

# CHAPTER 1

## Introduction to the IDF-DAR Practical Guidelines

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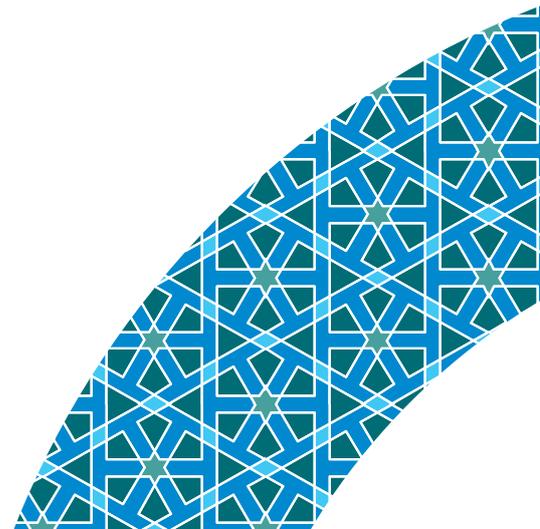
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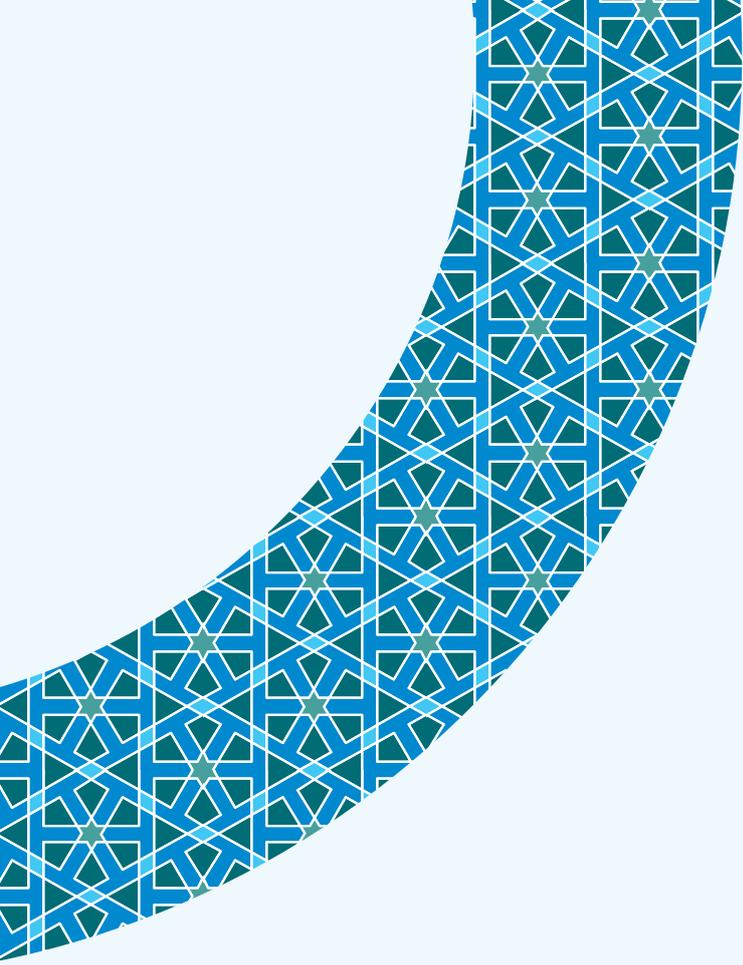
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## CHAPTER 1

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## 1. RAMADAN FASTING REGULATIONS

Fasting during Ramadan is one of the five pillars of Islam and commemorates the time when the Holy Quran was revealed to Prophet Muhammad, peace be upon him. The month-long (29–30 day) fast is obligatory for all healthy Muslims who have reached puberty and is a time for spiritual contemplation and seeking nearness to God. Followers must refrain from eating and drinking between dawn and sunset, and must also abstain from using oral medications, sexual activity and smoking. It is believed that spiritual rewards for good deeds are multiplied during Ramadan, and there is an intense desire to participate in fasting, even among those who could seek exemption, such as the elderly, children, the infirm, and pregnant women. Missed fasts should be completed at other times; for example, when health is restored or after the delivery of a baby. Fasting outside of Ramadan (when the rest of the community is not observing a fast) can be challenging, and this may discourage people from taking advantage of granted exemptions. Those who are permanently incapacitated can compensate by *Fidya*, a donation of food or money to the poor, for every day's fast that is missed.

