



**ANNUAL BULLETIN CREATED  
BY BAHRAIN DIABETES SOCIETY ISSUE (4)**

📍 bah\_diab\_society 📍 P.O.BOX 29080, MANAMA

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**Bahrain Diabetes Society, which was launched in 1989, is constantly striving to provide its services in collaboration with all health services provided by the Kingdom of Bahrain in the health sector.**


One of the most important roles of the association is to educate community members about the risks of diabetes and ways to prevent it and avoid its complications, on the one hand, such as the programs celebrating World Diabetes Day and the walking challenge program.

On the other hand, we are working through the society to raise the knowledge among healthcare workers through various seminars and conferences locally and internationally, in addition to the obesity academy program, which aims to reduce obesity and its consequences, including diabetes.

The society is taking steady steps towards achieving its strategic goals based on enhancing community awareness and presenting its programs equally to all segments of society, which is inclusive of the youth and women. We highly appreciate the selection of Bahrain Diabetes Society in the category of civil society institutions to receive the award of Her Royal Highness Princess Sabeeka bint Ibrahim Al Khalifa for the advancement of Bahraini women.

It is a matter of pride and honor that the Bahrain Diabetes Society continues to issue its annual bulletin for the fourth year in a row to highlight the importance of diabetes, ensure its prevention and provide appropriate treatment to successfully live with diabetes at all stages of life and avoid its complications.

May God bless everyone with health and wellness in our dear kingdom under the wise leadership.



**H.E. Lieutenant General Doctor Sheikh  
Mohamed Bin Abdullah Al Khalifa**

Chairman of the Supreme Council of Health / President of Bahrain Diabetes Society



**Dr. Mariam Al-Hajerii**  
Vice President of Bahrain Diabetes Society

## Access to diabetes care, if not now, then when?

Diabetes is a lifelong chronic disease that requires careful and continuous monitoring in terms of treatment, balanced diet and exercise.

It is estimated that 537 million adults have diabetes worldwide, and statistics show an increase in risk factors associated with overweight and obesity. Over the past decade, the prevalence of diabetes has increased greatly in all countries.

Diabetes is a major cause of blindness, kidney failure, heart attacks, strokes and lower limb amputations. A healthy diet, physical activity and abstinence from smoking can prevent or delay type 2 diabetes and avoid its consequences or delay their appearance.

This date was chosen by the International Diabetes Accreditation and the World Health Organization since the year 20, to commemorate the birth anniversary of the discoverer of insulin. Who was born on November 14 in order to recognize the urgent need to follow up the all efforts to encourage and improve human health and to provide access to treatment and education in the field of health care and to emphasize on member States and decision-makers to develop national policies for the prevention of diabetes and treatment and care for people with it; in line with the means of development sustainable systems in the field of healthcare.

Today, 100 years after the discovery of insulin, millions of people with diabetes around the world are still unable to get the care they need, as patients with diabetes need continuous care and support to manage the health condition and avoid complications. The centenary of the discovery of insulin provides a unique opportunity to make a difference to more than 537 million people suffer from diabetes and many others are at risk, and the global community concerned with diabetes, if united efforts, can make a change, and we are in dire need to meet the challenge and achieve achievement in preventing diabetes and reducing its complications.



**Professor Dalal Alromaihi**  
Chief Editor Remarks  
Consultant Endocrinologist at Awali Hospital  
Chair of the scientific committee at Bahrain Diabetes Society

## Dear Readers,

I am pleased to present to you the fourth issue of the Bahraini Diabetes Association Annual Bulletin, which was designed to provide scientific material in a simplified manner, with the aim of informing you of the latest developments in the world of diabetes.

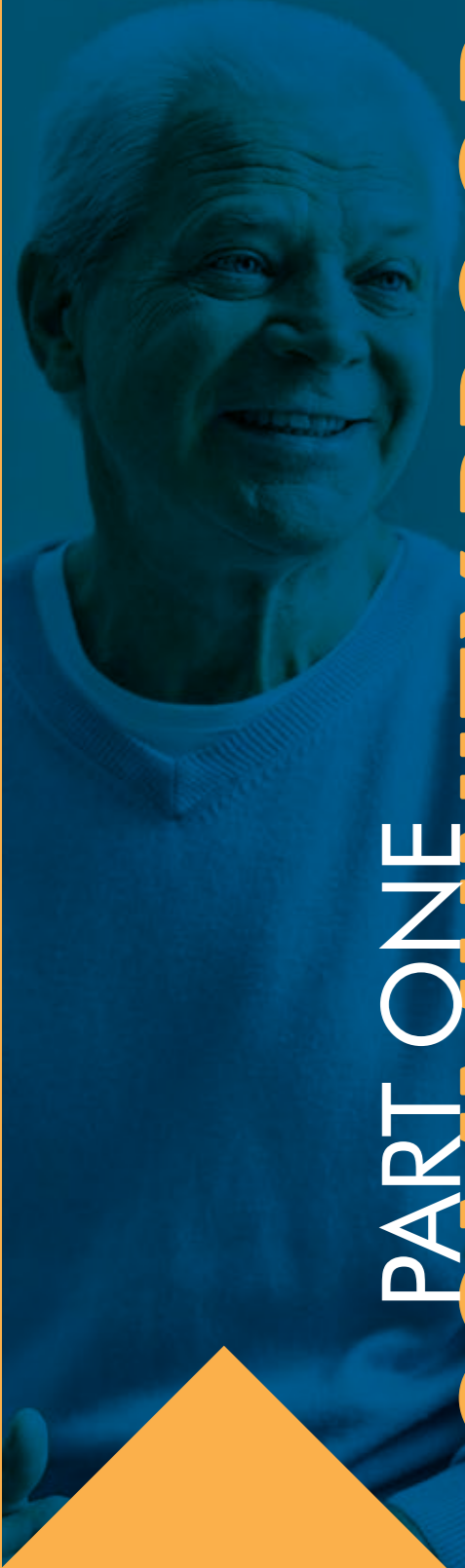
In this issue, you will find topics of interest to all ages, such as articles on dealing with a child with diabetes, how a parent can support a child while using insulin pumps, and scientific development in delaying the onset of type 1 diabetes. In addition, you will find topics of interest to women and articles focused on what you need to know to live well with diabetes.

Furthermore, we included the results of a clinical trial conducted in Bahrain that evaluated the effect of eating dates on the control of glucose in patient with diabetes.

We look forward to finding this issue to your approval. We have chosen to have a digital copy that you can easily send to your loved ones so that the benefit spreads.

Our heartfelt prayers for all for your health and happiness.

PART ONE  
COMMUNITY PROGRAMS



جائزة صاحبة السمو الملكي  
الأميرة سييكتة بنت إبراهيم آل خليفة  
لتقدم المرأة البحرينية



## The Award of Her Royal Highness Princess Sabeeka bint Ibrahim Al Khalifa for the advancement of Bahraini women is presented to distinguished governmental and private institutions in the areas of support and empowerment of Bahraini women.

This is in order to support and encourage incentive policies for gender balance programs, support the advancement of women to occupy decision-making positions and positions, and create a supportive and considerate environment for integrating women's needs and gender balance.

