Healthy eating habits 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
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- Module 7  Complication prevention

Part 2  Prevention and management of diabetes
- Module 1  Diagnosis and management
- Module 2  Healthy lifestyles
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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 3

Healthy eating habits for patients with hypertension

1. Lifestyle management: diet
2. Why a low-fat diet?
3. Healthy foods to lower blood pressure
4. Low-fat diet: less saturated fat
5. Low-fat diet: choosing healthy fats
6. Low-fat diet: reduce cholesterol
7. Low-fat diet: more fibre
8. Low-fat diet Q & A (1)
9. Low-fat diet Q & A (2)
10. Low-fat diet Q & A (3)
11. Specific plans for a low-fat diet
12. Choose healthy carbohydrates
13. Health risks of eating too much salt
14. Eat healthy
15. Take-home message
Lifestyle management: diet

Increase fruit and vegetable consumption

Maintain healthy/appropriate weight

Reduce salt and fat intake
Lifestyle management: diet

Patient education

• Managing your diet is very important in controlling hypertension.

• Methods include reducing salt and saturated fat intake and consuming adequate amounts of vegetables and fruits to maintain a healthy weight.

Professional information

• When a patient with hypertension eats food high in salt, the sodium in the salt increases blood volume, resulting in higher blood pressure.

• It is very important to reduce salt intake from the estimated global level of 9-12 grams per day to the recommended WHO maximum target of 5 grams per day.

• This has demonstrated the potential to reduce the global cardiovascular disease rate by 17% and global stroke rate by 23%.

REFERENCES:
Healthy foods to lower blood pressure

How should I eat to lower my blood pressure?

- Eat a wide variety from **all food groups**.
- Eat adequate amounts of healthy carbohydrates.
- Reduce saturated fats and trans fats.
- Reduce salt.
Healthy foods to lower blood pressure

Patient education

How should I eat to lower my blood pressure?

• Eat a wide variety from all food groups.
• Eat adequate amounts of healthy carbohydrates.
• Reduce saturated fats and trans fats.
• Reduce salt.

REFERENCES:
World Health Organization. Salt matters for Pacific island countries: mobilizing for effective action to reduce population salt intake in the Pacific island countries. 2014.
Why a low-fat diet?

Dyslipidaemia* prevention

• 50% of patients with high cholesterol levels have hypertension

• **Associated hypertension and dyslipidaemia raise the risk of cardiovascular complications**

• It is important to maintain blood cholesterol and triglyceride levels in the normal range

* Dyslipidaemia
Abnormally elevated blood cholesterol and triglyceride levels
Healthy eating habits for patients with hypertension

Why a low-fat diet?

Patient education

• For patients with hypertension, managing dyslipidaemia is very important.
• Dyslipidaemia is when blood cholesterol and triglycerides are abnormally high.
• The risk of cardiovascular complications increases when a hypertension patient also has dyslipidaemia.
• Therefore, it is important to maintain blood cholesterol and triglycerides within a normal range.
• For dyslipidaemia management, a low-fat, low-cholesterol diet and regular exercise are recommended first. If it is not controlled after 3–6 months of dietary restriction and regular exercise, drug therapy is needed.

Professional information

• Modifying lifestyles that have a bigger effect scale (+++ being the highest) and stronger evidence (A being the strongest) of effectiveness in lowering blood cholesterol

<table>
<thead>
<tr>
<th>Lifestyle habit change</th>
<th>Effect scale</th>
<th>Strength of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less saturated fat</td>
<td>+++</td>
<td>A</td>
</tr>
<tr>
<td>Less trans fat</td>
<td>+++</td>
<td>A</td>
</tr>
<tr>
<td>Food abundant in phytosterols</td>
<td>+++</td>
<td>A</td>
</tr>
<tr>
<td>Abundant dietary fibre intake</td>
<td>++</td>
<td>A</td>
</tr>
<tr>
<td>Physical activity</td>
<td>+</td>
<td>A</td>
</tr>
<tr>
<td>Less cholesterol intake</td>
<td>++</td>
<td>B</td>
</tr>
<tr>
<td>Weight reduction</td>
<td>+</td>
<td>B</td>
</tr>
</tbody>
</table>

