The first step towards change is awareness, the second, acceptance.

Sedentary lifestyles are leading to a dramatic rise in the obesity rates among children, which is a major risk factor for type 2 diabetes. The diabetes epidemic in the GCC is a subject upon which much ink has been spilled. An astonishing number of residents in the GCC are living today with diabetes or pre-diabetes—a number that has risen sharply in recent years, creating a major health challenge for our society.

The adolescent population as well as their parents are not aware of the relationship between obesity, diabetes, maintaining a healthy lifestyle, nor regular physical activity. Well here it is.

Diabetes—a very commonly heard of disease. It is one of the most widespread chronic health conditions in the world, but many cases are preventable. Many people suffer from diabetes but are still not clear on the management aspect of it. The World Diabetes Day promotes the awareness so that every person with diabetes or at risk of diabetes deserves the best possible quality of education, prevention and care available.

World Diabetes Day (WDD) was introduced in 1991 by the International Diabetes Federation (IDF) and the World Health Organization (WHO) in response to the alarming rise in diabetes around the world. In December 2006, the United Nations recognised diabetes as a global threat and designated 14th November as the World Diabetes Day—a UN Day to be observed every year starting in 2007. The day itself is celebrated on 14th November, to mark the birthday of Frederick Banting who, along with Charles Best, first conceived the idea which led to the discovery of insulin in 1922.

World Diabetes Day brings messages of both hope and concern for children with or at risk for diabetes, for their parents and for the medical personnel who care for them. Good news for the international diabetes community emanates from the exciting advances in our knowledge of the genetics of type 1 (T1DM) and type 2 diabetes (T2DM). Progress in our understanding of the molecular bases and pathophysiology of maturity onset diabetes of the young (MODY) and neonatal diabetes, has allowed introduction of oral medications and freed many children from the discomfort and expense of insulin therapy, and the continuing development of new drugs and new technology for the treatment and monitoring of diabetes has added many valuable tools for our care of this disease.

Counterbalancing these important advances is the evidence that the global burden of diabetes is burgeoning. The incidence of T1DM is increasing in many areas of the world and the prevalence of obesity and T2DM is spiralling to frightening numbers in nearly every industrialised and developing nation. The World Health Organization estimates that, between 2000 and 2030 the total population of the world will increase by 37 per cent while the number of people with diabetes will increase by 114 per cent.

The logo for the World Diabetes Day is the blue circle. The circle symbolizes life and health. The color blue reflects the sky that unites all nations, and it is also the color of the United Nations flag. Hence, the blue circle signifies the unity of the global diabetes community in response to the diabetes pandemic.

So this year, on World Diabetes Day, get aware of this much-heard chronic illness. Read this issue as a first step towards your health care by estimating your risk of getting diabetes along with tips to prevent the onset of diabetes.
Diabetes Control Why is it important?

You’ve probably heard your doctor talk a lot about “diabetes control,” which usually refers to how close the blood sugar, or glucose, is kept to the desired range.

Diabetes Control

One of the most difficult and inescapable lessons facing a person with diabetes, (especially the newly diagnosed) is that you are the one most responsible for your own diabetes care.

TAKING CHARGE OF YOUR DIABETES

DM Raises Awareness on Occupational Health Hazards

Public education plays a key role in raising awareness of public health issues.

Exercise Recommendations

A person with diabetes has abnormal blood glucose, which could have been a result of defects in insulin release, action or both.

Medical Nutrition Therapy

An essential concept

There is a direct correlation between diet and diabetes management.

10 Tips to Healthy Living

Why do I want to be healthy?” People don’t change without a reason, a reason that has a personal meaning.

The most important meal, and more so if you have diabetes

Did your mom always say that breakfast was the most important meal of the day? Turns out she was right.

Know Your Numbers!

How did this happen? Why did it happen? What is diabetes? What do we do?

It Remains Undetected

It is quite likely that some children and youth in developing countries, with Diabetic Ketoacidosis (DKA), die undiagnosed.

The contents of the publication, such as text, images, information, views, recommendations, and details are for general information purpose only. The publication and its contents are not intended to be a replacement for professional medical advice, diagnosis or treatment and disregard professional medical advice or delay seeking treatment because of the content. The advice of a qualified health care provider is absolutely important, especially when you have any questions about a medical condition. Never ever
Diabetic Ketoacidosis (DKA) occurs when there is profound insulin deficiency. It frequently occurs at diagnosis and also in children and youth with diabetes if insulin is omitted, or if insufficient insulin is given at times of acute illness.

DKA results in vomiting, abdominal pain, flushed cheeks, sweet smell on breath (acetone) and dehydration caused by excessive urination (polyuria). Breathing at first is rapid and shallow followed later by deep sighing respirations (Kussmaul breathing). The level of consciousness decreases and coma and death can ensue.

DKA is a medical emergency and treatment should be initiated at the healthcare site of first contact. The child/youth should be transferred as soon as possible to the best available site of care with diabetes experience.

The IDF Life for a Child Programme has introduced a 6-icon poster and invited countries supported by the Programme to participate. The six icons detailing frequent urination, weight loss, lack of energy, excessive thirst, bed-wetting and the later stages of DKA, was developed to alert health professionals to the signs and symptoms of diabetes in order to make a swift diagnosis and provide appropriate treatment to save lives - championing the vision that no child should die of diabetes. Health professionals are the key target audience for this campaign with posters put up in emergency rooms, paediatric wards, treatment rooms, medical and nursing schools, major health centres, paediatrician offices and diabetes centres.

To date, seven countries have distributed posters in various languages and completed successful awareness campaigns in their individual countries. Twelve countries’ campaign plans are in progress, with a further 18 being considered.

It is quite likely that some children and youth in developing countries, with Diabetic Ketoacidosis (DKA), die undiagnosed. The symptoms and clinical findings they present with may be diagnosed as more common illnesses such as pneumonia, gastroenteritis, malaria or typhoid. Also, even when the correct diagnosis is made, it is sometimes very late and the child/youth can die or suffer permanent cerebral damage.
RAHID CENTRE FOR DIABETES AND RESEARCH

Rashid Centre for Diabetes and Research (RCDR), Ajman UAE, managed by Global Health Partner (GHP) Sweden, is committed to improving the quality of life of people with and without diabetes, through raising public awareness and prevention of Diabetes Mellitus.

With reference to the RCDR Mission ‘to improve the quality of life for diabetes patients in the UAE by combining compassionate modern diabetes and obesity care with high quality research, professional education and fostering of community awareness’ and in commemoration with the International Diabetes Federation Theme: “Healthy Living and Diabetes” is the World Diabetes Day theme for 2014-2016.

