BUILDING SOLUTIONS TO MANAGE THE DIABETES CRISIS
More than 1 in 3 people with diabetes will develop diabetic retinopathy
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Diabetes voices: reducing my risk of type 2 diabetes

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What you see in the global diabetes landscape depends on your perspective. From the vantage point of distance by a policy-maker in a government office, or even by some “experts” in diabetes, the 415 million people living with diabetes today may be seen as a statistic on a health report. The real crisis can be too easily underestimated, misunderstood and ignored.

In 2011 when the 5th edition of the IDF Diabetes Atlas came out, it had a significant amount of data but one stood out. One person died of diabetes related complications every SEVEN seconds! Then in 2013 when the 6th edition came out, it showed that one person dies of diabetes related complications every SIX seconds!

For people with diabetes, things had become worse!

It is time to come down from the ivory towers and experience the ground realities. Big “talk” and quoting statistics have little value if we do not do initiatives which will improve the lives of all our people with diabetes.

A visit to a diabetes clinic in a low-income urban centre in Bangladesh might clear up any confusion right away. Seated amongst people with bandaged feet, amputations and walking sticks for blindness, one can immediately sense that fighting diabetes is like fighting a war. How about accompanying a child in a Rwandan village to a funeral? The child’s father died from diabetes complications before his 42nd birthday. How will that little boy survive, depending so dearly on the USD 1.50 his father earned each day?

Looking at the ground realities, we would have a truer, more direct sense of the diabetes crisis, leading to solutions to improve diabetes healthcare which could go a long way to change the shape of the current landscape.

The International Diabetes Federation (IDF) has the power to change the current diabetes landscape and influence those in leadership positions with our united and authoritative global voice.

In the 2016-2017 biennium, we will work with determination to ensure our members and partners can work with the governmental health agencies to reach the Sustainable Development Goals – the reduction of premature mortality from non-communicable diseases by one third through prevention and treatment, and the provision of access to quality essential health-care services, providing safe, effective, high-quality and affordable essential medicines for all – thereby helping to create a better world for people with diabetes and those at risk.

Working in the diabetes trenches and facing the day-to-day challenges of diabetes are IDF’s 230 members in 170 countries across the
world. Our members are our greatest strength to ground global advocacy in the realm of local experience. IDFs large volunteer base provides an unparalleled army of medical, allied health professional, scientific and communications experts helping us to better achieve our strategic objectives, particularly in low- and middle-income countries.

IDFs 2016-2017 action plan will focus on our core mission: to be the global voice for diabetes. We will do this through partnership: providing sustainable and strong organisational leadership and philanthropy at the global and regional level; in policy: providing high quality research and policy development for diabetes advocacy; and with presence: providing the best and most authoritative global source for diabetes information.

We will deliver our objectives on diabetes with a strong united voice drawing on our wide membership and the support of our partners in industry and across civil society. We will speak with authority based on our engagement in a wide range of research initiatives covering diabetes care and prevention, epidemiology, statistics, health economics, health education for professionals and citizens, as well as health system reform.

Together, our voice will have presence and be heard in environments where real and lasting change for diabetes awareness, care and prevention can be driven. Our global voice will drive action which creates change to make the lives of people better and help protect those at risk.

Shaukat Sadikot
President 2016-17
International Diabetes Federation
Highlights from WDC Vancouver 2015

An astonishing 177 countries were represented at the International Diabetes Federation’s World Diabetes Congress (WDC) Vancouver 2015, held from November 30 to December 4.

The Congress attracted experts in diabetes from around the world to exchange diabetes research and best practices. Physicians, scientists, nurses, educators and other healthcare professionals, as well as government officials, policy makers and representatives from more than 180 IDF members attended the 2015 conference. Approximately 60% of the Congress delegates were doctors specialising in diabetes; roughly 30% were other healthcare professionals, including educators, dietitians and nurses.

The Scientific Programme consisted of 220 hours of sessions, with talks from more than 350 speakers and over 1,000 posters presentations. Up to 80 global exhibitors presented their latest research, products and medical advances.

