

بسمه تعالی

بیمار خانم ۵۴ ساله جهت رویت آزمایشات به درمانگاه پزشکی خانواده مراجعه کرده است. سابقه ۱۲ سال دیابت دارد و هر سه ماه جهت مراقبت ها به مرکز بهداشت مراجعه می کند. بیماری قلبی یا فشار خون ندارد.

سابقه هیپوگلیسمی یک بار سال گذشته داشته است که دیگر تکرار نشده است.

با داروهای امپاگلیفلوزین و متفورمین تحت درمان می باشد.

سابقه تالاسمی مینور دارد.

با توجه به ماه مبارک رمضان از شما به عنوان پزشک خانواده در مورد روزه گرفتن یا نگرفتن سوال می پرسند.

1. Empagliflozin 10 mg / po/daily
2. Metformin 500 mg /po/tds
3. Atorvastatin 40 mg daily

BP=115/75,PR=74,RR=17,T=36.5,W=75,L=158,BMI=30.12

در معاینات قلب و ریه نرمال است.
تاری دید ندارد.
ملتحمه PALE می باشد.
معاینه عصبی نرمال است.

LAB FINDING:

CBC

WBC=5.9,RBC=5.54,HB=10.5,HCT=34,MCH=19,MCHC=30,PLT=273,
FBS=238,HBA1C=8.8,

CR=0.9,

TG=129,CHOL=136,LDL=69,HDL=41,CHOL/HDL=3.32,LDL/HDL=1.68
VLDL=25,

SGOT=24,SGPT=25

• **Fasting and feasting safely with type 2 diabetes in the month of Ramadan**

استاد راهنما :

خانم دکتر عبادتی - متخصص پزشکی خانوادہ - عضو ہیئت علمی

ارایہ دہندہ :

رسول اسمی - دستیار سال دوم پزشکی خانوادہ

TABLE 1 Changes in selected hormones in the context of Ramadan. References have been included.

Hormone	Non-Ramadan	Ramadan	References
Hormones with a dominant circadian function			
Melatonin	Controls sleep-wake cycle Highest midnight to 8 AM	Reduced level in ramadan (checked daytime only)	Al-Rawi et al
Cortisol	Stress hormone Peak in the morning Low at night Morning to evening ratio typically 2.5	Morning to evening ratio reduced to around 1.22	Bahijri et al
Growth hormone	Pulsatile secretion with higher levels in the morning	Lower levels in morning and also evening	Ajabnoor et al
Hormones with a dominant function on controlling food intake			
Leptin	Satiety hormone Higher after meals (BF, L, Din) Dependent on fat mass and higher in obese Peak 10 pm-3 am	Much higher level in the morning Evening level similar or reduced compared to non-Ramadan	Ajabnoor et al Alzoghaibi et al
Ghrelin	Hunger hormone High before meals (BF, L, Din)	No significant difference with non-ramadan in normal weight individuals Marked reduction in overweight and obese in last week of ramadan	Alzoghaibi et al Al-Rawi et al
GLP-1	Rise with meals Increases insulin secretion Reduces gastric motility Reduces appetite	No studies	-

Fasting and feasting safely with type 2 diabetes in the month of Ramadan

Salma Mehar

The article covers practical guidance on education for people with type 2 diabetes prior to fasting during the month of Ramadan, so that they can fast, celebrate and enjoy cultural foods without worrying about the impact on their diabetes. Over the last decade, there has been a huge focus on setting up pre-Ramadan education programmes regarding diet, exercise, medication adjustments and greater use of technology, including continuous glucose monitoring, prior to the month of Ramadan. The International Diabetes Federation and Diabetes and Ramadan International Alliance has recently updated its guideline on type 2 diabetes management during the month of Ramadan, including cultural nutrition plans and menus developed for different countries, based on the latest evidence. This provides more up-to-date nutritional guidance for people with type 2 diabetes who are seeking to fast safely during Ramadan.

Citation: Mehar S (2024) Fasting and feasting safely with type 2 diabetes in the month of Ramadan *Journal of Diabetes Nursing* 28: [Early view publication]

Article points

1. Although some at high risk of diabetes complications may be exempt from fasting in Ramadan, the majority of Muslims with type 2 diabetes are obliged or choose to do so.
2. Many diabetes-related risks can be minimised through medication adjustments and tailored nutrition advice.



HOW TO MANAGE DIABETES DURING RAMADAN (updated March 2023)

by Alia Gilani, Senior Diabetes Clinical Pharmacist, Sheffield

What is Ramadan?