World Diabetes Day, 14 November, the following objective for World Diabetes Day is planned:

A mobile diabetes awareness screening bus will transit through RAK and Fujairah towards diabetes awareness through screening and education of blood glucose, blood pressure, body Mass Index, A1C, lifestyle intervention and management advice with early referral as required.

Global Health Partner (GHP) is a Swedish, internationally active healthcare provider that operates specialist clinics within spine surgery and spine care, specialist dentistry, obesity surgery and metabolic disorders, orthopaedics and arrhythmia. Between the clinics, cooperation and networks are being facilitated, where the basis for the operations is that high patient volumes within the same area of treatment produce increased efficiency and higher quality. “Quality through Specialization” is GHP’s foundation and the inspiration for realising tangible improvements in healthcare.

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You may have come across talk about diabetes leading to blindness. It is true that people with diabetes have an increased risk of blindness, but at most people are likely to suffer from nothing more than minor eye disorders. Regular check-ups though are crucial in ensuring that the minor problem is kept minor. In the event of a major problem it is absolutely vital you have treatments that work well if you begin them right away.

**Diabetic Retinopathy**

Diabetic retinopathy is a general term for all disorders of the retina caused by diabetes. There are two major types of retinopathy: non-proliferative and proliferative.

**Non-proliferative Retinopathy**

This is the most common form of retinopathy. Here capillaries in the back of the eye balloon and form pouches. Non-proliferative retinopathy can move through three stages (mild, moderate, and severe), as more and more blood vessels become blocked.

**Proliferative Retinopathy**

In some cases, after several years of progress the more serious retinopathy is developed. Here the damage to the blood so severe they close off. The new blood vessels in response begin growing in the retina. These new vessels are weak and can leak blood, blocking vision, and which is a condition called vitreous haemorrhage. The new blood vessels can also cause scar tissue to grow. After the scar tissue shrinks, it can distort the retina or pull it out of place, a condition called retinal detachment.

**How is it treated?**

Huge strides have been made in the treatment of diabetic retinopathy. Treatments such as scatter photocoagulation, focal photocoagulation, and vitrectomy prevent blindness in most people. The sooner retinopathy is diagnosed; the more likely it is that these treatments will be successful. The best results occur when sight is still normal.

**Am I at Risk for Retinopathy?**

Several factors influence whether you get retinopathy:

- **Blood sugar control**
- **Blood pressure levels**
- **How long you have had diabetes**
- **Genes**

The longer you've had diabetes, the more likely you are to have retinopathy. Almost everyone with type 1 diabetes will eventually have non-proliferative retinopathy. And most people with type 2 diabetes will also get it. But the retinopathy that destroys vision, proliferative retinopathy, is far less common. People who keep their blood sugar levels closer to normal are less likely to have retinopathy or to have milder forms.

It is possible that your retina can be badly damaged before you notice any change in vision. Most people with non-proliferative retinopathy have no symptoms. Even with the more dangerous proliferative retinopathy, people sometimes have no symptoms until it is too late to treat them. It is therefore crucial to have your eyes examined regularly by an eye care professional.

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**PROTECTING YOUR SIGHT FROM DIABETES**

Dr. Hani Massoud
Retina Specialist
Sharif Eye Centers

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**BEAT DIABETES**

A Landmark Group Initiative

**Article courtesy Sharif Eye Centers**
**Diabetes Control**

**Why is it Important?**

You’ve probably heard your doctor talk a lot about “diabetes control,” which usually refers to how close the blood sugar, or glucose, is kept to the desired range. What does this mean and why is it important?

**When Diabetes Isn’t Under Control**

Too much or not enough sugar in the bloodstream can lead to short-term problems that must be treated right away, like hypoglycaemia, hyperglycaemia, or diabetic ketoacidosis.

Too much sugar in the bloodstream can cause long-term damage to the vessels that supply blood to vital organs, which can increase the risk of heart disease and stroke, kidney disease, vision problems, and nerve problems.

These problems don’t usually affect kids or teens with diabetes that have had the disease for only a few years. But they can occur in adults with diabetes, particularly if they haven’t managed or controlled their diabetes properly.

Controlling diabetes means keeping blood sugar levels as close to normal as possible. It is a three-way balancing act: Your medications (such as insulin), food, and activity level all need to be balanced to keep blood sugar levels under control. If one of these goes out of control then so will your blood sugar levels.

In general, poorly controlled blood sugar levels can be due to any of the following:

- not taking medications as prescribed
- not following the meal plan like eating too much or not enough food without adjusting medications.
- not getting regular exercise or not making the necessary adjustments in the diabetes treatment plan

when there is a significant change in physical activity level
- illness or stress
- not monitoring blood sugar levels closely enough so that changes can be recognised and addressed promptly.

**The Benefits of Good Control**

The complications associated with diabetes can seem frightening, but the good news is that studies have shown that people with diabetes who keep their blood sugar levels as close to normal as possible have a much lower likelihood of developing diabetes complications.

One large study showed that people with type 1 diabetes who checked blood sugar levels four or more times a day — and adjusted the amounts of insulin and other diabetes medicines, diet, and exercise based on their readings — had a reduced risk of developing eye disease, kidney problems, nerve damage, and high cholesterol levels—a major risk factor for heart disease.

**How to Know if Diabetes Is Under Control**

How do you find out if your diabetes is under control? First, the diabetes healthcare team will tell you what your “target range” should be in terms of blood sugar levels. This is based on factors such as your age and medical condition.

From day to day, the only way to know if your blood sugar levels are close to your target range is to measure them several times a day with a glucose meter. The diabetes healthcare team will recommend how and when to test based on your treatment plan. Checking regularly and keeping an organized and accurate record of the results will ensure that the health care team has the information needed to adjust your diabetes management plan.

Besides daily checks with a glucose meter to measure the current blood sugar level, you might also use the glycosylated haemoglobin test, which shows blood sugar levels over a longer period. The HbA1C test will give you and the health care team information about your blood glucose control during the 2 to 3 months before the test.
Whether you are new to diabetes or you have had diabetes for many years, you know that it is a hard disease to live with. There is always something to do, something to think about or something to worry about. Diabetes can sometimes be relentless and you may often feel as though no one understands what it is like for you.
TAKING CHARGE OF YOUR DIABETES

**Freedom and Responsibility**
One of the most difficult and inescapable lessons facing a person with diabetes, (especially the newly diagnosed) is that you are the one most responsible for your own diabetes care. Unlike most other illnesses, diabetes requires management 24 hours a day, seven days a week. By comparison, there are over 8,700 hours in a year, but, in reality, most people can only reasonably expect to spend few of these hours with their physicians and other healthcare professionals. Your healthcare providers just cannot be there every time you need their advice about a decision you must make. Like it or not (and probably not), this leaves you, the person who has diabetes, in charge. Every day you face many decisions that will affect the way you will feel that day and impact your future health. These decisions include when, what and how much you eat, the timing and level of your exercise and other physical activities and the amount of medicine you take (particularly if you are using insulin). As you make these choices, you also need to take into account external factors such as the amount of stress you are facing at work or at home and whether you happen to be sick or otherwise “under the weather.” Although your healthcare professionals and others can provide sound advice on how to handle each of these situations generally, they probably will not be at your side to help make decisions as you go through day. As you have likely already realized, this places most of the responsibility on you.

