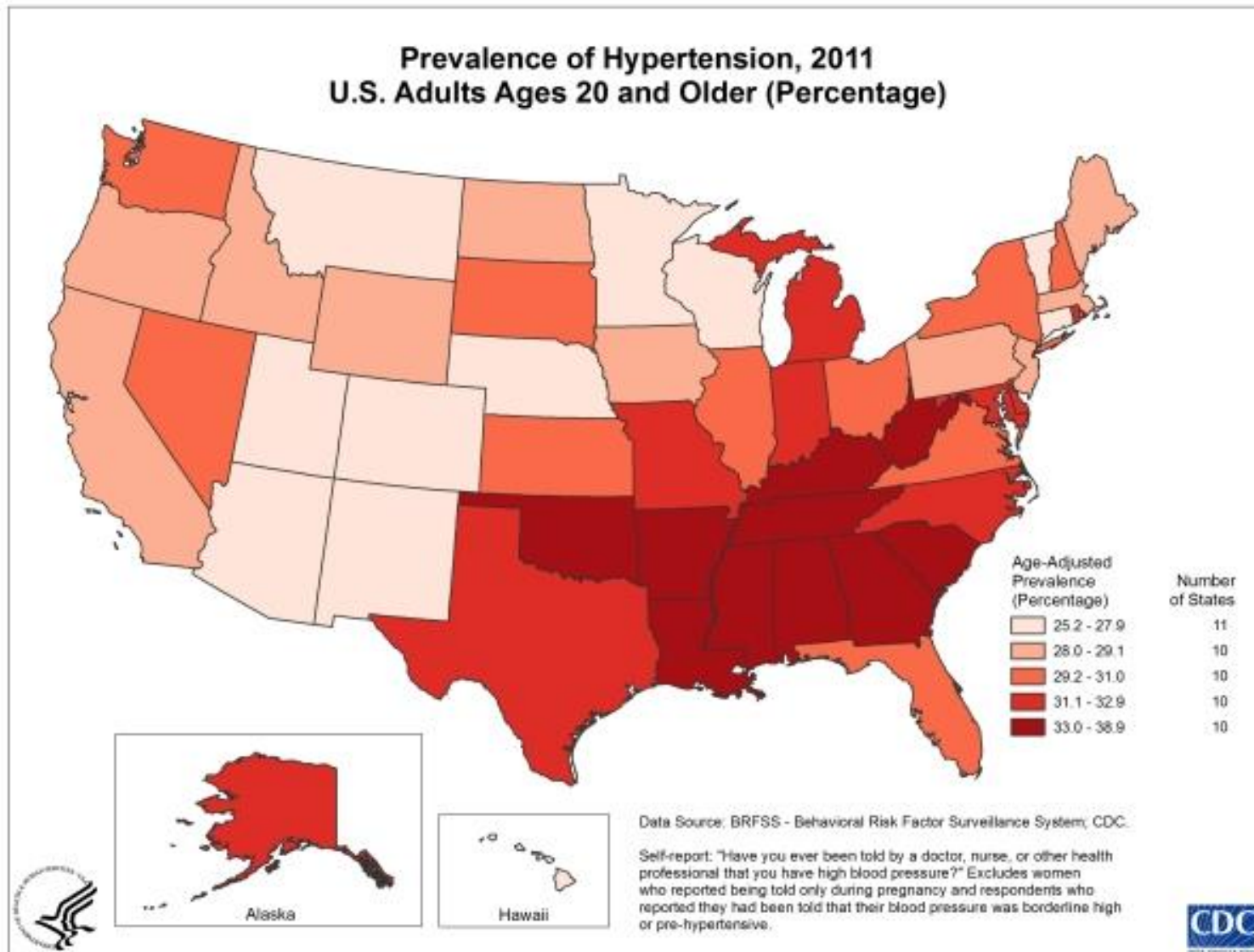


Healthcare professionals who have nutrition knowledge and practice healthful behaviors are better able to counsel patients and use nutrition as a complimentary treatment



DASH may be your secret ingredient!

