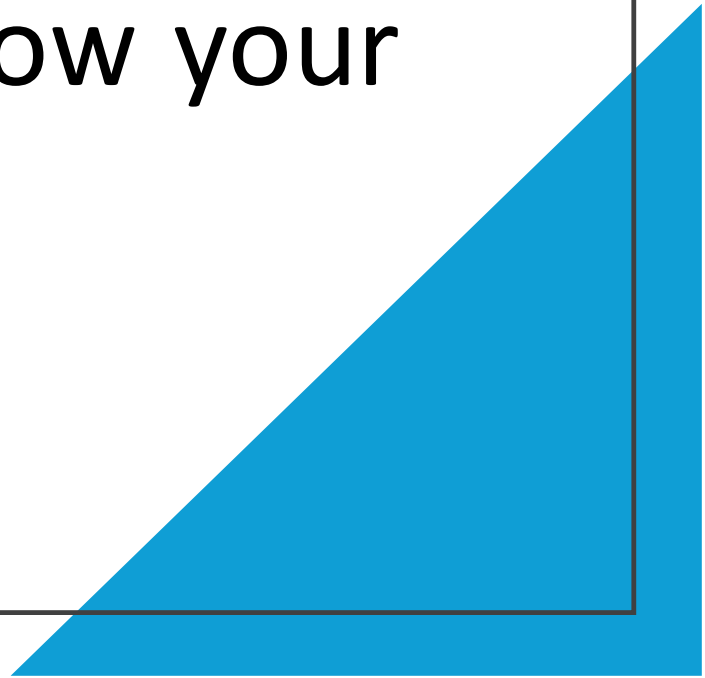


RAMADAN AND CHRONIC DISEASES

Dr Zain Qadri



The advice is general and may not be applicable to your circumstances. Speak to your doctor and follow your doctor's advice



The Qur'an:

“O you who have believed, decreed upon you is fasting as it was decreed upon those before you that you may become righteous.

Chronic Diseases

Diabetes

Cardiovascular diseases

Chronic kidney disease

Changes during Fasting

Dehydration , low
glucose level, low
BP

Sleep disturbance
and disturb
circadian Rhythm

Change in the
timing of the
medications.

Electrolytes(Salts)
imbalance

Diabetes

Effect of Fasting in Diabetic

Hypoglycaemia(Low blood sugar),
Hyperglycaemia(high blood sugar), ketoacidosis,
dehydration

inadequate response to hypoglycaemia .

TABLE 2: ELEMENTS FOR RISK CALCULATION AND SUGGESTED RISK SCORE FOR PEOPLE WITH DIABETES MELLITUS (DM) THAT SEEK TO FAST DURING RAMADAN

Risk Element	Risk Score	Risk Element	Risk Score
1. Diabetes type and duration		8. MVD Complications/Comorbidities	
Type 1 diabetes	1	Unstable MVD	6.5
Type 2 diabetes	0	Stable MVD	2
2. Duration of Diabetes (years)		No MVD	0
A duration of ≥ 10	1	9. Renal Complications/Comorbidities	
A duration of < 10	0	eGFR < 30 mL/min	6.5
3. Presence of hypoglycaemia		eGFR 30–45 mL/min	4
Hypoglycaemia unawareness	6.5	eGFR 45–60 mL/min	2
Recent Severe hypoglycaemia	5.5	eGFR >60 mL/min	0
Multiple weekly Hypoglycaemia	3.5	10. Pregnancy*	
Hypoglycaemia less than 1 time per week	1	Pregnant not within targets*	6.5
No hypoglycaemia	0	Pregnant within targets*	3.5
4. Level of glycaemic control		Not pregnant	0
HbA1c levels > 9% (11.7 mmol/L)	2	11. Frailty and Cognitive function	
HbA1c levels 7.5–9% (9.4–11.7 mmol/L)	1	Impaired cognitive function or Frail	6.5
HbA1c levels < 7.5% (9.4 mmol/L)	0	> 70 years old with no home support	3.5
5. Type of treatment		No frailty or loss in cognitive function	0
Multiple daily mixed insulin Injections	3	12. Physical Labour	
Basal Bolus/Insulin pump	2.5	Highly Intense physical labour	4
Once daily Mixed insulin	2	Moderate Intense Physical Labour	2
Basal Insulin	1.5	No physical labour	0
Glibenclamide	1	13. Previous Ramadan Experience	
Gliclazide/MR or Glimepride or Repaglanide	0.5	Overall negative experience	1
Other therapy not including SU or Insulin	0	No negative or positive experience	0
6. Self-Monitoring of Blood Glucose (SMBG)		14. Fasting hours (location)	
Indicated but not conducted	2	≥ 16 hours	1
Indicated but conducted sub-optimally	1	< 16 hours	0
Conducted as indicated	0	13. Previous Ramadan Experience	
7. Acute complications		Overall negative experience	1
DKA/ HONC in the last 3 months	3	No negative or positive experience	0
DKA/ HONC in the last 6 months	2	14. Fasting hours (location)	
DKA/ HONC in the last 12 months	1	≥ 16 hours	1
No DKA or HONC	0	< 16 hours	0

