

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.

WHO graciously acknowledges the intellectual contributions of Dr Jung-jin Cho, Co-director, Community-based Primary Care Project Committee and Professor, Department of Family Medicine, Hallym University Sacred Heart Dongtan Hospital, Republic of Korea; Dr Hyejin Lee, Volunteer, WHO/WPRO/NCD (currently PhD candidate, Department of Family Medicine, Seoul National University, Republic of Korea); Ms Saki Narita, Volunteer, WHO/WPRO/NCD (currently PhD candidate, Department of Global Health Policy, Graduate School of Medicine, University of Tokyo, Japan); and Mr Byung Ki Kwon, Technical Officer, WHO/WPRO/NCD (currently Director, Division of Health Promotion, Ministry of Health and Welfare, Republic of Korea).

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All illustrations were provided by the source publication.

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Noncommunicable disease education manual for primary health care professionals and patients

Part 1 Prevention and management of hypertension

- Module 1 Diagnosis and management
- Module 2 Healthy lifestyles
- Module 3 Healthy eating habits
- Module 4 Low-salt diet** ◀ YOU ARE HERE
- Module 5 Physical activity
- Module 6 Medication and management of associated diseases
- Module 7 Complication prevention

Part 2 Prevention and management of diabetes

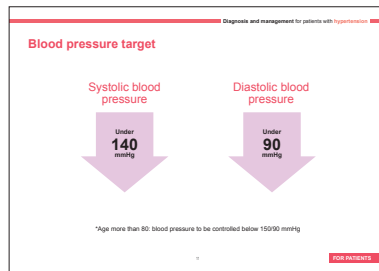
- Module 1 Diagnosis and management
- Module 2 Healthy lifestyles
- Module 3 Healthy eating habits 1
- Module 4 Healthy eating habits 2
- Module 5 Physical activity
- Module 6 Taking care of yourself in daily life
- Module 7 Complication prevention

Part 3 Quit smoking

How to use this manual

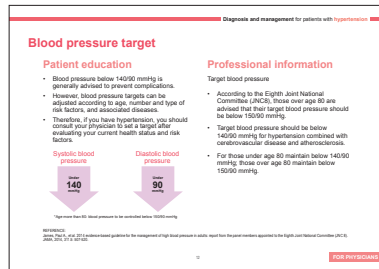
This book is one of fifteen modules of the “Noncommunicable disease education manual for primary health care professionals and patients”. This manual is intended to provide health information on the prevention and control of hypertension and diabetes.

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).

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Benefits of healthy lifestyles



Daily medication

Maintain target BP



Salt intake reduction

2–8 mmHg ↓



Physical activity

4–9 mmHg ↓



10 kg weight loss in obese person

5–20 mmHg ↓



Avoid harmful use of alcohol

2–4 mmHg ↓



Quit smoking

overall cardiovascular risk reduction

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.

