



Pacific
Community
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du Pacifique

Nutrition care for people with diabetes



PHD

Public
Health
Division

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Nutrition care for people with diabetes

Public Health Division

(taken from the Pacific healthy dietary guidelines for people with diabetes:
A handbook for health professionals and educators)

Part 1: The key guideline statements

Part 2: Assessment needs for dietary advice and intervention



Suva, Fiji, 2021



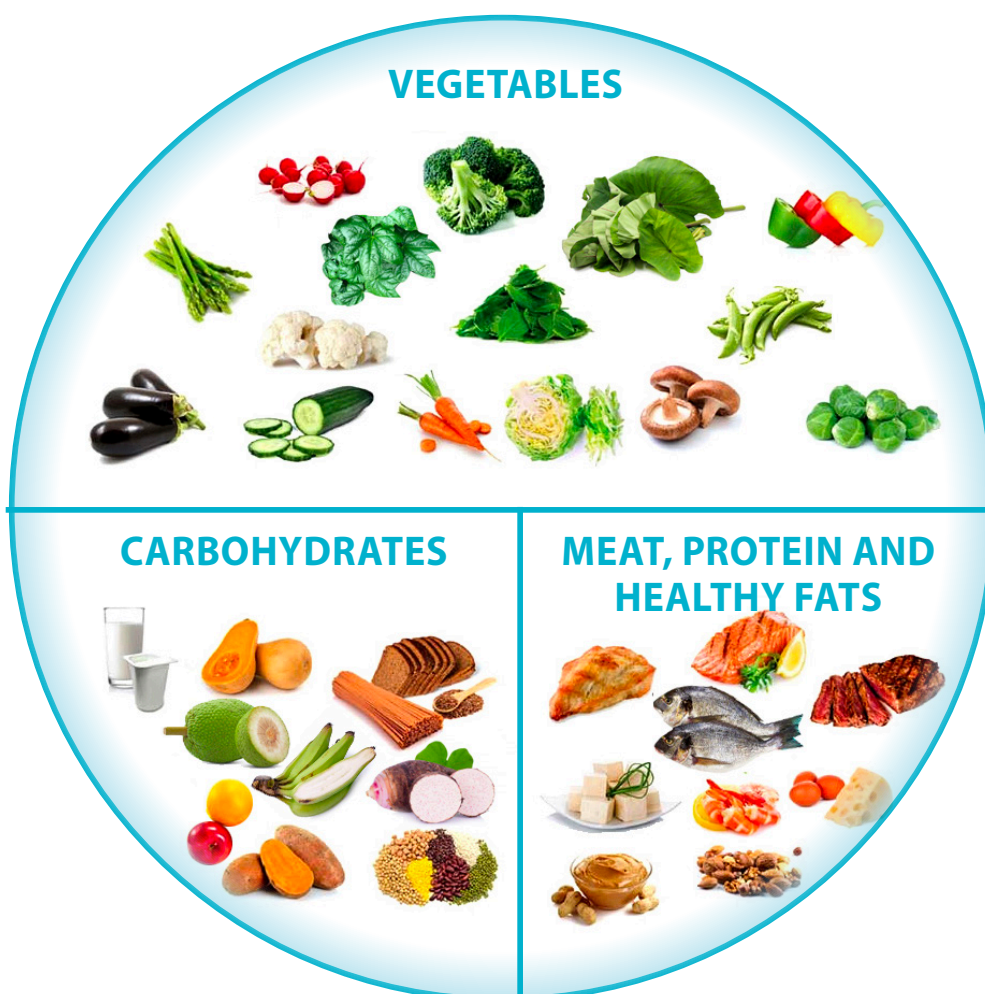
Part 1. The key guideline statements

1. Eat a variety of foods from the three food groups in the appropriate amounts every day.
Choose fresh local products/produce when possible




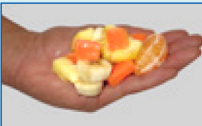



The recommended diabetes meal portions:

- **half of the plate** – vegetables for vitamins and minerals for protection
- **quarter of the plate** – root crops and starchy vegetables for carbohydrates for energy
- **quarter of the plate** – lean meat or legumes for protein for body building