Dyslipidaemia* prevention

• 50% of patients with high cholesterol levels have hypertension
• Associated hypertension and dyslipidaemia raise the risk of cardiovascular complications
• It is important to maintain blood cholesterol and triglyceride levels in the normal range

* Dyslipidaemia
Abnormally elevated blood cholesterol and triglyceride levels

REFERENCE:
Low-fat diet: less saturated fat

Ways to achieve lower saturated fat intake
= regular and even intake from various food groups

<table>
<thead>
<tr>
<th>Dietary factor</th>
<th>Goal (% of total energy, otherwise stated)</th>
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<tbody>
<tr>
<td>Total fat</td>
<td>15–30%</td>
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<tr>
<td>Saturated fat</td>
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<tr>
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<tr>
<td>Monounsaturated fat</td>
<td>By difference(^a)</td>
</tr>
<tr>
<td>Trans fatty acids</td>
<td>&lt; 1%</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>&lt; 300 mg per day</td>
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<tr>
<td>Carbohydrate</td>
<td>55–75%(^b)</td>
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<tr>
<td>Free sugars(^c)</td>
<td>&lt; 10%</td>
</tr>
<tr>
<td>Protein</td>
<td>10–15%(^d)</td>
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</table>

\(^a\) This is calculated as: total fat \(\text{–} (\text{saturated fatty acids + polyunsaturated fatty acids + trans-fatty acids})\).

\(^b\) The percentage of total energy available after taking into account that consumed as protein and fat, hence the wide range.

\(^c\) The term "free sugars" refers to all monosaccharides and disaccharides added to foods by the manufacturer, cook or consumer, plus sugars naturally present in honey, syrups and fruit juices.

\(^d\) The suggested range should be seen in the light of the Joint WHO/FAO/UNU Expert Consultation on Protein and Amino Acid Requirements in Human Nutrition, held in Geneva from 9 to 16 April 2002.
Healthy eating habits for patients with hypertension

Low-fat diet: less saturated fat

Patient education

- Many studies have been published about the relationship between fat intake and blood pressure, one of which showed that saturated fat intake is associated with the risk of cardiovascular diseases.
- The easiest way to cut the intake of saturated fat is to be in the habit of eating a variety of food groups regularly.

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Adequate amount  Regular time  Variety of foods

REFERENCE
### Low-fat diet: choosing healthy fats

Reduce saturated fat, replace with unsaturated fat

<table>
<thead>
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<td>Animal fat (oxtail, rib, bacon)</td>
<td>Olive oil</td>
<td>Corn oil</td>
</tr>
<tr>
<td>Dairy products (milk, cheese, ice cream)</td>
<td>Canola oil</td>
<td>Safflower seed oil</td>
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<tr>
<td>Coconut oil</td>
<td>Avocado oil</td>
<td>Sunflower oil</td>
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<tr>
<td>Palm oil (noodles, crackers)</td>
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<td>Peanut oil</td>
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<td>Butter</td>
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<td>Sesame oil</td>
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<td>Grape seed oil</td>
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<td>Soybean oil</td>
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<td></td>
<td></td>
<td>Primrose oil</td>
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<td></td>
<td></td>
<td>Fish oil (mackerel, salmon, herring, tuna)</td>
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<td>Seafood</td>
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<td>Soybean oil</td>
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<td>Perilla oil</td>
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<td>Canola oil</td>
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<tr>
<td></td>
<td></td>
<td>Nuts</td>
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</tbody>
</table>
Low-fat diet: choosing healthy fats

Patient education

- Substituting unhealthy fat (saturated) with healthy fat (unsaturated) is better than reducing total fat itself.
- If you cut fat intake just because you think “fat is bad” and instead eat more carbohydrates such as sugar, white bread, white rice and potatoes, you will gain more weight and your blood triglyceride levels will increase.
- While excess energy intake through too much fat causes obesity, it is still important to eat an adequate amount of the right kind of fat (unsaturated).

