Healthy eating habits 2

for patients with diabetes

A noncommunicable disease education manual for primary health care professionals and patients

World Health Organization
Western Pacific Region

보건복지부
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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).

Many thanks to Dr Albert Domingo, Dr Sonia McCarthy, Ms Marie Clem Carlos, Dr Katrin Engelhardt, Mr Kelvin Khow Chuan Heng and Dr Roberto Andres Ruiz from the WHO Regional Office for the Western Pacific and Dr Ma. Charina Benedicto, Physician-in-Charge, Bagong Barangay Health Center & Lying-in Clinic, Pandacan, Manila, Philippines for reviewing the draft publication.

Financial support for this publication was received from the Korea Centers for Disease Control and Prevention, Republic of Korea.

No conflict of interest was declared.

This is a translation of a manual published by the Ministry of Health and Welfare and Community-based Primary Care Project Committee in the Republic of Korea. Some of the content has been adapted, with permission, to align with current WHO recommendations and policies. However, the views expressed in the manual do not necessarily reflect the policies of the World Health Organization. The source publication was developed under the leadership of Dr Jung-jin Cho (also mentioned above); Mr Hyunjun Kim, Co-director, Community-based Primary Care Project Committee and Director General, Bureau of Health Policy, Ministry of Health and Welfare, Republic of Korea; and Dr Sunghoon Jung, Deputy Director, Division of Health Policy, Ministry of Health and Welfare, Republic of Korea.

All illustrations were provided by the source publication.

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ISBN 978 92 9061 807 2

Noncommunicable disease education manual for primary health care professionals and patients

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- Module 2 Healthy lifestyles
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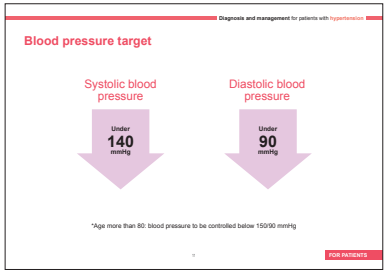
How to use this manual

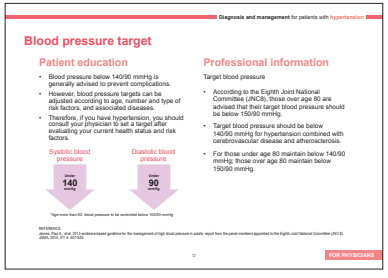
This book is one of fifteen modules of the “Noncommunicable disease education manual for primary health care professionals and patients”. This manual is intended to provide health information on the prevention and control of hypertension and diabetes.

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).

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Healthy eating habits 2 for patients with **diabetes**

Healthy balanced diet (1)

One concept used to choose a healthier diet is glycaemic index (GI).

- Glycaemic index (GI) is the measurement of how fast a food will raise blood glucose levels.
- Foods with a high GI raise blood glucose levels rapidly.
- If the total amount of calories is equal, it is healthier to choose the low GI option.

Healthy balanced diet (1)

Patient education

- The amount and types of sugar you eat, and how the food is cooked, are some of the factors that influence postprandial blood sugar levels.
- Some foods slowly increase postprandial glucose, while others rapidly increase blood sugar levels.
- The glycaemic index (GI) of food shows how fast blood glucose levels rise after you eat.
- For diabetic patients, low-GI foods are recommended for controlling blood glucose.

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Professional information

- GI is defined as the incremental area under the blood glucose curve following ingestion of a test food (50 g of sugar), expressed as a percentage of the corresponding area following an equivalent load of a reference carbohydrate, either glucose or white bread.
- A GI value of 100 represents the standard, an equivalent amount of pure glucose.
- If the total amount of calories is equal, it is healthier to choose the low-GI option.
- Example: 300 kcal in one bowl = boiled rice (GI: 92); boiled barley (GI: 25).
- However, we need to keep in mind that the total amount of foods, especially sugar, is the main issue of diabetic management.
- Even when eating low-GI food, the total amount of sugar should always be considered.