One of the objectives of the award is to highlight the efforts of ministries, public and private institutions, and civil society organizations that support the advancement of Bahraini women and ensure reconciliation between their practical and family duties. To encourage ministries, public and private institutions, and civil society institutions to build the capabilities and expertise of Bahraini women and benefit from these capabilities and experiences in the development of society, and to encourage an increase in the presence and effectiveness of Bahraini women in institutions.



It also seeks to highlight and appreciate the individual efforts and initiatives aimed at integrating the needs of women and empowering them in a way that contributes to bringing about positive change in society and achieving sustainable community development.

In 2022, the Bahraini Diabetes Society won the award of Her Royal Highness Princess Sabeeka Bint Ibrahim Al Khalifa for the advancement of Bahraini women in the category of civil society institutions in its seventh session.

A Women's Needs Committee was formed at the Bahraini Diabetes Society on July 1, 2021, headed by Dr. Mariam Al-Hajeri, Vice Chairman of the Board of Directors, with the membership of Dr. Samia Al-Qattan, Dr. Dalal Alromaihi, Dr. Najwa Abu Talib, Dr. Rabaa Al-Hajri and Dr. Kawthar Al-Eid. The committee held several meetings during which the concept of integrating women's needs and gender balance was discussed, and the extent of gender balance was evaluated in the society's working committees and through its various activities according to the committees. The committee's strategic objective is to preserve women's health through health promotion programs to prevent diseases and consolidate the principles of women's quality of life.

Through its activities and programs, the Committee presented several initiatives, including enabling women to enjoy a decent and safe life at all stages of life, promoting health and psychological safety through the requirements of improving the quality of women's life, encouraging healthy lifestyles to maintain health, reducing the percentage of diseases, improving the quality of life, promoting healthy nutrition and practicing physical activity among the various groups of society in addition to promoting the mental health of women.

It is worth noting that the Bahrain Diabetes Society, since its establishment in 1989, offers various programs to counter the steady increase in the prevalence of diabetes in the Kingdom of Bahrain, such as programs to prevent diabetes and obesity and encourage physical activity through the establishment of walking tracks and the walking challenge initiative. The society's programs have varied in enhancing the role of women through awareness activities, the most important of which is the encouragement to follow healthy lifestyles to maintain health, improve the quality of life, and promote healthy nutrition, in addition to educating and training women with diabetes of all ages on how to deal with diabetes and live with it safely, especially children and their mothers, in addition to support and assistance programs for newly diagnosed diabetes by exchanging mothers' experiences on how they deal with their children with diabetes. Participate in the early detection of diabetes through community partnership programs and provide awareness counseling.

The society's activity extended to organizing many distinguished programs and initiatives, including the Shorouk camp initiative for children with diabetes, the mobile diabetes unit, and the initiative to provide an insulin pump for children with diabetes.





### Dr. Mariam Al-Hajeri

Assistant Undersecretary of Public Health at the Ministry of Health  
Vice President of Bahrain Diabetes Society

## What is the importance of an insulin pump for children with diabetes?

Children receive many advantages after using insulin pumps, such as reducing needle pricks, controlling blood glucose levels, reducing the risk of hypoglycemia, and higher efficiency in controlling blood glucose. The pump also helps to use insulin doses easily and at any time, with the flexibility to choose the types and times of meals. In addition, it helps provide more privacy for the child. Additionally, modern pumps can be linked to a mobile phone and facilitate remote monitoring of the patient, especially children.

## When did the insulin pump program begin?

In terms of responsibility and community partnership, the Bahrain Diabetes Society has adopted an initiative to sponsor a diabetic child with an insulin pump under the slogan "Contribute to Good with Us" with the aim of supporting children with diabetes to obtain the best healthcare methods that help them control and live safely with diabetes by providing an insulin pump. . This initiative began ten years ago, in 2012, with a generous donation from Al-Mabarrah Al-Khalifia Foundation, and with the support of Her Highness Sheikha Zain bint Khalid Al-Khalifa, Chairman of the Board of Trustees of the Foundation. Hence, a number of pumps were provided with donations from some civil society organizations, government institutions, the private sector, and some individuals.

# DONATION PROJECT FOR INSULIN PUMPS

## What are the biggest challenges facing the provision of pumps for children with diabetes?

Diabetes mellitus is one of the diseases that may pose a great challenge to either the patient or his family, especially if they are children, because it requires constant and accurate follow-up and a good diet to control it and coexist safely with diabetes. In addition, cases of diabetes in children represent one of the challenges we face and have become a concern for all concerned, from the official authorities and parents. The insulin pump is very expensive, as the pump itself costs 4,000 dinars, and the pump needs supplies per month, with an estimated cost of 235 dinars.

Also, the use of the pump requires training and practice to learn how to use the pump properly.

## How are children selected to benefit from pumps?

This is done in coordination and joint cooperation with hospitals, where through the treating medical team, lists of children most in need are identified so that a report is received from the attending physician showing the condition of the child to the pump with filling out a special form on the condition of the child, and the importance of passing the child and guardian a training course on how to use and program the pump in coordination with the company concerned with the pumps.

## What are your aspirations for the insulin pump support program?

To provide a pump for all children and adolescents with diabetes in the Kingdom of Bahrain through joint cooperation with the private sector and philanthropists, as well as cooperation with insurance companies to facilitate the provision of pumps and the provision of monthly supplies.





### Dr. Kawthar Al-Eid

Public Health Consultant / Member of the Board of Directors of the Bahrain Diabetes Association



# THE WALKING CHALLENGE

## When did the Walking Challenge start? Tell us about the idea of the project?

The Walking Challenge program started in 2019 and it is still ongoing. It is considered one of the innovative initiatives of the Bahrain Diabetes Society to combat obesity, maintain weight and prevent non-communicable diseases including type 2 diabetes. The program is designed as a community walking activity ongoing for 5 days per week, half an hour per day or achieving an average of 10,000 steps per day, for a duration of 3 months. The goal is to achieve the 21/90 rule, which is to create a new habit of walking among participants by engaging them in 21 days of daily physical activities, over a period of 90 days. This is intended to create a healthy routine in their lifestyle even after completion of the program. The accepted types of physical activities in the Walking Challenge include regular outdoor walking, indoor walking on a treadmill, riding a bicycle, or stationary bike, walking with a person using a wheelchair, or moving the wheelchair by the participant. The program is therefore inclusive of all community members who are in stable health condition. We do recommend having someone along during physical activities whether at home, at the gym or the walking paths and we request to provide us with the number of the daily steps through Walking application on smartphones on the link created for documentation of the prove of the daily walking, for a period of 3 months. In order to engage the community in physical exercise, we also walk as a group, every Saturday for half an hour, in one of the walking tracks in Bahrain. At the end of the 3 months, the prizes will be drawn by lottery, for those who fulfill the conditions of the Walking Challenge.

## How did Bahrain Diabetes Society maintain the continuity of the program during the COVID-19 pandemic?

We maintained the continuity of the program during the pandemic by implementing the idea of virtual walking online. We distributed a link to the participants to join the walk from any location they chose; whether indoor or outdoor and each according to his or her place can join the walk alone which was in line with the national recommendations and precautionary measures and measures during the COVID-19 pandemic. This initiative was very well received by the participants and enabled many to join the walking activities from outside Bahrain.