THE THREE FOOD GROUPS



Recommended food groups and portion sizes

FOOD GROUPS AND TYPES OF FOODS TO CHOOSE	AMOUNT TO BE EATEN	MAIN NUTRIENTS THEY PROVIDE
<p>ENERGY FOODS – starchy staples</p> <p><i>Energy food to choose:</i></p> <ul style="list-style-type: none"> • Locally grown root crops • Breadfruit, cooked green bananas • Whole grain breads • Brown rice <p><i>Energy foods to limit:</i></p> <ul style="list-style-type: none"> • Refined grains and cereals such as white rice, pasta, noodles, vermicelli and bread • Foods prepared with fats and sugar, e.g. biscuits and cakes <p><i>Energy foods to avoid:</i></p> <ul style="list-style-type: none"> • Processed and deep-fried foods • Sugar and free sugars • Sugar-sweetened beverages 	<p>Should make up half (50%) of all the food you eat each day</p> <p>Eat at least six portions each day</p> <p>Example of portion:</p> <p>Carbohydrates 1 portion = fist</p> 	<p>Carbohydrates</p> <p>Vitamins</p> <p>Dietary fibre</p>
<p>PROTECTIVE FOODS – all vegetables and fruits</p> <p><i>Protective foods to choose:</i></p> <ul style="list-style-type: none"> • All fresh fruits and vegetables, locally grown • All frozen vegetables and fruits with no added sugar or salt <p><i>Protective food to limit:</i></p> <ul style="list-style-type: none"> • Canned fruit in juice is a good alternative if fresh fruit is limited. • Dried fruits with no added sugar or preservatives <p><i>Protective foods to avoid:</i></p> <ul style="list-style-type: none"> • Canned vegetables • Dried fruits with added sugar or preservatives • Cordials and fruit drinks • Fruit juice and fruit juice concentrate 	<p>Should make up one third (35%) of all the foods you eat each day</p> <p>Eat five or more portions each day</p> <p>Example of portions:</p> <p>Vegetables 1 portion = 2 cupped hands</p>  <p>Fruit 1 portion = 1 cupped hand</p>  	<p>Vitamins</p> <p>Minerals</p> <p>Dietary fibre</p> <p>Phytochemicals</p> <p>Antioxidants</p>
<p>BODY-BUILDING FOODS – protein rich foods</p> <p><i>Body-building foods to choose:</i></p> <ul style="list-style-type: none"> • Local, lean cuts of meat, chicken • Fish • Eggs • Dried beans and legumes • Nuts • Reduced fat milk and milk products <p><i>Body-building foods to limit:</i></p> <ul style="list-style-type: none"> • Meat with visible fat • Canned meat or fish with high salt content <p><i>Body-building foods to avoid:</i></p> <ul style="list-style-type: none"> • Processed meat – spam, canned corned meat • Corned beef/brisket in container, burgers, sausages, condensed milk, mutton flaps 	<p>Should make up one sixth (15%) of all the food you eat each day</p> <p>Eat at least one to two portions each day</p> <p>Example of portions:</p> <p>Meat 1 portion = palm of your hand</p>  <p>Nuts, beans/legumes 1 portion = 1 cupped hand</p>  	<p>Proteins and essential amino acids</p> <p>Vitamins</p> <p>Minerals</p> <p>Fatty acids</p> <p>Fibre (from dried beans and nuts)</p>

2. Eat carbohydrates at each meal for consistent carbohydrate distribution SEE GUIDELINES pp. 14–16

- Carbohydrates (CHO) break down into glucose and the quantity and type of CHO influence the blood glucose differently
- Recommended sources (with medium-to-low glycaemic indices) are starchy staples (root crops), vegetables, legumes and whole grains
- Requirements and distribution throughout the day are based on the patient's eating habits, diabetes medication, level of physical activity and occupation
- The glycaemic index (GI) classifies CHO foods based on ability to raise blood glucose level after consumption
- Foods with high GI values raise the blood glucose level quickly and are not recommended for people with diabetes

GI range	Some examples	Recommendation
>70 (high)	White bread, white rice, cornflakes, watermelon, potato (value changes with method of cooking), sugar, etc.	Not recommended
50–69 (medium)	Brown rice, rolled oats, fresh pineapple, raw mangoes, orange juice, sweet potato, pumpkin, green banana/plaintain, taro, etc.	Recommended but controlled
<50 (low)	Apple, orange, apple and orange juice, carrots, fruit yoghurt, legumes, etc.	Recommended but monitored

- Factors affecting GI include: amount consumed; type of starch in food; fibre content; mixture with other foods consumed; and cooking and processing methods
- It is recommended that the GI value is considered, including the amount of amount of other nutrients present in food items such as fats and protein

3. Eat three regular meals every day at a consistent time SEE GUIDELINES pp. 16–17

- Regular meals help to regulate blood glucose level and avoid overeating.
- If needed between mealtimes, snack on a serving of raw fruits, fresh vegetables or a slice of wholegrain bread.