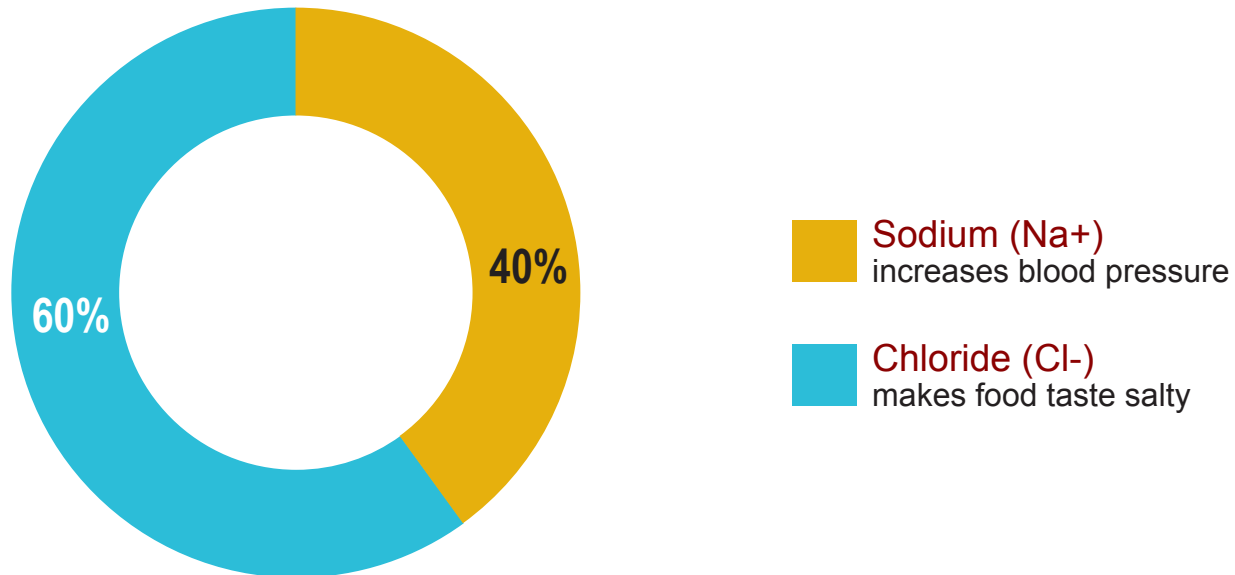


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Chobanian, Aram V., et al. Seventh report of the joint national committee on prevention, detection, evaluation, and treatment of high blood pressure. Hypertension, 2003, 42.6: 1206-1252.

What is salt?

1 g of table salt = 400 mg of sodium



1 g of sodium = 2.5 g of table salt

What is salt?

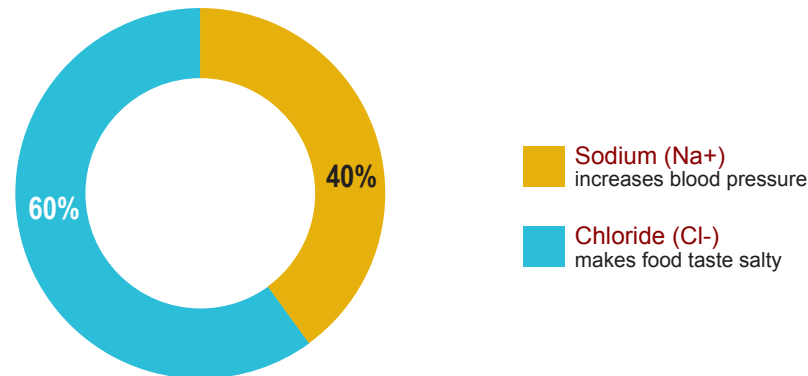
Patient education

- 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.