## What is the extent of community members' participation in the program?

Participation has been great from all regions of the Kingdom of Bahrain and it has been inclusive of all ages and participation included men and women. Additionally, some of the participants had type 1 or type 2 diabetes and others did not. The participants were active and were keen to continue the walking activities after the conclusion of the program. Participants provided us with lots of good suggestions for places to walk and proposals to further develop the program.

## What is the impact of the Walking Challenge program on the participants?

Distinguished results were achieved with people in the community, and the turnout was also distinguished, and we reached our goal, by adopting a daily sports pattern, and we achieved the rule of 21/90, and we are still continuing to motivate and encourage walking, to prevent diseases, foremost of which is obesity.

## What are the future plans for the Walking Challenge?

Continuing the Walking Challenge program and working on developing it to include more participants from all areas in the Kingdom of Bahrain and providing a link for virtual walking online so that everyone in any area of Bahrain or outside it can implement walking without having difficulties in moving to distant walking tracks.

# Bahrain Diabetes Society

Activities 2021 - 2022



Community participation in November 2022 on the occasion of World Diabetes Day.



Community participation in November 2022 on the occasion of World Diabetes Day.



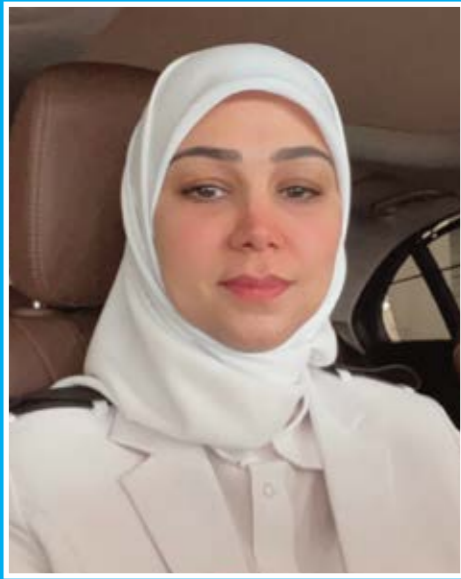
Walking marathon to celebrate World Diabetes Day in November 2021.



Community walk in the walking challenge initiative in March 2022.



PART TWO  
PATIENTS CARE



### **Mrs. Lamees Almuqahwi**

Nursing Supervisor in Primary Healthcare Centers  
Mother of a daughter with diabetes, Luma Fadhel

## **Insulin pumps - the vital role of the guardian in the success of treatment**

### **What are the responsibilities of parents to help their children use the pumps in the best way?**

Parents play a vital role in assisting their child with the use of insulin pumps. First of all, parents along with the medical team should include the child in the education about the importance of the pump and how it works in maintaining the normal level of sugar in the blood, in addition to instructing the child to inform the parent of any warning or alarms issued by the pump, in addition to maintaining it in terms of cleanliness and caring for the pump in general.

### **What are the difficulties you faced with the use of insulin pumps?**

In the beginning, I faced challenges in dealing with connecting the pump to the sensor, however, we then learned how to deal with alarms and figured how to manage this over time. The support that I have received from the medical team and the insulin pump company support staff helped ease my transition into using the pump confidently.

### **How do you prepare the school staff to deal with a student who uses an insulin pump?**

First of all, parents help educate the school staff about diabetes in general and types of therapy including insulin pumps. Additionally, we explain the importance of the pump in the successful treatment of diabetes. Furthermore, school staff are asked not to tamper with the pump or change its settings.

### **How did the pump improve the quality of your daughter's diabetes management?**

The pump had a clearly noticeable positive impact on my daughter.

First: It reduced the number of pricks to inject her with insulin, especially in the evening and at bedtime.

Second: Monitoring her glucose readings is available 24 hours a day without the need for frequent pricking and checking her blood glucose.

Third: It helped diagnose and predict low and high glucose even before its occurrence thanks to advance algorithms in the pump that identifies the trends of the glucose level.

Finally, it contributed to simplifying her life in general, as it contributed to my daughter's ability to participate confidently in sports and social activities and practicing her daily normal life comfortably.

### **Do you have final tips, Mrs. Lamees?**

I would like to remind parents that diabetes, praise be to God, is one of the diseases whose treatment has been discovered, and a child with diabetes can lead a normal life if he or she maintains the normal level of sugar in the blood through treatment with insulin injections directly or through a pump (as I always call it the savior). I would also like to encourage parents to be prepared with long and short acting insulin and to know from the medical team at the end of each visit what doses should they inject in case of pump failure.

The pump is a very useful device for the lives of people with diabetes, especially children. But it is a sensitive and expensive device, which must be maintained to last a long time with the child. It is like their artificial pancreas.

**INSULIN PUMPS - THE VITAL ROLE OF THE GUARDIAN  
IN THE SUCCESS OF TREATMENT**

# Bahrain Diabetes Society

Activities 2021 - 2022



Participation in the bder diabetes and obesity conference in March 2022



Summer activity in July 2022 for diabetes champions.



Celebrating Regular Diabetes Champions with HbA1c in December 2022.





### **Prof. Dalal Alromaihi**

Consultant Endocrinologist, Chair of Scientific Committee and Board Member of Bahrain Diabetes Society

## What are the factors in women that affect diabetes control?

Young girls and women go through several hormonal and physical changes at various stages of life that affect diabetes control and increase the challenges of good diabetes control in women compared to men. For example, many women notice a high blood sugar level during the menstrual cycle. Because of hormonal changes that affect the efficiency of insulin. Also, good control of diabetes during pregnancy requires a great effort on the part of the woman from planning her meals, measuring her glucose and taking medications regularly.

## How does the menstrual cycle affect the level of glucose?

The menstrual cycle often leads to a rise in glucose due to hormonal changes that affect the efficiency of insulin. As high progesterone increases insulin resistance, which leads to high blood glucose levels. These disorders are dealt with by increasing insulin doses, especially in young ladies or women with type 1 diabetes.