4. Eat plenty of vegetables every day. Fill half the plate with vegetables SEE GUIDELINES pp. 18–19

- Vegetables are good sources of vitamins, minerals and dietary fibre
- There should be at least three or four servings at each meal
- Fill half the plate with vegetables at mealtimes

5. Eat three or four portions of fruit every day. Avoid eating two or more fruits at one time

SEE GUIDELINE p. 19

- Sugar in fruits is called fructose
- It is a source of energy and contributes to carbohydrate intake
- Fruit is a better option to using table sugar (sucrose)
- The recommendation is up to four portions a day, with a single portion at a time

6. Drink plenty of safe and clean water every day. Avoid fruit juice and sugar sweetened drinks

SEE GUIDELINES p. 20

- Body needs water for key processes
- Sources of water is from food as well as fluid intakes
- The recommendation is to drink clean and safe water and aim for not less than 6–8 cups per day

7. Choose and prepare foods with less fat, particularly saturated fat

SEE GUIDELINES pp. 20–23

- The recommendation is that 30% of total energy can come from unsaturated fat
- Fat affects lipid profiles, blood pressure and weight
- Avoid fatty and processed meat
- Choose low-fat milk and dairy products

8. Choose and prepare foods with less salt

SEE GUIDELINES pp. 23–24

- High salt intake can lead to fluid retention, which is linked to high blood pressure, which can also lead to stroke, cardiovascular problems and kidney diseases
- The recommendation is less than 5mg (1 teaspoon) a day

9. Reduce or avoid consumption of alcohol

SEE GUIDELINES pp. 24–25

- Alcohol is a concentrated form of energy
- Alcohol should be avoided by those who are overweight, have high blood pressure or high levels of triglycerides
- Alcohol may cause hypoglycaemia, especially in people with diabetes who are on insulin or oral antihyperglycemic agents (OHA)
- If alcohol is consumed, it is important to take it with carbohydrate-containing food

10. Reduce energy intake and increase daily physical activity

SEE GUIDELINES pp. 25–26

- Physical activity improves blood glucose control, reduces cardiovascular risk factors, contributes to weight loss and improves wellbeing
- The effects of physical activity depend on its intensity and frequency
- For patients on lifestyle (LS) modification only or on lifestyle modification and metformin, there is no anticipated risk of hypoglycaemia. Those on sulfonylureas are potentially at risk
- There is a greater risk of hypoglycaemia for those on insulin so need to consult a doctor

Part 2. Assessment needs for dietary advice and intervention

1. Nutrition assessment

a. Collect dietary intake information by using

24-hour recall – (refer to example provided)

- This method is useful only if information is required on food and drink consumed in the past 24 hours
- It is not a true reflection of common dietary habits

Food diary – can be from 2–7 days (refer to example provided)

- This method is useful if tracking of dietary habits over several days is required
- It is more reflective of common dietary habits
- It is useful to combine food diary and blood glucose testing

b. Take anthropometric measurements

- Weight and body mass index (BMI)
- Waist circumference

c. Level of physical activity

- Type of physical activity, how often and duration

d. Biochemical data

- Take both fasting and random blood glucose readings
- Take HbA1c readings for the most recent test and results over a period
- Take lipid profile (total cholesterol, LDL, Triglycerides, HDL)

e. Medications

- For diabetes management, is the patient on:
 - lifestyle (LS) modification only
 - LS and OHA
 - LS and OHA and insulin
 - LS and insulin

2. Nutrition diagnosis

From step 1, what are the nutritional problems identified?

- a. irregular meals?
- b. carbohydrate intake – too much or inconsistent or not enough?
- c. portion size – recommended portion for the three food groups?

3. Nutrition intervention

Please note that nutrition interventions most suitable for each patient will be determined by the findings from steps 1 and 2

a. Identify the intervention that addresses the cause of the problem or problems identified in step 2

Examples of interventions are:

- avoiding sugary foods and drinks
- reducing/increasing the amount of CHO consumed at each meal
- increasing the amount of vegetables consumed at each meal
- timing meals with medications
- losing weight

b. Work with the patient to set realistic and achievable goals to reach recommended control levels for glucose and others. For example:

What do you and the patient want to achieve within a set period?