Reduce saturated fat, replace with unsaturated fat

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REFERENCE:
Healthy eating habits for patients with hypertension

Low-fat diet: reduce cholesterol

Eat less unhealthy fat
• Meat: remove skin, trim fat, reduce processed meat intake
• Reduce liver, intestine intake
• Milk, dairy products: eat low-fat or fat-free milk
Low-fat diet: reduce cholesterol

**Patient education**

- It is important to cut down on fat because most patients with hypertension normally have dyslipidaemia and need to control their weight. When you eat meat, try to avoid the fat.
- Reduce liver, intestine or processed meats consumption. Choose low-fat or fat-free dairy products.

**Eat less unhealthy fat**

- Meat: remove skin, trim fat, reduce processed meat intake
- Reduce liver, intestine intake
- Milk, dairy products: eat low-fat or fat-free milk

**REFERENCES:**
Healthy eating habits for patients with hypertension

Low-fat diet: more fibre

Eat more dietary fibre

Fibre

• Prevents cholesterol absorption and synthesis.
• Decreases the absorption speed of carbohydrates.
• Decreases the incidence of complications and cancer.
• Aids the digestive system.
• Abundant in vegetables, fruits, grains and seaweeds.
Healthy eating habits for patients with hypertension

Low-fat diet: more fibre

Patient education

- Eating fibre has benefits, such as aiding weight loss, even if it does not reduce blood pressure directly. Foods high in fibre are fruits, vegetables, oats, dry beans, seaweed and grains.
- Fibre also prevents absorption and production of cholesterol.
- It also has the positive effect of reducing the absorption rate of carbohydrates, as well as the incidence of constipation and cancer.
- Some studies report decreasing blood pressure as a result of eating more dietary fibre, but this needs more research.

Eat more dietary fibre

Fibre

- Prevents cholesterol absorption and synthesis.
- Decreases the absorption speed of carbohydrates.
- Decreases the incidence of complications and cancer.
- Aids the digestive system.
- Abundant in vegetables, fruits, grains and seaweeds.

REFERENCES:
Low-fat diet Q & A (1)

Q Can I have high cholesterol even if I don’t eat meat or fatty foods?

A People who have genetic factors or eat too much saturated fat hidden in processed foods can also have high cholesterol.

Animal fat from foods (Dietary factor)

Produced in the liver (Genetic factor)
Low-fat diet Q & A (1)

**Patient education**

- There are many patients with dyslipidaemia who are vegetarian, but still have high blood cholesterol.
- It is often due to eating too much (non-animal) saturated fat, causing an increase in cholesterol production.
- Sources may include pastries, cakes and biscuits.
- You can also find saturated fat in vegetable oils such as palm oil.
- Moreover, if you have genetic diseases like familial hypercholesterolaemia or have hypothyroidism, blood cholesterol could increase by inhibition of cholesterol metabolism.

**Professional information**

- If blood cholesterol level is high, even though the patient does not eat any fatty food, checking the intake of confectionary and whether the patient has familial hypercholesterolaemia or thyroid dysfunctions is required.

**Q**

Can I have high cholesterol even if I don’t eat meat or fatty foods?

**A**

People who have genetic factors or eat too much saturated fat hidden in processed foods can also have high cholesterol.

REFERENCE:
Low-fat diet Q & A (2)

Q Is vegetable oil OK?

A Some vegetable oils are high in saturated fat too.

Recommended oils

Higher in unsaturated fat:
- olive oil
- sesame oil
- perilla oil

Non-recommended oils

Higher in saturated and trans fat:
- palm oil
- coconut oil
Low-fat diet Q & A (2)

Patient education

- Some types of vegetable oil can increase blood cholesterol.
- Oils such as palm oil and coconut oil have a lot of saturated fat.
- Margarine is made from vegetable oil, but should be avoided because of its abundance of trans fats, even though it also contains a lot of unsaturated fat.
- Meanwhile, beans, corn and olives are rich in unsaturated fat, so they normally act to reduce the level of blood cholesterol.

Professional information

- Vegetable oils rich in saturated fat and trans fat should be avoided because they increase blood cholesterol.
- Unsaturated fats reduce blood cholesterol, but overeating can lead to weight gain.
- Therefore, restricting intake by 20% is recommended.
- This means that dyslipidaemia patients should cut their total fat intake, as well as reduce the proportion of saturated fat.