# DIABETES AND WOMEN

## Is there an effect of diabetes on infections in women?

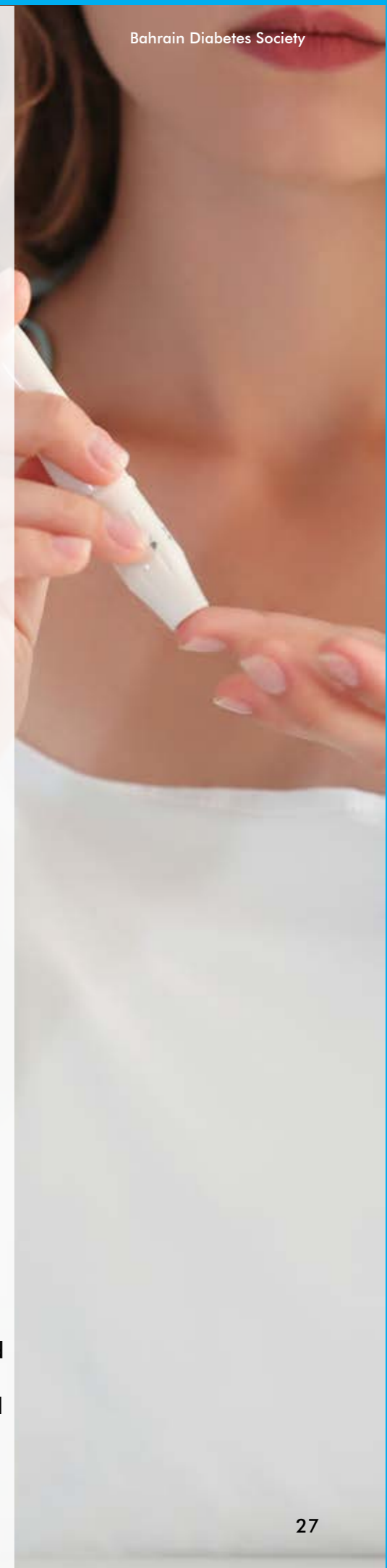
High glucose levels in general increase the chances of infections, especially in women, where high glucose levels are associated with increased chances of urinary infections and vaginal infections, whether bacterial or fungal infections. To treat these infections, it is necessary to regulate the level of glucose, as the woman enters a vicious cycle in which infections cause the level of glucose to rise, and high glucose causes difficulty in treating infections. Care must be taken to consult the attending physician to determine the appropriate medications for infections, adhere to the treatment plan, and drink more water.

## What is the relationship between diabetes in women and heart disease?

Diabetes is one of the most important factors that increase the risk of heart and blood vessel diseases, whether clots in the heart, brain or arteries. But specifically, among women, awareness should be raised that the common symptoms of heart attacks, such as pain in the left side that moves to the arm, may not appear in women with diabetes who suffer from a heart attack. Symptoms may be vague and nonspecific, such as difficulty breathing, increased sweating, indigestion and stomach pain. It is necessary to be careful and to see a doctor in the event of a health ailment to ensure the safety of the heart.

## General advice for women with diabetes

It is easy for women to be lax about taking care of themselves and putting family members at the forefront of priorities, and this may result in a lack of commitment to healthy nutrition, exercise, taking medicines regularly or following up with the doctor, performing annual foot and retinal examinations and periodic dental examinations. But women are the mainstay of the family, and the importance of taking care of their health and safety must be emphasized in order to be able to take care of a strong healthy family that contributes to building society. It should be remembered that women with diabetes or who are at risk of diabetes should be encouraged to take care of their health for themselves, their families and society.





## Professor. Najj Alamuddin

Consultant Endocrinologist  
King Hamad University Hospital

### Tell us about the dates study? What was the idea behind it?

Date fruit has been reported to have beneficial effects due to its nutritional value and antioxidant properties. Specifically, it is high in phytoestrogens, which may provide cardiovascular benefits. However, it is high in sugar content. This may be problematic in the Middle East and North Africa (MENA), where dates are consumed regularly, and the prevalence of diabetes is very high. Therefore, scientists and doctors from King Hamad University Hospital and the Royal College of Surgeons in Ireland- Bahrain decided to study this issue in more detail. Specifically, we wanted to study the effects of dates (Khalas dates- 3 dates twice daily) on HbA1C and blood glucose in patients with type 2 diabetes over a 3 months period, when compared to an equivalent glycemic load of raisins (30 grams twice daily), which have low phytoestrogen content. We also wanted to study the effect of date fruit on cardiovascular risk (fasting lipids, C-reactive protein (CRP), blood pressure, insulin resistance and insulin sensitivity).



### How many people participated? What were your key findings?

We enrolled 79 patients with type 2 diabetes in the study. They were randomly assigned to one of two groups: a dates group and a raisins group. A total of 33 patients in the dates group and 28 patients in the raisins group completed the study.

The study showed that the fasting blood glucose and HbA1c levels remained stable before and after the study and there was no difference between the dates or raisins on the participants' glucose levels. Regarding the cardiovascular risk, there was no difference in blood pressure, total cholesterol, LDL, HDL, triglycerides, CRP, HOMA-IR or HOMA-IS either between or within (from baseline to final) the dates and raisins groups.

### Did you expect such results?

I did not know what to expect before we conducted the study because we heard different responses from patients in the past. That's one of the reasons we did the study. Patients anecdotally told me that dates increase their glucose levels, while others told me it was helpful in controlling them.

### What is the impact of this study on the care of people with diabetes in our region?

This study, in a scientific manner, demonstrated that there was no improvement or worsening in glucose control following supplementation of either 60g daily date fruit or raisins over a 12-week period, indicating the safety of date fruit (and raisins) when consumed in people with type 2 diabetes.

Both dates and raisins also did not cause an adverse effect on cardiovascular indices, which is reassuring.

Basically, this study showed that dates, in moderation, can be consumed by patients with type 2 diabetes.



THE DATES STUDY

VACCINATIONS FOR PEOPLE WITH DIABETES: WHAT SHOULD YOU KNOW?



**Dr. Khawla Saad**  
 Consultant family physician  
 MSc in Diabetes

People with type 1 and type 2 diabetes are at high risks for the development of serious complications from some infectious disease that are vaccine-preventable such as influenza, pneumonia, and hepatitis. Diabetes, even if well controlled, can affect the immune system and makes it harder to fight infections. In addition, some infectious diseases like influenza, can contribute to increasing blood glucose to dangerously elevated levels. Therefore, vaccinations are important because they play an integral role in diabetes control.

The American Diabetes Association (ADA), recommends that all children and adults with type 1 and type 2 diabetes should receive vaccinations as indicated by age group. The recommended vaccinations include:

Influenza vaccine

Pneumococcal vaccine

Hepatitis B vaccine

COVID-19 vaccine

Tdap vaccine

In the Kingdom of Bahrain these vaccines are provided routinely in the primary and secondary care setting. It is advised that all patients with diabetes talk to their healthcare provider to help them get their vaccines in the right time to ensure protection against preventable infectious diseases. Vaccinations are safe methods to provide protection of the health of people with diabetes. Side effects are usually mild and resolve spontaneously and severe side effects are rare.

Discuss with your doctor your need for vaccination and keep your vaccination status updated regularly.





**Ms. Areej Alsaad**

Diabetologist

## Should all people with type 1 and type 2 diabetics learn to count carbs?

The method of calculating carbohydrates in main and light meals helps to control blood glucose levels. When a person has type 1 or type 2 diabetes, it is necessary to obtain the appropriate amount or amount of carbohydrates to avoid a sudden rise or drop in blood glucose levels.

- Where the purpose of carbohydrate counting is to help diabetic patients maintain general health.
- Prevention of diabetes complications resulting from sudden rise and fall in blood glucose levels.
- Helps improve energy levels.

## When is it necessary to learn to count carbohydrates?

Depends on the evaluation of the clinical dietitian on the readiness of the patient or the parent to learn to count carbohydrates based on two main axes:

**First:** Before starting, the clinical dietitian must assess the patient's readiness to learn and the patient's initial information about carbohydrates. Through the following questions: Is the patient or the parent aware of the group of carbohydrates and the food sources of carbohydrates? Has the patient or parent already practiced some technique to control carbohydrate intake, such as avoiding sugary drinks or reading food labels? The answers to these questions set the clinical dietitian's personal learning goals for each patient.