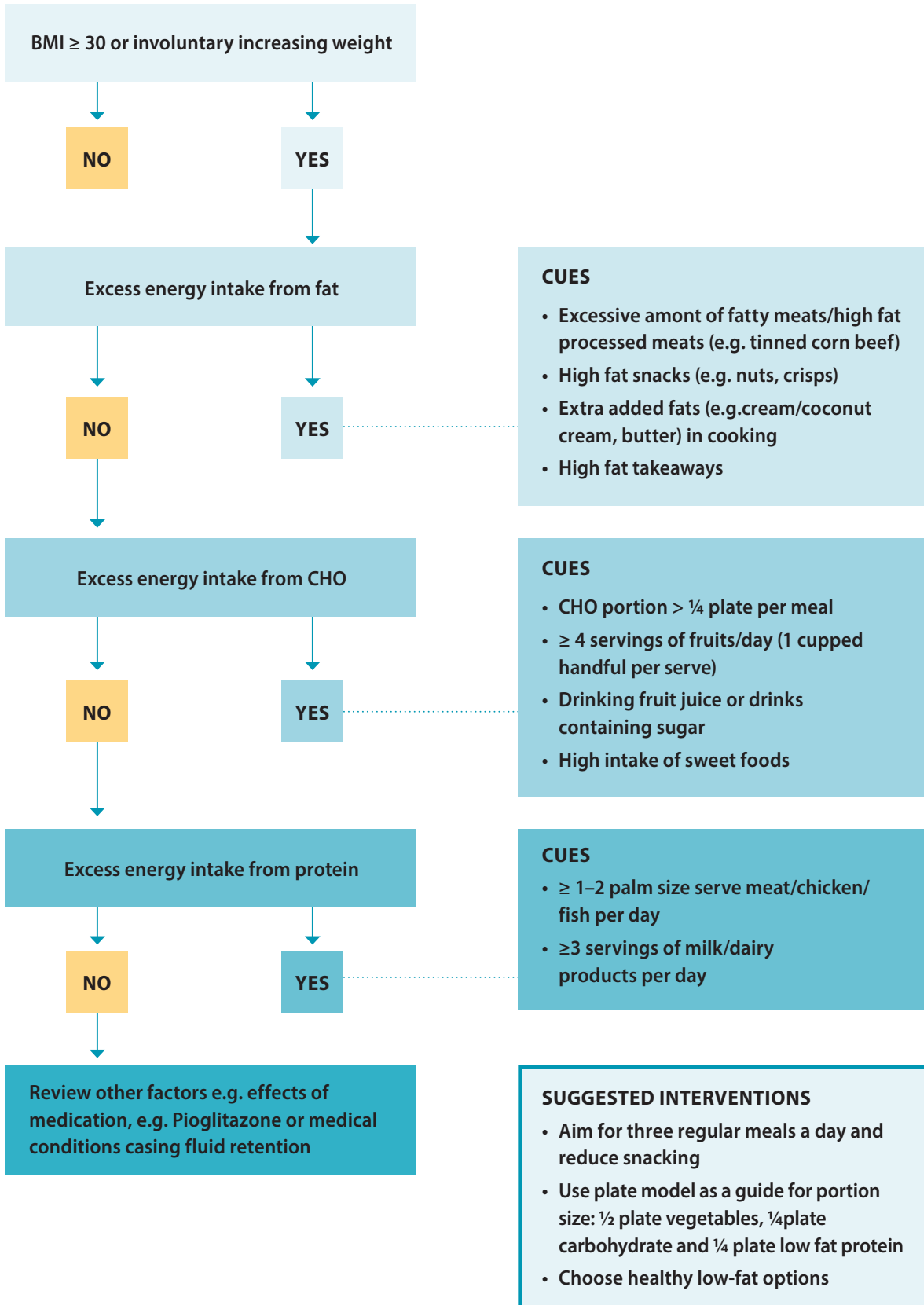
- Reduce fasting blood glucose levels to normal range within 1–2 weeks
- Reduce weight by at least 1kg a week and to achieve the desirable weight range within 4–6 months, depending on amount of weight to lose
- Reduce HbA1c by setting a target depending on requirement and management plan

How will that be achieved?