Healthy balanced diet (2)

High glycaemic index


White rice


White bread


Potato


Rice cake

Moderate glycaemic index


Brown rice


Brown bread


Sweet potato


Banana

Low glycaemic index


Mushroom


Milk


Apple


Peanuts

Healthy balanced diet (2)

Patient education

- There are many difficulties in applying the GI in real life.
- GI differs depending on how you cook the food, the shape of the food, the age of the starch, and even the types of food eaten together.
- The amount of food eaten is more important than the glycaemic index itself.

Professional information

- Foods with a GI of less than 55 are considered low-GI foods, and those with a GI higher than 70 are considered high-GI foods.
- For diabetes patients, low-GI foods, such as brown rice and whole grains, are recommended.

High glycaemic index


White rice


White bread


Potato


Rice cake

Moderate glycaemic index


Brown rice


Brown bread


Sweet potato


Banana

Low glycaemic index

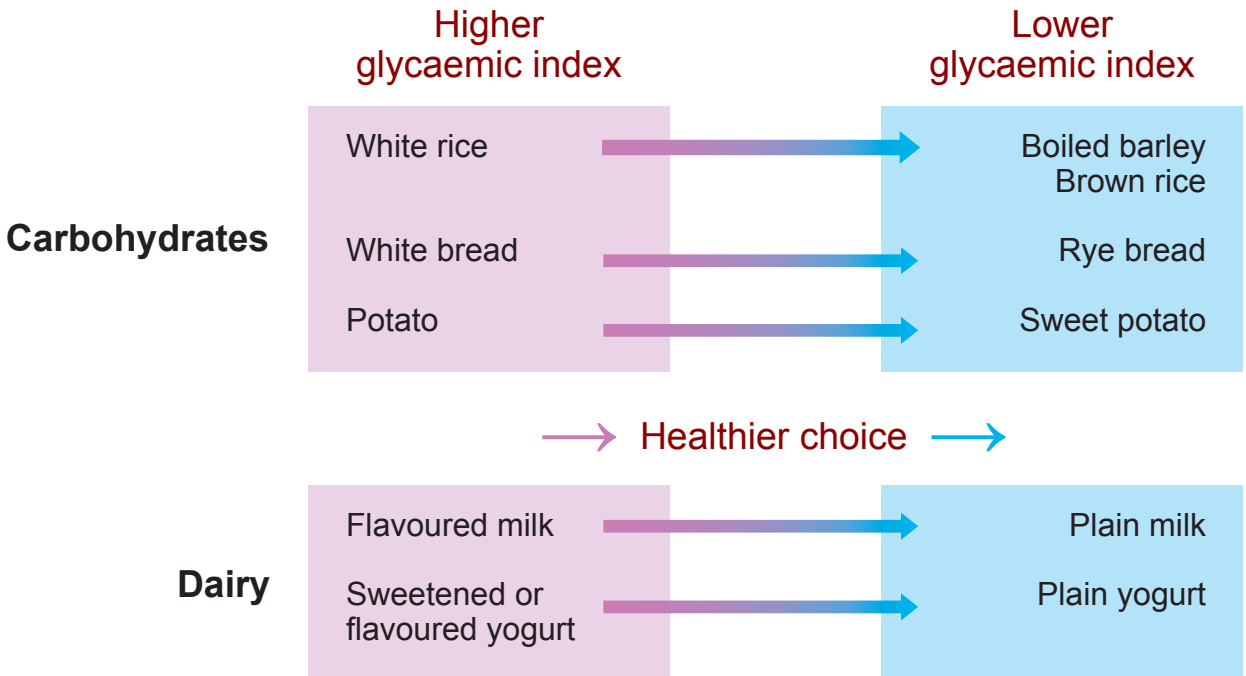

Mushroom


Milk


Apple


Peanuts

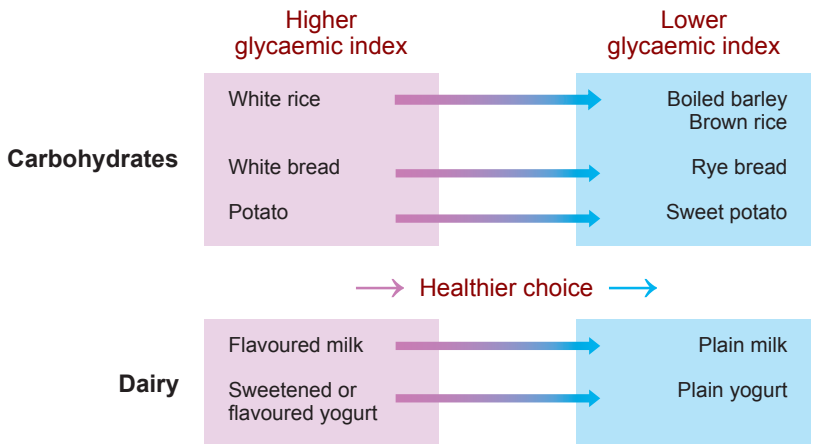
Healthy balanced diet (3)



Healthy balanced diet (3)

Patient education

- Eating high-GI meals rapidly increases blood sugar levels and insulin secretion, resulting in body fat accumulation.
