

# Fasting while diabetic

Patients with type 2 diabetes who fast during Ramadan can keep their glucose levels in check by following a structured Ramadan nutrition plan.

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THE holy month of Ramadan is here and most Muslims around the world are observing it under lockdown to curb the spread of Covid-19.

Locally, Ramadan bazaars, as well as congregational prayers, have been banned, and all mosques are temporarily closed.

Shopping at e-bazaars certainly does not give the same buzz or kick as walking through an array of food stalls and haggling with traders, but health comes first.

For safety, fasting, feasting and praying are now carried out solely in the comforts of your home.

So, does that mean you have better control of what you eat?

Perhaps.

For Muslim diabetics, fasting is always a challenge and they need to have a proper diabetes management plan in place after consultation with their doctor – ideally, a week or two before Ramadan.

Fasting during Ramadan not only alters the timing of meals, but may also disturb sleep patterns and circadian rhythms, all of which can affect a person's metabolic state.

In patients with diabetes, these changes, along with the type of medication they are taking, can be associated with the development of complications such as hypoglycaemia (low blood sugar level), hyperglycaemia (high blood sugar level), ketoacidosis (acidic blood) and dehydration.

There is also a tendency

to consume more calories during iftar (breaking of fast), which is often turned into a celebration with copious amounts of foods laden with sugar and carbohydrates.

Hence, medical nutrition therapy (MNT) plays a vital role in diabetes management during Ramadan.

## Making adjustments

Last month, Universiti Putra Malaysia (UPM), in collaboration with Nestle Health Science, published a first-of-its-kind study on the effects of using structured nutritional therapy with a diabetes specific formula (DSF), in the management of type 2 diabetes during the fasting month of Ramadan.

Published in the journal *Nutrients*, the study called *Comparison of Structured Nutrition Therapy for Ramadan with Standard Care in Type 2 Diabetes Patients*, was carried out for an eight-week period last year (including Ramadan) on 64 subjects who were pre-screened and have had type 2 diabetes for four to six years.

Participants – both men and women with an average age of 48 – were asked to choose their preferred group, i.e. structured Ramadan Nutritional Therapy (sRNT, 41 subjects) or standard care (SC, 23 subjects).

Participants in the sRNT group received a Ramadan-focused nutrition plan, including a DSF, throughout the study, while the SC group received standard nutrition care.

At the end of the study, participants in the sRNT group showed lower levels of fasting blood glucose, triglycerides and self-monitoring glucose before sahur and before bedtime, compared to the SC group.

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Illustration: ZULHAIMI BAHARUDDIN/The Star



# Keeping blood sugar in check



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They also lost roughly 2% of weight. Although the glycaemic control markers (HbA1c) did not differ between groups, participants in sRNT had more substantial improvement than the SC group, and better quality of life.

According to principle investigator Associate Professor Dr Barakatun Nisak Mohd Yusof, the role of MNT is vital during fasting, not only in achieving optimal diabetes control, but also in helping overweight and obese patients with type 2 diabetes improve their lifestyle and lose weight. "In fact, Ramadan provides an ideal opportunity for patients to channel the strength and discipline required to comply with the MNT; this, in turn, helps them to maintain optimal glycaemic control beyond the fasting month," says the dietitian, who is also the deputy dean of UPM's Faculty of Medicine and Health Sciences Department of Nutrition and Dietetics.

The key principles for the daily menu for sRNT, which can be followed by all diabetic patients, include:

## > Sufficient calories

A complete and balanced meal that contains adequate calories from carbohydrate, protein and fat.

## > Appropriate carbohydrates

Carbohydrates taken should have a lower glycaemic index and high fibre, e.g. basmati rice, whole grain bread and oats.

They should be eaten at regular intervals between sahur and iftar.

## > Portion control

Follow the MyPlate concept to portion your meals: a quarter of the plate for carbohydrates (e.g. rice), a quarter for protein (e.g. fish, eggs or chicken) and half for vegetables and/or fruit.

