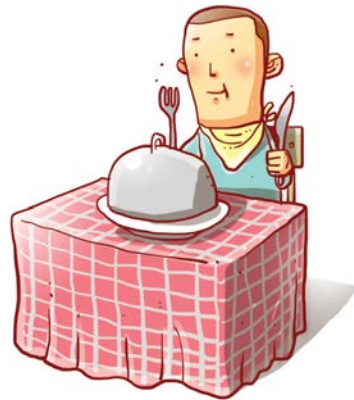


Healthy eating habits 1

for patients with diabetes

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





Healthy eating habits 1

for patients with diabetes

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



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

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
- 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** ◀ YOU ARE HERE
- 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.

Diagnosis and management for patients with hypertension

Blood pressure target

Systolic blood pressure	Diastolic blood pressure
Under 140 mmHg	Under 90 mmHg

*Age more than 60: blood pressure to be controlled below 150/90 mmHg

FOR PATIENTS

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.

Diagnosis and management for patients with hypertension

Blood pressure target

Systolic blood pressure	Diastolic blood pressure
Under 140 mmHg	Under 90 mmHg

*Age more than 60: blood pressure to be controlled below 150/90 mmHg

FOR PHYSICIANS

Patient education

- Blood pressure below 140/90 mmHg is generally advised to prevent complications.
- However, blood pressure targets can be adjusted according to age, number and type of risk factors, and associated diseases.
- Therefore, if you have hypertension, you should consult your physician to set a target after evaluating your current health status and risk factors.

Professional information

Target blood pressure

- According to the Eighth Joint National Committee (JNC8), those over age 60 are advised that their target blood pressure should be below 150/90 mmHg.
- Target blood pressure should be below 140/90 mmHg for hypertension combined with cardiovascular disease and atherosclerosis.
- For those under age 60 maintain below 140/90 mmHg, those over age 60 maintain below 150/90 mmHg.

REFERENCES

World Health Organization. Guidelines for the management of high blood pressure in adults: report from the regional committees for the World Health Organization. Geneva, 2003. WHO/CDS/RMS/03.2.

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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How many calories do I need? – Based on BMI and PAL (1)

Step 1: calculate your body mass index (BMI)

$$\text{BMI} = \frac{\text{weight (kg)}}{[\text{height (m)}]^2}$$

or

$$\text{BMI} = \frac{\text{weight (lb)}}{[\text{height (in)}]^2} \times 703$$

How many calories do I need? – Based on BMI and PAL (1)

Patient education

- Body Mass Index (BMI) is a simple index of weight-for-height that is commonly used to classify underweight, overweight and obesity in adults.
- People who are obese are at increased risk for noncommunicable diseases such as hypertension, type 2 diabetes and even some cancers.

Step 1: calculate your body mass index (BMI)

$$\text{BMI} = \frac{\text{weight (kg)}}{[\text{height (m)}]^2}$$

or

$$\text{BMI} = \frac{\text{weight (lb)}}{[\text{height (in)}]^2} \times 703$$

REFERENCES:

World Health Organization. Global Database on Body Mass Index. 2016.
Centers for Disease Control and Prevention. Body Mass Index (BMI). 2015.

How many calories do I need? – Based on BMI and PAL (2)

Step 2: know your physical activity level (PAL)

Category	Example
Sedentary/ Lightly active	Office workers who do not exercise regularly or who only occasionally engage in physically demanding activities
Active/ Moderately active	Construction workers or office workers who perform 1 hour of moderate to vigorous exercise daily such as jogging/cycling
Vigorous/ Vigorously active	Non-mechanized agricultural labourers or people with non-sedentary occupations who engage in strenuous activities such as swimming/dancing an average of two hours daily

How many calories do I need? – Based on BMI and PAL (2)

Patient education

- Healthy caloric intake differs depending on how intense your regular physical activities are.
- If you are an office worker in an urban area not engaged in regular physical activities, your physical activity level is sedentary.
- If you are an office worker who occasionally performs exercise, your physical activity level is moderately active.
- If you are a construction worker or an office worker who exercises vigorously for an hour every day, you are categorized as vigorously active.