Prevalence of Hypertension



What is DASH?



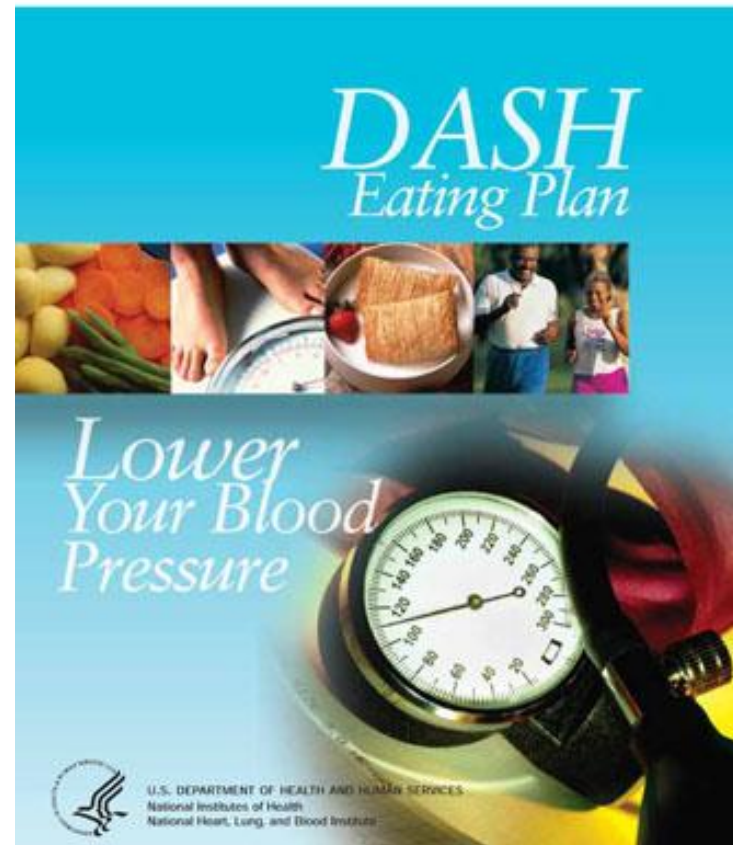
Dietary Approaches to Stop Hypertension

- Developed to lower blood pressure without medication in research sponsored by the US National Institutes of Health
- The first DASH diet research showed that it could lower blood pressure as well as the first line blood pressure medications, even with a sodium intake of 3,300 mg/day



YOUR GUIDE TO

Lowering Your Blood Pressure With DASH



Focus on Whole Foods



U.S. News Best Diet Rankings



- In January, 2018 *U.S. News and World Report* reviewed 35 diets designed to improve health and well-being and awarded the DASH Diet “Best Overall Diet.”
- Rated best overall diet *eight* years in a row.
- The publication bases this designation on several criteria:
 - ✓ Nutritional value
 - ✓ Heart Health
 - ✓ Diabetes
 - ✓ Safety
 - ✓ Ease of use
 - ✓ Effectiveness for short- and-long-term weight loss



DASH In Depth

Dietary Intervention for Hypertension



- In 1997, it is known that obesity, sodium intake, and alcohol consumption influence blood pressure.
- Approx. 43 million people (24% US adults) have high blood pressure
- Dietary guidelines at the time:
 - Weight control
 - Reduced sodium intake
 - Reduced alcohol consumption
 - Possibly increased potassium intake

Developing DASH: Food First



- Vegetarians tend to have lower blood pressures than non-vegetarians. Diets featured:
 - High amounts of fiber
 - Calcium
 - Magnesium
 - Potassium
- In observational studies, significant inverse associations of blood pressure are seen with:
 - High amounts of fiber
 - Calcium
 - Magnesium
 - Potassium
 - Protein

Developing DASH: Food First



- Not all forms of nutrient delivery were beneficial. Dietary supplements didn't have the same effects as the food
- In clinical trials where individuals were given single nutrients, often as dietary supplements, the reduction in blood pressure was typically small and inconsistent
- DASH was developed as a trial of dietary patterns rather than individual nutrients
- DASH tested the combined effects of nutrients that occur together in food

