

Important Notes for Ramadan

# A GUIDE TO ACHIEVING OPTIMAL BLOOD GLUCOSE CONTROL DURING RAMADAN THROUGH NUTRITION



# This guide was created to help you learn more about effective nutrition when fasting during Ramadan and, hopefully, principles that you may also carry forward into your normal daily lives.

## **This guide includes:**

1. The Ramadan Nutrition Plan (RNP)
2. Diabetes care during Ramadan
3. The RNP Kit

## **Preparation before Ramadan**

Before participating in Ramadan fasting, you should:

1. Consult your doctor or dietitian to make sure that you are fit to fast.
2. Choose a suitable exercise regimen to follow during Ramadan.
3. Know how to identify the 2H1D symptoms (hypoglycaemia, hyperglycaemia and dehydration).
4. Regularly monitor your blood glucose levels and body weight.



# Risks associated with fasting over a prolonged period:

The colour of urine when healthy and when dehydrated

## Hypoglycaemia

(low blood glucose)  
<3.9 mmol/L with or without symptoms

### Causal factors

- Too little carbohydrate intake
- Not taking pre-dawn meal
- Eating pre-dawn meal too early
- Intense physical activity
- Increased insulin dose or diabetes medication

### Symptoms

- Trembling
- Sweating
- Palpitations
- Hunger
- Headaches
- Feeling faint

## Hyperglycaemia

(high blood glucose)  
>16.6 mmol/L with or without symptoms

### Causal factors

- Excessive consumption of carbohydrates and sugary food or drinks
- Not taking diabetes medication
- Sleeping all day or being inactive

### Symptoms

- Extreme thirst
- Extreme hunger
- Frequent urination
- Lethargy
- Nausea / Vomiting

## Dehydration

Lack of water in the body

### Causal factors

- Not drinking enough water and being exposed to very hot weather

### Symptoms

- Urine appears darker (as shown to the right)

Healthy

Dehydrated

Severely dehydrated

## Tips: Maintaining hydration

- 1 Apportion your water intake at night, starting from the time of breaking fast to the pre-dawn meal.
- 2 Reduce the intake of caffeinated drinks and food high in sodium, such as processed food, fast food and salty food.
- 3 Reduce outdoor activities when the weather is hot.
- 4 Make sure your blood glucose is at optimum levels.

## Important!

### When should you break your fast?

It is not advisable to continue fasting if you experience:

1. Hypoglycaemia (blood glucose level is less than 3.9 mmol/L).
2. Hyperglycaemia (blood glucose level is more than 16.6 mmol/L).
3. Symptoms of hypoglycaemia, hyperglycaemia, dehydration or acute pain.

**Source:** International Diabetes Federation, Diabetes and Ramadan (IDF-DAR) International Alliance. Practical Guidelines, 2016. International Diabetes Federation, Belgium.



# What is the purpose of RNP?

The RNP is designed to help you practise effective nutrition during Ramadan.

This is important in ensuring:

- Adequate calorie intake and a balanced proportion of macronutrients
- Approximately the same amount of carbohydrates are taken at every meal
- Other comorbidities such as hypertension and dyslipidaemia are under control

## RNP kit

This RNP kit is intended as a guide on nutritional care when fasting during Ramadan.

The RNP kit covers 7 key topics:

