Healthy lifestyles 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  ► YOU ARE HERE
- 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).
**Table of contents**

Module 2  
**Healthy lifestyles** for patients with diabetes

<table>
<thead>
<tr>
<th>No.</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Healthy lifestyles for patients with diabetes</td>
</tr>
<tr>
<td>3</td>
<td>Healthy eating for patients with diabetes (1)</td>
</tr>
<tr>
<td>5</td>
<td>Healthy eating for patients with diabetes (2)</td>
</tr>
<tr>
<td>7</td>
<td>Healthy eating for patients with diabetes (3)</td>
</tr>
<tr>
<td>9</td>
<td>Healthy eating for patients with diabetes (4)</td>
</tr>
<tr>
<td>11</td>
<td>Effects of physical activity on patients with diabetes</td>
</tr>
<tr>
<td>13</td>
<td>Physical activity for patients with diabetes</td>
</tr>
<tr>
<td>15</td>
<td>Intensity of physical activity</td>
</tr>
<tr>
<td>17</td>
<td>Example of a one-day exercise schedule</td>
</tr>
<tr>
<td>19</td>
<td>Diabetes and smoking</td>
</tr>
<tr>
<td>21</td>
<td>How can I quit smoking?</td>
</tr>
<tr>
<td>23</td>
<td>Diabetes and harmful use of alcohol (1)</td>
</tr>
<tr>
<td>25</td>
<td>Diabetes and harmful use of alcohol (2)</td>
</tr>
<tr>
<td>27</td>
<td>Take-home message</td>
</tr>
</tbody>
</table>
Healthy lifestyles for patients with diabetes

Eat healthy
Be physically active
Quit smoking
Stop harmful use of alcohol
Healthy lifestyles for patients with diabetes

Patient education

- Eating healthy, being physically active, quitting smoking and stopping harmful use of alcohol are important lifestyle factors for diabetes management.

Professional information

- Major types of diabetes are type 1 diabetes, type 2 diabetes and gestational diabetes.

REFERENCES:
Healthy eating for patients with diabetes (1)

• Eat **balanced** meals.
• Eat a **reasonable amount** of calories.
• Eat **regularly** at the right time (do not skip meals to keep your blood sugar level down).
Healthy lifestyles for patients with diabetes

Patient education

- For diabetic patients, healthy eating does not mean restricting certain types of food.
- Plan a healthy, balanced meal, eat regularly and consume a proper amount of calories.
  - Eat balanced meals.
  - Eat a reasonable amount of calories.
  - Eat regularly at the right time (do not skip meals to keep your blood sugar level down).

Professional information

- All diabetic and pre-diabetic patients should receive individual counselling on healthy eating (recommendation grade I/evidence level A).
- Generally, it is recommended that 50–60% of total caloric intake should be carbohydrates, 15–20% protein and 25% fat.
- However, the proportion of each nutrition group can be individualized depending on the patient’s eating habits, preference and goal of treatment (recommendation grade IIb/evidence level D).
- For carbohydrates, a low glycemic index is preferred, including grains, beans, fruit, vegetables and dairy products (recommendation grade IIb/evidence level B).
- Foods high in unsaturated fats are recommended, while saturated fats or trans fats are not recommended (recommendation grade IIb/evidence level B).

REFERENCES:
Healthy eating for patients with diabetes (2)

3. Eat a balanced meal: a wide variety from all food groups.

<table>
<thead>
<tr>
<th>Food group</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbohydrates</td>
<td>Bread, pasta, sweet potato</td>
</tr>
<tr>
<td>Proteins</td>
<td>Meat, fish, egg, beans, tofu, squid, clam</td>
</tr>
<tr>
<td>Vegetables</td>
<td>Cucumber, carrot, seaweed</td>
</tr>
<tr>
<td>Fats</td>
<td>Cooking oil, sesame oil, butter, walnut, pine nut, peanuts</td>
</tr>
<tr>
<td>Dairy</td>
<td>Milk, yogurt, cheese</td>
</tr>
<tr>
<td>Fruit</td>
<td>Apple, pear, strawberry, grape, tangerine, banana</td>
</tr>
</tbody>
</table>
Healthy eating for patients with diabetes (2)

Patient education

• Eating a balanced meal is important.
• The food exchange table divides food into six categories: carbohydrates, proteins, vegetables, fats, dairy and fruit.
• It is important to eat a wide variety from all food groups, and to eat different foods in the same group.

