

# DASH

(Dietary Approaches to  
Stop Hypertension)

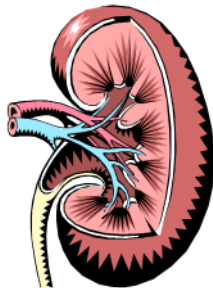
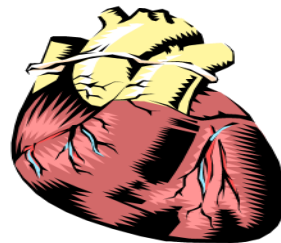


**By:**  
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- **Hypertension** is a common health problem in developed countries
- Untreated hypertension leads to diseases including ischaemic heart disease, stroke, congestive heart failure, end stage renal diseases & peripheral vascular disease.

Often called **silent killer**





# Risk Factors

## **Non-Modifiable**

- Age
- Race/ethnicity
- Gender
- Family history

## **Modifiable**

- Overweight
- Unhealthy diet
- Abnormal lipid metabolism
- Smoking
- Physical inactivity
- Excessive alcohol intake

**TABLE 6** Categories of BP in Adults\*

BP Category	SBP		DBP
Normal	<120 mm Hg	and	<80 mm Hg
Elevated	120-129 mm Hg	and	<80 mm Hg
<b>Hypertension</b>			
Stage 1	130-139 mm Hg	or	80-89 mm Hg
Stage 2	≥140 mm Hg	or	≥90 mm Hg

\*Individuals with SBP and DBP in 2 categories should be designated to the higher BP category.

BP indicates blood pressure (based on an average of ≥2 careful readings obtained on ≥2 occasions, as detailed in [Section 4](#)); DBP, diastolic blood pressure; and SBP, systolic blood pressure.



The emphasis on **lifestyle modification** has given a **diet** a prominent role for both the primary prevention & management of HTN.

Obesity & weight gain are predictive of progression to HTN.

Gaining 10% of BW was associated with a rise in BP of 7 mm Hg.



Based on the **Dietary Approach to Stop Hypertension** (Dash) research findings (1997), **combination** of eating plan & reduced sodium intake gives greater impact for hypertensive individuals and may help prevent the development of HTN



- DASH diet
  - Dietary Approaches to Stop Hypertension
  - High in whole grains, fruits, vegetables, and low-fat dairy
  - Adequate Calcium, Potassium, Magnesium
  - Low in red meat, sweets and sugar beverages
  - Low in saturated and trans fat, cholesterol



- DASH is more effective if also reduce sodium
- **Dietary sodium:**
  - 6g of sodium chloride or
  - $< 2400$  mg Na/d

- Reduce slowly in 2-3 weeks so that taste buds will get use to less salt

- Avoid food with high sodium



- Avoid intake of processed & preserved foods, canned foods & fast food





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## Nutrition Facts

Serving Size ½ cup (114g)  
Servings Per Container 4

### Amount Per Serving

**Calories** 90      Calories from Fat 30

**% Daily Value\***

<b>Total Fat</b> 3g	<b>5%</b>
Saturated Fat 0g	<b>0%</b>
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 300mg	<b>13%</b>
<b>Total Carbohydrate</b> 13g	<b>4%</b>
Dietary Fiber 3g	<b>12%</b>
Sugars 3g	

**Protein** 3g

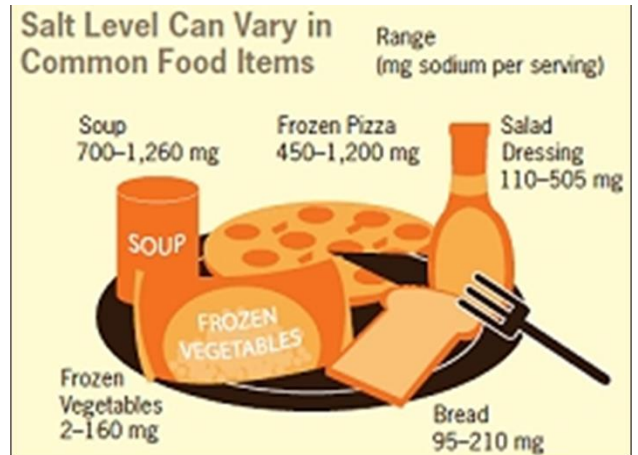
Vitamin A 80% • Vitamin C 60%

Calcium 4% • Iron 4%

\* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

		Calories: 2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:  
Fat 9 • Carbohydrate 4 • Protein 4