Landmark DASH Study

- Instead of looking at what to avoid or specific nutrients, the study sought to determine the effects of certain dietary patterns on blood pressure
 - Wholesome, inexpensive foods that support good health
- Dietary Approaches to Stop Hypertension
- Landmark clinical trial in 1997 published in *New England Journal of Medicine*

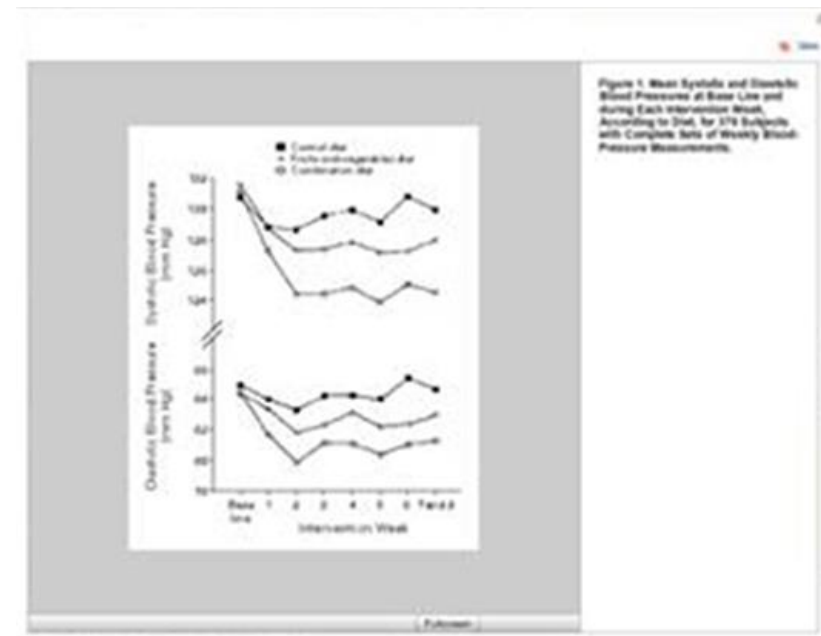


Landmark DASH Study

- Results found in subjects with or without hypertension, a combination diet reduced blood pressure more than fruits and vegetables or the control diet alone.

Systolic blood pressure
↓ by 5.5 mm Hg more than
control diet

Diastolic blood pressure
↓ by 3.0 mm Hg more than
control diet



Study concluded:

- Certain dietary patterns can have a favorable effect on blood pressure, especially one that is:
 - Rich in fruits and vegetables and low-fat dairy
 - Reduced in saturated and total fat
- Reduction in blood pressure began within 2 weeks and maintained over next 6 weeks
 - Pattern of reduction similar between genders and ethnicities
- DASH trial can be broadly applied to the U.S. population

DASH Follow-Up Studies

DASH-Sodium Study

- Tested the effects of varying levels of sodium: 3,000mg, 2,400mg and 1,500mg
- Results were especially evident in subjects who had hypertension to begin with

Encore Trial

- Evaluated the effects of the DASH diet alone and combined with a behavioral weight loss program on blood pressure
- Changes in dietary habits, weight, blood pressure persisted 8 months after completion of 16-week ENCORE program with some attenuation of the benefits