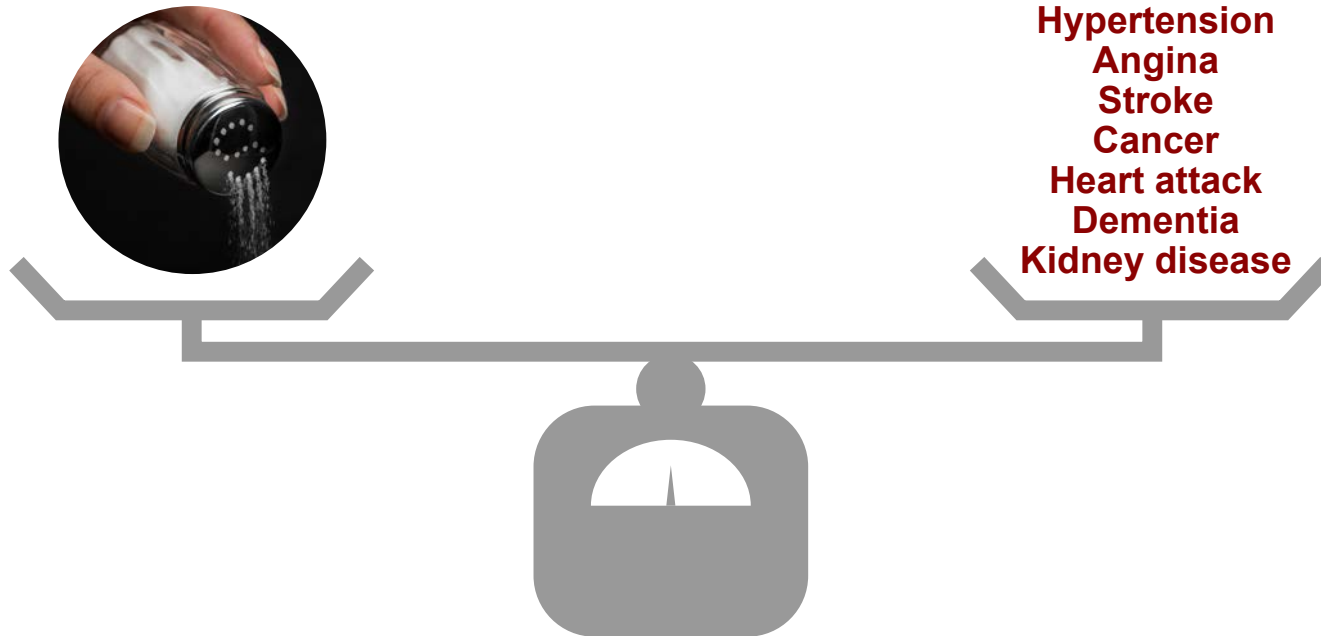
1 g of table salt = 400 mg of sodium



1 g of sodium = 2.5 g of table salt

Health risks of eating too much salt

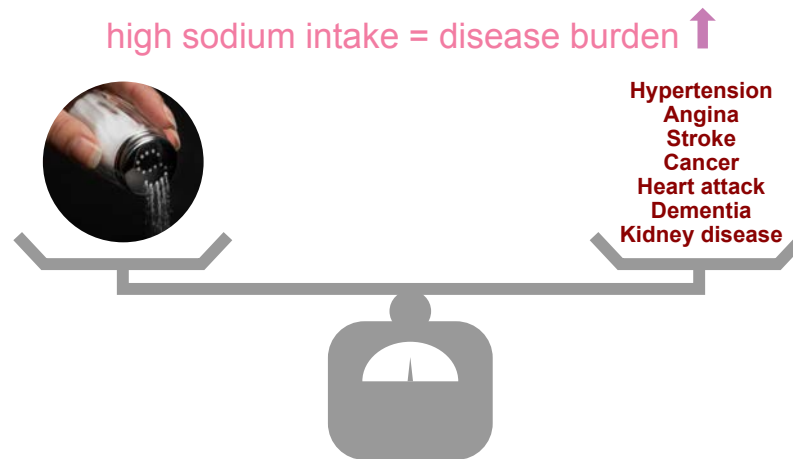
high sodium intake = disease burden ↑



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:

James, Paul A., et al. 2014 Evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8). JAMA, 2014, 311.5: 507-520.

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:

Strazzullo, Pasquale, et al. Salt intake, stroke, and cardiovascular disease: meta-analysis of prospective studies. *BMJ*, 2009, 339: b4567.

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

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- Reducing daily salt intake by 1–3 g is more effective than antihypertensive drugs.
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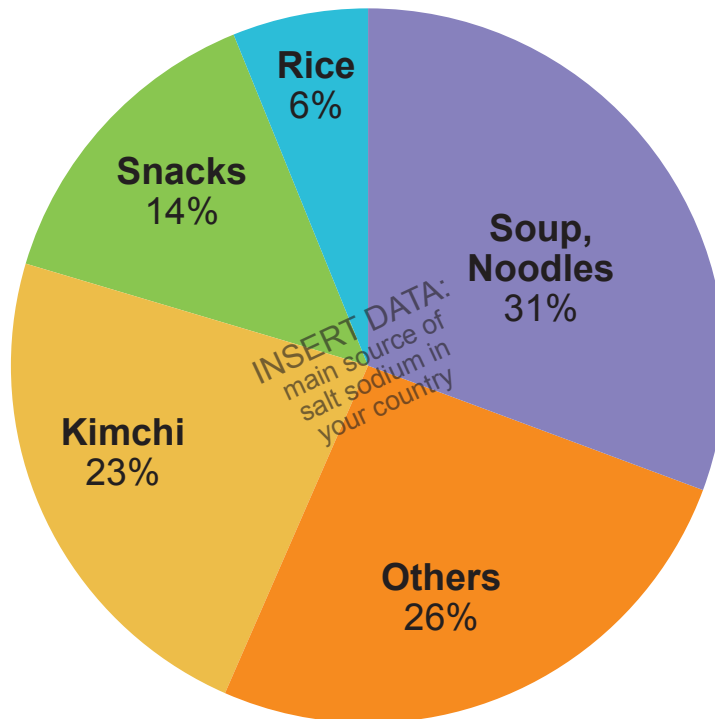
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Joffres MR et al. Estimate of the benefits of a population-based reduction in dietary sodium additives on hypertension and its related health care costs in Canada. *Can J Cardiol*, 2007, 23(6): 437-443.