- Ramadan fasting (or *sawm*) is one of the Five Pillars of Islam, considered by believers to be the foundation of Muslim life.
- Fasting occurs in the ninth month of the Islamic calendar (*Hijra*).
- The Islamic calendar is lunar based and has only 354 days. It therefore occurs 11 days earlier each year.
- Ramadan has great religious and cultural importance for Muslims. Healthcare professionals need to understand the impact this has on people with diabetes.
- Worldwide, approximately 116 million people with diabetes fast during Ramadan.¹

What does fasting entail?

- Fasting entails abstinence from food, liquid and oral medications.
- The fasting period occurs between sunrise (*suhoor*) and sunset (*iftar*).
- Ramadan lasts for 29–30 days.
- In the UK, a fast lasts 10–21 hours, depending on the season in which Ramadan falls.

Who should fast?

All healthy individuals after puberty should fast. Those for whom fasting is detrimental to their health are exempt from doing so. This includes:

- Frail and elderly people.
- Children.
- Pregnant and breastfeeding women.
- People with comorbidities.

What and why

- Healthcare professionals need to be aware of cultural and religious practices that can impact on a person with diabetes.
- The decision to fast for Ramadan should be made with ample discussion between the individual and healthcare provider.
- A decision should be made after assessing the risks and benefits.
- It is advisable for healthcare providers to work closely with local religious scholars to implement key messages within their community.

Citation: Gilani A (2023) How to manage diabetes in Ramadan. *Diabetes & Primary Care* 25: 27–9

Reference: [\(https://doi.org/10.1093/dpac/25.1.27\)](#)

Original Article

Validity of the International Diabetes Federation risk stratification score of Ramadan fasting in individuals with diabetes mellitus

Eman M. Alfadbli, MD, Taif S. Alharbi, MD, Abrar M. Alrotoie, MD, Asia A. Aljobani, MD, Amal S. Qari, MD, Bashaer A. Alsubhi, MD, Aram H. Alsaedi, MD, Alaa A. Aljobani, MD.



BRITISH ISLAMIC
MEDICAL ASSOCIATION

Ramadan Compendium

This is a compendium of evidence regarding fasting in Ramadan with health conditions undertaken by the British Islamic Medical Association (BIMA). This work builds upon the Ramadan Rapid Review, produced in 2020 in light of the COVID-19 pandemic. This work does not form a directive and should be used by individuals to frame an informed discussion with their clinicians. The views expressed represent the views of the author(s) and not necessarily those of BIMA and are not a substitute for professional advice.



۱۴۰۱ / ۱۲ / ۲۷



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

يَا أَيُّهَا الَّذِينَ آمَنُوا كُتِبَ عَلَيْكُمُ الصِّيَامُ كَمَا كُتِبَ عَلَى الَّذِينَ مِن قَبْلِكُمْ لَعَلَّكُمْ تَتَّقُونَ (سوره بقره آیه ۱۸۳)

وظیفه بیماران نسبت به روزه ماه مبارک رمضان

روزه ماه مبارک رمضان از ضروریات دین اسلام و ارکان اساسی آن و جزو اصول عملی (فروع) دین است و همانگونه که در قرآن کریم آمده است، عامل بسیار مهم نیل به تقوا و پاداش اخروی است و علاوه بر آن، آثار بسیار زیادی برای سلامتی مادی و معنوی انسان دارد.

این فریضه الهی، وظیفه عمومی مکلفان است؛ ولی طبق آیات ۱۸۴ و ۱۸۵ سوره بقره، بیماران و مسافران و افراد ناتوان از روزه‌داری معاف هستند. اما مطابق روایاتی که مفسر این آیات است و فتاوی فقهای بزرگوار که مبین احکام الهی است، بیمارانی که روزه برای آنان ضرری ندارد و توانایی بجا آوردن آن را دارند، مانند سایر مکلفان باید این وظیفه واجب را بجای آورند. سؤال اینجاست، کدام دسته از بیماران باید و کدامیک نباید روزه بگیرند؟

حکم شرعی در پاسخ این سؤال این است که اگر بیمار خودش تشخیص می‌دهد که روزه برایش مضر است، نباید روزه

-Ramadan is widely observed across the world.

Risk avoidance during Ramadan

- Hypoglycaemia
- Severe hyperglycaemia
- Dehydration - prolonged fasting hours and countries with hot climates.

- Many diabetes-related risks can be minimised through medication adjustments and tailored nutrition advice .
- IDF-DAR 2021 GUIDE LINE
- **Aims of pre-Ramadan education**
- Modification and adjustment of nutrition plans for optimal glucose control during Ramadan.
- Designing nutrition plans that may help weight reduction for those aiming to lose weight during Ramadan.
- Adjustment of glucose-lowering medications to match nutrition and fasting.
- Encouragement to continue daily exercise and work activities.
- Recognition of warning symptoms of dehydration, hypoglycaemia and other possible complications.
- Informing of the need to break the fast if blood glucose falls below 3.9 mmol/L or rises above 16.6 mmol/L
- Informing of the need to monitor blood glucose regularly (blood glucose testing does not break the fast).
- Encouraging the monitoring of body weight during Ramadan.