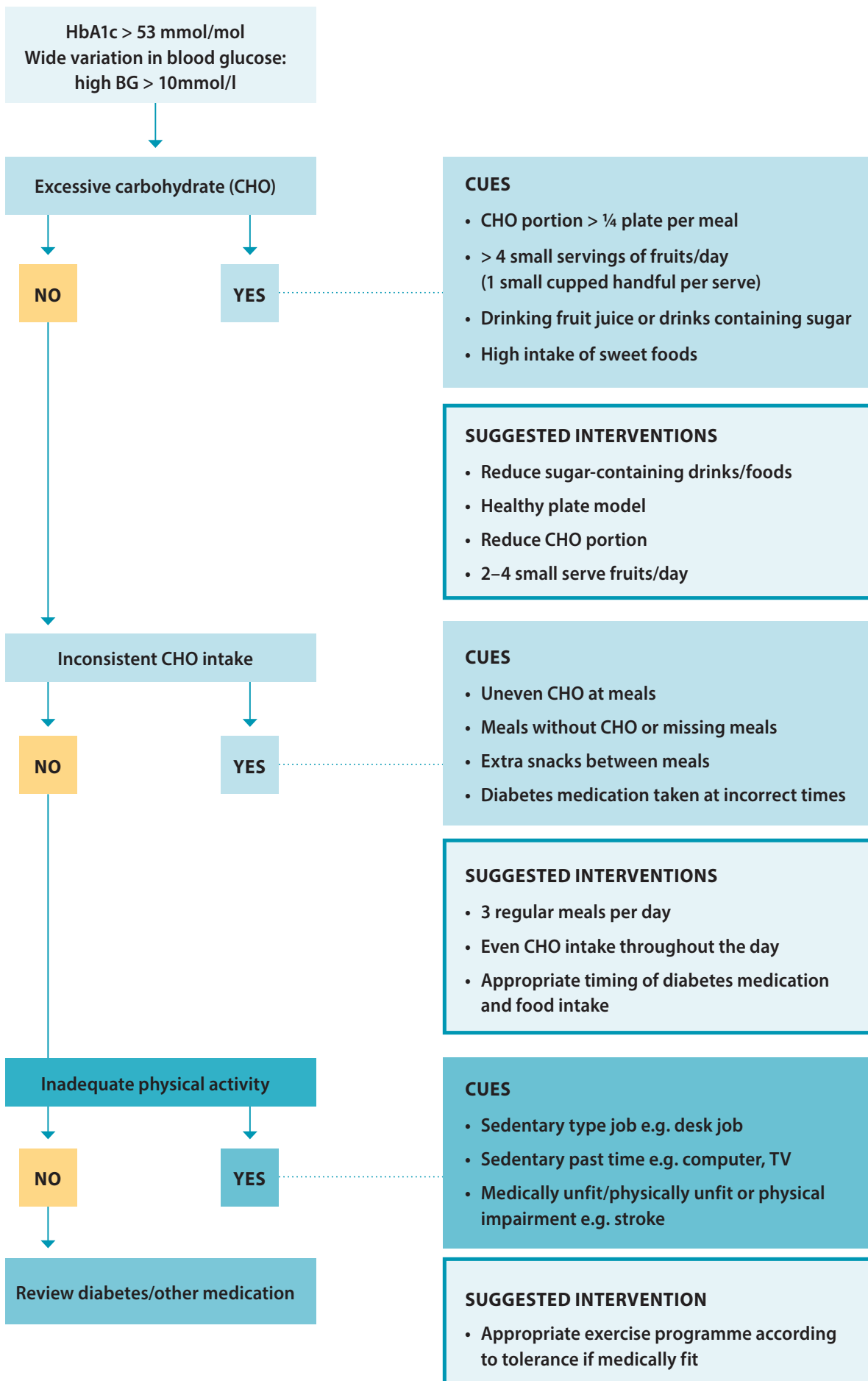
- Discuss with the patient changes to be made to their diet and lifestyle.
- These changes need to be in line with the targets set.

Examples:

An example of an intervention if the nutritional diagnosis is obesity or need to lose weight



An example of an intervention if diagnosis is HbA1c >7% and blood glucose >10mmol/L



What kind of tools and support does the patient need to reach targets set?

- **Education sessions** – patient and/or carers
- **Pamphlets and resources**
- **Glucometer and testing strips**

4. Monitoring and evaluation

- Monitoring is required to track the progress made with the targets set and the management plan
- Identify some indicators to monitor patient's progress such as:
 - following a regular meal pattern
 - carbohydrates portion control
 - blood glucose improvement
- Evaluate the improvement in glycaemic control through:
 - improved HbA1c
 - improved fasting blood glucose levels
 - achieving weight loss

Tools to help with dietary assessment and intervention

24-hour dietary recall

DATE: _____

NAME: _____ FEMALE/MALE: _____ DATE OF BIRTH: _____

MEAL	TIME	FOOD/DRINK ITEM	AMOUNT
Breakfast			
Morning tea			
Lunch			
Afternoon tea			
Dinner			
Supper			

Food and blood glucose diary

NAME: _____ FEMALE/MALE: _____ DATE OF BIRTH: _____

MEALTIME	TIME	FOOD/DRINK ITEM	AMOUNT	BLOOD GLUCOSE
Morning				
First meal/drink				
Morning tea				
Lunch				
Afternoon tea				
Dinner				
Supper				

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