Common sources of salt (sodium)



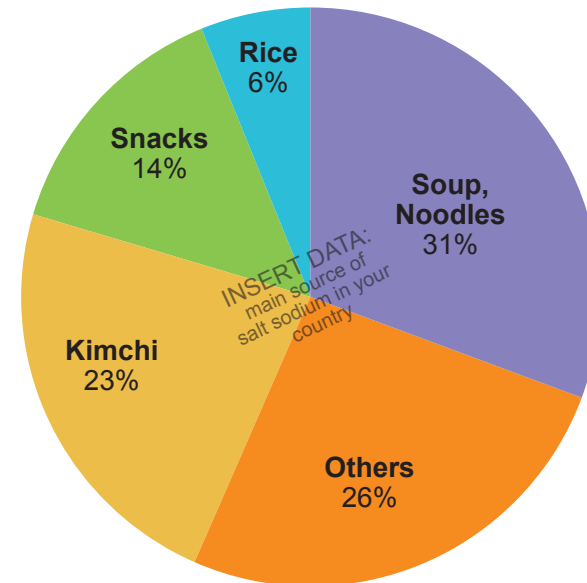
No. 1 source of sodium in the Republic of Korea: instant noodles and soup

REFERENCE:
Korean National Health and Nutrition Examination, 2011.

Common sources of salt (sodium)

Patient education

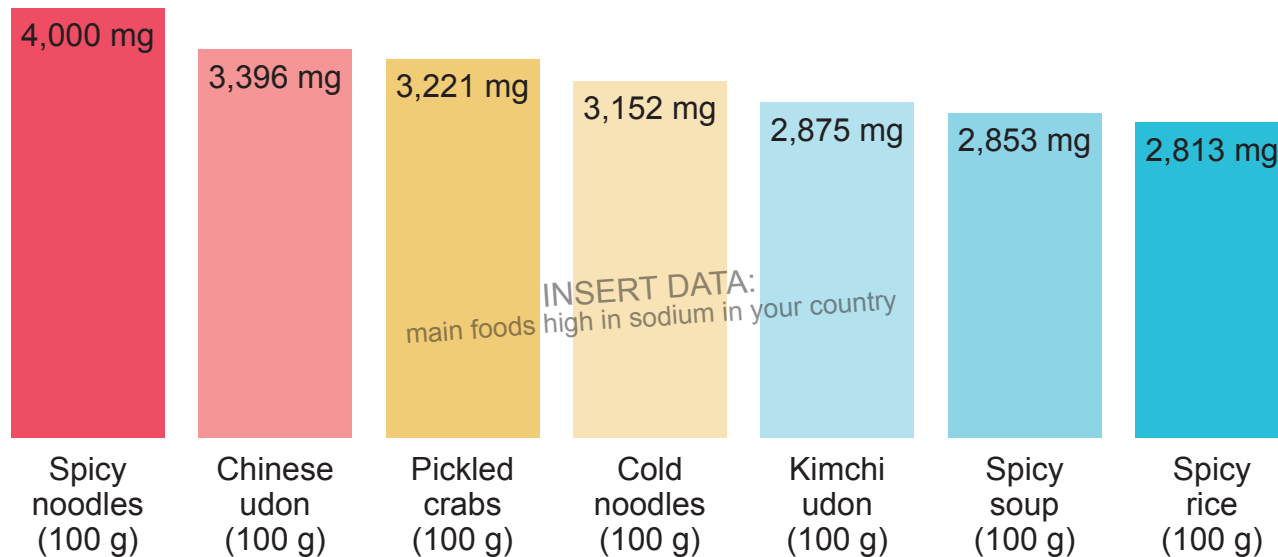
- What are the main sources of sodium in Korea?
- Koreans consume 50% of their total sodium intake just by eating pickled cabbage, soup, and instant noodles whereas people in other countries consume much of their salt from processed foods and bread.