REFERENCE:
Low-fat diet Q & A (3)

Q: Is it better not to eat any meat, egg, or squid?

A: • Rather than pork, choose chicken breast, fish and tofu.

• Squid, prawn, crab and egg are high in cholesterol, but at the same time reduce cholesterol absorption – they are safe to eat once in a while.

• Substituting healthy fat (unsaturated) for unhealthy fat (saturated) is better than reducing total fat only.
Low-fat diet Q & A (3)

Patient education

- Patients with hypertension and dyslipidaemia should eat an adequate amount of protein.
- It is better to eat protein from chicken, fish and tofu, than from beef or pork.
- In the past, eggs, squid, prawns and crabs were restricted because they are high in cholesterol.
- However, they are also abundant in sterols that have the effect of blocking cholesterol absorption.
- In conclusion, seafood and eggs that are known to be high in cholesterol can be consumed as long as you don’t eat too much or too frequently.

Q

Is it better not to eat any meat, egg, or squid?

A

- Rather than pork, choose chicken breast, fish and tofu.
- Squid, prawn, crab and egg are high in cholesterol, but at the same time reduce cholesterol absorption – they are safe to eat once in a while.
- Substituting healthy fat (unsaturated) for unhealthy fat (saturated) is better than reducing total fat only.

REFERENCE:
Specific plans for a low-fat diet

- Start cooking after removing excess fat.
- Use methods that reduce oil (grill rather than fry).
- Eat less than the size of your palm (60–90 g) per day.
- Remove skin before cooking or eating.
- Eat less than the size of your palm (60–90 g) per day.
- Use unsaturated vegetable oil when cooking.
- Cook in ways that use less oil such as grilling and steaming.
- Buy low-fat or fat-free products.
- Check the fat content and buy products with no saturated fat.
Specific plans for a low-fat diet

Patient education

- Start cooking after removing excess fat.
- Use methods that reduce oil (grill rather than fry).
- Eat less than the size of your palm (60–90 g) per day.
- Remove skin before cooking or eating.
- Eat less than the size of your palm (60–90 g) per day.
- Use **unsaturated** vegetable oil when cooking.
- Cook in ways that use less oil such as grilling and steaming.
- Buy low-fat or fat-free products.
- Check the fat content and buy products with no saturated fat.

REFERENCE:
Choose healthy carbohydrates

- Excessive carbohydrates → increase in triglycerides
- Accumulation of fatty acids → obesity, arteriosclerosis
- Instead of white rice, instant noodles and white bread, choose brown rice, rye bread and potatoes.
Choose healthy carbohydrates

Patient education

• Moderate intake of carbohydrates is recommended because they can increase serum triglyceride, leading to obesity and arteriosclerosis.
• It is important to eat brown rice and whole grain bread rather than carbohydrates with a high glycemic index such as white rice, instant noodles and white bread.

• Excessive carbohydrates → increase in triglycerides
• Accumulation of fatty acids → obesity, arteriosclerosis
• Instead of white rice, instant noodles and white bread, choose brown rice, rye bread and potatoes.

REFERENCES:
Healthy eating habits for patients with hypertension

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 salt (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 makes 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:
Eat healthy

Reduce salt intake

• Eat less soup broth.
• Eat less pickled and processed foods.
• Eat fresh, local food.

INSERT PHOTO:
Example of local foods high in salt

INSERT PHOTO:
Example of fresh local food (salad) with no dressing or sauce added.
**Healthy eating habits for patients with hypertension**

**Patient education**

- A balanced diet is very important for people with hypertension.
- It is also vital to eat less salt (sodium).
- For example, instead of drinking the soup broth, eat only the ingredients in the soup.
- Also cut back on pickled and processed foods like ketchup, sausages and ham.

**Reduce salt intake**

- Eat less soup broth.
- Eat less pickled and processed foods.
- Eat fresh, local food.

**REFERENCES:**
Take-home message
Healthy eating habits

Healthy eating habits

- Less saturated fat, adequate unsaturated fat.
- Eat from various food groups regularly.
- Choose healthy carbohydrates.
- Reduce salt.

INSERT PHOTO: example of how a typical local meal would be displayed