



## Nutritional Guidelines for the Management of Diabetes and Hypertension

*Delivering an Understandable, Evidenced-Based Message*



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## Pre-Diabetes and Diabetes



### Objectives

- Basics of Healthy Eating for Pre-diabetes, and Diabetes
- Reducing Dietary Sodium Intake
- Mindful Eating Techniques

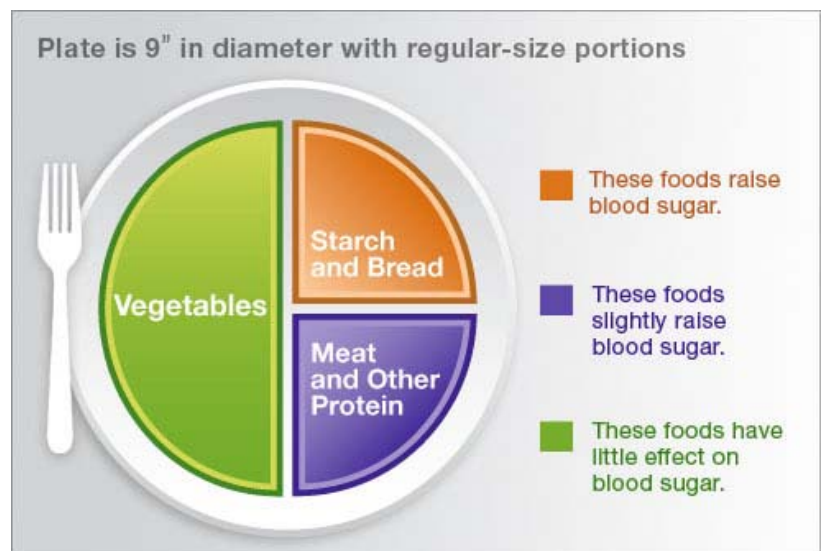
### Keys to a Healthy Diabetic Eating Plan

- Eat meals and snacks regularly (planned times).
- Eat about the same amount of food at each meal or snack.
- Choose healthful foods to support a healthy weight and heart.
  - What do these healthful foods look like?
  - What are the proper portions?
    - *Activity*

### Resources & Databases

- Dietary Guidelines for Americans 2015-2020
- Academy of Nutrition and Dietetics (AND)
  - Evidence-Based Nutrition Practice Guidelines
- National Institutes of Health
  - National Institute of Diabetes and Digestive and Kidney Health
- American Diabetes Association

### Carb Awareness – Plate Method



## Carb Awareness – Plate Method Cont.

Starch also includes: potatoes, peas, corn, beans, squash.



© 2013 Eat What You Love, Love What You Eat with Diabetes

## Carb Awareness – Plate Method Cont.



## Is Weight Loss Enough?

- Losing 5-10% of initial body weight lost
- The majority of lifestyle modification intervention studies reported that weight loss significantly reduces **fasting blood glucose** in individuals with prediabetes, while most studies report **no significant impact of weight loss on two-hour post-prandial blood glucose or A1C**.

Academy of Nutrition & Dietetics Evidence Analysis Library, 2016

## The Importance of Physical Activity

- Effect of  $\geq 3$  months physical activity
  - **Type 2 diabetes:** 90-150 min weekly physical activity (both aerobic exercise and resistance/strength training) reduces A1C, improves insulin sensitivity, and decreases relative risk for all-cause mortality.
- Special consideration for type 1 diabetes

Academy of Nutrition & Dietetics Evidence Analysis Library, 2016

## Weekly Physical Activity Guidelines for Americans

### Adults 18-64 years

- Aerobics performed  $\geq 10$  min, spread throughout week.
- 2+ days include muscle-strengthening activities involving all major groups.

### Adults >65 years

- Follow adult guidelines; if unable, be as physically active as abilities/conditions allow (even 60 min moderate provides some health benefits).
- Exercise to maintain/improve balance.
- Level of effort, relative to level of fitness.
- Older adults with chronic conditions should understand whether/how conditions affect ability to do regular physical activity safely.