Risk Element	Risk Score
1. Diabetes type and duration	
Type 1 diabetes	1
Type 2 diabetes	0
2. Duration of Diabetes (years)	
A duration of ≥ 10	1
A duration of < 10	0
3. Presence of hypoglycaemia	
Hypoglycaemia unawareness	6.5
Recent Severe hypoglycaemia	5.5
Multiple weekly Hypoglycaemia	3.5
Hypoglycaemia less than 1 time per week	1
No hypoglycaemia	0
4. Level of glycaemic control	
HbA1c levels $> 9\%$ (11.7 mmol/L)	2
HbA1c levels 7.5–9% (9.4–11.7 mmol/L)	1
HbA1c levels $< 7.5\%$ (9.4 mmol/L)	0
5. Type of treatment	
Multiple daily mixed insulin Injections	3
Basal Bolus/Insulin pump	2.5
Once daily Mixed insulin	2
Basal Insulin	1.5
Glibenclamide	1
Gliclazide/MR or Glimepride or Repaglinide	0.5
Other therapy not including SU or Insulin	0
6. Self-Monitoring of Blood Glucose (SMBG)	
Indicated but not conducted	2
Indicated but conducted sub-optimally	1
Conducted as indicated	0
7. Acute complications	
DKA/ HONC in the last 3 months	3
DKA/ HONC in the last 6 months	2
DKA/ HONC in the last 12 months	1
No DKA or HONC	0

Risk Element	Risk Score
8. MVD Complications/Comorbidities	
Unstable MVD	6.5
Stable MVD	2
No MVD	0
9. Renal Complications/Comorbidities	
eGFR < 30 mL/min	6.5
eGFR 30–45 mL/min	4
eGFR 45–60 mL/min	2
eGFR > 60 mL/min	0
10. Pregnancy*	
Pregnant not within targets*	6.5
Pregnant within targets*	3.5
Not pregnant	0
11. Frailty and Cognitive function	
Impaired cognitive function or Frail	6.5
> 70 years old with no home support	3.5
No frailty or loss in cognitive function	0
12. Physical Labour	
Highly Intense physical labour	4
Moderate Intense Physical Labour	2
No physical labour	0
13. Previous Ramadan Experience	
Overall negative experience	1
No negative or positive experience	0
14. Fasting hours (location)	
≥ 16 hours	1
< 16 hours	0