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

REFERENCE:
Korean National Health and Nutrition Examination, 2011.

Foods high in sodium

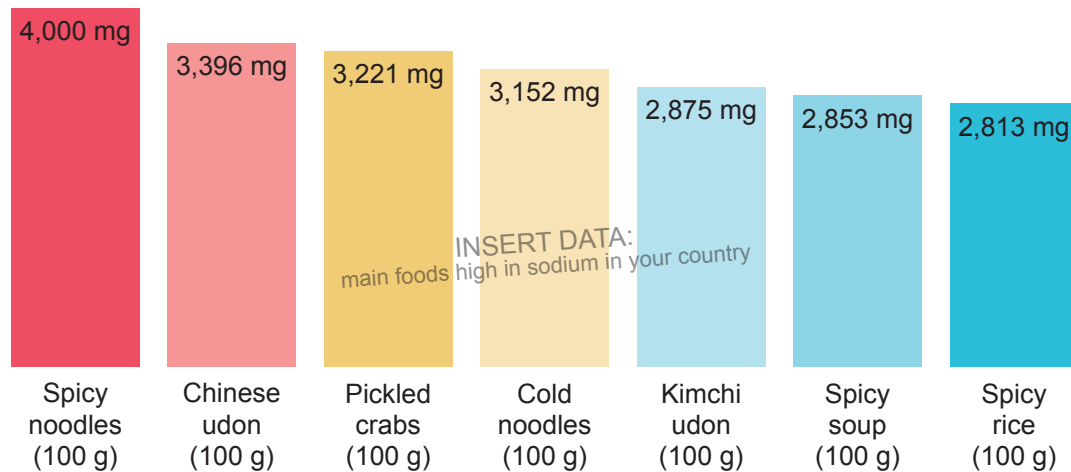


55%–75% of the sodium in a noodle soup dish is contained in the broth.