- On the other hand, low-GI meals increase blood sugar levels and insulin secretion slowly, helping maintain satiety longer and controlling your appetite.
- Non-glutinous rice is preferred to glutinous rice, and brown rice is better than polished rice.
- Whole-grain bread is better than white bread. High-fibre foods in general are recommended for their lower GI levels.



When cooking at home

- To reduce calories, boil or steam rather than fry.
- Do not overcook starches and vegetables.
- When adding seasonings use mustard, vinegar, pepper, lemon and low-calorie artificial sweetener if sweetness is required.
- Use fresh ingredients rather than processed foods.

When cooking at home

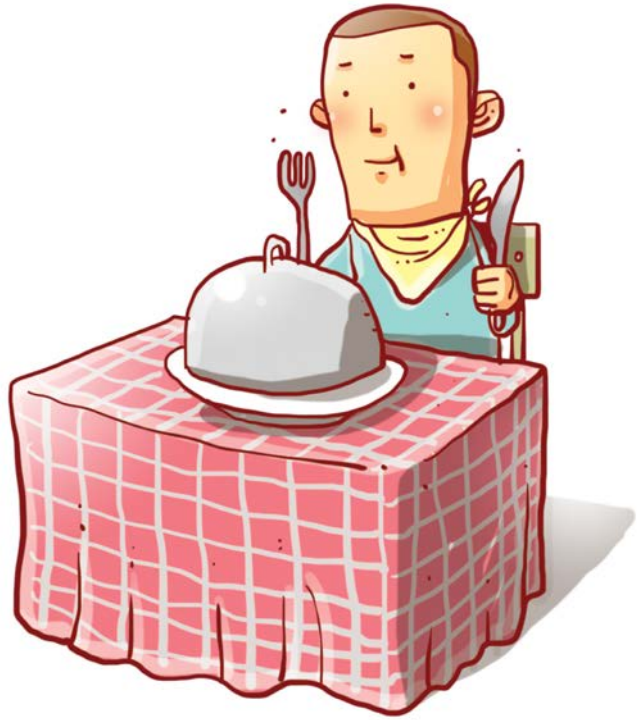
Patient education

- To reduce calorie intake from oil, boiling or steaming is better than frying.
- Prolonged exposure to heat also destroys fibre and nutrients.
- Fibre slows down digestion, boosts absorption of nutrients and helps control blood sugar levels.
- Adding vinegar or lemon slows the passage of food from the stomach to small intestines.
- When adding sweeteners, use low-calorie sweeteners rather than sugar, honey or syrup to help reduce total calorie intake.
- Choosing fresh ingredients rather than processed foods is beneficial because they are usually lower in calories and contain less salt and sodium.