Eat a balanced meal: a wide variety from all food groups.

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</table>

REFERENCES:
Healthy lifestyles for patients with diabetes (3)

2. Eat a reasonable amount of calories.

A 600 kcal meal plan as part of 1800 kcal per day

Reduce the amount of your main source of carbohydrates to two thirds.

A 500 kcal meal plan as part of 1500 kcal per day
Healthy eating for patients with diabetes (3)

Patient education

- Secondly, it is important to eat a reasonable amount of calories.
- Every person differs in their physical state and activity level.
- Therefore, the optimal amount of calorie intake depends on the individual. If you overeat, blood sugar levels rise abnormally, while skipping a meal results in hypoglycaemia.
- The picture on the left shows a 600 kcal meal plan for a person consuming a total of 1800 kcal per day.
- If you are overweight, you can reduce total caloric intake by reducing the amount of rice, breads, and meats on your plate.
- Reducing a full bowl of rice by one third will result in 500 kcal per meal, and 1500 kcal per day.

REFERENCES:
Healthy eating for patients with diabetes (4)

1. Eat at the right time.
   - 3–5 times a day, at set times
   - Take your time and eat **slowly** at regular meal times.

Breakfast  Snack  Lunch  Snack  Dinner
Healthy eating for patients with diabetes (4)

Patient education

• First of all, eat three meals every day at the same time.
• Many people, especially busy professionals, tend to skip breakfast and eat excessively during lunch or dinner.
• However, you should be aware that overeating raises blood sugar levels.
• It is important to eat breakfast, lunch and dinner every day.
• It is recommended that snacks be taken at least two hours after a meal, when blood sugar level is no longer increasing.
Effects of physical activity on patients with diabetes

Why exercise?

• Helps reduce weight
• Decreases risk factors
  - decreases blood pressure
  - decreases blood cholesterol levels
  - enables better blood sugar level control
• Prevents complications
  - prevents atherosclerosis
  - prevents angina, myocardial infarction and stroke
• Improves quality of life and relieves stress
Effects of physical activity on patients with diabetes

Patient education

- When a patient with hypertension or diabetes undergoes regular exercise, blood pressure, blood sugar levels and blood cholesterol levels decrease, preventing the patient from developing atherosclerosis, which leads to ischemic heart disease, angina and myocardial infarction, as well as stroke.
- Preventing complications and early death is the ultimate goal.

Professional information

- The average reduction from physical activity alone is 7.4 mmHg for systolic and 5.8 mmHg for diastolic blood pressure.
- Stroke risk is decreased by 35–40% and cardiovascular disease risk by 20–25% when diastolic blood pressure is decreased by 5–6 mmHg.
- Physical activity prevents atherosclerosis, which further prevents cardiovascular diseases.

Why exercise?

- Helps reduce weight
- Decreases risk factors
  - decreases blood pressure
  - decreases blood cholesterol levels
  - enables better blood sugar level control
- Prevents complications
  - prevents atherosclerosis
  - prevents angina, myocardial infarction and stroke
- Improves quality of life and relieves stress

REFERENCES:
Physical activity for patients with diabetes

For patients without complications:

Aerobic exercise mainly
• More than three days a week.
• Do not rest for more than two consecutive days.

Additional muscle strengthening exercise
• 2–4 times a week

* For patients with complications, recommendations differ according to severity.