The timing of Ramadan is based on the lunar calendar (355 days per lunar year), which is shorter than the Gregorian (Western) calendar, and therefore Ramadan occurs 10–11 days earlier every year. This means that the duration of daylight fasting varies according to the time of year in which Ramadan falls. In some parts of the world, daylight can be as long as 20 hours in the peak of summer. Climate conditions also vary according to the date of Ramadan, with people fasting in very dry and hot weather some years and cold temperatures in others. Importantly, these factors may increase the risk of fasting among certain individuals that are particularly vulnerable, such as those with poorly controlled diabetes and those with comorbidities to diabetes. In order to achieve a safe fast during Ramadan, there needs to be a collaborative process between people with diabetes and healthcare professionals (HCPs) where advice is provided using the best available evidence that also allows for individualisation.

**Many Muslims, even those who could seek exemption, have an intense desire to participate in fasting during Ramadan.**

## 2. THE NEED FOR PRACTICAL GUIDELINES ON DIABETES MANAGEMENT DURING RAMADAN FASTING

The management of people with diabetes who fast during Ramadan has generally been based on expert opinion rather than medical evidence gained from scientific data. However, the introduction of the First Edition of IDF-DAR Diabetes and Ramadan Practical Guidelines, 2016 provided a practical tool to help HCPs support their approach to safely guide people with diabetes who wish to fast the holy Month of Ramadan [1].

Muslims living as a minority in any country, including The Americas, Oceania, Europe, may need extra attention since healthcare professionals (HCPs) who are not experienced in

dealing with fasting people with diabetes might not consult or even be aware of published recommendations [2]. Evidence-based guidelines are extremely important in supporting advice given to people with diabetes seeking to fast during Ramadan. To this end, research related to diabetes and Ramadan has tremendously increased in the last 5 years [3]. But a greater number of well-designed studies are still needed as important questions still remain:

- Is fasting during Ramadan associated with a significant risk or benefit for people with diabetes?
- What are the criteria that predispose people with diabetes to increased risk during fasting?
- What are the most effective methods of providing Ramadan focused education?
- What are the best possible nutrition plans for people with diabetes seeking to fast during Ramadan, and how can these be adapted for the different regions across the world?
- What are the most appropriate medications for people with diabetes who fast during Ramadan?
- Will the large number of new antidiabetic oral and injectable agents and newer devices bring us closer to safe management while fasting?
- What is the most appropriate type and regimen of insulin for people with diabetes who fast during Ramadan?

**Most of the guidance available for the management of diabetes during Ramadan represents expert opinion rather than medical evidence.**

Although the results from new clinical trials will provide much needed data in the future, there is an immediate requirement for up-to-date practical guidance. This second edition of the *IDF-DAR Diabetes and Ramadan Practical Guidelines* aims to address this need by providing HCPs with the latest evidence-based recommendations, allowing them to deliver the best possible care and support for people with diabetes fasting during Ramadan.

### 3. EPIDEMIOLOGY OF DIABETES IN MUSLIM POPULATIONS

In 2019 the number of people living with diabetes globally was estimated to be 463 million, with a rise of 51% (700 million) expected by 2045 [4]. The number of people with diabetes in the Middle East and North Africa (MENA) – a region where a high proportion of inhabitants are Muslim – is predicted to more than double by 2045. A similar increase is expected in South East Asia, another area where Islam predominates [4].