DKA — Diabetic Ketoacidosis
HONC — Hyperglycaemic Hyperosmolar Nonketotic Coma
eGFR — Estimated glomerular filtration rate
MVD — Macrovascular disease

*Pregnant and breastfeeding women have the right to not fast regardless of whether they have diabetes



FIGURE 1
Risk score and risk categories

TABLE 1: DIETARY ADVICE FOR PEOPLE WITH DIABETES FASTING DURING RAMADAN

Divide the daily calories between *Suhoor* and *Iftar*, plus one to two snacks if necessary.

Ensure meals are well balanced

- 45% - 50% complex carbohydrates
E.g., barley, wheat, oats, millet, semolina, beans, lentils
- 20% - 30% protein
- <35% fat (preferably mono- and polyunsaturated)

Include low glycaemic index, high-fibre foods that release energy slowly before and after fasting

- E.g., granary bread, beans, rice

Include plenty of fruit, vegetables and salads

Minimise foods that are high in saturated fats

- E.g. ghee, samosas, pakoras

Avoid sugary desserts

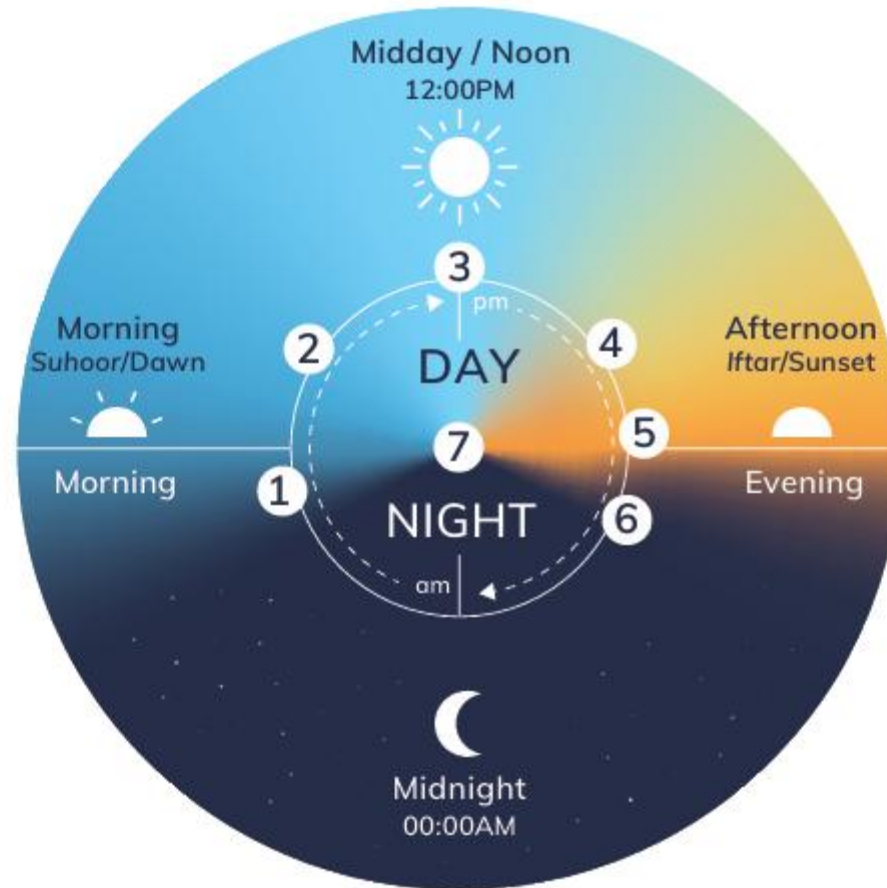
Use small amounts of oil when cooking

- E.g., olive, canola oil, rapeseed

Keep hydrated between sunset and sunrise by drinking water or other non-sweetened beverages

Avoid caffeinated and sweetened drinks

Self-Monitoring of Blood Glucose (SMBG) - 7 point guide for Ramadan



When to test?

Number of blood glucose monitoring differs according to the case.

