Low-salt diet for patients with hypertension

A noncommunicable disease education manual for primary health care professionals and patients
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The Noncommunicable Disease Education Manual for Primary Health Care Professionals and Patients results from the contributions and hard work of many people. Its development was led by Dr Hai-Rim Shin, Coordinator, and Dr Warrick Junsuk Kim, Medical Officer, of the Noncommunicable Diseases and Health Promotion unit at the WHO Regional Office for the Western Pacific (WHO/WPRO/NCD) in Manila, Philippines.

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Noncommunicable disease education manual for primary health care professionals and patients

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- Module 2  Healthy lifestyles
- Module 3  Healthy eating habits
- Module 4  Low-salt diet
- Module 5  Physical activity
- Module 6  Medication and management of associated diseases
- Module 7  Complication prevention

Part 2  Prevention and management of diabetes
- Module 1  Diagnosis and management
- Module 2  Healthy lifestyles
- Module 3  Healthy eating habits 1
- Module 4  Healthy eating habits 2
- Module 5  Physical activity
- Module 6  Taking care of yourself in daily life
- Module 7  Complication prevention

Part 3  Quit smoking
How to use this manual

This book is one of fifteen modules of the “Noncommunicable disease education manual for primary health care professionals and patients”. This manual is intended to provide health information on the prevention and control of hypertension and diabetes.

This will be used in the form of a flip chart for health professionals to educate their patients with either hypertension or diabetes.

FOR PATIENTS

On one side of the flip chart is the ‘For patients’ page. This side has simple images and key messages that are easy to understand. However, health professionals may need to provide education for patients to fully understand the content.

FOR PHYSICIANS

On the other side of the flip chart is the ‘For physicians’ page. This side includes information that the health professional can read out to the patient during counselling. Professional information is also provided for further understanding. A small image of the ‘For patients’ side is included so that the health professional is aware of what the patient is looking at.

This publication is intended to serve as a template to be adapted to national context. Images and graphs that have been watermarked should be replaced with images or graphs that represent the national situation. If assistance is required, or if you have any questions related to the publication, please contact the Noncommunicable Diseases and Health Promotion unit at WHO Regional Office for the Western Pacific (wproncd@who.int).
# Module 4

**Low-salt diet** for patients with **hypertension**

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Benefits of healthy lifestyles

- **Daily medication**: Maintain target BP
  - 2–8 mmHg

- **Salt intake reduction**: 4–9 mmHg

- **Physical activity**: 5–20 mmHg

- **10 kg weight loss in obese person**: 2–4 mmHg

- **Avoid harmful use of alcohol**: overall cardiovascular risk reduction

- **Quit smoking**
**Benefits of healthy lifestyles**

**Patient education**

- Controlling high blood pressure involves not only drug therapy, but also leading a healthy lifestyle.
- Taking medication daily is key to maintaining stable blood pressure in the target range.
- Healthy lifestyle including salt intake reduction, physical activity, weight control, lower alcohol consumption and eating more fruits and vegetables helps maintain or decrease blood pressure.
- It is more effective if these lifestyle factors are controlled together.
- Smokers can reduce overall cardiovascular disease risk if they quit smoking.

REFERENCE:
What is salt?

1 g of table salt = 400 mg of sodium

- **Sodium (Na+)** increases blood pressure
- **Chloride (Cl-)** makes food taste salty

1 g of sodium = 2.5 g of table salt
What is salt?

Patient education

• Salt is composed of sodium and chloride. Chloride is what gives the salty taste, but only in combination with sodium.
• Sodium increases blood pressure.
• The adverse effects of salt on our body are mainly caused by the sodium component.

Professional information

• One gram of salt contains 400 mg of sodium.
• Thus, the recommended 5 g of daily salt intake is equivalent to 2 g of sodium.

1 g of table salt = 400 mg of sodium

1 g of sodium = 2.5 g of table salt

Sodium (Na+) increases blood pressure

Chloride (Cl-) makes food taste salty
Health risks of eating too much salt

high sodium intake = disease burden

Hypertension
Angina
Stroke
Cancer
Heart attack
Dementia
Kidney disease
Health risks of eating too much salt

Patient education

• Consuming too much sodium can cause various diseases.
• It increases the risk of not only hypertension and cardiovascular diseases, but also chronic kidney disease, osteoporosis, and gastric cancer.
• Risk rises as intake increases.
• Salt works on your kidneys to make your body hold on to more water.
• This extra stored water raises your blood pressure and puts strain on your kidneys, arteries, heart and brain.

REFERENCE:
Salt (sodium) and hypertension

For every 5 g reduction of daily salt intake:

- Cardiovascular mortality decreases by 17%.
- Stroke mortality decreases by 23%.
Salt (sodium) and hypertension

Patient education

• When we eat salty food, sodium enters the blood vessels and increases blood volume which results in higher blood pressure.
• Controlling salt intake is vital.
• Reducing daily intake of salt by 5 g cuts cardiovascular mortality by 17% and stroke mortality by 23%.