Dietary Guidelines for Americans 2015-2020

## Physical Activities

- Moderate-intensity
  - Brisk walking, dancing, swimming, or bicycling on level terrain.
- Vigorous-intensity
  - Jogging, tennis, swimming continuous laps, bicycling uphill.
- Muscle-strengthening
  - Increase skeletal muscle power, endurance, and mass.
  - Strength and endurance, and resistance training.

Dietary Guidelines for Americans 2015-2020

## Getting and Staying Active: Real-Life Example

- An 85-Year-Old Living in an Assisted-Living Facility
- Weekly
  - 70 minutes of aerobic activity
  - As physically active as his condition allows
- Daily
  - 3 days per week (30 minutes sessions)
  - Ankle weights for lower body muscle strengthening exercises
- Residence includes a garden with walking paths and benches
  - Has gradually increased physical activity to walking ~10 minutes each day.

## The DASH Diet

- Dietary Approaches to Stopping Hypertension (DASH)
- What is the effect of the DASH diet pattern on blood pressure in adults with hypertension (HTN)?
  - Sodium intake of 1,500 mg- 2,400 mg
    - ↓ Systolic BP up to 11 mmHg
    - ↓ Diastolic BP up to 9 mmHg

Academy of Nutrition & Dietetics Evidence Analysis Library, 2016

## Hypertension Management: Reducing Dietary Sodium



## DASH and Blood Pressure Reduction

- Adults with pre-hypertension and HTN
  - ↓ Systolic blood pressure up to 6 mmHg
  - ↓ Diastolic blood pressure 3 mmHg.
- DASH in combination with a reduced sodium diet lowered BP more than reduced sodium intake alone.
  - The effect was greater in those with HTN.

Academy of Nutrition & Dietetics Evidence Analysis Library, 2016

## Contributors to Cardiovascular Disease

- Unbalanced diets
  - ↓ Intake of polyunsaturated fats (PUFAs)
    - Fatty fish: salmon, mackerel, herring, trout
    - Oils: soybean, corn, sunflower
  - ↑ Trans fats
  - ↓ Fruits/vegetables
  - ↑ Dietary sodium
- Physical inactivity

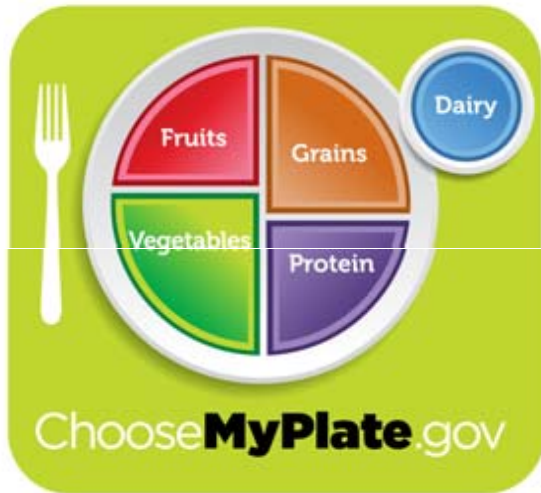
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## Dash and Weight Reduction

- When compared to weight loss alone, a combination of DASH and weight loss resulted in:
  - ↓Systolic blood pressure up to 16 mmHg
  - ↓Diastolic blood pressure up to 10 mmHg
- Theme of weight reduction and healthful eating pattern

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## Choose MyPlate



## Mindful Eating Techniques

### The Importance of Physical Activity

- Aerobic physical activity ↓ systolic BP and diastolic BP, on average up to 5 mm Hg, and up to 4 mmHg, respectively.
- Effective interventions:
  - Aerobic physical activity (on average) at least 12 weeks of duration
  - 3-4 sessions per week
  - 40 minutes per session
    - Moderate to vigorous-intensity physical activity.

Academy of Nutrition & Dietetics Evidence Analysis Library, 2016

### Implications of Weight Loss on Hypertension

- Most lifestyle modification intervention studies reported weight loss significantly reduces systolic and diastolic blood pressure in individuals with pre-diabetes.
- 6-11 lbs weight loss
  - ↓ Systolic blood pressure up to 6 mmHg
  - ↓ Diastolic blood pressure 5 mmHg

Academy of Nutrition & Dietetics Evidence Analysis Library, 2016

### Summary

### References

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