**Kit 1:** The Ramadan Wheel

**Kit 2:** Carbohydrate Counting

**Kit 3:** The Ramadan Plate

**Kit 4:** Healthier Choices at the Ramadan Bazaar

**Kit 5:** Diabetes-specific Formula (DSF)

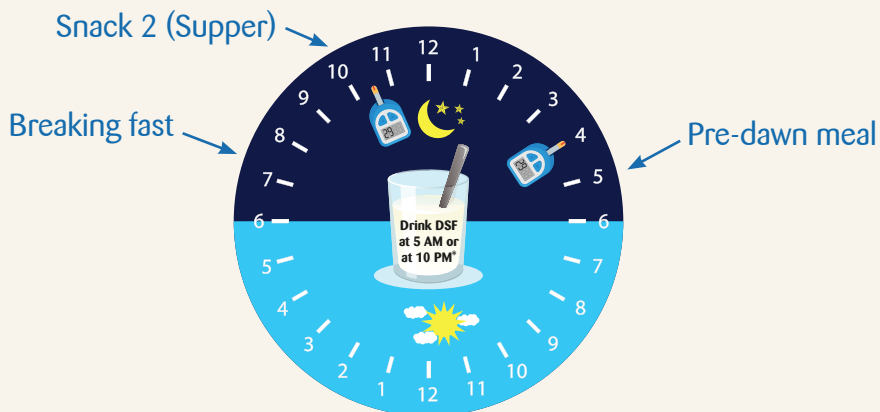
**Kit 6:** Syawal Nutrition Plan

**Kit 7:** Recipes for Ramadan



# Kit 1 The Ramadan Wheel

To help with planning a schedule of when to check your blood glucose levels and when to take the DSF.



- You are encouraged to delay the pre-dawn meal and break fast as soon as possible.
- Regular monitoring of blood glucose levels during Ramadan is important to identify the risk of blood glucose imbalance.
- It is recommended that blood glucose monitoring be done at least once or twice a day, as appropriate, and at these times:



Before the pre-dawn meal



Before bed

## Important!

Always remember to take your medication as prescribed by your doctor, especially during Ramadan.

\* Discuss with your dietitian on when and how much you should be taking of Nutren Untuk Diabetik®



# Kit 2 Carbohydrate Counting

To identify different sources of carbohydrates and measuring carbohydrate exchanges.

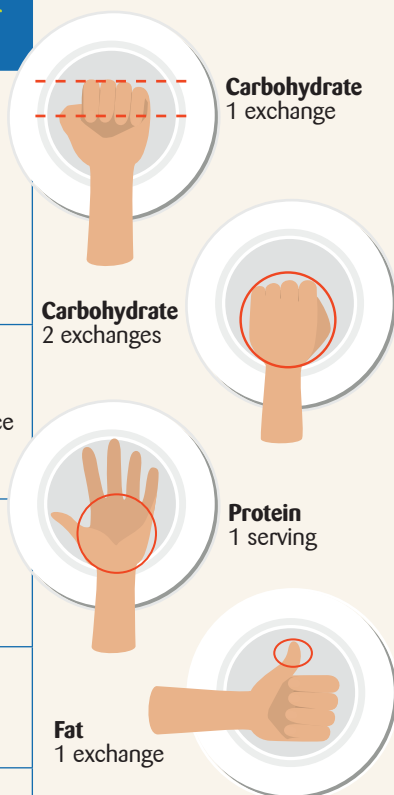
## What are carbohydrates?

They are one of the main classes of food besides protein and fat. Carbohydrates supply the body with glucose, which will then be converted into energy to support bodily functions and physical activity.

## Sources and measurement of carbohydrates

## Size of exchange

Sources	Measurement for 1 exchange
<b>Wholegrains</b>	
Brown rice / Basmati rice	½ cup
Rice porridge	1 cup
Noodles / Kuetiao / Pasta / Vermicelli noodles / Rice noodles	½ cup
White bread / Wholemeal bread	1 piece
Raw oats	3 tablespoons
Tosai / Pratha	½ piece
Plain biscuit	3 pieces
<b>Fruits</b>	
Dates	3 small pieces
Apple / Orange / Pear / Kiwi	1 piece
Banana / Papaya / Watermelon / Pineapple	1 medium-cut piece
Grapes / Langsat / Longan	8 pieces
<b>Starchy Vegetables</b>	
Potato	1 (75 g)
Corn	½ cup
Sweet potato / Yam / Cassava	½ cup
Pumpkin	1 cup
<b>Legumes</b>	
Baked beans / Green beans (cooked)	½ cup
Red beans (raw)	⅓ cup
Chickpeas, lentils (cooked)	3 tablespoons
<b>Sugar*</b>	
White sugar / Brown sugar	3 teaspoons



\* Not recommended. Should be limited if choosing to take.