Omni-Heart Trial: A Variation on the DASH, 2003

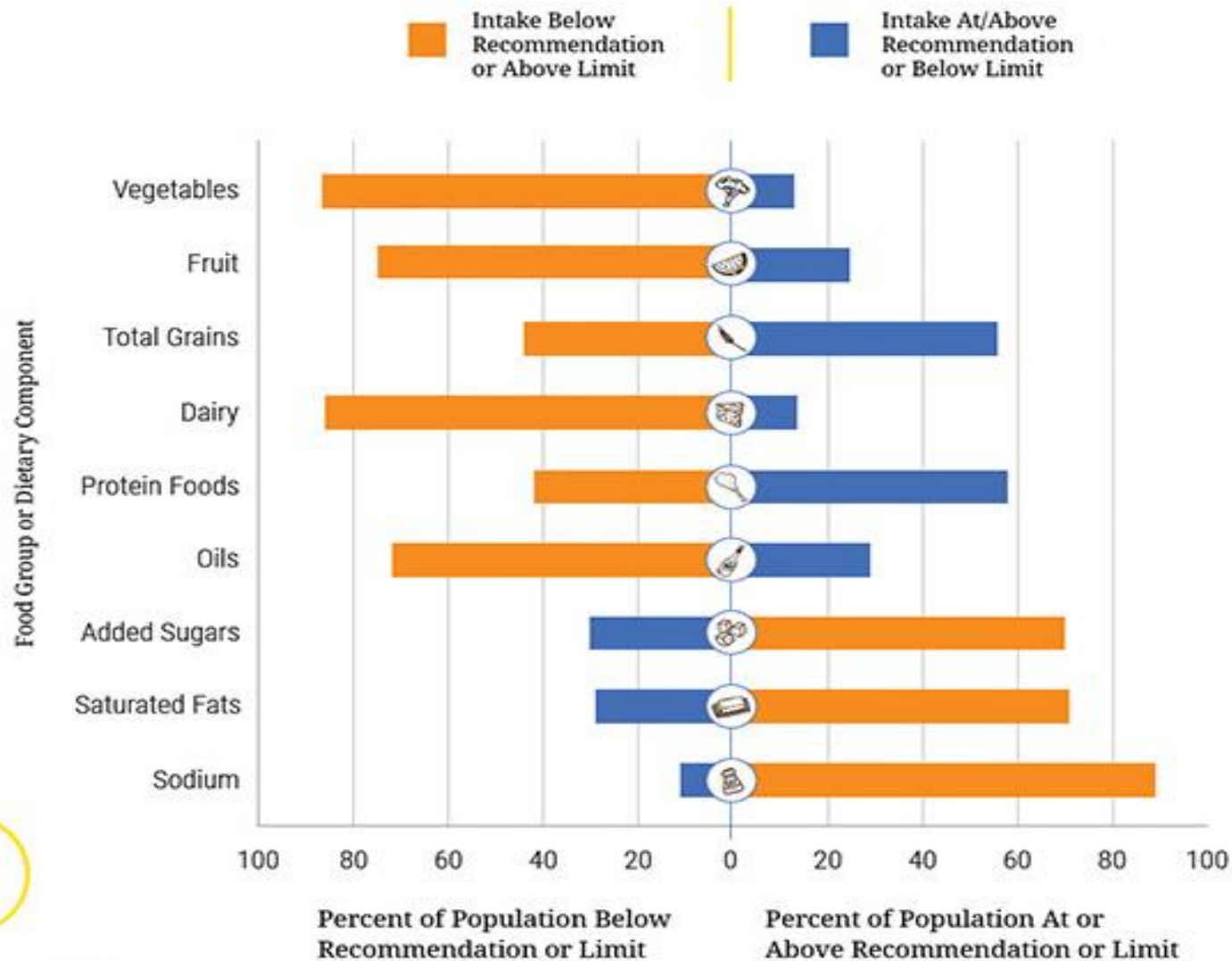
- The Carbohydrate Diet
- The Protein Diet
- The Unsaturated fat Diet
- Results were a tie between the diets higher in protein and unsaturated fat

High-Fat Dairy and DASH

- HF-DASH lowered blood pressure to the same extent as DASH
- It also ↓ TG and VLDL concentrations without significantly ↑ LDL