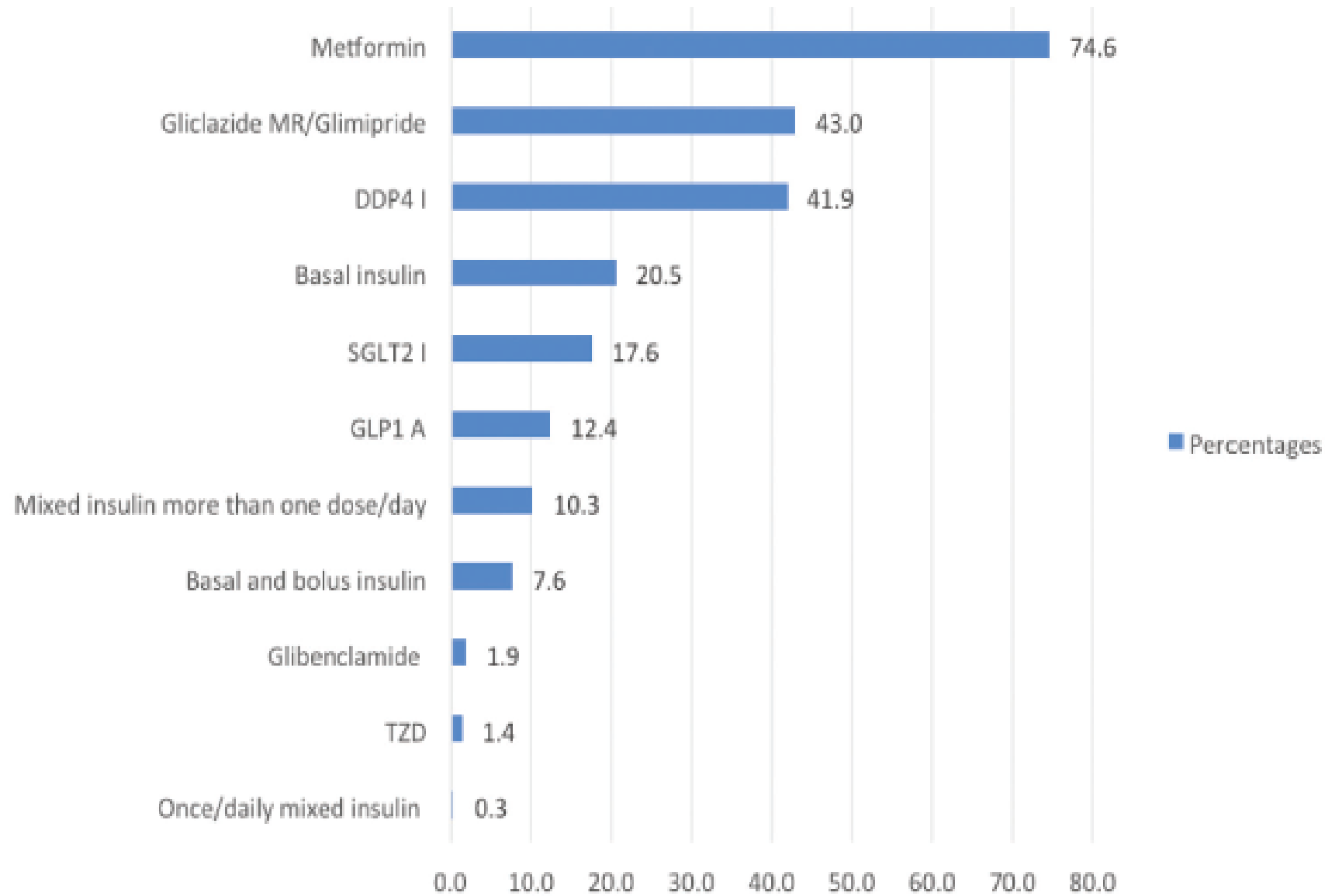
DKA — Diabetic Ketoacidosis
HONC — Hyperglycaemic Hyperosmolar Nonketotic Coma
eGFR — Estimated glomerular filtration rate
MVD — Macrovascular disease

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

SCORE 0 TO 3
SCORE 3.5 TO 6
SCORE > 6

LOW RISK
MODERATE RISK
HIGH RISK

Validity of IDF-DAR risk score ... *Alfadhli et al*



Condition	Very High Risk Advise MUST NOT fast	High Risk Advise should NOT fast	Low/Moderate Risk <u>Decision to not fast based on discretion of medical opinion and ability of the individual to tolerate fast</u>
	If patients in these categories wish to fast, is fasting shorter fasts in the winter a safe alternative? If not an option, or patients not willing to defer fasts and still wishing to fast, then they should be supported and should: <ul style="list-style-type: none"> • Receive structured education (where appropriate) • Be followed by an appropriate specialist/primary care contact whilst fasting • Monitor their health regularly • Adjust medication dose, frequency and timing as per recommendations • Be prepared to break the fast/abstain from fasting in case of adverse events 		
Cardiovascular disease	<ul style="list-style-type: none"> • Advanced heart failure (optimal medical therapy, Left Ventricular Ejection Fraction <35%, with class III-IV NYHA symptoms, ≥1 hospitalisation in the last 6 months due to decompensated heart failure and severely impaired functional capacity (e.g. 6 min walk distance <300m) • Severe pulmonary hypertension (defined as WHO/NYHA III-IV classification, right ventricular dysfunction and objective markers on right heart catheterisation e.g. SvO₂ <60%) 	<ul style="list-style-type: none"> • Poorly controlled hypertension (as defined by your specialist) • Recent Acute Coronary Syndrome / myocardial infarction (<6 weeks) • Hypertrophic Obstructive Cardiomyopathy (HOCM) with significant left ventricular outflow tract gradient (e.g. peak gradient ≥50mmHg) • Severe valvular disease (defined by echocardiographic criteria) • Severe heart failure without advanced features • Poorly controlled arrhythmias (as defined by your specialist) • High risk of fatal arrhythmias (e.g. inherited arrhythmic syndromes, arrhythmogenic cardiomyopathy) • Implantable cardioverter defibrillator +/- cardiac resynchronisation therapy 	<ul style="list-style-type: none"> • Stable hypertension • Stable angina (episodes of angina are not occurring at rest or increasing significantly in frequency or severity) • Mild heart failure with reduced ejection fraction (HFrEF) (Left Ventricular Ejection Fraction or LVEF ≥ 45%), Moderate HFrEF (LVEF 35 - 45%) or Heart Failure with preserved ejection fraction (HFpEF) (diagnosed by a combination of symptoms, LVEF ≥ 45-50%, Heart Failure Association score, natriuretic peptide levels +/- imaging - refer to specialist confirmation) • Implantable loop recorder • Permanent pacemaker (single or dual chamber) • Mild/mild-moderate valvular disease (as defined by echocardiographic criteria) • Supraventricular tachycardias/Atrial Fibrillation/Non sustained ventricular tachycardia • Mild/moderate Pulmonary Hypertension (Pulmonary Artery Systolic Pressure >25mmHg without severe echocardiographic or right heart catheterisation features)
<ul style="list-style-type: none"> • <i>Patients with Grown-up Congenital Heart disease (GUCH) and/or Heart Transplant must consult their specialist for an individual risk assessment.</i> 			
Respiratory disease	<ul style="list-style-type: none"> • Those experiencing an acute exacerbation of their chronic lung disease • Asthma/COPD sufferers at high risk of exacerbation and preventative inhaler timings cannot be altered to a fasting compatible regime 	<ul style="list-style-type: none"> • Poorly controlled lung disease with frequent exacerbations/hospital admissions • Poorly controlled symptoms requiring frequent rescue inhaler and/or nebuliser use throughout the day • Those receiving immunosuppressants for active lung disease • Those receiving anti-fibrotic therapy 	<ul style="list-style-type: none"> • Well controlled asthma/COPD requiring intermittent reliever inhaler use only • Stable disease with infrequent exacerbations • Those receiving immunosuppressants for stable disease (in remission)