Muscle strengthening (weight-bearing)

Aerobic

Walking
Swimming
Cycling

Should be light enough to lift at least eight times comfortably

Do not lift weights that are too heavy

FOR PATIENTS
Healthy lifestyles for patients with diabetes

Patient education

- Exercising reduces blood sugar levels, burns calories and helps prevent complications of diabetes. Regular physical activity also helps relieve stress and has a positive effect on mental health.
- Do moderate intensity aerobic exercise for more than 150 minutes per week.
- Exercise at least three times per week, and do not rest for more than two consecutive days.
- Muscle strengthening exercises should be done together 2–4 times per week if there are no other contraindications.

Professional information

- Recommend moderate intensity physical activity (50–70% of maximal heart rate, which is 220 minus age).
- All diabetic patients are recommended to exercise if there are no contraindications. However, depending on the physical state of the patient, intensity and frequency of physical activity must be individualized.
- If there is uncontrolled hypertension, severe peripheral neuropathy, autonomic neuropathy, history of diabetic foot, or proliferative diabetic retinopathy, risk of exercising must be evaluated and certain types of physical activity may need to be avoided.

Patient education

- Aerobic exercise: Walking, Swimming, Cycling
- Muscle strengthening (weight-bearing): Should be light enough to lift at least eight times comfortably
- Do not lift weights that are too heavy

For patients without complications:

Aerobic exercise mainly
- More than three days a week.
- Do not rest for more than two consecutive days.

Additional muscle strengthening exercise
- 2–4 times a week

* For patients with complications, recommendations differ according to severity.

REFERENCES:
Intensity of physical activity

Light exercise
- Walking, cycling slowly

Moderate exercise
- Brisk walking, climbing stairs, fast cycling
- At least 150 min/week

Vigorous exercise
- Fast swimming, jogging, jump rope
- At least 75 min/week
Healthy lifestyles for patients with diabetes

### Intensity of physical activity

#### Patient education

- Aerobic physical activity can be divided into three categories according to intensity: light, moderate and vigorous physical activity.
- Walking slowly is an example of light physical activity, brisk walking or climbing stairs are examples of moderate physical activity, and jogging and skipping are vigorous physical activities.
- You can decide which intensity and type of physical activity you can do and for how long according to your physical state and preference.

#### Intensity of physical activity

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Type of Exercise</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light exercise</td>
<td>Walking, cycling slowly</td>
<td></td>
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<tr>
<td>Moderate exercise</td>
<td>Brisk walking, climbing stairs, fast cycling</td>
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**REFERENCES:**
## Example of a one-day exercise schedule

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<th>Type</th>
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<tbody>
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<td><strong>Warm up</strong></td>
<td>5–20 minutes</td>
<td>Walking, stretching</td>
<td>Light to moderate</td>
</tr>
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<td><strong>Main exercise</strong></td>
<td>20–40 minutes</td>
<td>Aerobic exercise</td>
<td>Moderate to vigorous</td>
</tr>
<tr>
<td></td>
<td>20–30 minutes</td>
<td>Muscle-strengthening exercise</td>
<td></td>
</tr>
<tr>
<td><strong>Cool down</strong></td>
<td>10 minutes</td>
<td>Stretching muscles that were used</td>
<td>Light to moderate</td>
</tr>
</tbody>
</table>
Example of a one-day exercise schedule

Patient education

• This table shows a good example of an exercise schedule.
• Exercise time and intensity may vary depending on what type of physical activity you choose to do.
• First of all, you will start with a 5–20 minute light warm up, such as stretching or walking slowly.
• For the main exercise, a combination of aerobic and muscle-strengthening exercises are recommended.
• Between 20–40 minutes of aerobic exercise followed by 20–30 minutes of muscle strengthening is ideal.
• To end your exercise schedule, stretch the muscles you used for about 10 minutes.

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REFERENCES:
Diabetes and smoking

- Smoking increases the risk of cardiovascular diseases.
- Smoking increases the risk of type 2 diabetes.
- Smoking increases the risk of complications associated with diabetes.
- Smoking worsens symptoms associated with diabetes complications.
Diabetes and smoking

Patient education

- All patients with diabetes must quit smoking. Active (as distinct from passive) smoking increases your risk of developing type 2 diabetes.
- Smoking also increases the risk of cardiovascular diseases, raises blood cholesterol and triglyceride levels.
- Further, smoking increases the risk of complications associated with diabetes and worsens symptoms associated with complications.