Dietary Challenges

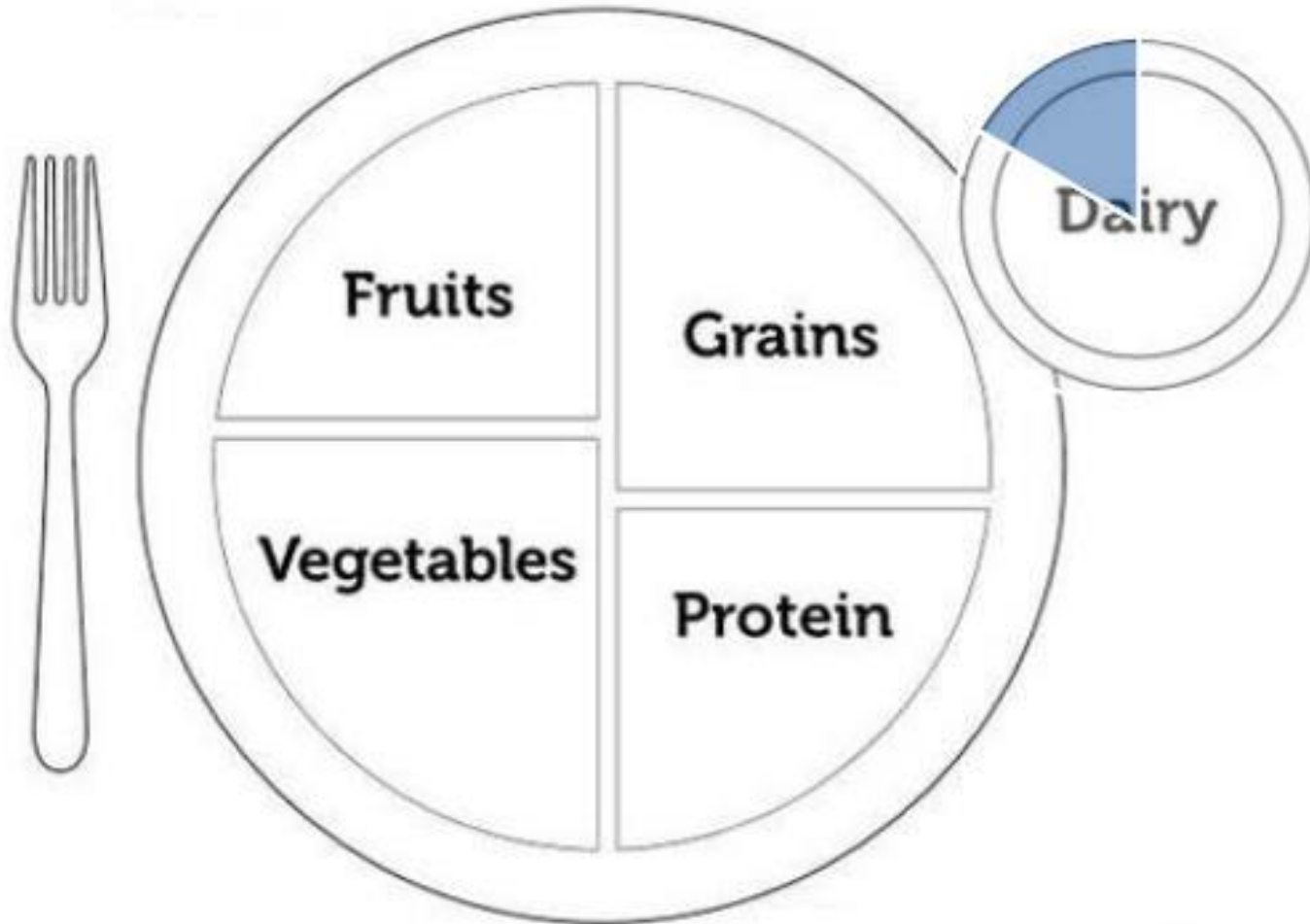
Current Eating Patterns in the US



*What We Eat
in America,
NHANES
2009-2010*

Missing the Mark

15% of Americans Meet the Dairy Food Group Recommendation



- **Lactose Intolerance is a food sensitivity** marked by insufficient lactase to digest lactose
 - Lactase:
 - Enzyme found in the lining of the small intestine
 - Acts as a catalyst in the breakdown of lactose
 - Lactose:
 - A sugar/carbohydrate naturally found in milk
 - Disaccharide containing glucose and galactose
- **Lactose Intolerance is not a food allergy!**