But you also have the freedom to make these choices. Freedom and responsibility are two sides of the same coin. As much as your family and friends can be of help and offer support, they cannot manage diabetes for you either. It is up to you. You are free to decide how much or how little you do to care for your diabetes. Because you benefit from the results of your choices, you have the absolute right to make these decisions. Many things in our lives are not of our own choosing. Diabetes is not something most people would choose to have. But while you cannot change having diabetes, you do have choices to make about how you live with it and your attitude towards it.

**Taking Charge**
The responsibility for managing diabetes can feel overwhelming. But there are things you can do to make it easier. Diabetes is a self-managed illness. And the basis for effective self-management is knowledge, not only about diabetes in general but about your diabetes as well. The members of your healthcare team, which includes your doctor, nurse, dietitian and pharmacist, will be invaluable sources of information about how diabetes generally affects people and how it is usually treated. You can also gain valuable information by reading the many diabetes books, periodicals and websites that are available or speaking with other people who have diabetes.

Most people find it helpful to work with their healthcare team to develop a plan to manage diabetes that matches their goals and abilities and also takes into account their likes and dislikes, their customs and beliefs, and all the other aspects of their lives that are important to them.

Be honest about what you can and cannot do. Remember, you are the one who has diabetes and lives with it each day. You are the expert on yourself and your life. You also need to be honest with yourself. It may be tempting to shift the decisions to your healthcare team or blame the people around you for your outcomes. But, when we do not accept responsibility, we become victims of our situation. A reality of diabetes is that you cannot escape this need to become expert on how your diabetes impacts you and your family members.

That is the challenge. It certainly is far from easy, and it takes time and effort. But the end result makes it worth all of the work. Taking charge of your diabetes helps to lighten the burden of daily living in your journey with diabetes. Take charge of your diabetes – don’t let it take charge of you.
Diary of a Practitioner

Dr Hanan Al Suwaidi, Specialist Family Physician

1. Can you try and put in words the effect Diabetes has in the UAE, in terms of people, economy and cost?

Diabetes is a huge and growing problem, and the costs to society are high and escalating. There are different data available on the prevalence of diabetes. According to the International Diabetes Federation, people affected with diabetes in the UAE is 19%. Almost one fifth of the population is affected by it. Diabetes has high impact on the quality of life of a person too. Therefore, the effect on the people is very high. Let’s just give an example of a person affected with diabetes. If he/she does not take care of it, various complications will arise which can range from heart attack, stroke, amputation of the legs etc. The effect is very high in terms of the complication of diabetes. The cost obviously will be extremely high if you try to lessen the effect of complication. For example, for renal failures the person will end up in dialysis, which as we all know is very expensive. The burden of this disease on the family and on the economy is very high.

2. What role can awareness and education play as a solution?

It is an important factor in combating diabetes. This is of course supported by evidence. If people are more aware and they have more information, they will be able to take better decisions and they can lead a better life. Education, involvement, and campaigns can engage people and community to deeply understand the effects diabetes has on the society. Different activities have been carried out to spread awareness on diabetes and its related complications. Such programmes are very important to clear the misconceptions people have about diabetes and its treatment. With the advancement of technology, now it is easy to reach people through social media and all and education programmes can be carried out easily and effectively.

3. What difference would it make to people’s lives when there is early detection?

We are part of the screening programmes that are being done across the governmental sectors to detect the epidemic early. At this stage we can save people’s lives, if a complication occurs. Screening programmes are the major ways to detect the disease early and therefore we can manage the complications earlier and we emphasise on early detection. Media, newspapers, support groups and diabetic forums are also playing major roles in spreading the awareness.

4. What should come together to help combat lifestyle diseases better in the UAE?

This is a public health issue. We need to encourage people to have a healthy diet. There are obviously major challenges. With chronic illnesses, initially the symptoms may not be detected. They don’t have clear symptoms. The bad effect will be happening during this time. Our major aim is to pull people back to lead a healthy life. We have many recreational platforms available and also there are lots of activities going on here organised by different agencies.

5. Is there adequate amount of help and treatment available for diabetic related conditions in the UAE?

Luckily, yes, we have most of the treatments available here in UAE, medications, equipment, etc. We have a good number of specialists who can handle these complications. However, we want to focus on prevention.

6. Are there any educational campaigns in the UAE to make people with diabetes aware of the complications and preventive measures?

Various taskforces have been carried out across the country to standardise diabetes care and management. The Dubai Diabetes Committee looks after anything related to diabetes, whether it is from prevention, campaigns, training the professionals to help them to be comfortable with the treatment of diabetes etc. The aim is to provide a unified diabetes care and management all across the country.

7. What are the challenges and risks you face when dealing with high sugar levels?

I don’t know why some people despite having known that they have diabetes, will ignore it, and do not prioritise their health. We find them ending up with high sugar levels and of course if a patient is having high blood sugar then he will feel tired, which will keep him uncomfortable. To reduce this we need to apply a lot of medications to improve his condition. Here we may face the real challenges. The main thing is to accept that they have diabetes. Some people may be in denial and think they don’t have diabetes. Unfortunately some will have already developed complications. It will be bit late to save one from this condition. I wish that the patients develop a proper communication with the physicians and we are here to help them, not to make their life miserable. On the contrary we want them to lead their lives and have a good quality of life. If they have any questions or doubts they can share it with their physicians and it can be cleared out. We tailor the management according to the patient’s needs. It is a lifelong condition but there’s a lot of things we can offer to help them improve. I encourage everyone to get checked occasionally especially people with family history of diabetes, with obesity etc. In the UAE the prevalence is very high so we check anyone above 18.

8. Could you tell us about healthy living with diabetes?

Anyone can lead a healthy life. Some people with diabetes think that they should stop enjoying their food and their diet. It is very important to be active and to maintain good levels of energy which is mainly obtained from the carbohydrates in the diet. Therefore we advise people to maintain a healthy diet with all the major ingredients and avoid food with high percentage of carbs. Most of our patients when they actually follow a normal balanced diet feel comfortable. It is more about positive feedback. We want people with diabetes to live with it and embrace it and understand its positive and negative sides. Create a lifestyle that is suitable to him/her.