Step 2: know your physical activity level (PAL)

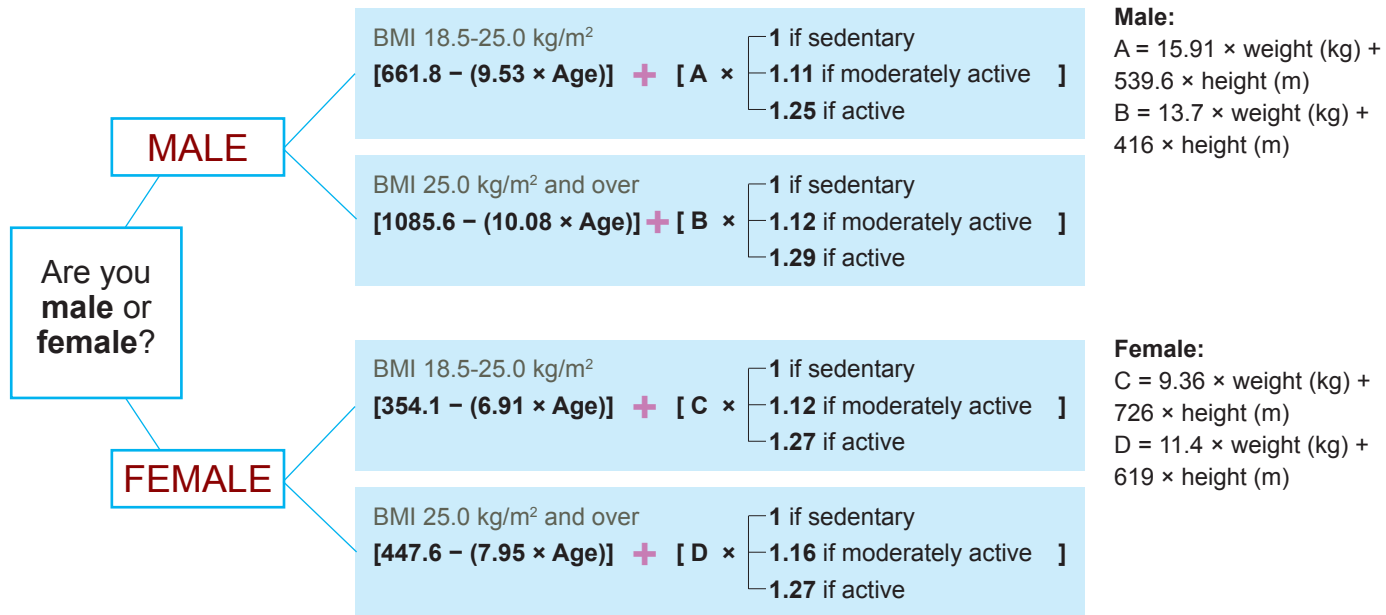
Category	Example
Sedentary/ Lightly active	Office workers who do not exercise regularly or who only occasionally engage in physically demanding activities
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Vigorous/ Vigorously active	Non-mechanized agricultural labourers or people with non-sedentary occupations who engage in strenuous activities such as swimming/dancing an average of two hours daily

REFERENCE:

Food and agriculture organization of the United Nations/World Health Organization/United Nations University, 2011, Human energy requirements.

How many calories do I need? – Based on BMI and PAL (3)

Step 3: calculate your daily calorie intake



How many calories do I need? – Based on BMI and PAL (3)

Patient education

- If you are a 30 year-old male whose BMI is 22.5, first of all, put your age into the first part of the equation:

$$661.8 - 9.53 \times 30 = 375.9$$

- Next, choose the best category that matches your daily physical activity patterns in the second part of the equation. If you work in an office and do not engage in any regular physical activity, the second part of equation will be:

$$1951.5 \times 1 = 1951.5$$

- You can add these two values to estimate your recommended daily calorie intake:

$$375.9 + 1951.5 = 2327.4 \text{ kcal/day}$$

- This calculation is based on a fixed weight and height (1.70 m and 65.0 kg for males; 1.60 m and 60.0 kg for female).
- If you want to calculate your exact recommended daily calorie intake based on your own weight and height, ask your health provider for additional information.