**second:** The patient's food security should be assessed. The International Food Policy Research Institute defines food security as physical, social and economic access to sufficient, safe and nutritious food. In other words, you can teach the patient the correct information, but if the patient cannot apply it to his daily life, he may feel frustrated. Answers to the following questions will help you determine if the patient needs additional community resources: Does the patient or parent have access to a grocery store that contains nutritional needs? Does the patient receive nutritional support from the family? Can the patient or parent buy and prepare meals? Then, they collaborate with the patient or parent to set goals and help keep them actively engaged during the education process.

## How does calculating carbohydrates help diabetics control their glucose better?

For people with type 1 diabetes: Calculating the amounts of carbohydrates in grams in the main and snacks helps the patient to estimate insulin doses proportional to the amounts of carbohydrates, which avoids the patient sudden rises and falls in glucose rates.

For people with type 2 diabetes: Eating fixed quantities and portions of carbohydrates distributed in moderation in the main and light meals helps ensure the stability of blood sugar levels during the day and avoids high blood sugar levels, and helps in weight loss.

## What are the most important challenges faced by a clinical dietitian in teaching patients how to count carbohydrates?

- Among the most important challenges or difficulties facing the clinical dietitian:
- The patient's desire to understand the flexible dietary patterns in controlling carbohydrates.
- The patient or the parent did not spend the necessary time and effort to calculate the carbohydrate content in each meal, especially in the initial stages of education.
- Lack of sufficient awareness of the importance of self-measurement of sugar rates.
- Difficulty understanding the patient's carbohydrate counting strategy.
- Difficulty performing mathematical calculations.
- The lack of sufficient number of mafia-trained clinical nutritionists to provide appropriate education.
- Awareness of other factors that affect blood sugar levels, for example, fiber, fats, alcohol, stress, illness, hormones, individual differences.

## Are there applications that you recommend for carbohydrate counting?

Yes, there are several helpful applications; for example:

- CARB CALC
- Low Carb Diet Calculator
- Calculation of the carb

DON'T UNDERESTIMATE  
THE CARBOHYDRATE COUNT!



**Professor. Haya Mohammed Al-Khayyat**  
Senior Consultant Endocrinologist and Pediatric Diabetes at the Military Hospital  
Associate Professor at the Irish Royal College of Surgeons

## Can we delay the onset of Type 1 Diabetes mellitus (T1DM)?

Type 1 Diabetes Mellitus is a chronic disease. It results from destruction of the beta cells in the pancreas, which secretes insulin by an abnormal immune response. This leads to insulin deficiency. Therefore, the only treatment for this chronic disease is insulin, which is either taken by multiple daily injections or by insulin pumps.

It can occur at any age, but mostly in children. There is an increased risk to develop it if a family member has diabetes, but most affected people do not have a family history.

Type 1 Diabetes Mellitus Cascade occurs in three stages:

**Stage 1:** is now considered the start of T1DM. Individuals test positive for two or more diabetes-related autoantibodies. The immune system has started attacking the insulin-producing beta cells, although blood sugar levels remain normal and no symptoms are present.

**Stage 2:** like stage 1, includes individuals with two or more diabetes-related autoantibodies, but now blood sugar levels have become abnormal due to increasing loss of beta cells. There are still no symptoms.

# CAN WE DELAY THE ONSET OF TYPE 1 DIABETES MELLITUS (T1DM)?

**Stage 3:** is when clinical diagnosis typically takes place. By this time, there is significant beta cell loss and symptoms of type 1 diabetes are usually present.

Research shows that age plays a significant role in the rate of T1DM progression. The younger the person, the faster the disease will progress. Furthermore, for both stage 1 and 2, the lifetime risk of clinical diagnosis (stage 3) nears 100%.

In November 2022, the US food and drug administration approved an important medication that can delay the symptoms of T1DM for months to years. This medication is called Tziel (Teplizumab) and is given as injections to delay the onset of stage three in Type one diabetes in adults and pediatric patients eight years of age and older, who currently have stage two diabetes.

Studies have shown that it can delay the development of stage three in Type one diabetes patients for up to a median of 50 months in 45% of those who used it. The most common side effects of Tziel is decreased level of a certain type of white blood cells, rash and headache. Prior to the use of this medication, all age appropriate vaccines are to be administered, and to avoid live inactivated vaccines during the treatment period.





### Mr. Sami Al-Emadi

Head of schools in the third educational district  
Member of the Bahraini Diabetes Society

## ***Have faith in God first and last***

We know that children by nature would crave sweets and candy. The same is true for your child with diabetes. Your role is to help him cope with his condition and live a healthy full life with access to things he likes in moderation and under your supervision.

Dear parent, do not leave your son without careful follow-up with his first days of diabetes, as he is not aware of himself, but with your presence with him and your follow-up to him and with your trust in God, you will find that your son is normal and does not suffer from any diseases, as there are many children like your son, if not more susceptible to illnesses.

Dear mother, if I ask you a question?? Where do you put your jewelry and valuables? The response will be that it is in the jewelry box (or a safe). Just as you keep your precious savings in this box, it is your duty to keep your children in a place that is safer than what you keep your savings in. They are the jewels, and they are the ones who bear your family name and they are from your blood. Rather, you have to pray for them and accustom them to recite the morning and evening supplications, the least of which is to recite Surah Al-Fatihah and Ayat Al-Kursi in the morning and evening.

# HAVE FAITH IN GOD FIRST AND LAST

Dear parent, make your son play as others play and do not worry about him. Make your son eat as others eat while monitoring the quantity and quality of food. Furthermore, make your son confident of himself by smiling at him and not making him feel that he is different from others.

And do not forget the hadith of the Messenger, may God bless him and grant him peace

(Smiling at your brother is charity)

So be smiling and spread your smile around the surroundings of those closest to you, who are your family, and in the community, especially with your son, for true happiness is your trust in God in everything.





**PART THREE**  
**THE ROLE OF**  
**NURSING IN DIABETES CARE**





### Ms. Fathiya Rajab

Member of the Shurooq Committee of the Bahrain Diabetes Society , Pediatric diabetes nurse educator team leader Salmaniya Medical Complex

## The importance of health education to empower diabetics

### Tell us about your experience with diabetes education? How long have you joined this field?

I used to work in pediatric nursing, and I volunteered to take care of four children in Shurooq camp for diabetic children in 2009 in Sakhir camp. I knew their suffering and their daily needs. The irony is that in the same year I was nominated to work in the Pediatric Diabetes Unit as an inpatient diabetic nurse at first, and I did everything that this task required of educating and closely following up on new and existing patients, taking turns on the emergency phone and responding to the children's parents around the clock with love, understanding and dedication. In addition to attending specialized courses, conferences and workshops continuously, in addition to obtaining the certified diabetes educator certificate from King Saud University Hospital in Riyadh in the Kingdom of Saudi Arabia. This year, I have completed thirteen years in this field, and I am still continuing to support children with diabetes by participating in the activities of the Bahrain Diabetes Society. I feel proud of the importance of this work and its positive outcomes for children with diabetes and their families in our beloved Kingdom.