As I mentioned earlier, we have lots of options available now in the medical field. Plenty of modern treatments are there. As per the WHO guideline, we recommend a 150 minutes exercise per week to maintain a healthy weight. They can divide as per the time available. Now there are lot of options like public tracks, clubs etc. Actually you need to invest more time, not money, as we are living in a busy schedule. Think and execute a programme for your own fitness.

9. What is the advice you would like to give to people living with diabetes?

People should not be afraid of diabetes. Don’t listen to rumours. Look for practitioners you can trust. Discuss with them your fears, concerns etc. Keep a good relationship with the practitioners and be a good role model for others, friends, families, and that is how we can bring in a change in everyone’s lives. And of course people can volunteer to donate for the sake of diabetes research and all. Knowledge can be exchanged and to know better we need to do research.
**MASCOT TOYS TO EASE ANXIETY IN CHILDREN WITH DIABETES**

Qatar Diabetes Association (QDA), a member of Qatar Foundation for Education, Science and Community Development (QF), in collaboration with Sasol Qatar, has introduced new educational tools intended to reduce the fear and anxiety often associated with diabetes in young children.

Custom-made for QDA, Salem and Sarah are plush characters developed to provide educational support and comfort for children living with type 1 diabetes in Qatar and across the region; an initiative that supports Qatar Foundation in its mission to be a catalyst for change by leveraging its experiences, knowledge and capabilities.

The toys contain a hidden, zipped compartment on their back where children can keep their diabetic testing equipment, and each toy is accompanied with a backpack and video. Mascots Salem and Sarah have clear injection sites on their arms, legs, and stomach.

Around 1,000 plush toys will be used in QDA camps for children with diabetes, as well as distributed through the Newly Diagnosed Programme in collaboration with Hamad Medical Corporation.

Through the use of these playful learning tools, Sarah and Salem will also raise awareness of the various lifestyle changes that children living with diabetes, and their families, will have to face.

Speaking at a press conference on Sunday to announce the initiative, Dr Abdulla Al-Hamaq, Executive Director of Qatar Diabetes Association, said: “We thank Sasol for their leadership and support, ensuring that this important initiative reaches and impacts the children who need it.

“We have been working on creating educational programmes that provide support to children with type 1 diabetes. We are very grateful that Sasol and The Art of Business brought this idea, as well as offered us the financial support to create these mascots.”

Sasol is an international integrated energy and chemical company that leverages the talent and expertise of more than 35,000 people working in 37 countries. Sasol develops and commercialises technologies, and builds and operates world-scale facilities to produce a range of product streams, including liquid fuels, chemicals and electricity.

Commenting on the project, Marjo Louw, President of Sasol Qatar, said: “Sasol is pleased to support this important programme, in collaboration with the Qatar Diabetes Association. Through our community initiatives, we are committed to help support individuals facing challenges to reach their ambitions.

“I hope these plush toys help children and their families in coping with the diagnosis, providing useful information, and improving their ability to enjoy life’s pleasures. Hope and joy are integral in helping children tackle health challenges.”

Around 16.7 per cent of Qatar’s total adult native population suffers from diabetes with 23.11 per 100,000 children diagnosed with type 1 diabetes, according to data from Hamad Medical Corporation. There is no cure for diabetes, and patients must carefully monitor their blood-sugar levels or risk damaging health complications.

In some cases, poor management of diabetes can lead to blindness, loss of limbs and severe nerve pain.

Diabetes is a condition that children may find hard to understand, especially considering that treatments are complex and daunting. Salem and Sarah are fun, light-hearted character mascots that aim to bring diabetes and its treatment to an approachable and comprehensible level.
Public education plays a key role in raising awareness of public health issues and putting the power into the hands of communities to make informed decisions. However, educational strategies alone will not suffice to address the magnitude and complexity of health problems. Public education can motivate individuals to change behaviours and adopt healthy, active lifestyles.

The Dubai Municipality (DM) is on one such mission to make people aware about the occupational health diseases which they may face while on their work fields.

An ‘occupational disease’ is any disease contracted primarily as a result of an exposure to risk factors arising from work activity. ‘Work-related diseases’ have multiple causes, where factors in the work environment may play a role, together with other risk factors, in the development of such diseases.

“We have started a campaign in March this year to raise awareness about the diseases one can get through their occupation. We will be carrying out the campaign till the end of this year. An analysis will be there on the basis of the study to detect the severity of the diseases. The present plan of action deals with all aspects of workers’ health, including primary prevention of occupational hazards, protection and promotion of health at work, employment conditions, and a better response from health systems to workers’ health,” said Zubaida Mohammed Sharif Ghayathi, Head of Clinic and Medical Services Section, Dubai Municipality.

Clinics & medical services section at the Public Health Services Department of Dubai Municipality also organises health week activities aiming at improving health awareness among its more than 6,000 labourers. The activities include awareness sessions, health clinics, competitions and entertainment items.

“Various programmes we conduct in collaboration with government departments and private companies. We do conduct health weeks as part of DM’s keenness on the health & safety levels of its workers,” said Zubaida Mohammed Sharif Ghayathi. Apart from awareness programmes, DM clinic participates with various health organisers such as DHA, MOH and private hospitals & clinics to support workers to have proper consultations on their health, including dental, chest, men’s, women’s urology and bone.

Dr. Munir Hamad, Senior Practitioner at Dubai Municipality Clinic said such awareness programmes create an opportunity for workers to have a good understanding of health practices as well as knowledge on how to take precaution against possible diseases.

“The major public health challenges are caused by certain lifestyle, occupational, and environmental factors. Future research should focus on population-based public health interventions that target the factors associated with the development of various diseases,” the doctor added.

The doctor urged the need to have a proper lifestyle and a balanced diet for a healthy living. “Most of the diseases can be avoided if we follow a diet rich of vegetables and an active lifestyle, including proper exercises. Instead of going for work outs in a gym we can follow simple exercises like taking the stairs instead of elevators, parking the car at the end of the lot and walk etc. Everybody knows the benefits of proper exercise and balanced diet, but nobody is ready to act accordingly,” added Dr. Munir Hamad.
A ttain and maintain a healthy weight to prevent or delay type 2 diabetes and live a healthy life. Dasha doesn’t have diabetes, but her mother does. This, plus her being overweight puts her at risk for developing type 2 diabetes. She wonders what she can do to prevent developing type 2 diabetes.

Dasha was surprised to learn how a landmark study, The Diabetes Prevention Program (DPP) showed losing a small amount of weight, just 5 – 10% of your weight, can help you prevent or delay type 2 diabetes. If you weigh 91.91 kilogrammes (200 pounds) that means you only need to lose 4.5 to 9 kilogrammes to make a big difference. If you weigh 136 kilogrammes that’s only 7 to 13.5 kilogrammes that you need to lose. This amount is something most people can do. And so can you!