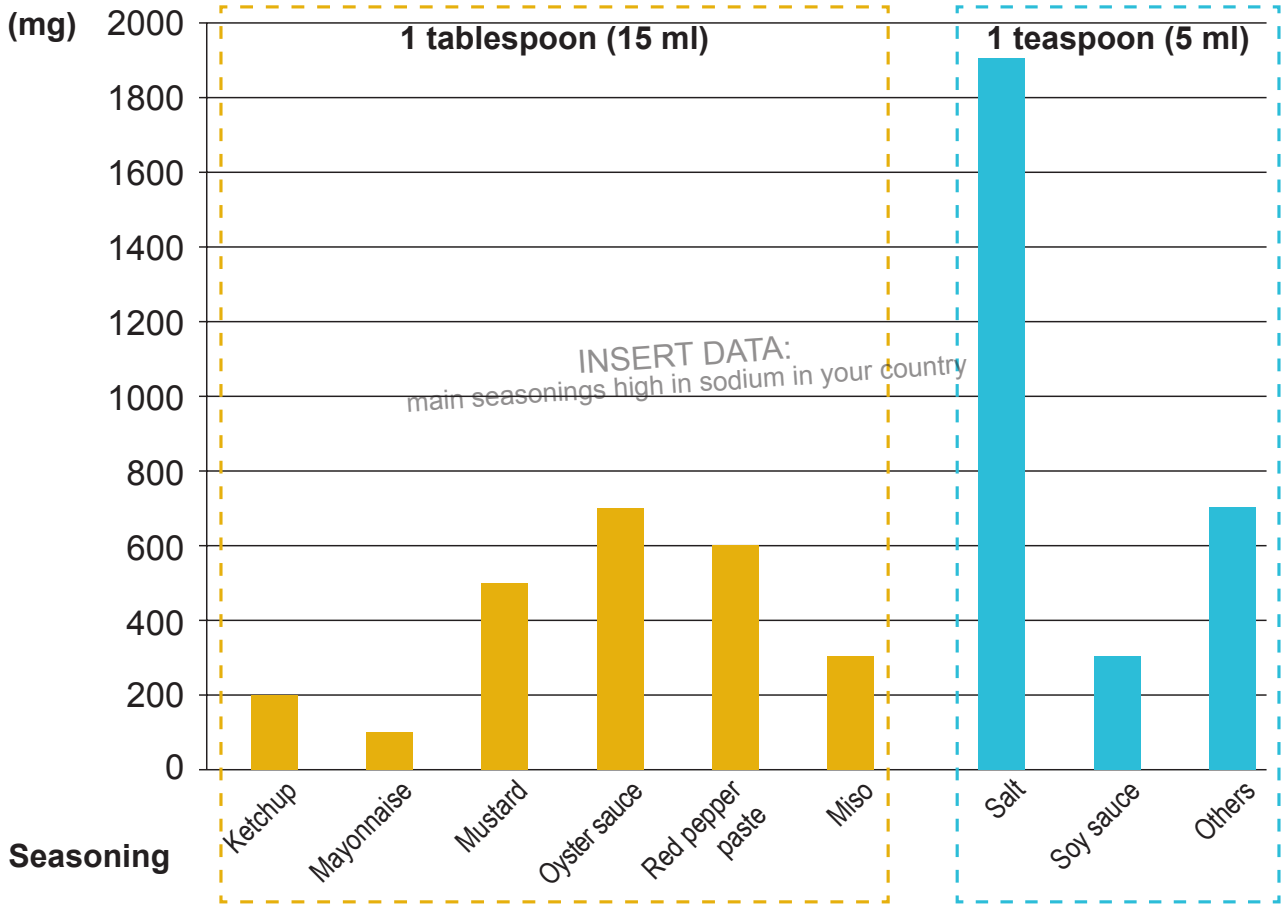
Foods high in sodium

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.



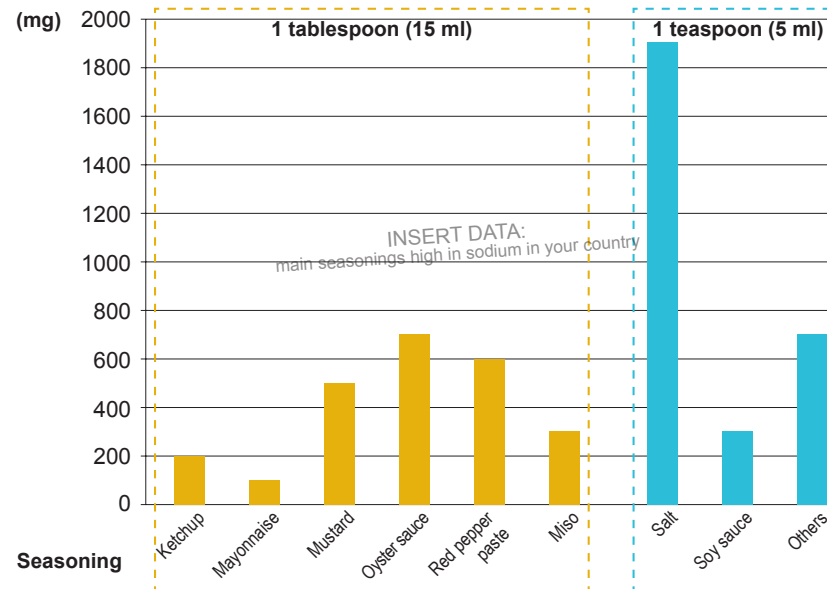
Sodium in seasonings



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.