For every 5 g reduction of daily salt intake:

• Cardiovascular mortality decreases by 17%.
• Stroke mortality decreases by 23%.

REFERENCE:
Effects of low-salt diet

- Average life expectancy increases by five years when sodium intake is reduced by one third for 30 years.
- Reducing daily salt intake by 1–3 g is more effective than antihypertensive drugs.
- The risk of hypertension is reduced by 30% and the benefit of medication is doubled when daily salt intake is reduced by 4.6 g.
Effects of low-salt diet

Patient education

- Average life expectancy increases by five years when sodium intake is reduced by one third for 30 years.

- Reducing daily salt intake by 1–3 g is more effective than antihypertensive drugs.

- The risk of hypertension is reduced by 30% and the benefit of medication is doubled when daily salt intake is reduced by 4.6 g.

REFERENCES:
Common sources of salt (sodium)

- **Soup, Noodles**: 31%
- **Kimchi**: 23%
- **Others**: 26%
- **Snacks**: 14%
- **Rice**: 6%

**No. 1 source of sodium in the Republic of Korea:** instant noodles and soup

Common sources of salt (sodium)

Patient education

- What are the main sources of sodium in Korea?
- Koreans consume 50% of their total sodium intake just by eating pickled cabbage, soup, and instant noodles whereas people in other countries consume much of their salt from processed foods and bread.

REFERENCE:
Foods high in sodium

55%–75% of the sodium in a noodle soup dish is contained in the broth.

- Spicy noodles (100 g): 4,000 mg
- Chinese udon (100 g): 3,396 mg
- Pickled crabs (100 g): 3,221 mg
- Cold noodles (100 g): 3,152 mg
- Kimchi udon (100 g): 2,875 mg
- Spicy soup (100 g): 2,853 mg
- Spicy rice (100 g): 2,813 mg

INSERT DATA: main foods high in sodium in your country
Foods high in sodium

Patient education

- If you just eat the noodles and other ingredients in a bowl of noodle soup and leave the broth, you can reduce your sodium intake by half to three quarters.
Sodium in seasonings

<table>
<thead>
<tr>
<th>Seasoning</th>
<th>mg 1 tablespoon (15 ml)</th>
<th>mg 1 teaspoon (5 ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ketchup</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Mayonnaise</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Mustard</td>
<td>360</td>
<td></td>
</tr>
<tr>
<td>Oyster sauce</td>
<td>1800</td>
<td></td>
</tr>
<tr>
<td>Red pepper paste</td>
<td>1200</td>
<td></td>
</tr>
<tr>
<td>Miso</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>Salt</td>
<td>2000</td>
<td>1200</td>
</tr>
<tr>
<td>Soy sauce</td>
<td>400</td>
<td>100</td>
</tr>
<tr>
<td>Others</td>
<td>200</td>
<td>50</td>
</tr>
</tbody>
</table>

INSERT DATA: main seasonings high in sodium in your country
Low-salt diet for patients with hypertension

Sodium in seasonings

Patient education

- Below is a comparison of sodium content in seasonings, by teaspoon.
- Miso, red pepper paste and oyster sauce are especially high in sodium.
Low-salt diet for patients with hypertension

Three steps toward a low-salt diet: choosing food

• Step 1: Five tips for choosing food
  a. Raw or steamed fish rather than fried fish.
  b. Fresh food rather than processed food.
  c. Check nutrition labels and choose the one with the lowest sodium (target daily sodium intake: 2000 mg).
  d. Choose low-sodium seasonings, including low-sodium salt.
  e. Avoid preserved food.

• Step 2: Five tips for cooking

• Step 3: Five ways to eat less salt
Three steps toward a low-salt diet: choosing food

Patient education

Five steps for choosing food:

a. Raw or steamed fish rather than fried fish.
b. Fresh food rather than processed food.
c. Check nutrition labels and choose the one with the lowest sodium (target daily sodium intake: 2000 mg).
d. Choose low-sodium seasonings, including low-sodium salt.
e. Avoid preserved food.

REFERENCE:
Low-salt diet for patients with hypertension

Step 1: Five tips for choosing food

Sodium in processed food

How much sodium is added when food is processed?

Potatoes 100 g
Na+ 4 mg

Fries and chips 100 mg
Na+ 469 mg

Flour 100 g
Na+ 3 mg

Instant noodles with soup
Na+ 2140 mg

Tomatoes 100 g
Na+ 5 mg

Ketchup 100 g
Na+ 1295 mg
Step 1: Five tips for choosing food

Sodium in processed food

Patient education

- When fresh food products are processed, sodium content generally increases – salt and other sodium products are added for many reasons including longer shelf life and increased flavour.
Step 1: Five tips for choosing food

Check nutrition labels for salt content before purchasing:

An example of what one serving (1 oz. or 28 g) of chips may include:

- 160 kcal
- 15 g of carbohydrates (5%)
- 2 g of protein
- 10 g of fat (16%)
- 170 mg of sodium (7%) (0.4 g of salt)
- 350 mg of potassium (10%)

* % indicates percentage of daily values based on a 2000 kcal diet
Low-salt diet for patients with hypertension

Step 1: Five tips for choosing food

Check nutrition labels for salt content

Patient education

- This nutrition label shows, for example, that one serving (1 oz. or 28 g) of chips may include 160 kcal.
- In one serving of chips, you are eating 15 g of carbohydrates, 2 g of protein, 10 g of fat, 170 mg of sodium (0.4 g of salt) and 350 mg of potassium.