Chronic kidney disease	<ul style="list-style-type: none"> • Patients on all forms of hemodialysis and peritoneal dialysis • Pregnant CKD patients • CKD stage 3-5 patients with history of pre-existing cardiovascular disease • CKD patients on tolvaptan 	<ul style="list-style-type: none"> • CKD patients with known electrolyte abnormalities • Patients at risk of dehydration due to fluid restriction requirements or need for diuretics • Patients on ACE-I/ARB, SGLT2 inhibitors and mineralocorticoid receptor antagonists 	<ul style="list-style-type: none"> • CKD patients prone to urinary tract infections or stone formation
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CKD, Chronic Kidney Disease; ACE-I, Angiotensin Converting Enzyme inhibitor; ARB, Angiotensin Receptor Blocker; eGFR, estimated Glomerular Filtration Rate; SGLT2, sodium-glucose Cotransporter-2
 *unstable patients would include those with rapidly declining GFR, history of fluid overload and frailty.
 **although HD and PD patients would be considered very high risk, a select group may be able to fast following risk stratification and counselling, factors to consider would include – residual renal function, fluid balance, potassium >6.0 mmol/L, motivation, compliance with medical advice, consider alternatives to fasting and winter fasting.

Gastrointestinal disease	<ul style="list-style-type: none"> • Patients with established cirrhosis especially Child-Pugh B and C • Patients who are < 6months post Liver transplant • Patients with symptomatic active inflammatory bowel disease • Patients with significant acute or chronic diarrhoea • Patients with high output ileostomy 	<ul style="list-style-type: none"> • Liver transplant patients taking Tacrolimus are at high risk of renal toxicity if they become dehydrated. They are also at risk of rejection if adherence to immunosuppression medication is not maintained due to fasting. • Patients on prednisolone at doses > 20mg per day 	<ul style="list-style-type: none"> • Patients with Child A cirrhosis • Patients with stable chronic liver disease without cirrhosis • Patients with stable chronic inflammatory bowel disease in remission, including those on immunosuppressants • Patients with peptic ulcer disease, reflux oesophagitis and irritable bowel syndrome
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Neurological disease	<ul style="list-style-type: none"> • Any condition predisposing to respiratory complications e.g. bulbar weakness, neuromuscular disorders* • Myasthenia Gravis on regular pyridostigmine more than 3 times per day • MND • Poorly controlled epilepsy, on multiple antiepileptic medications, history of status epilepticus • Parkinson's disease requiring regular levo-dopa • Neurodegenerative disorders with cognitive impairment 	<ul style="list-style-type: none"> • Epilepsy requiring a medication regime incompatible with fasting which cannot be modified safely in time for Ramadan • Myasthenia gravis on pyridostigmine 3 times daily or less • Parkinson's disease with low requirement for levo-dopa in younger patients 	<ul style="list-style-type: none"> • History of cerebrovascular disease, dependent on level of disability • History of MS, dependent on level of disability. See ABN guidance for management of immunosuppression during the COVID-19 pandemic • Well controlled epilepsy with medication regime compatible with length of fast • Myasthenia gravis not requiring pyridostigmine or purely ocular • Migraine
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Diabetes^a	<p>One or more of the following:</p> <ul style="list-style-type: none"> • Severe hypoglycaemia within the 3 months prior to Ramadan^b • DKA within the 3 months prior to Ramadan • Hyperosmolar hyperglycaemic coma within the 3 months prior to Ramadan • History of recurrent hypoglycaemia • History of hypoglycaemia unawareness • Poorly controlled T1DM • Acute illness • Pregnancy in pre-existing diabetes or GDM treated with insulin • Chronic dialysis or CKD stage 4 & 5 • Advanced macrovascular complications • Old age with ill health • Type 2 diabetes requiring insulin (MDI or mixed insulin) with no prior experience of safe fasting 	<p>One or more of the following:</p> <ul style="list-style-type: none"> • T2DM with sustained poor glycaemic control^c • Well-controlled T1DM • Well-controlled T2DM on MDI or mixed insulin • Pregnant T2DM or GDM controlled by diet only or metformin • CKD stage 3 • Stable macrovascular complications • Patients with comorbid conditions that present additional risk factors • People with diabetes performing intense physical labour • Treatment with drugs that may affect cognitive function • Type 2 diabetes on SGLT-2 inhibitors (consider alternatives/stopping)* 	<p>Well-controlled T2DM treated with one or more of the following:</p> <ul style="list-style-type: none"> • Lifestyle therapy • Metformin • Acarbose • Thiazolidinediones • Second-generation SUs (moderate risk, regular SMBG advised) • Incretin-based therapy (DPP-4 inhibitors or GLP-1 RAs) • SGLT-2 inhibitors • Basal Insulin (moderate risk, regular SMBG advised)
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Very High Risk
Advise MUST NOT fast