Lactose Intolerance vs. Milk Allergy



Lactose intolerance	Milk allergy
Sensitivity	Allergy
Occurs in gastrointestinal system	Triggered by immune system
A sensitivity to milk carbohydrate (lactose)	A reaction to milk protein
Rare in young children	Generally impacts young children; may be outgrown
Can enjoy milk and milk products with simple management strategies	Should avoid milk and milk products (unless allergy is outgrown)

- Lactose intolerance is **rare** in younger **children**
- Lactose intolerance typically **emerges in late-adolescence or adulthood**
- Higher incidence in **African Americans, Hispanic Americans, Native Americans, and Asian Americans**

Low Dairy Intake



Only half of African Americans **eat one or more** servings of dairy a day¹



On average, Hispanic Americans consume **only 1.5-1.6 servings** of dairy a day²

1. Wooten WJ, et al. *J Natl Med Assoc.* 2004; 96:1S-31S
2. Sharma S, et al. *J Am Diet Assoc.* 2004;104:1873-1877

A Critical Time to Grow



6 in 10 moms are restricting their children's intake of dairy



83 percent of girls do not meet recommended intakes of milk

Benefits Now and In the Future



Studies show that dairy foods including low-fat milk, cheese and yogurt may be related to reducing your risk of certain diseases.



Dairy has been linked with a lower risk of Type 2 diabetes



Dairy has been linked with a lower risk of cardiovascular disease



Dairy has been linked with a lower risk of osteoporosis

Dairy is the DASH Superstar!



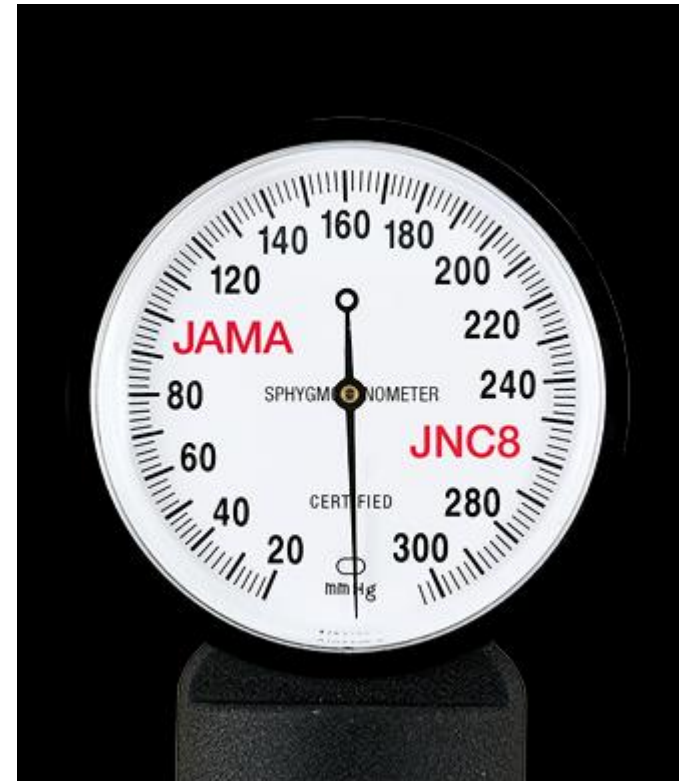
- Dairy is the No. 1 source of both calcium and potassium in the United States. It's also packed with high-quality protein.
- Dairy foods have those magic minerals:
 - Calcium
 - Potassium
 - Magnesium



The DASH Prescription

Evolution of Practice Standards

- Eighth Report of the Joint National Committee on the *Prevention, Detection, Evaluation and Treatment of High Blood Pressure*, 2014
- Provides recommendations for doctors based on clinical research
- Research supports DASH with a low-sodium diet as key to lowering high blood pressure