Attaining and maintaining a healthy weight is your real key to success for living a healthy life and for preventing or delaying type 2 diabetes.

You may wonder...’How do I do this? I have so much going on in my life; I don’t know where to start.’ A good place to start is to learn more about healthy living. We often think healthy living is all about food and exercise, but we forget it also has to do with how we think.
1. Ask Yourself Why?
“Why do I want to be healthy?” People don’t change without a reason, a reason that has a personal meaning. Answering this question is the beginning of real change. Some people decide to change when faced with an illness. They recognise if they don’t change, they may not live a long life. Next, answer why you want to live a long healthy life. Many women want to see their family grow up. They want to play with their grandchildren. This motivates them to make changes. Many men want to continue to work, to feel productive. It takes being healthy to do these things. What’s your reason?

2. Make Small Changes
The DPP taught us that small changes add up to make a big difference. Don’t make too many changes at one time. It is best to make one change at a time, make your new change a new habit for you, then add something else. For example, if you don’t usually eat breakfast, start there. Eat breakfast every morning. Do it every day for 21 days (three weeks). Continue with this, and then add something else such as walking a half hour most days of the week. When this has become a regular part of your life, add something else.

3. Be Active!
Long hours at your computer, watching your TV, or driving in a car, may keep you from being active. Be more active by making it a priority. If you live or work in a building that has an elevator, take the steps instead. Plan and take a thirty-minute-walk three days or more a week. If thirty minutes is too much for you, break it up. Try ten minutes three times a day. Walk on the beach. It’s beautiful!

4. Eat Healthy!
Learn about healthy eating. It takes learning and knowledge before acting. Learn the importance of eating vegetables, fruit, lean proteins, and healthy oils such as olive oil and nuts. Choose to avoid or at least cut back on fried foods and processed foods. Eat more vegetables and fruit. Grill, broil, or bake your poultry, fish, and meats rather than fry them. Choose low fat dairy products. Order dressings and sauces on the side. Avoid or cut back on fruit juices, sweet drinks such as regular soda, and energy drinks. If you drink milk, drink an 8 ounce glass rather than a larger glass. Drink more water, unsweetened coffee and tea. And, when learning about healthy eating, learn about how much to eat, which is called portion control.

5. Think Positive!
If you think you can change, you will at least try. For example, if you think you have to lose 45 kilogrammes, you may think you can’t do it, so you won’t even try. On the other hand, if you think you need to lose 4.5 to 9 kilogrammes, that may sound like something you think you can do, and you’ll work on it. Think about and work on what you can do, rather than what you can’t do.

6. Plan and Prepare
Go shopping to make sure you have healthy food in the house and with you at all times. If you’re not prepared, it’s easy to grab for the quickest food available, such as fast foods, which are usually high calorie foods. If having certain kinds of foods in the house make you overeat, don’t keep those foods in the house. They won’t be there to tempt you. Plan time to be active just like you would plan time for a meeting or appointment.

7. Sleep
Getting enough sleep and good quality sleep is linked to good health. Not getting enough sleep can also make you gain weight and increase your risk for type 2 diabetes. Try to get seven to nine hours of sleep at night. And, if you snore, tell your doctor.

8. Say No!
Being able to say no can help you from overdoing, overeating, and being less active. Don’t agree right away. If invited to get involved in a new project, thank the person who invited you. Tell him/her you will get back with an answer. Take some time to think about if you really want to do this, and if you have the time to do it. If you don’t, then say no thank you. This will allow you to have more time for you to take care of yourself. It will give you time to shop, be more active, get more sleep, or just do what you want to do for a change. Avoid going to fast food restaurants and eating fast foods.

9. Remember Family & Friends
Family and friends are an important part of healthy living. They can have a positive impact on you and your health. Make and spend time with your family and friends. You can support each other by serving and choosing healthy food at get-togethers. Bring something you like that is healthy. You’ll be surprised how many others like it too. For example, bring a large salad that has red onions, carrots, cucumbers, tomatoes, strawberries, and sunflower seeds in it. Have olive oil and balsamic vinegar on the side. Or, bring a vegetable platter with broccoli, cauliflower, celery, carrots, and coloured peppers. Have a dish of hummus or Baba ghanoush to dip your vegetables in. When you are together, be active. Put on some music and dance. Play with the children or take a walk.

10. Write it Down!
There is power in journaling (keeping a diary). Write down why you want to be healthy. Write about the things that keep you from living a healthy lifestyle. When you discover these deep secrets about you, you can start a plan to live a healthy lifestyle. So get out your pen and paper, or start clicking at your keyboard now to discover how you can live a healthy life.
Fatima and her husband Abdullah were surprised when their doctor told them that they both had diabetes. Although they have been hearing a lot about diabetes, they didn’t think it would happen to them, and especially not to both of them. They wondered, **How Did this happen? Why did it happen? What is Diabetes? What Do We Do?**

### What is Diabetes?

Diabetes (diabetes mellitus) is a condition in which your body is not able to use and store blood glucose (sugar). Insulin is a hormone that allows your body to use and store blood glucose for energy. When you have diabetes, you don’t have enough insulin to do these things, the glucose stays in the blood and the level rises.

You may not have enough insulin because your pancreas (the organ that produces insulin) may no longer be making enough insulin, or your body resists (fights) the insulin your pancreas makes, or both. Whatever the reason, without the right amount of insulin, your blood glucose level will be higher than normal.

### Types of Diabetes

Yes, there is more than one type of diabetes. The two main types are type 1 and type 2 diabetes. There is also a category called gestational diabetes.

- **Type 1 diabetes** occurs when the beta cells of your pancreas produce very little to no insulin because your body’s immune system has attacked or destroyed them. This used to be called juvenile-onset, or insulin dependent diabetes because it is usually diagnosed when you are a child or young adult, and you will always need to take insulin. Only 5-10% of people with diabetes have type 1 diabetes.

- **Type 2 diabetes** occurs when your pancreas no longer makes enough insulin to keep up with your body’s needs. Most people with type 2 are insulin resistant, which means your body fights against the insulin your pancreas does make, therefore you need more for your blood glucose to be normal. Your pancreas can do this for a time, but then it loses its ability to keep up with the demand. The cause is not completely understood, but genetics and environment both play a part. This used to be called adult-onset because you were usually diagnosed with type 2 at an older age. We now see younger people diagnosed. This is the more common type of diabetes.