### What are the challenges you face in the field of health education?

What I feel most as a challenge in this area is the failure of some children's parents or the child himself to be diagnosed with diabetes (especially in adolescence) and the inability to positively adapt to diabetes, as this negatively affects the course of their lives. Despite all the support from the diabetes educator and psychologist with the health team, the situation remains in a spiral and more efforts are needed to control diabetes to prevent complications and improve the quality of life.

### What positive experiences do you remember from your experience working in health education?

I have educated hundreds of children and their families about diabetes and trained them on the daily skills required for self-care and good control of it, and the experiences were often positive after following them up, thank God. When parents receive the news of their child's diagnosis of diabetes, they feel a lot of sadness, anxiety, and fear, and they usually only see a dark side, but by the grace of God Almighty, and after following the instructions and starting to control diabetes, parents feel more confident and feel that they have overcome the worst, and that life is through reconciliation. They learn that coexistence with diabetes is very possible. I am very happy to see them moving forward in life with determination and faith.

### What advice would you give to nurses wishing to join this specialty?

The diabetes educator must first of all be empathetic and patient with good organizational skills, have effective communication, the ability to work in high pressure situations, love teamwork, and the ability to think critically and solve problems. The diabetes educator should also be constantly informed and keen to keep pace with the rapid development in the field of diabetes treatment by attending conferences and workshops and obtaining the required certificates to support people with diabetes to manage their condition and achieve optimal health outcomes.

THE IMPORTANCE OF HEALTH EDUCATION  
TO EMPOWER DIABETICS



Community participation in November 2022 on the occasion of World Diabetes Day.



These are community posts in November 2022 on the occasion of World Diabetes Day.





**Fatema Mohamed Sultan**

Diabetes Educator in King Hamad University Hospital

## What are the recommended places to inject insulin?

There are many places to inject insulin, including:

1. Abdominal area: It is preferable to stay away from the navel area by two fingers, and it can be injected in any area of the abdomen, whether on the right, left, above or below the navel.
2. Thigh side area: between the knee and the hip.
3. Back region of the hip.
4. Back of the arm: between the elbow and the shoulder.

## Are there better places to inject slow insulin and rapid insulin?

Recent studies have proven that the best place for injection is the abdomen for easy access, and the abdomen contains more fat and less muscle, so it is preferable to inject insulin before a meal into the abdomen.

At the same time, studies have not demonstrated that slow-acting insulin is affected by its absorption in the areas of insulin injections.

# INSULIN INJECTION SITES

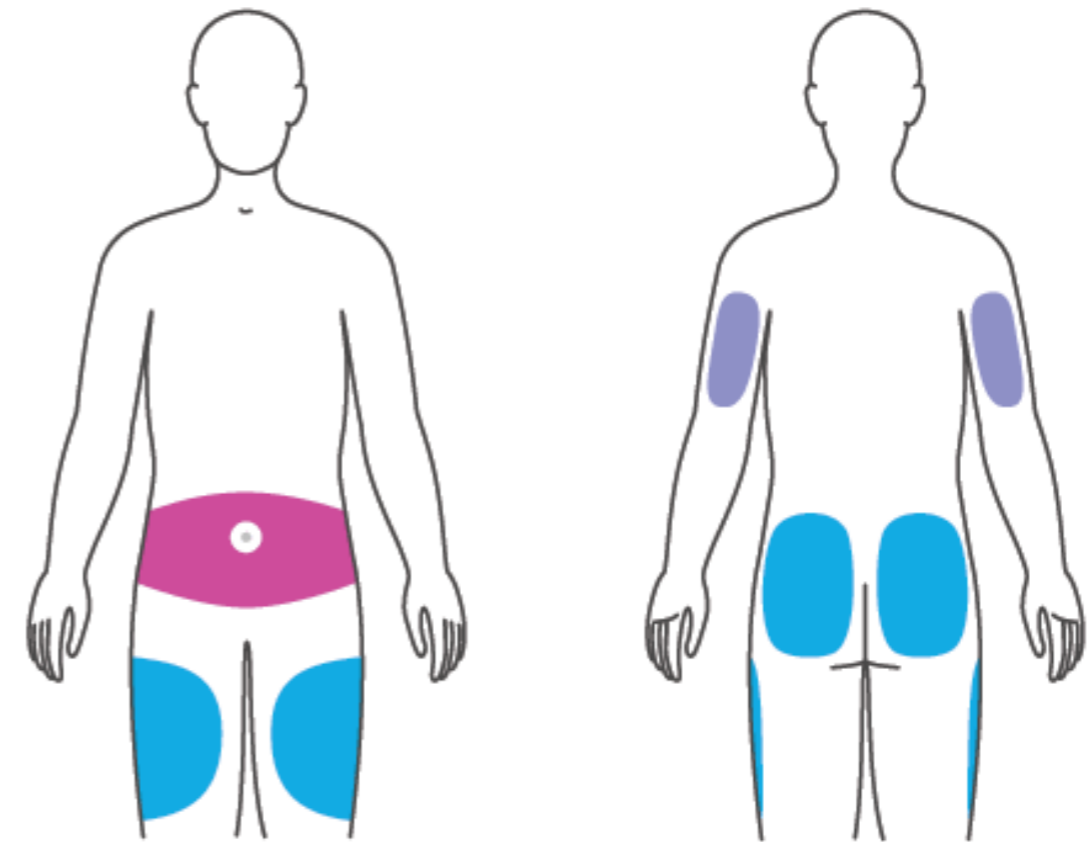
## How should patients maintain a good effect of their insulin?

Insulin pens are kept at the temperature recommended by the manufacturing company and not exposed to high temperatures such as the heat of the sun and it's important to avoid freezing insulin in the fridge or the freezer.

## What happens if the injections are repeated in the same area?

It is not recommended to focus on one area during the injection, but rather to rotate continuously to avoid fibrosis and hardening of the skin which can negatively affects insulin absorption.

If skin thickening occurs, a physician should be consulted.



**Insulin Absorbtion Rate**



## Habiba Jassem

Diabetes education specialist at King Hamad University Hospital

## What is the correct way to measure sugar?

Hands should be washed with soap and water, making sure that there are no food or juice residues on the finger, or alcohol swabs can be used to sterilize the finger.

It is possible to measure from all ends of the fingers of the hands by pricking the side of the finger with the measuring needle

It is preferable to wipe or a drop of blood and use the second drop to measure

## What are the common errors in measuring glucose?

- Leaving the alcohol solution on the finger and mixing it with blood, which could lead to a change in the accuracy of the measurement.
- Prick the upper end of the finger with the measuring needle.
- Use the first drop to measure

# MEASURING SUGAR COMMON MISTAKES

## Is it recommended to measure sugar frequently at the same time from more than one finger?

It is not recommended to repeat glucose measurements at the same time or from more than one finger.

## Are the arm probes accurate?

The sensor's measuring devices are many and varied and have many benefits for the diabetic. They are accurate, but this does not preclude measuring using a drop of blood in the event that the reading is not reassured.