If patients in these categories wish to fast, is fasting shorter fasts in the winter a safe alternative? If not an option, or patients not willing to defer fasts and still wishing to fast, then they should be supported and should:

- Receive structured education (where appropriate)
- Be followed by an appropriate specialist/primary care contact whilst fasting
- Monitor their health regularly
- Adjust medication dose, frequency and timing as per recommendations
- **Be prepared to break the fast/abstain from fasting in case of adverse events**

One or more of the following:

- Severe hypoglycaemia within the 3 months prior to Ramadan^b
- DKA within the 3 months prior to Ramadan
- Hyperosmolar hyperglycaemic coma within the 3 months prior to Ramadan
- History of recurrent hypoglycaemia
- History of hypoglycaemia unawareness
- Poorly controlled T1DM
- Acute illness
- Pregnancy in pre-existing diabetes or GDM treated with insulin
- Chronic dialysis or CKD stage 4 & 5
- Advanced macrovascular complications
- Old age with ill health
- Type 2 diabetes requiring insulin (MDI or mixed insulin) with no prior experience of safe fasting

One or more of the following:

- T2DM with sustained poor glycaemic control ^c
- Well-controlled T1DM
- Well-controlled T2DM on MDI or mixed insulin
- Pregnant T2DM or GDM controlled by diet only or metformin
- CKD stage 3
- Stable macrovascular complications
- Patients with comorbid conditions that present additional risk factors
- People with diabetes performing intense physical labour
- Treatment with drugs that may affect cognitive function
- Type 2 diabetes on SGLT-2 inhibitors (consider alternatives/stopping)*

High Risk
Advise should NOT fast

If patients in these categories wish to fast, is fasting shorter fasts in the winter a safe alternative? If not an option, or patients not willing to defer fasts and still wishing to fast, then they should be supported and should:

- Receive structured education (where appropriate)
- Be followed by an appropriate specialist/primary care contact whilst fasting
- Monitor their health regularly
- Adjust medication dose, frequency and timing as per recommendations
- **Be prepared to break the fast/abstain from fasting in case of adverse events**

Well-controlled T2DM treated with one or more of the following:

- Lifestyle therapy
- Metformin
- Acarbose
- Thiazolidinediones
- Second-generation SUs (moderate risk, regular SMBG advised)
- Incretin-based therapy (DPP-4 inhibitors or GLP-1 RAs)
- SGLT-2 inhibitors
- Basal Insulin (moderate risk, regular SMBG advised)

Low/Moderate Risk

Decision to not fast based on discretion of medical opinion and ability of the individual to tolerate fast

Medication

- Taking oral medications during fasting hours invalidates the fast.¹
- In general, the bigger dose of antidiabetes medication should be given at *iftar*.
- During Ramadan, it may be prudent to choose antidiabetes agents that have a lower risk of hypoglycaemia.
- Ideally, any new medications should be initiated 6–8 weeks prior to Ramadan.⁶
- The recommendations for dose adjustment for antidiabetes agents are shown in the table below.