- **Gestational diabetes** occurs to some women when they are pregnant. It is because of the

### The Symptoms of Diabetes

There are symptoms of diabetes, but not all people have symptoms. Some people have all of the symptoms, some have some symptoms, and some have no symptoms. Symptoms of diabetes:

- Unusually thirsty
- Unusually hungry
- Increased urination
- Blurred vision
- Less energy
- Weight loss
- Irritable
- Numbness and/or tingling of your fingers and/or feet
- Frequent infections
- Wounds that don’t heal

Because not everyone has symptoms, it is good to know if you are at risk for diabetes. If you have any risk factors listed below, visit your healthcare provider and get tested.

### Blood Testing

<table>
<thead>
<tr>
<th>Blood testing</th>
<th>Normal</th>
<th>Pre-diabetic</th>
<th>Diabetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fasting</td>
<td>70 - 100</td>
<td>101 - 125</td>
<td>&gt; 126</td>
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<tr>
<td>Random</td>
<td>70 - 140</td>
<td>141 - 199</td>
<td>&gt; 200</td>
</tr>
<tr>
<td>A1c</td>
<td>3.5 - 5.5</td>
<td>5.6 - 6.4</td>
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hormones and not enough insulin to manage blood glucose levels. These women didn’t have diabetes before getting pregnant, and the diabetes seems to go away after the baby is delivered. Having had gestational diabetes increases a woman’s risk for type 2 diabetes later in life.

**What should be my blood glucose level?**

For someone who does not have diabetes, a normal blood glucose level after fasting for 8 or more hours is 70-100mg/dL. If you have eaten, your blood glucose is considered to be in the normal range if your blood glucose is less than 140mg/dL two hours after eating. You are considered to have pre-diabetes if your blood glucose is higher than normal but not high enough to be diagnosed with diabetes. Prediabetes is diagnosed when your fasting blood glucose is higher than 100mg/dL but less than 126mg/dL, and more than 140mg/dL two hours after eating, but less than 200mg/dL. You are diagnosed as having diabetes when your fasting blood glucose is 126mg/dL or higher two consecutive times in a row, when your blood glucose two hours after eating is 200mg/dL or higher, or if your blood glucose is greater than 200mg/dL at any time and you have symptoms of diabetes.

The Hemoglobin A1C (A1C) test is a blood test you usually have taken in your healthcare provider’s office, or in the lab. This test gives an average blood glucose level over the past 2 – 3 months. 4 – 6% is considered normal test reading.

**RISK FACTORS**

Risk factors don’t play as big a role in developing type 1 diabetes as much as they do with type 2 diabetes. At this time it has not been proven that you can prevent type 1 diabetes, but there is research to support that you can prevent or delay type 2 diabetes.

**Type 1: Risk Factors**

- Family history - If you have a parent, brother, or sister with type 1 diabetes.
- Autoimmune conditions - If you have an autoimmune disease such as Hashimoto’s disease, celiac disease, rheumatoid arthritis, or Crohn’s disease.
- Islet cell antibodies - If you have the type of antibodies that attack and destroy the beta cells of your pancreas.

**Type 2: Risk Factors**

- Age - If you are over 45 years old.
- Family history - If you have a family member with type 2 diabetes.
- Weight - If you are overweight or obese.
- Waist Circumference
- Physical Activity - If you are not physically active.
- Blood pressure - If you have high blood pressure.
- Cholesterol (lipids) - If you have a high triglyceride level and or a low HDL level.
- Heart disease - If you have heart disease.

After getting answers to these questions, Fatima and Abdullah realised they were both at risk for type 2 diabetes. They are now learning how to manage their diabetes by eating healthy, being more physically active, monitoring their blood glucose, blood pressure, lipids, and taking their medicine as prescribed. Learn how to manage your diabetes by continuing to read Diabetes Positive Living.
Consult your Doctor
People with diabetes should get a thorough checkup for heart and neurological problems before starting a moderate to vigorous exercise programme i.e. more intense than brisk walking. This is especially for those above 40 years, or people who have had diabetes for more than 10 years, or those with complications related to diabetes, or those who have not exercised for a long time. You should consult your doctor or healthcare team before starting an exercise programme.

Types of Exercises
Exercise is a programme of physical activity which increases your heart rate, and requires you to spend energy at a level where one can achieve health benefits. There are three types of exercises which are important for the health and fitness of a person with diabetes.

- Aerobic exercises
- Strength exercises
- Flexibility exercises

Aerobic Exercises
These kinds of exercises involve large muscle groups for the entire time period and cause the heart rate to remain elevated for a longer period. Walking, jogging, swimming and cycling are such exercises.

How Much is Required?
Do moderately intense aerobic exercise - 30 minutes a day, 5 days a week

or

Do vigorously intense aerobic exercise - 20 minutes a day, 3 days a week

Remember that 30 minutes of exercise is all what is required for health and fitness, but to lose weight or maintain weight loss, 60–90 minutes of physical activity may be necessary.

How do you Monitor the Intensity of your Exercise?
To monitor the intensity of your exercise try the ‘Talk Test’. If you are able to sing or whistle while doing the activity, you are active at a light intensity. If you are able to converse comfortably while engaging in the activity, you are active at a moderate intensity. If you are too out of breath to carry on a conversation, the activity can be considered vigorous.

What are Strength Exercises?
Strength exercises are any activity that makes your body muscles to work against an opposing force. It can be done against your own body weight or by using external weights such as dumbbells, cuff weights, elastic bands and weight training machines.

How often should you Practise Strength Training?
It is recommended that you do strength exercises two to three days a week. People with diabetes can choose 8 to 10 exercises, involving all the major muscle groups of the upper and lower body. They can do 1–3 sets of 10–15 repetitions of each exercise.

Flexibility Exercises
These are stretching exercises that prevent the body from injury and help to avoid stiff and sore muscles.

How should one Stretch and what is the Best Time Suitable for it?
You should do stretching exercises only when your muscles are warm. People with diabetes can do stretching exercises three to five days per week or at the end of each exercise session. Examples of stretching are static stretching, yoga or Tai-chi.

Overcoming Barriers
Getting started is an important thing. Starting off with any exercise is better than no activity at all. Overcome your barriers of being active. Try the following tips for incorporating exercise as a part of your life. Engage yourself in activities you enjoy such as swimming, biking, or playing basketball to get your daily physical activity.

Do it in Short Stints
Research shows that moderately-intense physical activity can be accumulated throughout the day in 10-minute stints, which can be just as effective as exercising for 30 minutes straight. This can be useful when trying to fit physical activity into a busy schedule. People with knee arthritis can also resort to this instead of a single long session to avoid knee pain.

Mix it up
Combinations of moderate and vigorously intense physical activity can be used to meet the guidelines. For example, walk briskly for 30 minutes twice a week and jog at a higher intensity on the other two days.

