NON PHARMACOLOGICAL TREATMENT OF HYPERTENSION

By prof. Diaa El Menshawy
MD cardiology

2009 Canadian Hypertension Education Program Recommendations
Key CHEP messages for the management of hypertension

- Assess blood pressure at all appropriate visits.
- Encourage people with hypertension to use approved devices and proper technique to measure blood pressure at home.
- Ensure people with hypertension are screened for diabetes (and vice versa). Treat hypertension in people with diabetes with a combination of lifestyle changes and pharmacotherapy to control blood pressure to less than 130/80 mmHg. Many require use of three or more antihypertensive drugs including diuretics to achieve blood pressure targets.
- Assess and manage overall cardiovascular risk in all people with hypertension including: smoking, dyslipidemia, dysglycemia, abdominal obesity, unhealthy eating and physical inactivity.
- Sustained lifestyle modification is the cornerstone for the prevention and management of hypertension and cardiovascular disease (CVD).
- Treat blood pressure to less than 140/90 mmHg in most people and to less than 130/80 mmHg in people with diabetes or chronic kidney disease. More than one drug is usually required.
Lifestyle Recommendations for Prevention and Treatment of Hypertension

To reduce the possibility of becoming hypertensive,
Reduce sodium intake to less than 2300 mg / day

Healthy diet: high in fresh fruits, vegetables, low fat dairy products, dietary and soluble fiber, whole grains and protein from plant sources, low in saturated fat, cholesterol and sodium in accordance with Canada's Guide to Healthy Eating.

Regular physical activity: accumulation of 30-60 minutes of moderate intensity cardiorespiratory activity (e.g. a brisk walk) 4-7 days/week in addition to routine activities of daily living

Low risk alcohol consumption (≤2 standard drinks/day and less than 14/week for men and less than 9/week for women)

Maintenance of ideal body weight (BMI 18.5-24.9 kg/m²)

<table>
<thead>
<tr>
<th>Waist Circumference</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Europid, Sub-Saharan African, Middle Eastern</td>
<td>&lt;94 cm</td>
<td>&lt;80 cm</td>
</tr>
<tr>
<td>- South Asian, Chinese</td>
<td>&lt;90 cm</td>
<td>&lt;80 cm</td>
</tr>
<tr>
<td>- Smoke free environment</td>
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2009 Canadian Hypertension Education Program Recommendations
ENVIRONMENT

SALT  OBESITY  ALCOHOL  STRESS

GENETIC PREDISPOSITION (OR INTRAUTERINE FACTORS)

- Autoregulation
- Ion transport inhibitors
- Sympathetic nervous system
- Renal mechanisms
- Vascular wall contractility and structure
- Rarefaction

PATHOGENETIC MECHANISMS

↑ B.P.
**Trial Of Non-pharmacological intervention in the Elderly (TONE):**
weight (-3.5kg) and sodium (-40mmol/d) reductions in elderly patients (60-80 yrs) ►BP reduction (-30%)

**Diet, Exercise and Weight loss Intervention Trial (DEW-IT):**
DASH-diet + fitness program ►-4.9kg and -12/-6mmHg
Lifestyle Recommendations for Hypertension: Weight Loss

Height, weight, and waist circumference (WC) should be measured and body mass index (BMI) calculated for all adults.

<table>
<thead>
<tr>
<th>Hypertensive and all patients</th>
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</thead>
<tbody>
<tr>
<td><strong>BMI over 25</strong></td>
</tr>
<tr>
<td>- Encourage weight reduction</td>
</tr>
<tr>
<td>- Healthy BMI: 18.5-24.9 kg/m²</td>
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</tbody>
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For patients prescribed pharmacological therapy: weight loss has additional antihypertensive effects. Weight loss strategies should employ a multidisciplinary approach and include dietary education, increased physical activity and behaviour modification.

CMAJ 2007;176:1103-6

2009 Canadian Hypertension Education Program Recommendations
TO REDUCE DIETARY SODIUM

Advise patients to
• Buy and eat more fresh foods, especially fruit and vegetables
• Choose processed foods look with low salt labels or brands with the lowest percentage of sodium on the food label
• Wash canned foods or other salty foods in water before eating or cooking
• If desired, use unsalted spices to make foods taste better
• Eat less food at restaurants and fast food outlets and ask for less salt to be added in food orders
• Use less sauces on food
• Eat foods with less than 200 mg of sodium or less than 10% of the daily value per serving

Advise patients not to
• Buy or eat heavily salted foods (e.g. pickled foods, salted crackers or chips, processed meats, etc).
• Add salt in cooking and at the table
• Eat foods with more than 400 mg of sodium or more than 20% of the daily value per serving

2009 Canadian Hypertension Education Program Recommendations
Recommendations for daily salt intake

Less than:

- 2,300 mg sodium (Na)
- 100 mmol sodium (Na)
- 5.8 g of salt (NaCl)
- 1 teaspoon of table salt

2,300 mg sodium = 1 level teaspoon of table salt

However, 80% of average sodium intake is in processed foods and only 10% is added at the table or in cooking.
D.A.S.H. diet

- High fruit & vegetables
- Low fat dairy products
- Whole grains & Nuts
- Poultry & Fish
- Little red meat, sweets, sugar-containing drinks
- Reduced total and saturated fat
- Reduced cholesterol

Lifestyle Recommendations for Hypertension: Dietary

• **High** in fresh fruits
• **High** in fresh vegetables
• **High** in low fat dairy products
• **High** in dietary and soluble fibre
• **High** in plant protein
• **Low** in saturated fat and cholesterol
• **Low** in sodium

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**Dietary Sodium**

Less than 2300mg / day

(Most of the salt in food is ‘hidden’ and comes from processed food)

**Dietary Potassium**

Daily dietary intake >80 mmol

**Calcium supplementation**

No conclusive studies for hypertension

**Magnesium supplementation**

No conclusive studies for hypertension

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2009 Canadian Hypertension Education Program Recommendations
Lifestyle Recommendations for Hypertension: Physical Activity

Should be prescribed to reduce blood pressure

<table>
<thead>
<tr>
<th>F</th>
<th>Frequency</th>
<th>- Four to seven days per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Intensity</td>
<td>- Moderate</td>
</tr>
<tr>
<td>T</td>
<td>Time</td>
<td>- 30-60 minutes</td>
</tr>
<tr>
<td>T</td>
<td>Type</td>
<td>cardiorespiratory activity</td>
</tr>
<tr>
<td></td>
<td>- Walking, jogging</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Cycling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Non-competitive swimming</td>
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</tbody>
</table>

Exercise should be prescribed as adjunctive to pharmacological therapy

2009 Canadian Hypertension Education Program Recommendations
**Myth**

Stopping smoking reduces high blood pressure

Smoking is a contributory factor for cardiovascular disease