According to National Health Survey 2010, one in slightly less than four (23.5%) of Singapore residents had high blood pressure or hypertension. Hypertension is a common co-morbid condition of diabetes mellitus, about one-third of patients with diabetes mellitus reported has high blood pressure. High blood pressure and diabetes mellitus are powerful artherogenic* risk factors that increase the risk of stroke, heart disease, heart failure and chronic kidney disease.

What you eat affects your chances of getting high blood pressure. A healthy eating plan can both reduce the risk of developing high blood pressure and lower a blood pressure that is already too high.

You may wish to consider DASH, a dietery eating plan which stands for “Dietary Approaches to Stop Hypertension”.

DASH is not a traditional low salt diet but a balanced eating pattern to prevent or treat hypertension. DASH eating plan uses food high in minerals such as calcium, magnesium, potassium and fibre but low in saturated fat, total fat and cholesterol.

Why choose DASH?
DASH diet showed greater improvement in blood pressure compared to commonly known low salt diets. Studies also showed that patients with diabetes mellitus have better glycaemic control when DASH diet is implemented together with exercise and weight loss. DASH eating plan can be a good way to lose weight as it replaces high calorie food with more fruits, vegetables and low fat dairy products. Watch your portion to control overall calorie intake.

Principles of DASH diet

The DASH eating plan:
• Emphasises vegetables, fruits, and fat-free or low-fat dairy products.
• Includes whole grains, fish, poultry, beans, seeds, nuts, and vegetable oils
• Limits food high in sodium, as well as sweets, sugary beverages, and red meats.

In terms of nutrition content, DASH is:
• Low in fat, especially saturated fats.
• Rich in potassium, calcium, magnesium, fibre, and protein.

* tending to promote the formation of fatty deposits in the arteries.
Diabetes mellitus are powerful artherogenic risk factors that increase the risk of stroke, heart disease, heart failure and chronic kidney disease.

Common co-morbid condition of diabetes mellitus, about one-third of patients of Singapore residents had high blood pressure or hypertension. Hypertension is a DIET AND BLOOD PRESSURE: IT’S NOT ONLY ABOUT THE SALT

MAKE A FOR IT

loss. DASH eating plan can be a good way to lose weight as it replaces high calorie food with more fruits, vegetables and low fat dairy patients with diabetes mellitus have better glycaemic control when DASH diet is implemented together with exercise and weight DASH diet showed greater improvement in blood pressure compared to commonly known low salt diets. Studies also showed that Why choose DASH?

What you eat affects your chances of getting high blood pressure. A healthy eating plan can both reduce the risk of developing high Calcium intake from food has an effect on blood pressure. If calcium intake is low, more calcium will be drawn into the vascular muscle cells and increases vascular resistance. Increase vascular resistance raises blood pressure for blood flow. Calcium intake from supplements has not been shown to have the same effect.

The recommended dietary allowance of calcium for adult is 800 to 1000mg daily. Food sources rich in calcium include low fat dairy products, calcium-fortified soybean milk, yoghurt and cheeses, fish with edible bones such as sardines and anchovies, nuts and green leafy vegetables such as kailan, broccoli and spinach.

Tips to increase calcium intake:
- Have 1 to 2 cups of low fat milk or calcium-fortified soybean milk daily.
- Choose low fat yoghurt as a snack.
- Eat a variety of foods to top up calcium intake in a day.

Foods high in fibre keep you feeling full and stabilise blood sugar level. Fruits, vegetables, legumes and wholegrains are rich in fibre. Patients with diabetes mellitus need to be aware that fruits, wholegrains and legumes are part of carbohydrates. Health Promotion Board recommends 2 plus 2 servings of fruits and vegetables as well as 2 to 3 servings of wholegrain daily.

How to increase fibre in diet:
- Replace refined grains with wholegrains. Options of wholegrain products include wholemeal bread, wholewheat crackers, brown rice or wholegrain pasta.
- Add legumes to salad, soup, stew or dishes.
- Have fruits as dessert or snack.
- Include vegetables in each meal.