Non-insulin dose modifications for people with type 2 diabetes⁵

Metformin

Daily dose remains unchanged.

Immediate release: daily – take at *iftar*;

twice daily – take at *iftar* and *suhoor*; three-times daily – morning dose at *suhoor*, combine afternoon and evening dose at *iftar*.

Prolonged release: take at *iftar*.

Non-insulin dose modifications for people with type 2 diabetes⁵

Sulfonylurea (SU)

Switch to newer SU (gliclazide, glimepiride) where possible; glibenclamide should be avoided.

Once daily – take at *iftar*. Dose may be reduced in people with good glycaemic control.

Twice daily – *iftar* dose remains unchanged. *Suhoor* dose should be reduced in people with good glycaemic control.⁹

For once-daily SU combination therapy, take at *iftar* and consider reducing the dose by 50%.

For twice-daily SU combination therapy, omit morning dose and take normal dose at *iftar*.

Non-insulin dose modifications for people with type 2 diabetes⁵

Thiazolidinediones

No dose modifications.
Dose can be taken with *iftar* or *suhoor*.

DPP-4 inhibitors

No dose modifications.

GLP-1 receptor agonists

No dose modifications.
If taking an oral formulation (Rybelsus), take the tablet at *iftar* and wait 30 minutes before consuming any food.

Prandial glucose regulators (glinides)

Three-times daily dosing may be reduced/redistributed to two doses taken with *iftar* and *suhoor*.

SGLT2 inhibitors

No dose modifications.
Dose should be taken with *iftar*.
Extra clear fluids should be ingested during non-fasting periods.
Use with caution in those at risk of fluid depletion.

Table 1. Potential lifestyle changes, benefits and risks associated with Ramadan fasting (adapted from IDF-DAR, 2021).

Potential lifestyle changes	Potential physical and mental benefits	Potential adverse physical and mental effects
1. Sleeping schedules	1. Sense of fulfilment in participating in all aspects of Ramadan	1. Sleep deprivation and disruption of circadian rhythm leading to increased fatigue and reduced cognition
2. Meal plans and diet	2. Improvements in weight and BMI	2. Glucose excursions causing feelings of being unwell
3. Physical activity patterns	3. Improvements in self-control and ability to resist temptations	3. Greater feelings of lethargy
4. Reduction of adverse behaviours such as smoking	4. Greater sense of empathy with those less fortunate	4. Heightened fear of diabetes-related complications
5. Medication adjustments	5. Participation in <i>Sunnah</i> practices for greater spiritual benefits	5. Temporary changes in weight
	6. Greater sense of community and an opportunity to strengthen relationships	6. Short-term feelings of stress, anxiety, irritability and agitation
	7. Greater a physical and mental wellbeing as a result of stopping adverse behaviours such as smoking	

The Ramadan Nutrition Plan

- Divide daily calories between *Suhoor* and *Iftar*.
- Ensure meals are well balanced:
 - 45–50% carbohydrate.
 - 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 fat: – e.g. ghee, samosas, pakoras.
- Avoid sugary desserts.
- • Use small amounts of oil when cooking:– e.g. olive, rapeseed.
- Keep hydrated between sunset and sunrise by drinking water or other non-sweetened beverages.
- Avoid caffeinated and sweetened drinks.

- **Foods to recommend during *Suhoor***
- **Complex carbohydrates, Fruits and vegetables , Protein-rich foods, Dairy foods , Fluids**
- **Foods to recommend during *Iftar***
- **Dates , Complex carbohydrates , Meats and alternatives , Reduce intake of processed foods -Salt**
- **Fluids**

- **Ramadan safety tips for people with type 2 diabetes**

1. Always carry glucose treatment with you.
2. Test your blood regularly to monitor your glucose (sugar) levels. This will not break your fast.
3. Test your blood glucose level if you feel unwell during the fast.
4. If your blood glucose level is high or low, you must treat this.
5. If your blood glucose is less than **3.9 mmol/L**, end the fast immediately and treat the low blood glucose.
6. If your blood glucose is higher than **16.6 mmol/L**, end the fast immediately.
7. If you become dehydrated, end the fast immediately and have a drink of water.
8. If you start to feel unwell, disoriented or confused, or if you collapse or faint, you should stop fasting and have a drink of water or other fluid, and check your blood glucose levels.
9. Insulin users should never stop your insulin, but you must speak to your doctor because you may need to change the dose and timing of your insulin injections.
10. Keep meals well balanced and drink plenty of

Diet and lifestyle advice

Key messages include:¹

- Use Ramadan as an opportunity to make healthier food choices.
- Keep well hydrated and drink plenty of water.
- Avoid fried food (e.g. pakoras, samosas).
- Minimise sugary foods.
- Try to eat *suhoor* (morning meal) as late as possible.
- Minimise consumption of caffeine.
- Try to have plenty of fresh fruit and vegetables/salads.
- Try to consume high-fibre and starchy foods as these will release energy slowly. These include: chapatis, rice, oat-based cereals, grains, seeds, beans and pulses.
- Do not consume excessive dates, as these can be high in sugar.