**Nutrition Facts**
Serving Size 1 oz (28g/About 15 chips)

<table>
<thead>
<tr>
<th>Amount Per Serving</th>
<th>% Daily Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories 160</td>
<td>Calories from Fat 160</td>
</tr>
<tr>
<td>Total Fat 10g</td>
<td>16%</td>
</tr>
<tr>
<td>Saturated Fat 1.5g</td>
<td>8%</td>
</tr>
<tr>
<td>Trans Fat 0g</td>
<td></td>
</tr>
<tr>
<td>Cholesterol 0mg</td>
<td>0%</td>
</tr>
<tr>
<td>Sodium 170mg</td>
<td>7%</td>
</tr>
<tr>
<td>Potassium 350mg</td>
<td>10%</td>
</tr>
<tr>
<td>Total Carbohydrate 15g</td>
<td>5%</td>
</tr>
<tr>
<td>Dietary Fiber 1g</td>
<td>5%</td>
</tr>
<tr>
<td>Sugars less than 1g</td>
<td></td>
</tr>
<tr>
<td>Protein 2g</td>
<td></td>
</tr>
<tr>
<td>Vitamin A 0%</td>
<td></td>
</tr>
<tr>
<td>Calcium 0%</td>
<td></td>
</tr>
<tr>
<td>Vitamin E 6%</td>
<td></td>
</tr>
<tr>
<td>Iron 2%</td>
<td></td>
</tr>
<tr>
<td>Thiamin 4%</td>
<td></td>
</tr>
<tr>
<td>Niacin 6%</td>
<td></td>
</tr>
<tr>
<td>Vitamin B6 10%</td>
<td></td>
</tr>
<tr>
<td>Magnesium 4%</td>
<td></td>
</tr>
<tr>
<td>Zinc 2%</td>
<td></td>
</tr>
</tbody>
</table>
Three steps toward a low-salt diet: cooking

- **Step 1: Five tips for choosing food**
- **Step 2: Five tips for cooking**
  a. Season your food at the last minute.
  b. Use herbs and vegetables for additional flavour.
     - Savoury: spring onion, garlic, onions, pepper.
     - Sour and sweet: vinegar, lemon zest.
  c. Use less seasoning when cooking processed foods.
  d. Grill fish without salt.
- **Step 3: Five ways to eat less salt**
Three steps toward a low-salt diet: cooking

Patient education

Five tips for cooking:

a. Season your food at the last minute.

b. Use herbs and vegetables for additional flavour.
   • Savoury: spring onion, garlic, onions, pepper.
   • Sour and sweet: vinegar, lemon zest.

c. Use less seasoning when cooking processed foods.

d. Grill fish without salt.

REFERENCE:
Three steps toward a low-salt diet: eat less salt

• Step 1: Five tips for choosing food
• Step 2: Five tips for cooking
• Step 3: Five ways to eat less salt

a. Eat fresh vegetables rather than pickles.
b. Do not add sauce or salt to fried foods.
c. Avoid soups high in salt and use low-salt stock when cooking them.
d. Use spring onion/garlic or pepper for seasoning soups.
e. Choose low-salt options when eating out.
Three steps toward a low-salt diet: eat less salt

Patient education

Five ways to eat less salt:

a. Eat fresh vegetables rather than pickled.
b. Do not add sauce or salt to fried foods.
c. Avoid soups high in salt and use low-salt stock when cooking them.
d. Use spring onion/garlic or pepper for seasoning soups.
e. Choose low-salt options when eating out.

REFERENCES:
Reduce salt intake

Reduce salt, soy sauce to HALF.

Steam or grill instead of salting or simmering in soy sauce.

Remove the salt shaker from your table.

Reduce pickled vegetables and salted/dried fish.

Use spices instead of salt and soy sauce.

Eat the solid ingredients, leave the broth.
Reduce salt intake

Patient education

- Most people eat too much salt.
- However, the recommended level is less than 5 grams per day.
- Eating salty food increases your blood pressure and appetite.
- Reducing salt intake prevents blood pressure from rising and reduces your appetite, making it easier to eat healthy.
- If you have kidney failure, it is even more important to strictly control your salt intake.
- Try to eat only the solid ingredients in soups and reduce consumption of processed food (instant noodles, ham, canned food, snacks, bread).

REFERENCES:
Take-home message
Low-salt diet

Shopping
Check the sodium content in ingredients list.
Buy fresh food instead of processed foods.

Dining
Ask for low-salt options when eating out.
Remove salt from the dining table.

Ordering
Ask about low-salt food options.

Snacks
Eat vegetables, fruits and milk.