- To reduce calories, boil or steam rather than fry.
- Do not overcook starches and vegetables.
- When adding seasonings use mustard, vinegar, pepper, lemon and low-calorie artificial sweetener if sweetness is required.
- Use fresh ingredients rather than processed foods.

Tips when eating out

- Be aware of the **type of food** and **portion sizes** you eat in restaurants.
- Be aware of the **amount of calories** in the food you eat.
- **Do not skip a meal** before eating out.
- Try choosing items with a lot of **vegetables.**
- If you overeat, remember to **burn off the calories** by increasing physical activity.



Tips when eating out

Patient education

- There are times when you have to eat out in the course of your duties, or with friends and family.
- It is important to learn ways to manage your diabetes while eating out.
- First of all, it is important to be aware of the type of food and portion sizes of the restaurant.
- If you are aware of how much food and how many calories you normally eat, it will be easier for you to order accordingly.
- Do not skip a meal before eating out as it will raise your chances of overeating.
- If your meal is later than your regular mealtime, eat a snack.
- Try to choose items with a lot of vegetables.
- When you overeat, remember to burn off the extra calories through physical activity, or by reducing the amount of food you eat at the next meal.

- Be aware of the **type of food** and **portion sizes** you eat in restaurants.
- Be aware of the **amount of calories** in the food you eat.
- **Do not skip a meal** before eating out.
- Try choosing items with a lot of **vegetables.**
- If you overeat, remember to **burn off the calories** by increasing physical activity.

REFERENCE:
Ordering Tips. American Diabetes Association. 2016.(http://www.diabetes.org/food-and-fitness/food/what-can-i-eat/food-tips/eating-out/ordering-tips.html, accessed 28 September 2016).

Meals during acute illness

- Even when you do not feel like eating:
  - continue insulin injections and oral hypoglycaemic agents
  - check your blood sugar level every four hours;
- Eat soft foods that are easier to digest in small portions;
- After you vomit or have diarrhoea, make sure that you are sufficiently hydrated; and
- Avoid excessive physical activity.

Meals during acute illness

Patient education

- It may be difficult to stick to a normal meal plan when you are sick, but even if you do not have an appetite, try eating soft foods in small portions that are easier to digest, such as soup.
- Continue with oral hypoglycaemic agents or insulin therapy, since the inflammation can raise your blood sugar level, and check your blood sugar level every four hours.
- If you vomit or have diarrhoea, drink sufficient fluids to prevent hyperglycaemia due to dehydration.
- Avoid too much physical activity since it can cause hypoglycaemia.

- Even when you do not feel like eating:
  - continue insulin injections and oral hypoglycaemic agents
  - check your blood sugar level every four hours;
- Eat soft foods that are easier to digest in small portions;
- After you vomit or have diarrhoea, make sure that you are sufficiently hydrated; and
- Avoid excessive physical activity.

Eating during physical activity

- When your blood sugar is well controlled, additional snacks are not required when exercising regularly.
- If you are doing unusually intense physical activity, eat additional snacks.
- Choose from dairy, fruits and grains.




Eating during physical activity

Patient education

- For patients whose blood sugar level is well controlled and who exercise regularly, additional snacks before exercise are not needed.
- However, when doing more strenuous physical activity than usual, additional snacks can prevent hypoglycaemia. Snacks should be taken before you exercise.
- When planning to do vigorous physical activity for an hour or more, such as soccer, basketball or swimming, and your blood sugar level is below 100, a carbohydrate snack is needed.

- When your blood sugar is well controlled, additional snacks are not required when exercising regularly.
- If you are doing unusually intense physical activity, eat additional snacks.
- Choose from dairy, fruits and grains.




REFERENCES:
American Diabetes Association. Standards of medical care in diabetes—2015. Diabetes Care, 2015.
Scottish Intercollegiate Guidelines Network. Management of diabetes. Edinburgh. 2011.