**Source:** Suzana S, et al. *Atlas of Food Exchanges & Portion Sizes (Third Edition)*, 2015. MDC Publishers Sdn Bhd, Kuala Lumpur. Malaysian Dietitians' Association. Medical Nutrition Therapy Guidelines for Type 2 Diabetes Malaysia (2nd Edition), 2013. Malaysian Dietitians' Association and Ministry of Health, Putrajaya.

# Kit 3 The Ramadan Plate

To plan a healthy and balanced diet.

## Plain water

Always try opting for plain water and also reduce the intake of caffeinated drinks

## $\frac{1}{4}$ Carbohydrate

(Rice, noodles, bread, cereal, cereal products or potatoes)  
Best choice: Wholegrains

## Soup or gravy

Always choose low-fat cooking methods

## $\frac{1}{4}$ Protein

(Fish, chicken, meat or legumes)  
Best choice: Meat cuts with less fat

## Fruits

Best choice: Fresh fruits or dates

## $\frac{1}{2}$ Vegetables

Start your meal by eating vegetables first

## Tips: Healthy eating habits

- 1 Start by drinking plain water and eating a piece of fruit.
- 2 Start by eating vegetables first.
- 3 Each meal should include protein and vegetables.

## The Ramadan Plate can help you:

- 1 Eat a variety of food
- 2 Control meal portion size
- 3 Control your blood glucose level



# Healthier Choices at the Ramadan Bazaar

To plan what to buy at the Ramadan bazaar.

## Tips when buying at the Ramadan bazaar

- Make a list of only the food you need to avoid buying too much.
- Buy dishes that are low in oil and sugar, and make a habit of picking a variety of fruits and vegetables. The right amount of food is also important for maintaining a healthy lifestyle.
- Pick dishes made using healthier cooking methods (such as boiled, roasted or steamed dishes) to maintain a healthy weight.
- Try to avoid buying cakes, dessert porridge, or sweet beverages as they contain carbohydrates that can increase blood sugar levels.
- Some of the healthy and recommended options at the Ramadan bazaar include:

- Non-fried spring rolls
- Stuffed tofu
- Assam laksa
- Javanese pecel (with less peanut sauce)
- Snacks that do not contain high sugar such as steamed cakes, curry puffs and vadei
- Grilled or roasted chicken (request for breast meat, skinless and with less gravy)
- Fresh fruits or juice (ask for no added sugar)

*non-fried spring roll*



*assam laksa*



*grilled chicken*



*fresh fruits*





# Diabetes-specific Formula (DSF)

To plan your intake of Nutren Untuk Diabetik<sup>®</sup> during Ramadan to help meet your nutritional needs as well as control your weight and blood glucose levels.



## What is Nutren Untuk Diabetik<sup>®</sup>?

- It is a drink specially formulated for individuals with diabetes.
- Contains a unique combination of nutrients.
- Recommended as part of the RNP with an appropriate calorie content.
- Helps in weight control and in achieving optimal glucose control.

Source: Barakatun-Nisak MY, et al. *Nutrients* 2020;12:813.

## What are the special nutrients of Nutren Untuk Diabetik<sup>®</sup>?

- Slowly digestible carbohydrates (low glycaemic index)
- Soluble fibres and prebiotics
- Unsaturated fats
- High quality protein

## Recommended Nutren Untuk Diabetik<sup>®</sup> intake during Ramadan

Time	Total scoops (servings)
Pre-dawn meal / Breaking fast	7 scoops (1 serving)
Snack 1 (Mini Iftar) / Snack 2 (Supper)	3.5 scoops (½ serving)

Drink at least 1 serving a day. 1 serving of Nutren Untuk Diabetik<sup>®</sup> (7 scoops) provides 253 kcal, 24.5 g carbohydrate, 11.3 g protein, 11.0 g fat.

1 scoop of Nutren Untuk Diabetik<sup>®</sup> = 7.9 g powder



# Kit 6 Syawal Nutrition Plan

To provide healthy nutrition guidance for the festive season.