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.
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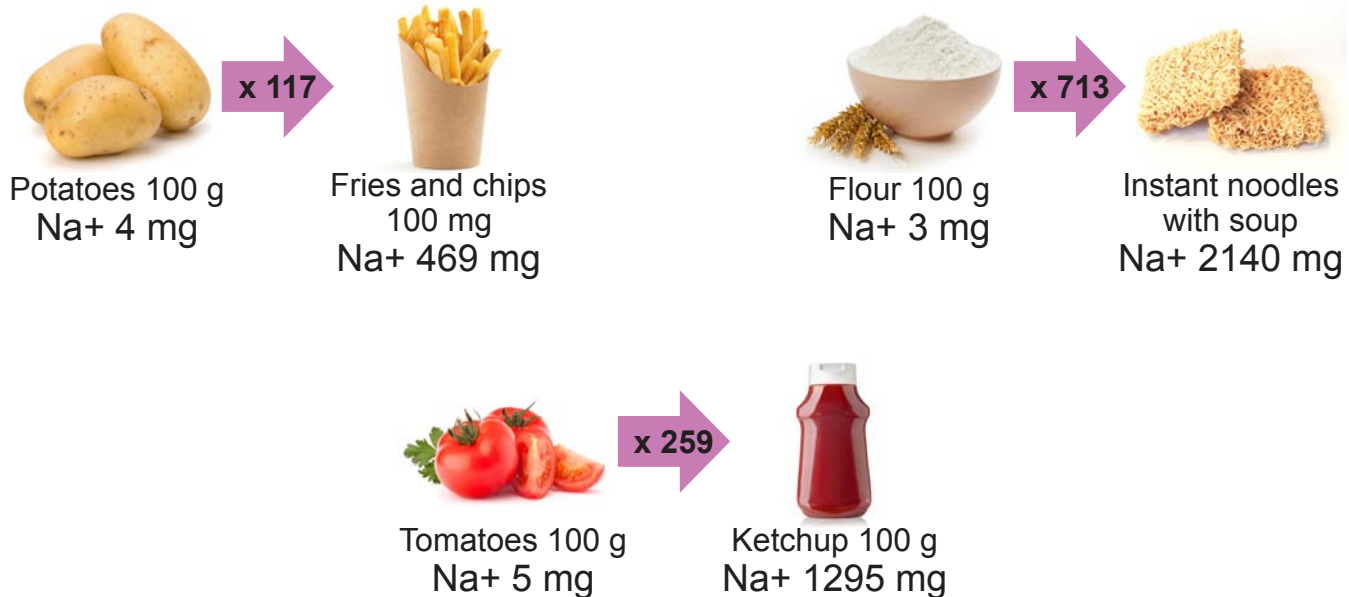
REFERENCE:

McGuire, Shelley. U.S. Department of Agriculture and U.S. Department of Health and Human Services (United States), Dietary Guidelines for Americans, 2010. *Advances in Nutrition: an international review journal*, 2011, 2.3: 293-294.

Step 1: Five tips for choosing food

Sodium in processed food

How much sodium is added when food is processed?