When you also have dyslipidaemia

- Reduce saturated fat.
- Eliminate all trans fats from diet.

X

Avoid

When you also have dyslipidaemia

Patient education

- Dyslipidaemia must be strictly controlled since associated diabetes and dyslipidaemia increases the risk of cardiovascular disease.
- When planning your meal, reduce food that can increase risk of dyslipidaemia.
- Animal fats (saturated) are to be avoided since they increase cholesterol levels.
- These should be replaced with unsaturated fat from vegetable oils.
- However, trans fats, which are made from processed vegetable oils, are even more harmful than saturated fats.
- Avoid processed foods containing trans fats.
- Try to eat lean meat and remove the skin of chicken before you eat.
- Choose low-fat dairy.

- Reduce saturated fat.
- Eliminate all trans fats from diet.

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Foods high in carbohydrates and calories

X

Avoid

Foods high in carbohydrates and calories

Patient education

- Beware of foods containing a lot of carbohydrates and calories.
- Sweet starchy foods, such as cakes, cookies, pie and rice cake, and sweet drinks, such as soda and fruit juices, are some examples.
- Canned fruits also contain a lot of sugar.

Check the nutrition facts

Be cautious with health and nutrition claims

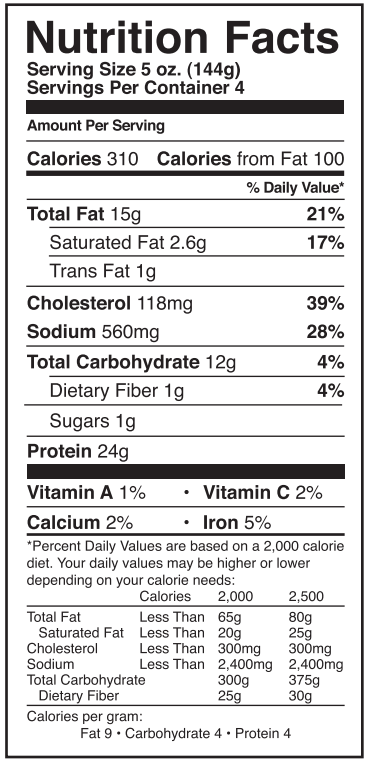
Calories

- Excessive calorie intake leads to overweight or obesity.
- Consume the optimal amount of calories.

Carbohydrates

- Carbohydrates play a major role in increasing blood sugar levels after meals.
- Reducing intake of sugars is especially important.

Always check sugar and sodium content, where available.



Nutrition Facts

Serving Size 5 oz. (144g)
Servings Per Container 4

Amount Per Serving

Calories 310	**Calories** from Fat 100
	% Daily Value*
Total Fat 15g	**21%**
Saturated Fat 2.6g	**17%**
Trans Fat 1g	
Cholesterol 118mg	**39%**
Sodium 560mg	**28%**
Total Carbohydrate 12g	**4%**
Dietary Fiber 1g	**4%**
Sugars 1g	
Protein 24g	
Vitamin A 1% •	**Vitamin C** 2%
Calcium 2% •	**Iron** 5%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Check the nutrition facts

Patient education

- When purchasing processed products, be cautious with health and nutrition claims.
- Check the amount of calories, carbohydrates and sodium on the nutrition label.
- Checking the amount of sugar is particularly important for diabetic patients.
- Although fresh foods, such as grains or vegetables, also contain sugar, processed foods generally contain a much higher amount of sugar.
- This is one reason why fresh foods are recommended over processed foods.

Be cautious with health and nutrition claims

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Cholesterol 118mg	**39%**
Sodium 560mg	**28%**
Total Carbohydrate 12g	**4%**
Dietary Fiber 1g	**4%**
Sugars 1g	
Protein 24g	

Vitamin A 1% • **Vitamin C** 2%
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