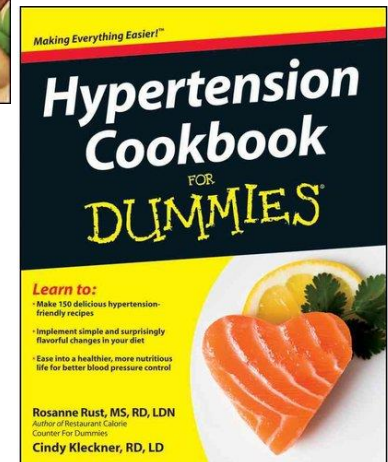
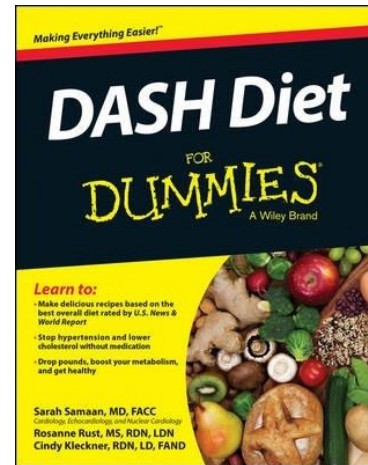


What is the DASH Eating Plan?



Dietary Approaches to Stop Hypertension

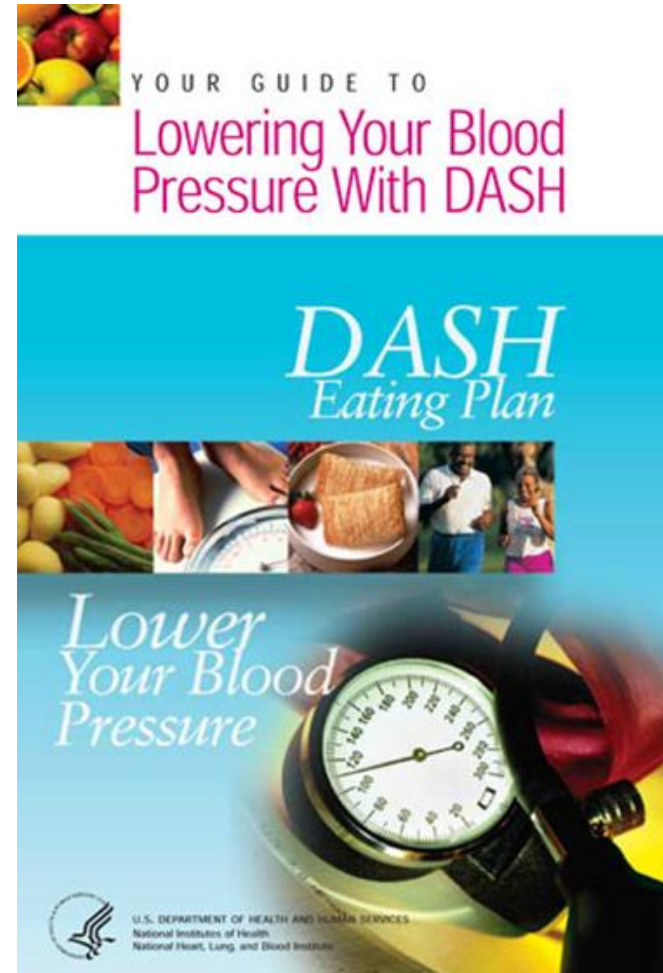
- Fruits
- Vegetables
- Low-Fat and Fat-Free Dairy
- Lean Meat, Fish, Poultry
- Whole Grains
- Nuts, Seeds, Legumes
- Limits on Fats, Oils and Sweets



DASH and A Heart Healthy Lifestyle



- Maintain a Healthy Weight
- Be Physically Active
- Make Healthy Eating Choices
- Increase Potassium-Rich Foods
- Reduce Sodium
- Limit Alcohol
- Avoid tobacco use



DASHing Toward Better Health



- The DASH Diet was designed to improve blood pressure but comes with bonus features:
 - Helps manage weight
 - Protects brain function
 - Helps maintain healthy kidney function
 - Helps reduce cancer risk



DASH Really Works



Advice	Specifics	Systolic BP Drop
Lose excess weight	For every 20 lbs. you lose	5 to 20 points
Follow a DASH Diet	Eat a lower-fat diet rich in vegetables, fruits and low-fat dairy	8 to 14 points
Limit sodium	Eat no more than 2400 mg a day (ideally 1500 mg)	2 to 8 points
Exercise daily	Get 30 minutes a day of aerobic activity	4-9 points
Limit alcohol	Have no more than 2 drinks/ day for men; 1 for women	2 to 4 points