توصیه به ترک روزه (روزه ضرر دارد)	روزه‌داری با نظر پزشک معالج	توصیه به روزه داری (روزه ضرر ندارد)	وضعیت سلامت و بیماری
<ul style="list-style-type: none"> ● بیماران دیابتی که سابقه اغمای دیابتی و یا کاهش شدید و افزایش شدید قند خون را به کرات داشته‌اند. ● بیماران دیابتی که عوارض شدید دیابت را دارند. ● بیماران باردار دیابتی ● بیماران دیابتی که کنترل قند ایشان دشوار و دارای نوسانات فراوان است. ● بیماران دیابتی که علائم هشدار دهنده افت قندخون در آنها از بین رفته است. 	<ul style="list-style-type: none"> ● بیمار دیابتی که با قرص‌های خوراکی کنترل شده و عوارض بیماری را ندارند. ● بیماران دیابتی که عوارض دیابتی آنها کنترل شده است. 	<ul style="list-style-type: none"> ● بیمار دیابتی که با رژیم غذایی درمان می‌شود و بیماری کنترل شده است. 	<p>دیابت</p>

Tips for healthcare professionals

- Most studies (and based on the author's experience) have indicated that the majority of people with diabetes will participate in fasting despite the risks.⁷ If this occurs, it is important for healthcare professionals to note this on a patient's medical record and document that advice has been given to minimise any risks of adverse effects.
- To those who choose to fast despite it worsening their health, it can be advised that it is deemed to be against the Quranic principles of Ramadan.
- Those whose medical conditions are exacerbated by fasting can do non-consecutive fasts.
- Review the patient's previous experience of fasting.
- Those who are unable to fast due to the long hours can switch to the winter months, where the duration of fast is shorter.
- People with diabetes can do a 1–2-day trial of fasting during the month preceding Ramadan and review its effects.
- Those who cannot partake in fasting can pay *fidyah*, an obligatory charitable donation when there is a necessity to miss fasting. The current amount is £5 per fast missed.⁸
- Reassure patients who are unable to fast that they can participate in other acts of charity (e.g. giving donations, making and giving food to others).
- Where there is a significant population who partake in fasting, Ramadan education can be delivered in multiple ways: community group education, liaise and work closely with Islamic community leaders, develop [Ramadan education patient information leaflets](#), arrange healthcare professional educational updates, use of media (e.g. local radio stations).

Primordial Prevention

Primary Prevention

Secondary Prevention

Tertiary Prevention

Quaternary Prevention

• PRIMORDIAL PREVENTION

1. استفاده از گاید لاین های تغذیه بین المللی جهت راهنمایی بیماران دیابتی

2. ارائه آموزش های لازم به تیم سلامت شامل پزشک و کارشناس تغذیه و مراقب سلامت برای روزه داری بیماران مبتلا به دیابت و راهنمایی و پیگیری و درمان بیماران

3. تدوین گایدلاین بومی متناسب با داروها و شرایط بیماران

PRIMARY PREVENTION

- 1- طبقه بندی بیماران مبتلا به دیابت و بررسی خطر آنها در روزه‌داری
- 2- آموزش مناسب چهره به چهره بیماران برای تغذیه مناسب در ایام روزه‌داری
- 3- آموزش علایم خطر به بیماران در جهت خاتمه دادن به روزه

• SECONDARY PREVENTION

- 1- بررسی سوابق روزهداری در سال‌های گذشته و ارائه توصیه‌های لازم بر مبنای آن
- 2- توصیه به روزهداری 2 تا 3 روز قبل از ماه رمضان جهت بررسی وضعیت بیمار
- 3- آموزش و ارائه توصیه‌های لازم در زمان قند خون بالا و یا پایین در زمان روزهداری

• Tertiary PREVENTION

- 1- بررسی سوابق دارویی بیماران و تغییر دوز دارو بر مبنای عوارض احتمالی در روزهداری
- 2- بررسی سوابق دارویی بیماران و تغییر نوع دارو بر مبنای عوارض احتمالی در روزهداری

• quaternary PREVENTION

1- عدم انجام مداخلات غیر ضروری برای بیماران مبتلا به دیابت که قصد روزهداری دارند.