- Smoking increases the risk of cardiovascular diseases.
- Smoking increases the risk of type 2 diabetes.
- Smoking increases the risk of complications associated with diabetes.
- Smoking worsens symptoms associated with diabetes complications.

REFERENCES:
How can I quit smoking?

Overcome the smoking habit!
- Get rid of ashtrays and lighters.
- Inform friends and family that you have quit smoking.

Overcome nicotine dependence!
- Nicotine replacement therapy:
  - nicotine patch, gum
- Visit a doctor or community health centre for counselling.
How can I quit smoking?

Patient education

- Nicotine is an addictive substance in tobacco that can affect your nervous system.
- When you quit smoking, the supply of nicotine to your brain stops and you feel withdrawal symptoms.
- To overcome nicotine dependence and withdrawal symptoms, nicotine replacement therapy can help.
- It is also important to get support by informing people around you that you are planning to quit smoking.

Overcome the smoking habit!

- Get rid of ashtrays and lighters.
- Inform friends and family that you have quit smoking.

Overcome nicotine dependence!

- Nicotine replacement therapy:
  - nicotine patch, gum
- Visit a doctor or community health centre for counselling.

REFERENCES:
Diabetes and harmful use of alcohol (1)

Adverse effects of harmful use of alcohol in diabetic patients:

- Obesity: alcohol is high in calories, low in nutrients.
- Hypoglycaemia induced 8–12 hours after drinking.
- Acute complications may follow heavy drinking.
- Elevated blood triglyceride levels.
- Aggravated peripheral neuropathy.
Diabetes and harmful use of alcohol (1)

Patient education

- There are many adverse health effects of harmful alcohol use.
- As alcohol is not a nutrient, drinking alcohol means you are just consuming empty calories, leading to obesity.
- Heavy drinking can cause acute complications.
- Drinking also increases blood triglyceride levels and worsens peripheral neuropathy.

Professional information

- Alcohol contains a lot of calories without any nutrition.
- For those who need to reduce weight, it is best to avoid alcohol.
- There is always a risk of hypoglycaemia if combined with hypoglycaemic agents or insulin.
- Restrict alcohol intake to one glass per day for adult women, and two glasses per day for men.

Adverse effects of harmful use of alcohol in diabetic patients:

- Obesity: alcohol is high in calories, low in nutrients.
- Hypoglycaemia induced 8–12 hours after drinking.
- Acute complications may follow heavy drinking.
- Elevated blood triglyceride levels.
- Aggravated peripheral neuropathy.

REFERENCE:
Diabetes and harmful use of alcohol (2)

- Drinking alcohol is not advisable if you have liver disease, high cholesterol level, or obesity.
- Small amounts of alcohol are tolerable for patients whose blood sugar level is well controlled.
- Do not drink alcohol on an empty stomach or after exercising as this may lead to hypoglycaemia.
- The morning after drinking, check your blood sugar level. To prevent hypoglycaemia, be sure to eat breakfast.
Diabetes and harmful use of alcohol (2)

Patient education

- Alcohol contains a lot of calories poor in nutrients, so for those who need to lose weight it is best not to drink alcoholic drinks.
- There is always a risk of hypoglycaemia if a patient on hypoglycaemic agents or insulin drinks alcohol.
- Restrict consumption to one glass per day for adult women, two glasses per day for men.

- Drinking alcohol is not advisable if you have liver disease, high cholesterol level, or obesity.
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REFERENCES:
Take-home message
Healthy lifestyles

Eat healthy
Be physically active
Quit smoking
Stop harmful use of alcohol

- Eat **balanced** meals.
- Eat a **reasonable amount** of calories.
- Eat **regularly** at the right time.