Step 3: calculate your daily calorie intake



REFERENCE:
 U.S. Institute of Medicine. Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. Washington (DC): The National Academics Press; 2005.

How many calories do I need? – Based on BMI and PAL (4)

Example for men:
find out how many calories you need

MALE	BMI: 18.5–25.0 kg/m ² ^a			BMI: >25.0 kg/m ² ^b		
	Physical activity level (PAL)			Physical activity level (PAL)		
Age (years)	Sedentary	Moderately active	Vigorously active	Sedentary	Moderately active	Vigorously active
30–39	2330	2540	2820	2590	2800	3110
40–49	2230	2450	2720	2490	2700	3010
50–59	2140	2350	2620	2380	2600	2910
60–69	2040	2260	2530	2280	2500	2810
70+	1950	2160	2430	2180	2400	2710

a. Estimates are calculated based on H1.70 (m) and W65.0 (kg) and rounded to the nearest 10 kilocalories. An individual's caloric needs may be higher or lower than these estimates.

b. Estimates are calculated based on H1.70 (m) and W80.0 (kg) and rounded to the nearest 10 kilocalories. An individual's caloric needs may be higher or lower than these estimates.

* DISCLAIMER: These estimates are calculated based on the IOM report on dietary intake and do not represent recommendations of WHO.

How many calories do I need? – Based on BMI and PAL (4)

Patient education

- This table shows examples of how much the recommended caloric intake would be according to gender, age group, BMI and physical activity level.
- The recommended caloric intake is calculated based on hypothetically fixed weight and height, and may vary by individual.

Example for men:
find out how many calories you need

MALE	BMI: 18.5–25.0 kg/m ² ^a			BMI: >25.0 kg/m ² ^b		
	Physical activity level (PAL)			Physical activity level (PAL)		
Age (years)	Sedentary	Moderately active	Vigorously active	Sedentary	Moderately active	Vigorously active
30–39	2330	2540	2820	2590	2800	3110
40–49	2230	2450	2720	2490	2700	3010
50–59	2140	2350	2620	2380	2600	2910
60–69	2040	2260	2530	2280	2500	2810
70+	1950	2160	2430	2180	2400	2710

a. Estimates are calculated based on H1.70 (m) and W65.0 (kg) and rounded to the nearest 10 kilocalories. An individual's caloric needs may be higher or lower than these estimates.
b. Estimates are calculated based on H1.70 (m) and W80.0 (kg) and rounded to the nearest 10 kilocalories. An individual's caloric needs may be higher or lower than these estimates.
* DISCLAIMER: These estimates are calculated based on the IOM report on dietary intake and do not represent recommendations of WHO.

REFERENCE:

U.S. Institute of Medicine. dietary reference intakes for energy, carbohydrate, fiber, fat, fatty acids, cholesterol, protein, and amino acids. Washington (DC): The National Academics Press; 2005.

How many calories do I need? – Based on BMI and PAL (5)

Example for women:
find out how many calories you need

FEMALE ^c	BMI: 18.5–25.0 kg/m ² ^a			BMI: >25.0 kg/m ² ^b		
	Physical activity level (PAL)			Physical activity level (PAL)		
Age (years)	Sedentary	Moderately active	Vigorously active	Sedentary	Moderately active	Vigorously active
30–39	1870	2080	2340	1930	2210	2400
40–49	1800	2010	2270	1850	2130	2320
50–59	1730	1940	2200	1770	2050	2240
60–69	1660	1870	2130	1690	1970	2160
70+	1590	1800	2060	1610	1890	2080

a. Estimates are calculated based on H1.60 (m) and W60.0 (kg) and rounded to the nearest 10 kilocalories. An individual's caloric needs may be higher or lower than these estimates.

b. Estimates are calculated based on H1.60 (m) and W70.0 (kg) and rounded to the nearest 10 kilocalories. An individual's caloric needs may be higher or lower than these estimates.

c. Estimates for female do not include women who are pregnant or breastfeeding.

* DISCLAIMER: These estimates are calculated based on the IOM report on dietary intake and do not represent recommendations of WHO.