1. Pre-dawn meal (suhoor)
2. Morning
3. Midday
4. Mid-afternoon
5. Pre-sunset meal (iftar)
6. 2 hours after iftar
7. At any time when there are symptoms of hypoglycaemia/hyperglycaemia or feelings of being unwell

FIGURE 4

A seven point blood glucose monitoring guide for people with diabetes fasting during Ramadan



-
- Rigorous exercise should be avoided, particularly during the last hours of fasting (before sunset) because it may lead to an increased risk of hypoglycaemia and/or dehydration .
 - People with diabetes should be encouraged to maintain their normal physical activity during Ramadan; they should be reminded that the physical exertions involved in Taraweeh prayers, such as bowing, kneeling, and rising, should be considered part of their daily exercise activities.

ALL INDIVIDUALS SHOULD BREAK THEIR FAST IF:

- Blood glucose <70 mg/dL (3.9 mmol/L)
 - Re-check within 1 hour if blood glucose is between 70–90 mg/dL (3.9–5.0 mmol/L)
- Blood glucose >300 mg/dL (16.6mmol/L)*
- Symptoms of hypoglycaemia, hyperglycaemia, dehydration or acute illness occur

HYPOGLYCAEMIA

- Trembling
- Sweating/chills
- Palpitations
- Hunger
- Altered mental status
- Confusion
- Headache

HYPERGLYCAEMIA

- Extreme thirst
- Hunger
- Frequent urination
- Fatigue
- Confusion
- Nausea/vomiting
- Abdominal pain

Dose Modification
(Consult your doctor)

Insulin Dosing

- Basal Bolus
 - Premixed insulin
 - Continuous insulin pump
-
- Reduce the dose by 30 -40%

CHANGES TO SU DOSING DURING RAMADAN

Once daily dosing

Take at
Iftar

In individuals
with well-controlled
BG levels,
the dose may
be reduced

Twice-daily dosing

Iftar dose
remains
the same

In individuals
with well-controlled
BG levels,
the Suhoor
dose should
be reduced

Older drugs in SU class

Older drugs
(e.g. glibenclamide)
carry a higher risk
of hypoglycaemia
and should
be avoided

2nd generation
SUs such as
glicazide,
glicazide MR,
glimepiride should
be used instead