## > DSF

Consume DSF mainly at sahur to ensure sufficient nutrient levels and improve blood sugar profiles while fasting.

## > Sufficient fluid intake

Drink enough water – preferably plain water – at iftar and sahur, and between those two times.

Assoc Prof Barakatun advises, "Start by eating the vegetables first before the rice or protein.

"This technique will help minimise the blood glucose spikes after iftar.

"Break your fast with a mini iftar (small snack) followed by Maghrib prayer, then enjoy a healthy iftar meal.

"This is important to avoid excessive food intake all at one time."

After Ramadan, patients can still continue using the recommended sRNT diet, with adjustments made to meal times.

"Sahur and iftar can be considered as your main meals (breakfast, lunch or dinner), while a mini iftar can be your healthy snack.

"In our study, a few participants who adhered to sRNT managed to reduce their diabetes medications.

"This is what we need, as a reduction in the dose of medication is a sign that the glucose can be controlled with some changes in diet and lifestyle.

"In other words, your body can take charge," she says.

She points out that there are no adverse effects to following this diet in the long run.

"The foundation of the sRNT is based on the principles of MNT for people with diabetes.

"Monitoring and evaluation are key to ensure that the diet adjustment and medication dose are properly matched.

## A sample Ramadan meal plan for diabetics

This menu contributes around 1,800 kcal/day, with 50% carbohydrate content. Please consult your dietitian to understand your caloric and carbohydrate needs.

Sahur (4.30-5.30am)	Mini Iftar (7.20-7.30pm)	Iftar (7.45-8.30pm)	Moreh (10-10.30pm)
Brown rice and fish fried with sambal  > 1 ½ cup brown rice > 1 cup vegetable soup > 1 (palm size) fish fried with sambal  OR  Fried meehoun and boiled egg  > 1 ½ cup fried meehoun > 1 cup vegetables > 1 whole boiled egg  WITH  7 scoops DSF  Sufficient water	Kurma shake with Diabetes Specific Formula (DSF)  > 1-2 pc small dates > 3 ½ scoop DSF  OR  1-2 small dates and wet popiah (1 piece)  Sufficient fluid	Spaghetti aglio olio with chickpeas salad and vegetables  > 1 cup whole grain spaghetti > 1 (palm size) chicken/ prawn/ fish > 1 cup salad with ½ cup chickpeas  OR  Brown rice, chicken grilled with sambal and vegetable dhal curry  > 1 ½ cup brown rice > 1 cup sauted vegetable > 1 (palm size) chicken grilled with sambal > ½ cup dhal cooked with curry without coconut milk (coconut milk can be replaced with yogurt or milk)  WITH  1 fruit  > 1 orange/ apple  OR  > 1 slice of papaya/ guava  Sufficient fluid	> 1 Vietnamese roll > 1 baked curry puff  WITH  1 fruit  Sufficient water

MAGHRIB PRAYER

Source: Universiti Putra Malaysia and Nestle Health Science



An example of MyPlate, which can be used by anyone wanting to eat healthily. – Photos: Filepic

"Consult your doctor and dietitian after Ramadan to decide the best treatment plan for your whole life.

"In fact, Ramadan should be your turning point for better lifestyle management."

The study's results have been translated into a 14-day Ramadan menu plan, which is in a patient education booklet containing healthy meal plans and snacks for sahur, iftar and moreh (supper).

The free booklet can be downloaded at [www.nestlehealthscience.my](http://www.nestlehealthscience.my).

## Should diabetics fast?

However, considering that diabetics, especially those with type 1 diabetes, can develop complications from fasting, is it wise for them to do so?

Says consultant endocrinologist and physician Dr Zanariah Hussein, "Many old studies show that the majority of Muslims will, and want to, fast, despite having type 1 diabetes.

"There are a lot of benefits to fasting, e.g. weight reduction, improving lipid profile, lowering blood pressure, etc.

"If their diabetes is chronic, then they should be exempted from fasting.