How many calories do I need? – Based on BMI and PAL (5)

Patient education

- These tables show examples of how much the recommended caloric intake would be according to gender, age group, BMI and physical activity level.
- The recommended caloric intake is calculated based on hypothetically fixed weight and height, and may vary by individual.

Example for women:
find out how many calories you need

FEMALE ^c	BMI: 18.5–25.0 kg/m ² ^a			BMI: >25.0 kg/m ² ^b		
	Physical activity level (PAL)			Physical activity level (PAL)		
Age (years)	Sedentary	Moderately active	Vigorously active	Sedentary	Moderately active	Vigorously active
30–39	1870	2080	2340	1930	2210	2400
40–49	1800	2010	2270	1850	2130	2320
50–59	1730	1940	2200	1770	2050	2240
60–69	1660	1870	2130	1690	1970	2160
70+	1590	1800	2060	1610	1890	2080

a. Estimates are calculated based on H1.60 (m) and W60.0 (kg) and rounded to the nearest 10 kilocalories. An individual's caloric needs may be higher or lower than these estimates.

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REFERENCE:

U.S. Institute of Medicine. dietary reference intakes for energy, carbohydrate, fiber, fat, fatty acids, cholesterol, protein, and amino acids. Washington (DC): The National Academics Press; 2005.

Healthy balanced diet



Healthy balanced diet

Patient education

- A healthy diet helps protect against malnutrition in all its forms, as well as noncommunicable diseases (NCDs), including diabetes, cardiovascular disease, stroke and cancer.

Here are some tips for a healthy diet:

- eat a variety of foods;
- eat plenty of vegetables and fruit;
- eat moderate amounts of fats and oils; and
- eat less sugar and salt.

Professional information

- Consuming a healthy diet throughout the life-course helps prevent malnutrition in all its forms as well as a range of NCDs and other conditions.
- However, the increased production of processed food, rapid urbanization and changing lifestyles have led to a shift in dietary patterns.
- People are now consuming more foods high in energy, fats, free sugars or salt/sodium, and many do not eat enough fruit, vegetables and dietary fibre, such as whole grains.



REFERENCE:
World Health Organization Western Pacific Region. Pocket guide for a healthy diet, 2016.

Healthy balanced diet: fruits and vegetables

At least
400 g (5 handfuls)
of fruits and vegetables a day



Healthy balanced diet: fruits and vegetables

Patient education

Eat more vegetables and fruits by:

- always including vegetables in your meals;
- eating fresh fruits and raw vegetables as snacks;
- eating fresh local fruits and vegetables in season; and
- adding fruits and vegetables of at least three colours to your plate, such as red, yellow, green, purple and white.

Professional information

- Vegetables and fruits are important sources of vitamins, minerals, dietary fibre, plant protein and antioxidants.
- People whose diets are rich in vegetables and fruit have a significantly lower risk of obesity, heart disease, stroke, diabetes and certain types of cancer.

At least
400 g (5 handfuls)
of fruits and
vegetables a day



REFERENCE:
World Health Organization Western Pacific Region. Pocket guide for a healthy diet, 2016.

Healthy balanced diet: meat and fish

- Eat plenty of iron-rich foods.
- Choose white meat and fish instead of red meat.
- Avoid processed meats.



Healthy balanced diet: meat and fish

Patient education

Eating a variety of foods every day helps to obtain the right amounts of essential nutrients.

- Eat plenty of iron-rich foods such as meat, eggs, liver, oysters, clams, anchovy, shrimps, salmon and tuna.
- Choose white meat, such as poultry, and fish, which are both generally low in fats, over red meat.
- Avoid processed meats because these are high in fat and salt.

Professional information

- Eating a healthy balanced diet is important for healthier and more active lives.
- Meat, poultry and fish in the diet improves iron absorption and prevents anaemia.
- However, people who eat too much processed foods, which are high in saturated fat and trans fat, are at higher risk of heart disease and stroke.



- Eat plenty of iron-rich foods.
- Choose white meat and fish instead of red meat.
- Avoid processed meats.

REFERENCE:
World Health Organization Western Pacific Region. Pocket guide for a healthy diet, 2016.