BG, blood glucose; SU, sulphonylurea

CHANGES TO METFORMIN DOSING DURING RAMADAN

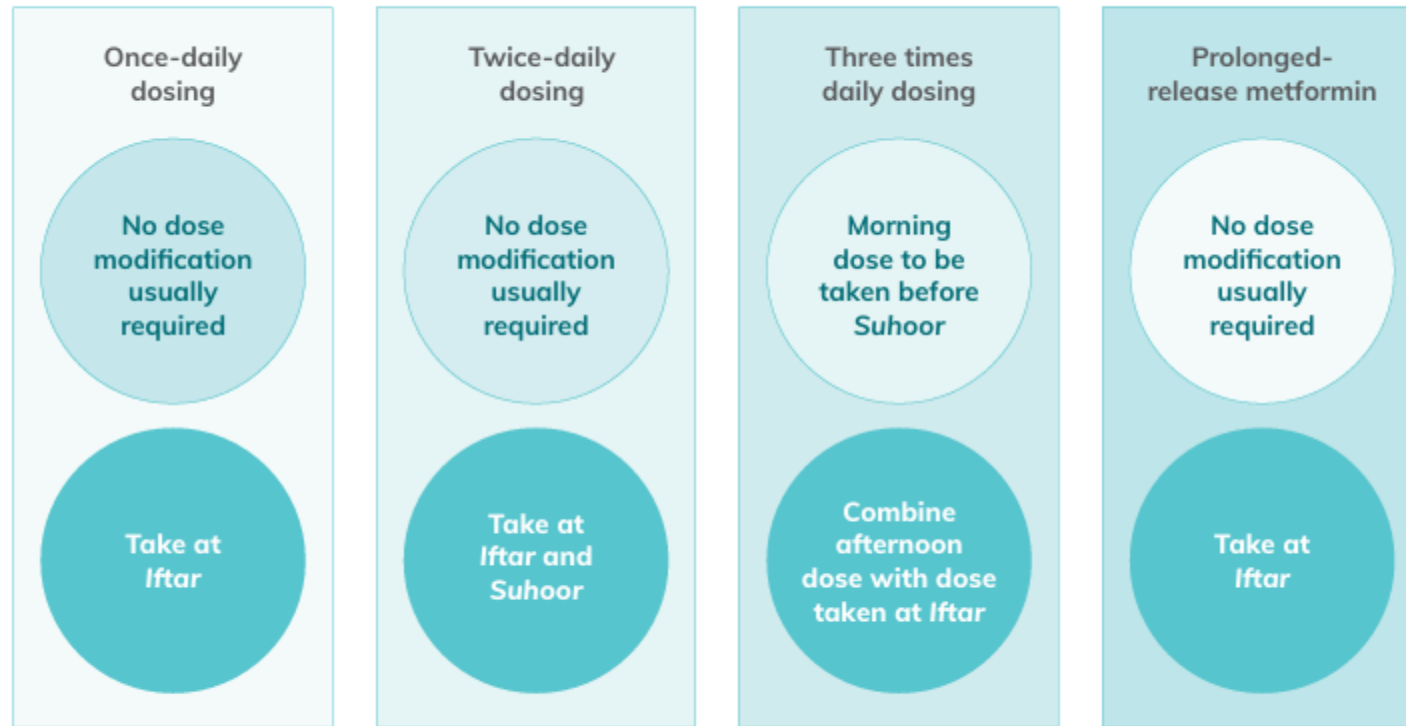


FIGURE 2

Dose adjustments for metformin

Type 1 Diabetic in general are considered at high risk of complications and should not Fast

Cardiovascular Diseases

Table 2 Risk stratification for fasting in patients with cardiovascular conditions based on the IDF-DAR risk categories (reproduced based on¹⁰, with permission)

Risk level	Moderate/low risk	High risk	Very high risk
Advice	<p>May be able to fast - listen to medical advice</p> <ul style="list-style-type: none"> ▶ Stable hypertension ▶ Stable angina* ▶ Stable†, non-severe heart failure: LVEF >35%, HFpEF‡ ▶ Implantable loop recorder ▶ Permanent pacemaker (single or dual chamber) ▶ Mild/mild-moderate valvular disease ▶ Supraventricular tachycardias/atrial fibrillation/non-sustained ventricular tachycardia ▶ Mild/moderate pulmonary hypertension§ 	<p>Should not fast</p> <ul style="list-style-type: none"> ▶ Poorly controlled hypertension (as defined by your specialist) ▶ Recent acute coronary syndrome/myocardial infarction (<6 weeks) ▶ Hypertrophic cardiomyopathy with obstruction¶ ▶ Severe valvular disease ▶ Severe heart failure without advanced features ▶ Poorly controlled arrhythmias (as defined by your specialist) ▶ High risk of fatal arrhythmias (eg, inherited arrhythmic syndromes, arrhythmogenic cardiomyopathy) ▶ Implantable cardioverter defibrillator±cardiac resynchronisation therapy 	<p>Must not fast</p> <ul style="list-style-type: none"> ▶ Advanced heart failure** ▶ Severe pulmonary hypertension††
<p><i>Patients with inherited cardiomyopathy, adult congenital heart disease, left ventricular assist device or heart transplantation should discuss fasting in Ramadan in their next routine appointment</i></p>			

Dose Modification n (Consult your doctor)

Diuretics

- Reduce the dose
- If you are on 2 different type of diuretics then take only one

Once a day medications can be taken at Iftar

Twice a day medications should be taken at Suhoor and Iftar



Chronic Kidney Disease

Complications of Fasting in Chronic kidney disease

Dehydration cause
worsening of renal
function

At more risk of
electrolytes(blood
salts) imbalance

Blood pressure
variation can have
negative impact on
kidneys.

Increase risk of
kidney stones due
to dehydration

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No DKA or HONC	0		

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FIGURE 1
Risk score and risk categories

Renal Transplant patients

Risk level	Patient categories	Advice summary
Very high risk^a	<ul style="list-style-type: none"> > Solid organ transplant recipients who underwent a transplant in the last 12 months > Patients on twice-daily formulations of immunosuppression > Pregnant transplant patients > Transplant patients diagnosed with post-transplant diabetes mellitus requiring twice-daily oral hypoglycaemics or insulin treatment > Kidney transplant recipients with reduced kidney function (eGFR <30 mL/min) > Patients with unstable graft function, recent rejection episodes and opportunistic infections > Liver transplant recipients with unstable graft function, decompensated liver disease or evidence of cirrhosis on biopsy > Patients with moderate to severe frailty^b 	Must not fast
High risk	<ul style="list-style-type: none"> > Kidney transplant recipients with reduced graft function (eGFR 30–60 mL/min) > Heart, lung, liver, small bowel, pancreas and multiorgan transplant recipients with reduced graft function > Patients at risk of dehydration due to fluid restriction requirements, need for diuretics or if they would be unable to meet their daily fluid intake requirement set by their transplant team > Patients with mild frailty^b 	Should not fast
Moderate/ low risk	Transplant patients not in the above categories. We would advise patients to discuss the suitability of fasting and monitoring necessary with their relevant transplant teams	Follow medical advice

Take home message

- Ramadan bring Rewards and bounties
- Fasting results in dehydration, low blood glucose level, electrolytes imbalance and low BP
- Changes as a result of change in routine in Ramadan can have significant impact in patients with chronic diseases.
- You might be able to safely fast but listen to medical advice
- Don't put your life or health at risk