"We advise them if we feel they are at risk, that they are not obligated to fast."

Depending on where diabetics live, the average fasting time is between 11.2 to 19.2 hours.

In Malaysia, it is around 13.2 hours.

She says, "Stores of glucose in the liver can last for about 12 hours or so.

"If you don't have diabetes, there is a good balance between insulin and other hormones, which helps to maintain blood glucose levels.

"With diabetics, they are at risk of hypoglycaemia, and when they break fast, the

quick rise in blood glucose poses a risk to their health, so it is important to minimise such fluctuations.

"From studies, we know that there is a five-fold increase of hypoglycaemia episodes among type 1 patients during Ramadan, and seven times more in type 2 patients.

"There is a serious risk of complications that can happen to diabetics who fast, so doctors need to manage patients well to prevent these things from happening."

From experience, Assoc Prof Barakatun notes that many Muslims skip sahur or have their final meal before sleeping, which wreaks havoc on their glucose levels.

This is not recommended for diabetics.

If possible, they should adjust their fasting time so that sahur is eaten later and they break fast earlier.

For moderate or low risk patients with well-controlled diabetes, Dr Zanariah says they can be guided to fast in a safe way, although they are advised to check their blood glucose levels before sahur, in the middle of the day and after breaking fast.

"We remind patients that they must know when to stop fasting.

"Also, as this will be the first time we are fasting during the movement control order (MCO), there are a lot of restrictions on physical activity.

"With Covid-19, our lifestyle has changed – congregational prayers are at home, motivation is lower, and we are constantly able to get food from the kitchen.

"People are trying all kinds of recipes and they all turn out looking good, so there is a concern about overeating.

"It will be interesting to see how this is going to affect patients with diabetes," she says.

## Reducing temptation

Indeed, with budding chefs and bakers in the making, staying away from the kitchen may pose some difficulty.

Assoc Prof Barakatun advises: "If you are preparing for Ramadan and staying home more than usual due to the MCO, it's important to have healthy foods.

"So start by stocking up on foods that pack a nutritional punch, such as whole grain crackers, dried fruits and wholemeal bread,



Assoc Prof Barakatun advises Muslim patients with diabetes not to skip sahur or have their final meal before sleeping, as this can wreak havoc on their blood glucose levels. – ASSOC PROF BARAKATUN NISAK MOHD YUSOF



Doctors need to manage diabetics who want to fast, so that they do not experience serious complications, says Dr Zanariah.

rather than junk food.

"This is because what food is available in the kitchen helps us and our children to make the right decision on eating healthily.

"You can still prepare a family favourite dessert, but do combine it with other healthier meals.

"For example, if you are preparing air batu campur (ABC) for iftar, also serve plain ice water, so that they know there is an option."

Without the Ramadan bazaars, it may be easier for diabetics (and the public) to control their diets as the lure of unhealthy foods is not there.

Still, e-bazaars pose their own set of challenges.

"The time between 4-6pm is dangerous as that is when we tend to buy food because we are hungry.

"A hungry person cannot think well, so there is a probability of buying more than required.

"Perhaps, one of the primary triggers (physical bazaars) has been minimised.

"Nonetheless, it must be remembered that food choices start with us, whether it is from food preparation or food delivery," says Assoc Prof Barakatun.

For Muslim healthcare workers, especially frontliners suited up with personal protective equipment (PPE) and working long hours, dehydration is a risk during Ramadan. They have to replenish the fluids lost once they break fast.

She says, "Try to reduce the intake of foods high in salt (such as fast foods) as extra sodium in your diet would hold extra water, making you dehydrated.

"The same goes for caffeinated beverages such as coffee and soft drinks.

"Caffeine acts as a mild diuretic, which means it might make them pee more than they usually would.

"If they choose to fast, the diet should be easy, quick and balanced.

"They can start by breaking fast by eating food with fast-release sugar, such as dates and sweetened beverages, for quick, energy replacement."