Healthy balanced diet: fats and oils

Less than 67 g (19 teaspoons)
of total fats and oils a day



One teaspoon holds about
3.5 g of oil

 **x 19**

Healthy balanced diet: fats and oils

Patient education

Reduce fat intake by:

- choosing healthier cooking oils, such as sunflower, canola, olive oil;
- removing visible fats from all types of meat;
- boiling, steaming or baking rather than frying;
- avoiding foods high in saturated fats, such as cheese, ice cream and fatty meat; and
- choosing foods high in unsaturated fats (for example, salmon, avocados, natural peanut butter and nuts).

Professional information

- Fats and oils are concentrated sources of energy, and eating too much fat, particularly the wrong kinds of fat, can be harmful to health.
- Evidence indicates that total fat should not exceed 30% of total energy intake to avoid unhealthy weight gain, with a shift in fat consumption away from saturated fats to unsaturated fats, and towards the elimination of industrial trans fats.

Less than 67 g
(19 teaspoons)
of total fats and
oils a day



One teaspoon
holds about
3.5 g of oil

— x 19

REFERENCE:
World Health Organization Western Pacific Region. Pocket guide for a healthy diet, 2016.

Healthy balanced diet: sugars

Less than 50 g (12 teaspoons)
of sugars a day

Reducing sugar intake can help **prevent overweight, obesity** and related diseases such as **cardiovascular disease** and **type 2 diabetes**. This can also reduce the risk of dental caries and other dental diseases.



— x 12

Healthy balanced diet: sugars

Patient education

Reduce the amount of sugar intake by:

- watching out for hidden sugars in processed foods and drinks, such as breads, sauces, dressing, soups and alcohol;
- choosing water and limiting intake of soft drinks or soda and other drinks that are high in sugar, such as fruit juices, cordials and syrup, flavoured milks and yogurt drinks; and
- choosing fresh fruits instead of sweet snacks, such as cookies, cakes and chocolates.

Less than 50 g (12 teaspoons)
of sugars a day

Reducing sugar intake can help **prevent overweight, obesity** and related diseases such as **cardiovascular disease** and **type 2 diabetes**. This can also reduce the risk of dental caries and other dental diseases.



— x 12

Professional information

- Sugar is one of the main contributors to excess calories in a diet.
- People whose diets are high in sugar have a greater risk of becoming overweight or obese, and an increased risk of tooth decay.
- People who reduce the amount of sugars in their diet may also reduce their risk of noncommunicable disease, such as heart disease and stroke.
- Limiting the intake of free sugar to less than 10% of total energy intake is part of a healthy diet.
- A further reduction to less than 5% of total energy intake is suggested for additional health benefits.

REFERENCE:
World Health Organization Western Pacific Region. Pocket guide for a healthy diet, 2016.

Healthy balanced diet: salt

Less than 5 g of salt
(2 g sodium/1 teaspoon)
a day

Limiting salt (sodium) can help reduce the risk of hypertension, which in turn reduces the risk of cardiovascular disease and stroke.



— x 1

Healthy balanced diet: salt

Patient education

Reduce your salt intake by:

- using herbs instead of salt, soy sauce or fish sauce for seasoning;
- choosing fresh foods rather than processed foods; and
- removing the salt shaker from the dining table.

Less than 5 g of salt
(2 g sodium/1 teaspoon)
a day

Limiting salt (sodium) can help reduce the risk of hypertension, which in turn reduces the risk of cardiovascular disease and stroke.

Professional information

- People whose diets are high in sodium (including salt) have a greater risk of high blood pressure, which can increase their risk of cardiovascular disease and stroke.
- Keeping salt intake to less than 5 g per day helps prevent hypertension and reduces the risk of cardiovascular disease and stroke.



— x 1

REFERENCE:
World Health Organization Western Pacific Region. Pocket guide for a healthy diet, 2016.

Healthy balanced diet: serving size

You can use your hands to estimate serving sizes.



A FIST

- = 1 serving of cooked rice
- = 1 serving of cooked noodle
- = 1 serving of fruit/vegetables



A PALM

- = 1 serving of lean meat
- = 1 serving of fish



THUMB TIP
3× THUMB
TIPS

- = 1 teaspoon
- = 1 tablespoon (= 3 teaspoons)