## Any other tips?

It is very important for a diabetic to know the normal blood sugar level, as well as the rate of decrease and rise.

Measuring blood sugar also helps to assess the extent to which treatment goals have been achieved and to identify the effect of treatment.. Periodic blood sugar measurement at home is important for every patient with diabetes.

It is also recommended some important times for measurement such as; Fasting sugar, two hours after a meal and before bed.

## Ideal glucose values

### Fasting 8 hours

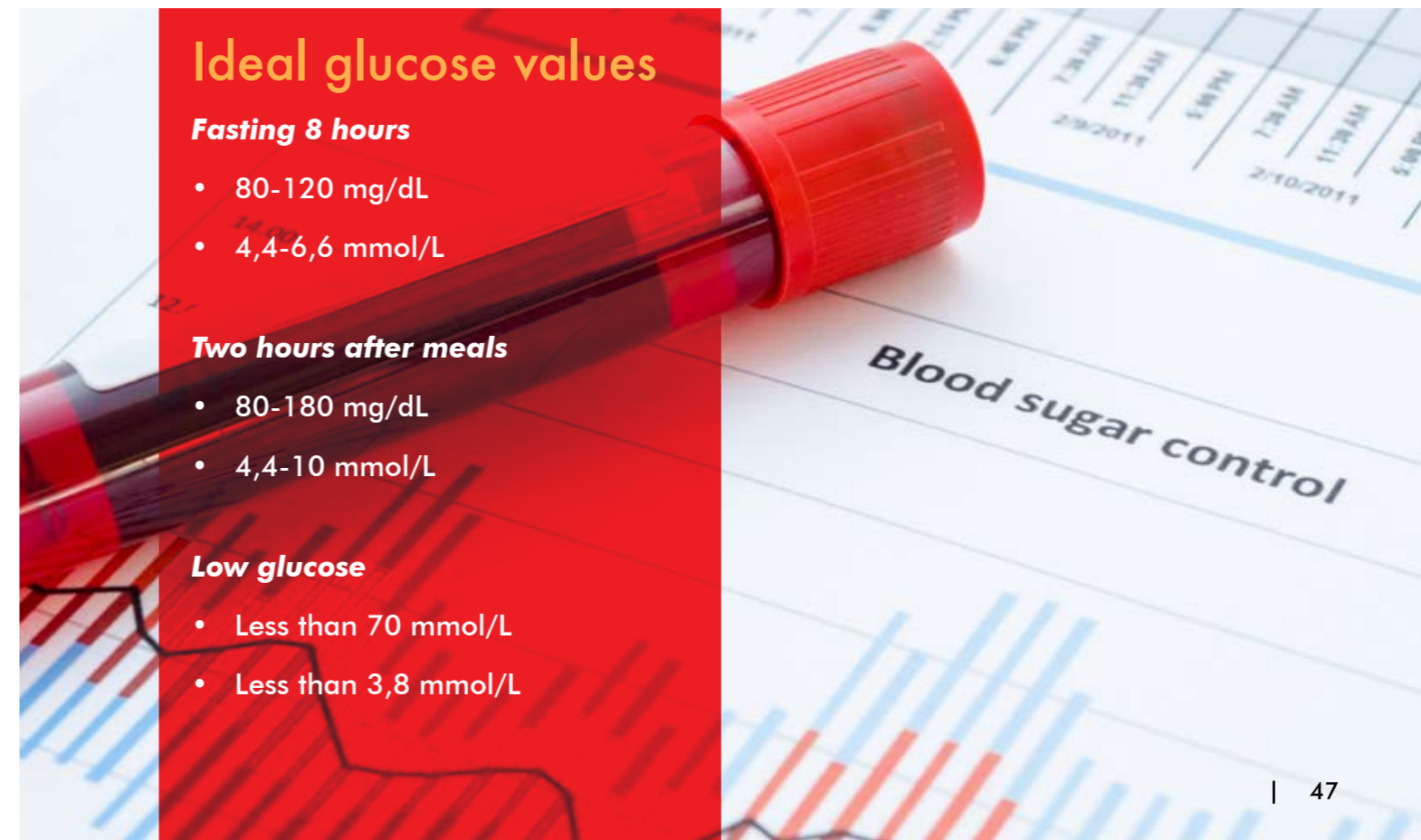
- 80-120 mg/dL
- 4,4-6,6 mmol/L

### Two hours after meals

- 80-180 mg/dL
- 4,4-10 mmol/L

### Low glucose

- Less than 70 mmol/L
- Less than 3,8 mmol/L



# PART FOUR YOUTH AND DIABETES



# Youth Team

Bahraini Youth Day, which occurs on the twenty-fifth of March, is a day dedicated to those who stepped on the walls of the homeland, unforgettable success stories that history boasts about. Bahrain Diabetes Society decided in the year 2022, on Bahraini Youth Day to launch a youth team consisting of a group of six individuals, namely Ihab Ali, Nouf Shaheen, Nasser Al-Toblani, Maha Al-Balooshi, Tariq Al-Mutawa and Fatima Youssef. This group works to achieve many goals by offering various programs, and one of the most important goals that the committee seeks to achieve is to help young people with diabetes to live with this disease. The team also seeks to work on programs to exchange experiences between patients in diabetes circle so that everyone can live with diabetes in a better way.

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In addition, the team will offer various support programs, such as the moral support program, which will include periodic meetings to discuss many topics, and this program will greatly serve the newly injured, as the first stage of infection greatly needs moral support. The team will also launch a program for sports support, which will include several sports activities and events, in cooperation with the competent authorities.

The team strives to help young people in all ways, and therefore it is working to establish cooperation with institutions, associations, clubs and youth centers in the Kingdom of Bahrain. On the international level, the team will work to establish relations with international and regional associations in order to participate in international conferences and exhibitions.

The team focuses on serving all young people, so it will also work on developing programs through an electronic platform. There will be digital content that will help young people live a better life. An example of this will be special content on food, nutrition and other topics that improve the lives of people with diabetes.

The committee will help young people in different and varied ways to create a youth diabetes community full of healthy life and well-being and will contribute to spreading awareness among the injured in order to reduce the incidence of diabetes complications. The team will also support awareness campaigns to reduce the incidence of type 2 diabetes.

# Be Proud of Your Diabetes

“Do not be ashamed of a matter that God has chosen for you” On one of the shelves in an abandoned book, I found this phrase, or let us say that I found a light that illuminates the darkest path that I am walking on...

## BE PROUD OF YOUR DIABETES

Diabetes, in one of the legends it is said that it is a “blessing”, and other legends narrate it as a “disaster”, but all the legends agreed that diabetes is something that God chose for us. If the faith of our heart tends to the first myths that tell us that diabetes is a blessing... then why be ashamed of blessings? And God has inspired us to talk about it in His saying: (And as for the grace of your Lord, tell it). Let's talk about the things that diabetes added to us, and let's tell everyone about our life with it.

But if the faith of our heart tends to other myths that claim that diabetes is a disaster, then why the fear of revealing the calamity? And the prophets and messengers were afflicted before us..? God has said in His Holy Book (And We will certainly test you with something of fear and hunger and a shortage of wealth, lives and fruits, but give glad tidings to those who are patient).