## Foods Emphasized in the DASH Eating Plan

- ✓ **LOW-FAT or FAT-FREE MILK, yogurt or reduced-fat cheese**
- ✓ **FRUITS**
- ✓ **VEGETABLES**
- ✓ **WHOLE GRAINS**

## DASH DIET



GRAINS AND  
GRAIN PRODUCTS



FRUITS AND  
VEGETABLES



LOW FAT OR  
NON FAT DAIRY



LEAN MEATS, FISH  
AND POULTRY



NUTS, SEEDS  
AND LEGUMES



FATS AND SWEETS

## potassium:

- High potassium diet reduce BP.
  - Recommendation: 4700 mg/d.
  - GFR < 60 ml/min: reduce potassium.
  - Choose food with high in potassium: leafy vegetables & root veg (oranges, beet greens, white beans, spinach, bananas & sweet potato).
  - w
- 
- whole grains & low fat dairy products contain potassium but not well-absorbed as that from fruits & veg



- **NUTRITION PRESCRIPTION**

- **CHO:**

- 50-60% total energy intake
- Most should come from complex CHO: brown rice, whole meal bread, oats, bran.
- **Fiber:** 20-30 gr/day

- **Protein:**

- 15-20%

- **Fat:**

- 25-30%



## Food Groups

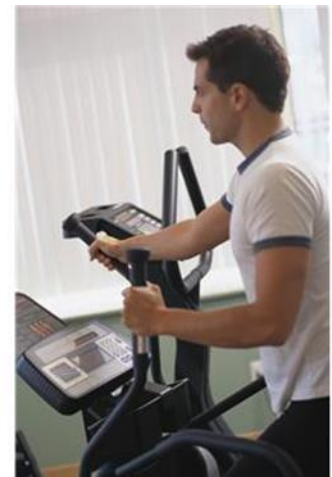
## Servings per Day by Calorie Level

	<i>1600 calories</i>	<i>2000 calories</i>	<i>2600 calories</i>	<i>3100 calories</i>
<b>Grains</b>	6	7–8	10–11	12–13
<b>Vegetables</b>	3–4	4–5	5–6	6
<b>Fruits</b>	4	4–5	5–6	6
<b>FF or LF milk &amp; milk products</b>	2–3	2–3	3	3–4
<b>Lean meats, poultry, fish</b>	1–2	2 or less	2	2-3
<b>Nuts, seeds, legumes</b>	3/week	4-5/week	1	1
<b>Fats, oils</b>	2	2–3	3	4
<b>Sweets, added sugar</b>	0	≤5/week	≤2	≤2



# Be Physically Active

- Helps lower blood pressure and lose/ maintain weight.
- 30 minutes of moderate level activity on most days of week. Can even break it up into 10 minute sessions.
- Use stairs instead of elevator, get off bus 2 stops early, Park your car at the far end of the lot and walk!
- 30 minutes at least 5 days a week
- Can divide into 10-15 minute periods
- Work up gradually
- Do something that you enjoy



- Fit into daily routine
- Aim for at least 150 minutes/week of moderate aerobic exercise
- Start slowly and gradually build intensity
- Wear a pedometer (10,000 steps)
- Take stairs, park further away or walk to another bus stop, etc.





## LIFESTYLE INTERVENTIONS FOR BP CONTROL

INTERVENTION	SPECIFIC GUIDANCE	AVERAGE SYSTOLIC BLOOD PRESSURE REDUCTION <sup>a</sup>
<b>Weight reduction</b>	Maintain a normal body weight (body mass index 18.5 to 24.9 kg/m <sup>2</sup> ).	5 to 20 mm Hg/10 kg
<b>DASH eating plan</b>	Adopt a diet rich in fruits, vegetables, and low-fat dairy products with reduced content of saturated and total fat.	8 to 14 mm Hg
<b>Dietary sodium reduction</b>	Reduce dietary sodium to $\leq 100$ mmol per day (2.4 g sodium or 6 g sodium chloride).	2 to 8 mm Hg
<b>Aerobic physical activity</b>	Regular aerobic physical activity (e.g., brisk walking) at least 30 minutes per day, most days of the week.	4 to 9 mm Hg
<b>Moderation of alcohol consumption</b>	Men: limit to $\leq 2$ drinks <sup>b</sup> per day. Women and lighter-weight men: limit to $\leq 1$ drink <sup>a</sup> per day.	2 to 4 mm Hg



# Try to

- Follow a healthy eating pattern.
- Be Active
- Not Smoke
- Control Your Weight
- Take Your Medicine



# Conclusion

- Hypertension is a very controllable disease, with drastic consequences if left uncontrolled.
- Hypertension can be treated by diet and lifestyle measures that are as, or more effective than medication.