Make Exercise a Habit
For some it might be easier to walk during your lunch hour break, and for others it might be hitting the pavement right after dinner. It is essential to make it just as much a regular part of your schedule as everything else.

Hitting the Gym is Not Necessary
A little motivation is all you need to live a more active, healthier life. Walking is a great way to do moderately intense physical activity.

Make it a Family Affair
Ask your spouse, your children, or a friend to join you during exercise to make the activity more interesting. This is a good way to encourage your kids to be physically active and healthy.
Did your mom always say that breakfast was the most important meal of the day? Turns out she was right. More and more researchers who study the morning meal are finding that breakfast plays a key role in healthy living. And yet many people sacrifice it in their rush to get out the door. As its name implies, the purpose of breakfast is to break the fast between dinner and lunch. Here’s what happens when you don’t eat a morning meal: prolonged fasting to believe that you’ll be eating any time soon. When you finally eat lunch, your body stores it as fat because it thinks, “I’d better save this for later. I don’t know when the next meal will come.” That, of course, leads to weight gain. When you break the fast in the morning, on the other hand, your body can use that food to power you through the day.

Breakfast is the most important meal of the day for diabetics who have high blood glucose levels. At night, the body typically goes without food—a source of glucose—for up to 12 hours. It is during this prolonged period of fasting that the body mobilises its glucose stores in the form of glycogen. This gradual breakdown of glycogen maintains blood glucose levels during the night. However, glycogen stores may be depleted by the next morning. This may spell trouble for people with diabetes who have taken blood glucose-lowering drugs the night before.

As these drugs may still be active the next morning, blood glucose levels may drop further, increasing the risk of hypoglycaemia or low blood sugar. Symptoms include giddiness and irritability. If severe, one may even fall into a coma.

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If you don’t have a lot of time in the morning for healthy breakfast foods, you may be tempted to wolf down a donut and coffee for the extra sugar and caffeine, but this is a mistake. Breakfast should be a meal that provides your body fuel for the next couple of hours. It should be a valuable source of energy, not just quick energy. Breakfast is also a great opportunity to get some fibre, which is good for diabetes because fibre fills you up without raising your blood sugar. That can mean better blood-sugar control and fewer calories. Try to get 7 to 10 grams of fibre every morning as part of a healthy breakfast for diabetes.

If you plan ahead, breakfast may be simply a matter of microwaving food before you leave the house—or, if you are really pressed for time, microwaving your breakfast at work. Try prepping oatmeal the night before. In the morning, you can just add water or low-fat milk and heat. An alternative to the same old oatmeal is to top it with fruit and cheese.

If you do not already eat breakfast start off slow. Don’t start trying to have a big breakfast. It may be starting with a slice of toast for a week and eating more gradually. Spend time figuring out which foods fill you up and which leave you hungry an hour later. Also important is monitoring your blood glucose to see how different meals affect you in the morning. For some people, oatmeal is the perfect quick breakfast. For others, it causes blood glucose spikes. Soon you’ll figure out how to eat to stay full, keep your blood glucose in range—and have plenty of energy throughout the day.
Foods that Boost Your Health

Oats
Many studies show that eating oats and other whole grain foods with fibre offers significant heart-healthy benefits. A study published in the American Journal of Clinical Nutrition showed that people who consumed whole grains in place of refined grains had a lower risk of developing coronary artery disease. To include oats in your daily diet, sprinkle some into meatball or meatloaf recipes, bake them into muffins and cookies or enjoy a tasty bowl of hot oatmeal at breakfast.

Garlic
Garlic contains a substance called allicin that helps encourage a moderate, short-term reduction in total cholesterol, LDL (bad) cholesterol and triglyceride levels, as demonstrated in studies published in a variety of scientific journals. Raw, roasted, dried or powdered garlic can be added to many recipes, including soups, sauces, salad dressings and vegetable dishes. If you take a garlic supplement and will be having a surgical procedure, be sure to discontinue the garlic supplement prior to the surgery. It can thin the blood, which could cause healing problems.

What do oats and garlic have in common?
They could help start a great casserole, but the real answer is far more exciting. These foods may help reduce your risk of heart disease, heart attack and stroke. High blood LDL cholesterol and triglyceride levels increase the risk of heart disease, heart attacks and strokes. This risk is even greater if you have diabetes. Cholesterol is a soft, fat-like substance that can clog arteries and interfere with the flow of blood. It comes in two forms: LDL (bad) cholesterol, which clogs the arteries with plaque, and HDL (good) cholesterol, which helps remove the bad cholesterol from the arteries.

Some researchers believe that the bad cholesterol also may injure the blood vessels when it changes from a liquid solid inside the blood vessels. When this happens, expands and tears the arteries' walls. Healthy food choices, regular physical activity and medicines (if needed) can help you meet the cholesterol and triglyceride goals set by your healthcare provider.

In addition to following a healthy lifestyle and taking medicine as directed, you also can get added help in reaching your heart-healthy goals from some commonly found foods and supplements.

Flaxseed
Flaxseed, the subject of numerous studies, contains Omega-3 fatty acids, which may help reduce triglyceride levels and improve HDL levels. Ground flaxseeds can be baked into muffins or breads or sprinkled onto breakfast cereal or low-fat yogurt. Whole seeds can be used, the greatest when the seeds have been crushed or chewed well.

Fish Oils
Oily fish, such as salmon, mackerel, lake trout, albacore tuna, contain two beneficial Omega-3 fatty acids EPA and DHA. These may help reduce the risk for heart disease cardiovascular disease. Fish oil capsules concentrated doses of the fatty acids EPA and DHA may help reduce triglyceride levels and effectiveness of statin drugs that are used to lower levels. There are many fish oil products available. All of us want to stay healthy. It is nice to know that many common food items and supplements can help you achieve that goal.
Sugar Free Food is not necessarily the kind of food one should be eating when suffering from diabetes. Always read the labels first and investigate all the ingredients before putting it in your basket, as they can have side effects, especially in children.

The nutrition claim “sugar-free” or “made without sugar” may or may not mean calorie or carbohydrate-free. Therefore you need to know what these words mean and check the Nutrition Facts label of products before you drop them in your shopping cart.

These foods fall into several groups:

- made with polyols and other regular sugars
- sweetened solely with a no-calorie sweetener, such as aspartame or sucralose
- sweetened with both polyols and no-calorie sweeteners
- sweetened with regular sweeteners and a no-calorie sweetener

The latter two are increasingly common. Polyols are found in some hard and soft candies, chocolate bars, cookies and ice cream. The names that you see on the ingredient list are sorbitol, mannitol and lactitol. Many polyols have an “ol” ending. The benefits of polyols are that they have fewer calories than regular sweeteners, such as high-fructose corn syrup. They may also cause a lower rise in blood glucose than regular sweeteners. However, according to the ADA’s nutrition guidelines, there are no studies that show that the use of foods with polyols help people with diabetes reduce their intake of calories or carbohydrate. Remember, these foods are sugar-free, but not carbohydrate or calorie-free. And often, they do not lower the calorie or carbohydrate content that much.