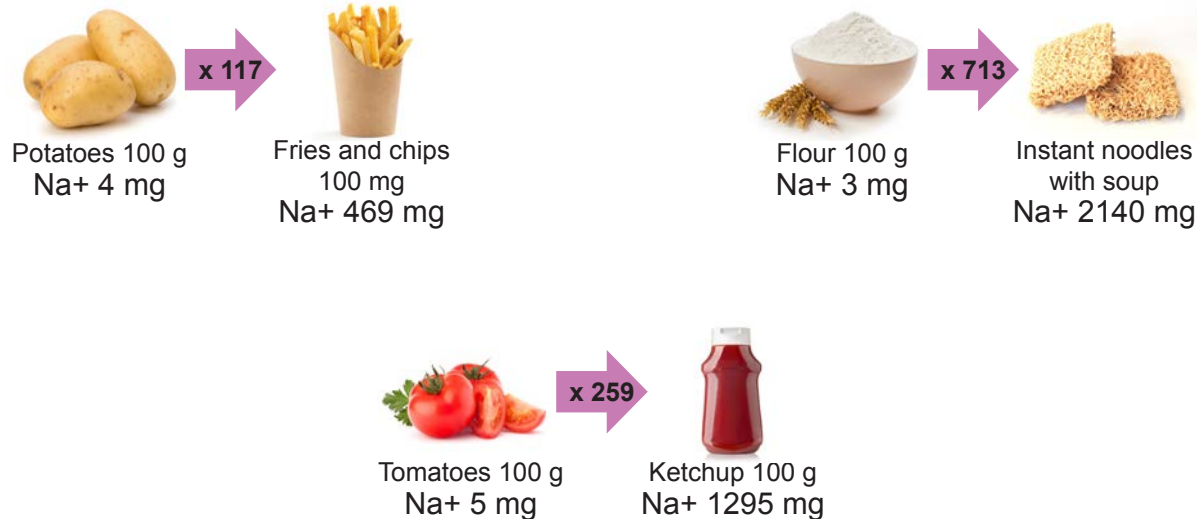


Step 1: Five tips for choosing food

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

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

Nutrition Facts	
Serving Size 1 oz (28g/About 15 chips)	
Amount Per Serving	
Calories 160	Calories from Fat 160
% Daily Value*	
Total Fat 10g	16%
Saturated Fat 1.5g	8%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 170mg	7%
Potassium 350mg	10%
Total Carbohydrate 15g	5%
Dietary Fiber 1g	5%
Sugars less than 1g	
Protein 2g	
Vitamin A 0%	• Vitamin C 10%
Calcium 0%	• Iron 2%
Vitamin E 6%	• Thiamin 4%
Niacin 6%	• Vitamin B ₆ 10%
Magnesium 4%	• Zinc 2%

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)	
Amount Per Serving	
Calories 160	Calories from Fat 160
% Daily Value*	
Total Fat 10g	16%
Saturated Fat 1.5g	8%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 170mg	7%
Potassium 350mg	10%
Total Carbohydrate 15g	5%
Dietary Fiber 1g	5%
Sugars less than 1g	
Protein 2g	
Vitamin A 0%	• Vitamin C 10%
Calcium 0%	• Iron 2%
Vitamin E 6%	• Thiamin 4%
Niacin 6%	• Vitamin B ₆ 10%
Magnesium 4%	• Zinc 2%

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.
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 - Savoury: spring onion, garlic, onions, pepper.
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McGuire, Shelley. U.S. Department of Agriculture and U.S. Department of Health and Human Services (United States), Dietary Guidelines for Americans, 2010. Advances in Nutrition: an international review journal, 2011, 2.3: 293-294.

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.
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- d. Use spring onion/garlic or pepper for seasoning soups.
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REFERENCES:

Weber, Michael A., et al. Clinical practice guidelines for the management of hypertension in the community. *The Journal of Clinical Hypertension*, 2014, 16.1: 14-26.
James, Paul A., et al. w-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8). *JAMA*, 2014, 311.5: 507-520. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute (United States). Your guide to lowering your blood pressure with DASH. DASH eating plan, 2006.

Reduce salt intake



Reduce salt, soy sauce to HALF.



Remove the salt shaker from your table.



Use spices instead of salt and soy sauce.



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



Reduce pickled vegetables and salted/dried fish.



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).

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Diabetes basic nutrition course. Centers for Disease Control and Prevention, Republic of Korea. 2016. (http://www.kncd.org/down/sub09/01/9_1_2_4.pdf, accessed 28 September 2016).

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International Diabetes Federation. Global guideline for type 2 diabetes. Brussels: IDF Clinical Guidelines Task Force, 2012.

Scottish Intercollegiate Guidelines Network. Management of diabetes. Edinburgh. 2011.



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



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Remove the salt shaker from your table.



Use spices instead of salt and soy sauce.



Eat the solid ingredients, leave the broth.

Take-home message

Low-salt diet

Shopping

Check the sodium content in ingredients list.

Buy fresh food instead of processed foods.

Ordering

Ask about low-salt food options.

Dining

Ask for low-salt options when eating out.

Remove salt from the dining table.

Snacks

Eat vegetables, fruits and milk.