Ramadan is widely observed across the world. A recent survey in 39 countries involving over 38,000 Muslims reported that a median of 93% fasted during Ramadan [5]. The Epidemiology of Diabetes and Ramadan (EPIDIAR) study performed in 2001 found that 42.8% of people with type 1 diabetes mellitus (T1DM) and 78.7% of those with type 2 diabetes mellitus (T2DM) fasted for at least 15 days during Ramadan [6]. Likewise, the 2010 CREED study reported that 94.2% of participants with T2DM fasted for at least 15 days, and 63.6% fasted all days of Ramadan [2]. More recently, the DAR-MENA (Diabetes and Ramadan—Middle East and North Africa) T2DM study revealed that 86% of participants fasted for at least 15 days [7]. It is clear that fasting in Ramadan is a very important practice and has a major impact on the management of diabetes in Muslim population.

Considering that many Muslims living with diabetes are deciding to fast during Ramadan, the need for evidence based, practical guidance is greater than ever.

#### 4. PHYSIOLOGICAL EFFECTS OF FASTING, AND POTENTIAL RISKS TO PEOPLE WITH DIABETES

Fasting during Ramadan has a number of physiological effects on both homeostatic and endocrine processes. In people with diabetes, these changes and the type of medication being taken to treat diabetes can be associated with the development of complications such as hypoglycaemia and hyperglycaemia [8].

Ramadan fasting not only alters the timings of meals, but it may also disturb sleeping patterns and circadian rhythms, all of which can affect an individual's metabolic state. Understanding these changes can help with the management of diabetes during Ramadan. **chapter 3: What happens to the body? Physiology of fasting during Ramadan**, takes a closer look at the effects of fasting on the body of both healthy individuals and those with diabetes. The impact of fasting on glucose homeostasis is of particular importance when considering the risks to people with diabetes.

To help HCPs deliver the best possible advice, individuals with diabetes can be stratified into different groups according to the risk that fasting would impose. These include low, moderate and high risk (Further details are available in **chapter 5: Risk stratification of people with diabetes before Ramadan**). This classification follows a more practical approach and has been developed using the feedback of 300 experienced physicians from across the world and approved by the Mofty of Egypt, the highest religious regulatory authority in Egypt. It is important for religious scholars to acquaint themselves with current recommendations so that they can give the best advice and support to individuals with diabetes both before and during Ramadan.

## 5. THE IMPORTANCE OF DIABETES AND RAMADAN EDUCATION

Diabetes self-management education and support (DSMES) addresses the practical, clinical, psychosocial, and behavioural aspects of care needed for daily self-management [9] and is essential for safe fasting during Ramadan. The objective of Ramadan-focused education is to raise awareness of the risks associated with diabetes and fasting, and to provide strategies for effective prevention [9]. The clear benefits of structured education on many aspects of Diabetes in Ramadan have been demonstrated in several studies in diverse populations [10-12]. The timing of this education is also important and should be given well before Ramadan commences. Yet, only two thirds of people with diabetes that do fast receive such counselling as shown in the Epidemiology of Diabetes and Ramadan (EPIDIAR) study [6]. It has been estimated that only 30-67% of physicians used a Ramadan focused educational program [13-18]. Education should be delivered in simple, clear local languages and should be engaging, motivational, culturally sensitive and be delivered by well-informed individuals. Ramadan-focused education should target three major groups: the general population, people with diabetes and HCPs (The details are highlighted in **chapter 7: Pre-Ramadan Assessment and Education**). Major aspects of structured education should include, but not be limited to, information on: Risk quantification, blood glucose monitoring, fluids and dietary advice, exercise and physical activity patterns, medication adjustments during fasting, when to break the fast, and the recognition of symptoms of various complications with self-management strategies.