## Quantity of food containing 1 exchange of carbohydrates (equivalent to ½ cup of rice)

Hari Raya Delicacies	
Rice cakes	¾ piece
Ketupat palas	1 piece
Lemang	3 pieces
Peanut sauce	6 tablespoons
Burasa	1 piece
Porridge	1 cup
Rice / Glutinous rice / Noodles / Vermicelli noodles / Tanghoon / Pasta / Rice noodles / Laksam / Kuetiao	½ cup

**Source:** Suzana S, et al. *Atlas of Food Exchanges & Portion Sizes (Third Edition)*, 2015. MDC Publishers Sdn Bhd, Kuala Lumpur. Malaysian Dietitians' Association. *Medical Nutrition Therapy Guidelines for Type 2 Diabetes Malaysia (2nd Edition)*, 2013. Malaysian Dietitians' Association and Ministry of Health, Putrajaya.

## Tips: Healthy Eating on Hari Raya

- 1 Control the amount of carbohydrates taken when choosing a raya delicacy.
- 2 Identify food items that are high in carbohydrate content and be aware of hidden carbohydrate such as in gravy.
- 3 Use a smaller plate. Food looks more plentiful on a smaller plate than a larger one.

## Quantity of food containing 1 exchange of carbohydrate (~½ cup of rice)

Raya cookies	
<i>Kuih bangkit</i> , Mazola cookies, Arab / Makmur cookies, Cat's tongue cookies, London almond, Honey cornflakes, Pineapple tarts, Chocolate chip cookies, <i>Semperit</i>	2 pieces
Jelly	2 pieces
Twisted spring roll, <i>kuih siput</i>	3 tablespoons
<i>Bahulu</i>	1 piece
Love letters	2 pieces
<i>Dodol</i>	2 small pieces (45 g)
<i>Wajik</i>	1 piece (25 g)
Fruit cake	1 piece (25 g)
Sarawak layered cake	2 pieces (25 g)
Banana chips / Tapioca chips	6 pieces
<i>Kuih cincin</i> , <i>Kuih ros / Loyang</i> , <i>Murukku</i> , <i>Rempenyek</i>	1 piece

**Source:** Suzana S, et al. *Atlas of Food Exchanges & Portion Sizes (Third Edition)*, 2015. MDC Publishers Sdn Bhd, Kuala Lumpur. Malaysian Dietitians' Association. *Medical Nutrition Therapy Guidelines for Type 2 Diabetes Malaysia (2nd Edition)*, 2013. Malaysian Dietitians' Association and Ministry of Health, Putrajaya.

- 4 Choose plain water and avoid sweet drinks.
- 5 Every meal should be complete with vegetables.
- 6 Eat vegetables first, followed by side dishes and then carbohydrates.



# Kit 7 Recipes for Ramadan

To give you samples of a healthy menu.

## Baked Cheese Macaroni with Nutren Untuk Diabetik®

Breaking fast meal: 1 serving

### Ingredients

- ½ cup of macaroni
- 10 g mozzarella cheese
- 10 g cheddar cheese
- 10 g cream cheese
- 1 scoop of Nutren Untuk Diabetik® (mixed with 50 mL of water)
- 40 g chicken meat (breast part, without fat and skin)
- 1½ teaspoons of cooking oil
- A pinch of salt
- A pinch of black pepper powder

### Preparation method:

1. Preheat the oven to 170°C.
2. Boil the macaroni until tender. Strain the macaroni and set aside.
3. Mix Nutren Untuk Diabetik® with 50 mL of water.
4. Heat the oil and add in the chicken. Stir briefly.
5. Pour in the Nutren Untuk Diabetik® that has been mixed with water. Stir and add black pepper powder and salt.
6. Add the cheese one at a time and stir well so that it does not become lumpy.
7. Finally, add the macaroni. Mix well and season to taste.
8. Put the macaroni in a baking tray and bake at 170°C for 20–30 minutes.
9. Ready to be served together with vegetables.