It is to be noted that a high consumption of products containing polyols can cause gas and diarrhea, especially in children. For this reason, the FDA requires manufacturers to put a statement about this on some products. Some foods are made with no-calorie sweeteners. Familiar names of no-calorie sweeteners are ascesulfame-k, aspartame, saccharin, sucralose and—the newest—neotame. These sweeteners contain next-to-no calories or carbohydrates. Foods sweetened with no-calorie sweeteners may or may not have calories and carbohydrates from ingredients other than the no-calorie sweetener. Foods, such as diet soda, diet gelatin and powdered drink mixes, contain next-to-no calories.

Other foods sweetened with no-calorie sweeteners, such as hot cocoa mixes, fruit yogurt and maple syrup, contain ingredients other than the sweeteners that may contribute carbohydrates, other nutrients and calories. Remember, it’s always best to use the Nutrition Facts to determine how much carbohydrate is contained in the foods you want to eat!
Medical Nutrition Therapy
An essential concept

There is a direct correlation between diet and diabetes management. Medical nutrition therapy (MNT) is a key complement to traditional diabetes treatment.

The importance of diet in addition to regular diabetes treatment has been well documented. People with diabetes often look to their primary care physicians for advice on general care, including diet, but survey studies have revealed that doctors are uncomfortable advising people on sensitive issues such as weight loss. Research is increasingly demonstrating that MNT, administered by a dietitian or nutrition professional, is a key component of diabetes management.

What is MNT?
MNT is nutritional therapy and counselling services for disease management. It is prepared by a registered dietician or nutrition professional. It is a process of setting priorities, establishing goals, and creating individualised action plans for managing the ailment.

As part of nutrition monitoring and evaluation, a dietician monitors biochemical factors such as A1C and serum lipid levels, as well as lifestyle factors such as dietary intake. These factors are used to evaluate the effectiveness of the therapy in meeting the set goals.

The therapy could be revised based on nutrition-related outcomes. Counselling in MNT is individualised and tailored to a person’s clinical and lifestyle needs.

MNT is not synonymous with diabetes self-management training (DSMT). DSMT is an education and training programme that helps people manage their diabetes, whereas MNT is a more individualised diagnosis, therapy, and subsequent counselling, related to nutrition.

MNT for people with diabetes is administered in several sessions with a dietician who provides a more intensive nutrition counselling and therapy regimen. The sessions rely heavily on follow-up and feedback to assist people with their changing needs.

Importance of Carbohydrates
Understanding the effect of carbohydrates on blood glucose levels is essential to managing diabetes. Carbohydrates in food result in increased blood glucose levels.

If you intend to keep blood glucose levels under check, then you must ensure you maintain the right balance between the foods you eat, your physical activities and any pills or insulin you take. If you take more than your usual intake of carbohydrates then you can expect your blood glucose levels to rise, and vice versa. By striking a balance, you will be at your best, can do the things you enjoy, and lower your risk of diabetes complications.

The three main types of carbohydrates in foods are starch, sugar and dietary fibre. Foods that contain carbohydrates include:
- Beans and legumes
- Grains and starchy vegetables
- Fruits
- Dairy products such as milk and yogurt
- Sweets and snack foods such as chips

Meal planning for diabetes is more than just cutting back on starch or sugar. Having diabetes does not necessarily mean eating the same foods day after day. It is possible to try new foods by adopting right meals.

Carbohydrate counting is a meal planning technique for managing your blood levels. By keeping a record of carbohydrate intake and setting a limit for it, one can help keep the blood glucose levels within the target range.

Finding the right amount of carbohydrates depends on many things including how active you are and what, if any, medicines you take.

How much carbs?
Start with about 45–60 gm of carbohydrates in a meal. The requirement may vary depending on one’s diabetes management. A person with diabetes along with his healthcare team can arrive at the right amount of carbohydrates required. Once the amount of carbohydrate intake is known, one can decide on the food and the portion size to match.

How much carbohydrates are in these foods?
Food labels tell you the amount of carbohydrates in a particular food. In foods without a label, estimate keeping general serving sizes in mind.

For example, there is about 15 grams of carbohydrate in:
- 1 small piece of fresh fruit (4 oz)
- 1/2 cup of canned or frozen fruit
- 1 slice of bread (1 oz) or 1 (6 inch) tortilla
- 1/2 cup of oatmeal
- 1/3 cup of pasta or rice
- 4-6 crackers
- 1/2 English muffin or hamburger bun
- 1/2 cup of black beans or starchy vegetable
- 1/4 of a large baked potato (3 oz)
- 2/3 cup of plain fat-free yogurt or sweetened with sugar substitutes
- 2 small cookies
- 2 inch square brownie or cake without frosting
- 1/2 cup ice cream or sherbet
- 1 Tbsp syrup, jam, jelly, sugar or honey
- 2 Tbsp light syrup
- 6 chicken nuggets
- 1/2 cup of casserole
- 1 cup of soup
- 1/4 serving of a medium French fry

Protein and Fat
- While carbohydrate counting, ensure that you do not miss out on protein and fat. Always include a source of protein and fat to balance out your meal.

Food Labels
Carbohydrate counting is easier when food labels are available. The two most important elements in carbohydrate counting are the serving size and the total carbohydrate amount.
- Look at the serving size. All the information on the label is with regard to this serving of food. In case of a larger serving, one would have to double or triple the information accordingly.
- Look at the grams of total carbohydrates.
- Total carbohydrates on the label include sugar, starch and fibre.
- Know the amount of carbohydrate you can eat, and figure out the portion size to match.
- If you are trying to lose weight, look at the calories. Comparing products can be helpful in finding ones lower in calories per serving.
- To cut the risk of heart disease and stroke, ensure that the amount of saturated and trans fats are low.
- For people with high blood pressure, food with less sodium is advised.

Conclusion
MNT is an effective and increasingly affordable method to prevent Type 2 diabetes and to treat both Type 1 and Type 2 diabetes. It is endorsed for the treatment of diabetes by the Institute of Medicine, the American Dietetic Association, and the ADA. MNT provided by experts through individualised nutrition counselling will improve the quality of counselling being offered.
GOING BEYOND THE EXPECTED IN DIABETES MANAGEMENT

 نحو آفاقٍ أبعد في علاج السكري

SANOFI DIABETES Going beyond together