## 6. DIFFERENCES IN RAMADAN FASTING PRACTICES ACROSS THE WORLD: Consequences for Individuals with Diabetes

Nutrition therapy plays a vital role in diabetes management during Ramadan. An individual's regional beliefs and culture should be considered when preparing their diet plan [19-21]. Ramadan can result in an extra burden of calories; *Iftar*, the meal taken when the fast is broken at sunset, often turns into a feast with huge volumes of food laden with sugar and carbohydrates. Since there is cultural variation in the traditional foods eaten at *iftar*, a well-trained dietician should be at the centre of the diabetes management and follow-up team. The Ramadan Nutrition Plan (RNP), which is supported by DAR is a mobile and web-based application that aims to provide HCPs with expert information to help them individualise medical nutrition therapy (MNT) for people with diabetes during Ramadan accounting for regional and cultural differences. The RNP provides a patient platform that includes the diabetes nutrition plan and an education component for Ramadan. Example meal plans for different countries and regions are included in this application. This could be very useful for individuals seeking to fast during Ramadan, particularly for those who do not have access to appropriate care. A full description of the RNP can be found in **chapter 8: The Ramadan Nutrition Plan (RNP) for people with diabetes**.

## 7. OPTIMISING STRATEGIES FOR THE MANAGEMENT OF DIABETES DURING RAMADAN

Fasting during Ramadan for people with diabetes carries considerable challenges. Individuals with diabetes should schedule a pre-Ramadan assessment with their HCP in order to discuss their decision to fast. This will enable the physician to assess risk, provide advice and produce an individualised treatment plan. With the correct guidance, many people with diabetes can fast



during Ramadan safely but they must be under the close supervision of HCPs and made aware of the risks of fasting. Individuals who fast against the medical advice should follow their treating team to receive detailed guidance to avoid the development of serious complications.

**Generating optimised Ramadan-specific treatment regimens for each patient is essential if a physician is to offer the best possible care.**

As already indicated, there is no one-plan-fits-all scenario, as each individual will have factors specific to them that will affect the treatment strategy. This is especially true for individuals that are considered high risk with a high probability of harm if they fast during Ramadan. This includes people with T1DM, pregnant women with diabetes, elderly individuals with diabetes and people with comorbidities such as cardiovascular disease (CVD), stroke and chronic kidney disease (CKD), many of whom will decide to fast against medical and religious advice. Guidance on the management of these high-risk populations, including dose adjustments to medication is given in **chapters 9, 11, 12 and 13**.

## **8. DISSEMINATING AND IMPLEMENTING THE GUIDELINES**

Guidelines and educational resources are only of value if they are adhered to, in both Muslim-majority and Muslim-minority countries. However, several barriers to guideline implementation exist including healthcare professional (HCP) awareness; socio-cultural sensitivity; and community and system barriers. The COVID-19 global pandemic formally declared by the WHO since March 2020 has disrupted usual care mechanisms and added additional physical barriers that include restrictions to movement and lockdowns and dietary and psychological factors that can be more difficult to overcome. There are several methods to overcome these barriers, such as structured educational classes to both HCPs and people with diabetes and use of telecommunication so that care and support can be given remotely and to people that lack access. To this end, working with all members of the community including community workers and Imams is of significant value.

## SUMMARY

- With the worldwide prevalence of diabetes increasing, and the number of fasting Muslims set to rise, the importance of effective guidelines for the management of diabetes during Ramadan fasting is clear.
- There is a paucity of evidence-based medicine in the field of diabetes management during Ramadan. Indeed, many recommendations are based on expert opinion rather than clinical evidence. However, in recent times a significant number of studies have been published in the area of diabetes and Ramadan.
- People with diabetes intending to fast during Ramadan should be categorised into low, moderate and high-risk groups.
- Pre-Ramadan education has been shown to reduce the incidence of hypoglycaemia. However, guidance given by medical professionals, particularly in Muslim-minority countries, may be suboptimal.
- Different medications to treat diabetes have varying levels of hypoglycaemic risk, and Ramadan-specific treatment regimens including dose and/or timing adjustments should be produced for each individual with diabetes.
- The implementation of guidelines requires effective communication with, and education of, all those involved. This includes the individuals with diabetes themselves, HCPs, religious leaders, and members of the wider community.
- Education, communication and accessibility are all critical to the success of the guidance provided in this document.
- The *IDF-DAR Practical Guidelines* provide HCPs with both practical information and the background behind recommendations. These management recommendations will help HCPs optimise care and ensure people with diabetes who plan to fast during Ramadan can do so safely.



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