Let us inform everyone that God has chosen for us the fate of diabetes, so diabetes is not a shame, nor is it a disgrace for us to suffer from it.

But we may say why tell those around us? Why are we talking about diabetes? We know that looks of sympathy will attack us, and that words of ignorance will precede them. Yes, words of ignorance that carry blame and admonition. They think that diabetes has occurred for a reason, and that this reason is “we.”

When fate brings you to me, when we meet one day and I tell you that I have diabetes, do not look at me with sympathy and do not attack me and accuse me of being the one who caused this disease. Be nice to me and let me eat what I want and don't be watching over me. Do not tell me about the complications suffered by your elderly relative, do not tell me about the complications of diabetes, do not pretend to be afraid of needles, and beware of telling me about folk remedies, for I am saddened by that. I have the full ability to do anything such as sports, swimming, driving and others..

And to tell you also that there is no difference between you and me at all, except for one thing.. You carry your pancreas in your body, but I carry it in my hand.

الحظة عن أي تفاصيل عن داء السكري لا بأنواعه ولا بكيفية التعايش معه. لربما كان جهلي بهذه المعلومات هو منيع قلتي. وكانت تلك اللحظة الحاسمة منعطفاً لبداية جديدة. فإسأ أن أقبل التحدي كما أسألت في حياتي المهنية وأقبل السكري بنمط حياة جديد يليق به، أو أخضع له منهزماً.

لذلك، قبلت التحدي. لم تكن خطوة سهلة بتاتاً، فلم يسبق لأحد من عائلتي أو أصدقائي إصابته بالسكري. كان الطاقم الطبي هم دليلي الوحيد آنذاك في بداية رحلتي مع السكري وقد نصحتني بعضهم بالاطلاع والتثقيف المستمر عن الداء، فللتطبيب دور كبير في مساعدة مريضه، لكن كما قيل «الإنسان طبيب نفسه»، ولذلك أمضيت ساعات في البحث عن أنواع السكري وطرق التعامل معه وكيفية المحافظة على مستوى صحي للسكري. إضافة إلى تواصلتي مع العديد من مصابي السكري للتعرف على تجاربهم. لم تكن هذه الفترة نقطة تحول في نمط حياتي

الصحي فقط، إنما كانت نقطة انتهاء حياتي الأكاديمية سعياً إلى مستقبل مهني. ارتأيت قلق شديد بأن يتم رفضي بسبب السكري، لكن شاء الله أن يوفقني بالضمان في المجال الذي حلمت أن أعمل فيه. لم يكن السكري مصدر ضعف قطع بل بخلاف ذلك، تسلفت جبالاً وشاركت في سباقات لجزري إضافة إلى عشرات الكيلومترات التي قطعتها بدراجتي وغيرها من الأنشطة البدنية لأثبت لنفسي قبل أن أهب للعالم أن السكري لم ولن يكون أبداً مصدر ضعف أو عائق لاجتياز أي تحدٍ في حياتي.

وهأنذا، أحتفل اليوم بمرور 8 سنوات على إصابتي بالسكري، وأنا قائد لفريق في المجال الذي لطالما عشقته. ختاماً، ليست من المعوقات أبداً الإصابات بسداء أو حتى بالمرور بسأي تحدٍ. إنما من الخطأ الخضوع لهذه التحديات والعجز عن مواجهتها والاستسلام لها.

**قصة بطل سكري**

حقيقية، لكن سرعان ما تأكدت من أنه ليس بحلم حين وخرزت الممرضة طرف أصبعي لفحص مستوى السكر. وفي أول ساعات نهار ذلك اليوم تم تشخيصي بالإصابة بالنوع الأول من داء السكري. لم تكن المشكلة حينها في ألم الأم بي، لكن من قلق من مستقبل مهني.

لقد كنت في ريعان شبابه وقتلذ، وعلى بعد شهور من إنهاء مشوارتي الجامعي. تساءلت هل أن الأوان أن أضع حداً لأحلامي وخططي المهنية والاجتماعية لهذا الداء؟ لم أكن أعلم حتى تلك

لطالما عشقت مجال الطيران منذ الطفولة. لست أدري إن كنت عاشقاً للتحدي؟ أم أنني مجرد هاوٍ للسفر واكتشاف أرض الله الواسعة. ولكن كانت مشيئة الله فوق إرادتي فالتحقت بكلية الهندسة الميكانيكية عوضاً عن كلية هندسة الطيران التي لطالما حلمت بها.

وبعد أن أصبحت على بعد خطوات من إنهاء مشوارتي الجامعي، استيقظت ذات يوم على سرور في أحد المستشفيات الحكومية.

لم أتيقن حينها إن كان ما أعيشه كابوساً أم



إبراهيم علي

عضو جمعية  
السكري البحرينية -  
رئيس فريق الشباب

# Exercise & diabetes

Exercise is an integral part of our daily lives, as it is a cure for mental health as important as it is for physical health. A healthy person may feel tired or exhausted after practicing a harsh sport or for a long period of time, and therefore it is always advised to exercise moderation and to persevere with it continuously. But what would be different if you had diabetes?

There is no doubt that exercise is an essential element for maintaining the level of sugar in the blood, as it enhances the so-called insulin sensitivity, which is the sensitivity of the body's cells to insulin. In addition, the effect of exercise on the body extends to at least 16 hours. The effect of sports on diabetics varies according to many factors, such as the type of physical activity, and the age and weight of the athlete. Therefore, there is no uniform formula to be applied to all diabetics to maintain their blood sugar level with exercise.

Diabetics may sometimes notice a sudden rise in the level of blood sugar when practicing some sports with high physical effort such as running and resistance exercises, and this is due to the increased secretion of glucagon, a hormone secreted by the pancreas to burn sugar in the liver. While diabetics may experience a sudden drop in the level of sugar after some activities such as walking or riding a bike.

## EXERCISE AND DIABETES

Some young people with diabetes, especially type 1, may fear exercise in order to avoid any disturbances in the sugar level, or some may practice various types of sports without taking the necessary precautions into account, such as neglecting to drink adequate amounts of water, which may cause dehydration. Some diabetics may be led to some articles that are not based on scientific facts without consulting doctors.

Given the importance of sports and its effective role in maintaining diabetes, it is advised to persevere with it, taking precautions into account, including measuring sugar before, during and after any sports activity, which helps diabetics to understand the effect of their sports activity on their sugar level. It is also advised to maintain periodic consultations with the doctor to ensure the safety of the injured person from any dangers that he may overlook at the time of exercising. It may be rumored that sugars and carbohydrates are harmful to a diabetic, and in fact, carbohydrates are a source of energy and a remedy for depression, and therefore diabetics must eat sufficient quantities before and after exercising. In addition, it is not recommended to exercise if the sugar level is not in the healthy range, and when feeling any symptoms of high or low sugar, the patient must immediately stop his activity and check the sugar, then start treating it. Finally, the diabetic must notify his colleagues or those who participate in the sport with them about his diabetes, so that he can provide assistance when needed.

Sport is food for the body and mind, so let us make sure to practice it regularly and safely.



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