Source: The Eighth Report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure

2017 Randomized Control Trial

- 400 adults with prehypertension or stage 1 high blood pressure
- DASH or Control Diet for 12 weeks
- Found a low-sodium DASH diet sustainably lowered systolic blood pressure

Results

Systolic Blood Pressure	Reduction
>150 mmHg	21 mmHg
140-149 mmHg	10 mmHg
130-139 mmHg	7 mmHg
<130 mmHg	5 mmHg



Putting it in Context



- FDA requires any new antihypertensive agent submitted for approval to lower systolic blood pressure by 3-4 mmHg
- Most established medications on the market, such as ACE inhibitors, beta-blockers, or calcium channel blockers, on average reduce systolic blood pressure by 10-15 mmHg
- Here, the dietary intervention is as effective—or more effective—than antihypertensive drugs

What's Your Role?

Consumers Trust Health Professionals



Which of these sources would you trust the most to provide accurate information about nutrition?

- Healthcare professional are top source
- Friends and family are also heavily relied upon
- Health-focused website
- Registered Dietitian Nutritionists
- Reading a scientific study
- News article or headline
- Healthcare professional on social media
- Food company
- Fitness professional on social media
- Government agency



How Can Physicians Make a Difference



- Encourage lifestyle modification and the DASH guidelines in the treatment of patients with hypertension.
- Provide resources regarding the DASH Diet and make referrals to Registered Dietitian Nutritionists.



DASH In Practice

Cook More! Focus of Flavor!

- Infuse more flavor into food without salt:
 - Citrus
 - Herbs and spices
 - Aromatic vegetables: onions, garlic, shallots
 - Veggie purees
 - Roasting and grilling
- Recipe Rehab:
 - Change cooking methods
 - Modify ingredients
 - Add wholesome food – “Nutrition by Addition”

Grilled Romaine Salad with Cilantro Lime Dressing



- The best way to get out of a salad rut is to dress it with a delicious and nutrient-rich “drizzle” of dressing. This yummy salad is a DASH’ed up version:
 - ✓ Greek yogurt in place of sour cream for added calcium & vitamin D
 - ✓ Include more veggies
 - ✓ Use healthy monounsaturated oil
 - ✓ Lean protein source that adds fiber



Spicy Southwest Roasted Vegetables

- Add a side dish of colorful vegetables for a generous dose of vitamins, minerals and antioxidants including magnesium, fiber with a lower calorie amount:
 - ✓ Think variety
 - ✓ Choose seasonal
 - ✓ Prepare with healthy monounsaturated oil
 - ✓ Variety of herbs and spices gives a little “kick” of flavor in place of excess salt
 - ✓ Roasting caramelizes to produce more flavor instead of steaming



Shrimp-Stuffed Roasted Poblanos with Red Bell Pepper Sauce

- A DASH'ed up version of Chile Relleno without the breading and frying:
 - ✓ Shrimp is a wonderful high protein, no fat protein choice
 - ✓ Use combination of cheese sources to enhance the calcium and vitamin D
 - ✓ Roasted veggie-based sauce with high antioxidant chiles kicks up the flavor without added fat



Fireball Pineapple with Maple Cream Sauce



- Delicious dessert alternative to a heavy calorie bomb:
- ✓ Fresh pineapple, flavored with sweet hint of cinnamon and high in potassium and vitamin C
- ✓ Served with Greek yogurt containing calcium and vitamin D in lieu of high saturated fat ice cream
- ✓ Right size portion following a satisfying meal



“Cooking Makes Nutrition Come Alive”

When patients get inspired and learn a few techniques and the art of flavor building their confidence blossoms and they are better able to follow a healthy eating program!



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- Hypertension Cookbook For Dummies, R. Rust, C. Kleckner, John Wiley & Sons, Inc.