Tip: It is encouraged to use low-fat and low-sodium cheese.



Serving Suggestion

Nutrition Facts	
Carbohydrate exchanges	- 2
Total in each meal	<b>390</b>
<b>Calories</b>	
	% Daily Value*
Total Fat 17g	13%
Saturated Fat 5g	42%
Trans Fat 0g	
Sodium 347mg	17%
Total Carbohydrate 37g	12%
Fibre 4g	20%
Sugar Total 2g	
Including 0g of Added Sugar	6%
Protein 22g	7%

\* Daily Value % (DV) is a guide to the percentage of nutrients contained in each serving of food.



Serving Suggestion

## Dates Milkshake

Snack (mini iftar): 1 meal

### Ingredients

3 dates (21 g)

3.5 scoops of Nutren Untuk Diabetik® (mixed with 120 mL of water)

A bit of walnut

### Preparation method:

1. Mix 3.5 scoops of Nutren Untuk Diabetik® with 120 mL of water.
2. Put the dates, walnut and mixed Nutren Untuk Diabetik® into a blender. Blend for 30 seconds.
3. Pour into a glass and chill.
4. Ready to drink.

<b>Nutrition Facts</b>	
Carbohydrate exchanges	~2
Total in each meal	<b>190</b>
<b>Calories</b>	
	% Nilai Harian*
Total Fat 6g	4%
Saturated Fat 0g	4%
Trans Fat 0g	
Sodium 216mg	11%
Total Carbohydrate 27g	9%
Fibre 3g	14%
Total Sugar 13g	
Including 0g Added Sugar	45%
<b>Protein 6g</b>	<b>2%</b>

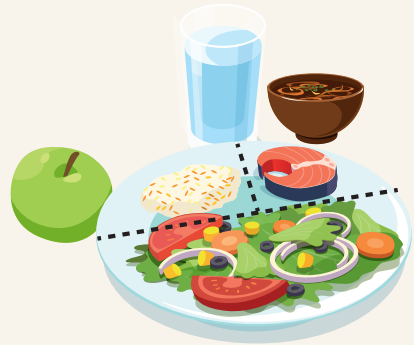
\* Daily Value % (DV) is a guide to the percentage of nutrients contained in each serving of food.



# 10 Principles of RNP

To help you control your blood glucose levels and body weight.

1. Consult your doctor or dietitian before deciding to fast.
2. Take a sufficient amount of calories or carbohydrates. Portion out your calories between the pre-dawn meal, breaking fast and (if necessary) 1–2 snack (Mini Iftar or Supper).
3. Ensure a balanced proportion of macronutrients (recommended carbohydrates 45–50%, protein 20–30% and fat does not exceed 35% of total calories).
4. Use the 'Ramadan Plate' as a guide to ensure pre-dawn and breaking fast meals that are complete with vegetables, protein, some fat and carbohydrates. Eat vegetables first.
5. Choose carbohydrates with a low glycaemic index and are high in fibre (preferably wholegrains).
6. Delay the pre-dawn meal.
7. Start the breaking of fast with Snack 1 (Mini Iftar), followed by the Maghrib prayer. Then, enjoy your break fast meal.



8. Drink enough water (without sugar and reduce caffeinated drinks) between the time of breaking fast and the pre-dawn meal.
9. Nutren Untuk Diabetik® can be used as part of the pre-dawn meal or snack to ensure adequate nutrition, as well as blood glucose control and body weight.
10. If necessary, you can take a healthy snack such as a piece of fruit, boiled chickpeas or non-fried spring roll.



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# Diabetes and Ramadan

For people with diabetes, fasting during the month of Ramadan requires careful planning together with doctor's advice. During Ramadan, there are significant changes to your eating schedule, medicine intake, physical activity and sleeping patterns. Therefore, proper nutritional care is very important to enable you to fast safely during Ramadan. Do consult your doctor before deciding to fast. Meet with a dietitian to receive a nutrition guide tailored specifically for Ramadan.

Happy fasting!

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