Magnesium and potassium have vasodilatory effects (widening of blood vessel) and hence associated with lowering blood pressure. Nuts, wholegrain bread and cereals are good food sources of magnesium. Tubers and fruits are great sources of potassium. Dark green leafy vegetables are high in both magnesium and potassium.

Eating tips:
- Enjoy variety of fruits and vegetables.
- Add vegetables into soup, noodles, pasta or sandwiches.
- Choose nuts or dried fruits as snacks instead of chips and sweets.

Saturated fat increases your total cholesterol and ‘bad cholesterol’ thus increasing your risk of heart disease. As fat provide almost twice the number of calories for amount of protein and carbohydrates, cut down total fat intake helps in weight loss.

Tips to reduce total fat intake:
- Choose lean meat or skinless poultry.
- Use soy-based products such as tofu, tempeh as source of protein.
- Use cooking oil with ‘Healthier Choice’ symbol in cooking.
- Choose low fat dairy products instead of those with full cream.
- Opt for soft margarine instead of butter.
- Limit deep-fried food and gravy intake.

Cholesterol is found only in animal products. Daily cholesterol intake should be less than 300mg. Tips to reduce cholesterol intake:
- Limit to no more than 4 egg yolks a week.
- Limit consumption of organ meats and seafood.

If sodium is consumed excessively, kidney is unable to excrete excess sodium. Sodium attracts water and it increases blood volume which makes the heart to pump harder and increases the blood pressure. Sources of food high in sodium include sauces/seasoning, processed food and canned food. The Health Promotion Board recommends a daily allowance of 2000mg of sodium (equivalent to 1 teaspoon of salt). DASH is naturally low in sodium as it emphasises fresh foods.

Tips to reduce sodium intake:
- Buy fresh products: choose fresh vegetables, poultry and meat but not processed, cured and pickled food.
- Use natural seasoning (lemon juice, lemongrass, ginger, fresh chili or herbs and spices) to spice your food up.
- If you must have convenience food, opt for those that are lower in sodium. Look out food products with the “Healthier Choice - lower in sodium” symbol.
- Taste your food before you add salt/seasonings. Use it sparingly.
How do I make the DASH?

The serving size of each food group varies with each individual’s calorie requirement in a day. Below is a sample of a DASH eating plan based on 1800kcal.

<table>
<thead>
<tr>
<th>Meal/snack</th>
<th>Food items</th>
<th>Quantity</th>
<th>Approximate number of servings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Brown rice, wholemeal bread and others</td>
<td>Vegetables</td>
</tr>
<tr>
<td>Breakfast</td>
<td>Wholemeal bread</td>
<td>2 slices</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Low fat cheese, Reduced salt</td>
<td>1 slice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low fat milk</td>
<td>1 cup (250ml)</td>
<td></td>
</tr>
<tr>
<td>Mid-morning snack</td>
<td>Nuts (baked, unsalted)</td>
<td>1 handful</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Apple</td>
<td>1 fist-size</td>
<td></td>
</tr>
<tr>
<td>Lunch</td>
<td>Brown rice</td>
<td>1 bowl</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Steamed fish</td>
<td>1 palm-sized bowl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stir-fried vegetables</td>
<td>1 medium bowl</td>
<td></td>
</tr>
<tr>
<td>Afternoon snack</td>
<td>Papaya</td>
<td>1 wedge</td>
<td></td>
</tr>
<tr>
<td>Dinner</td>
<td>Yong Tau Fu</td>
<td>1 bowl</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Kway teow soup</td>
<td>3 choices (~1 medium bowl)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vegetables</td>
<td>2 small blocks</td>
<td></td>
</tr>
<tr>
<td>Supper</td>
<td>Low fat milk</td>
<td>1 cup (250ml)</td>
<td>½</td>
</tr>
<tr>
<td></td>
<td>High fibre Crackers</td>
<td>3 pieces</td>
<td></td>
</tr>
</tbody>
</table>

**Total servings**

5 ½  2  2  3 ½  1

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**Significance of food group to DASH diet**

- Good source of energy and fibre
- Good source of fibre, magnesium and potassium
- Good source of protein, calcium and magnesium
- Good source of magnesium, fibre and protein

# Consult your dietitian for an individualised meal plan.

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**References**