Visit www.idf.org/congress to view webcasts, posters and abstracts from the Congress.

World Health Day 2016

World Health Day (WHD) is celebrated every year on 7th April. The first World Health Assembly, held by the World Health Organization (WHO) in 1948, resolved that WHD would be held on this date from 1950 onwards. WHO has chosen diabetes as its theme for WHD in 2016 – for the first time ever.

The WHO website lists four reasons why WHO is focusing 7th April this year on diabetes: the rapidly increasing diabetes epidemic with particular concerns about low- and middle-income countries; the preventability of type 2 diabetes; the treatability of diabetes with the potential to prevent complications and, lastly, the congruence between efforts to prevent and treat diabetes and the battle to achieve the global Sustainable Development Goal 3 target of reducing premature mortality from non-communicable diseases.

The website also lists three goals for WHD: an increase in awareness of diabetes and its consequences; a triggering of specific, effective and affordable actions to prevent, diagnose and treat diabetes and the launch of the first
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global report on diabetes which will describe the burden of diabetes and advocate the strengthening of health systems to combat this immense global challenge.

WHD on April 7th is a golden opportunity for individuals and organisations working for the benefit of people with diabetes and people at risk of diabetes to highlight the importance of all types of diabetes and to continue our efforts for enhanced public awareness and action on behalf of health and other public authorities.

Visit www.who.int/whd/diabetes to view and download World Health Day 2016 materials and resources.
Pre-diabetes and diabetes projected to double in Singapore

A new study by the National Healthcare Group (NHG) of Singapore predicts that, by 2035, the prevalence of pre-diabetes and diabetes among Singapore residents aged 21 and over is expected to be one in four and one in five respectively.

The authors developed a dynamic Markov model based on the clinical course of diabetes using time-dependent rates and probabilities. A one-year cycle over a 25-year time horizon from 2010 to 2035 was used. The model forecasted annual disease burden by simulating transition of cohorts between different health states using prevalence, incidence and mortality rates, disease transition, disease detection and complication rates along with publicly available data and a chronic disease register.

In 2035, the number of Singapore residents with pre-diabetes and diabetes is projected to be 903,596 and 823,802 respectively, more than double that of 2010. The study also projected a further estimate of 733,174 and 100,250 patients with pre-diabetes and uncomplicated diabetes respectively will remain undiagnosed. The prevalence of detected and undetected complications is forecasted to rise from 60.0% in 2010 to 70.2% by 2035.

The authors are calling for the adoption of more aggressive interventions to contain the public health risks associated with diabetes.

NHG is a cluster of restructured public institutions providing primary (polyclinics), secondary (community and general hospitals) and tertiary (specialist hospitals) care.

Reduced risk for future type 2 diabetes

The ability of people to resist the consequences of psychological stress and cope effectively with life challenges might be associated with reduced risk of future type 2 diabetes, according to a very large Swedish study of young men followed-up into middle age. The study findings suggest that, if a relationship exists, the magnitude of its effects is quite variable.

The researchers utilized an extensive database of young men undergoing compulsory conscription into military service. Part of the process involved a psychological examination in which recruits were interviewed individually about their attitudes, backgrounds and experiences.

Assessments were made by trained interviewers of each person’s emotional stability, independence, persistence and social maturity, from which a stress resilience score was derived.

In the analyses, more than 1.5 million healthy 18-year-old men were followed-up for an average of 25.7 years, with type 2 diabetes diagnoses being extracted from hospital and outpatient registers. About 34,000 men developed type 2 diabetes over the study period and an inverse association between stress resilience and future type 2 diabetes was found.

Psychosocial stress in adulthood is associated with a higher risk of type 2 diabetes, possibly mediated by behavioural and physiological factors. These study findings suggest that low stress resilience may play an important long-term role in aetiological pathways for type 2 diabetes. Further elucidation of the underlying causal factors may help inform more effective preventive interventions.
IDF Board of Directors 2016-17

The International Diabetes Federation, the largest global voluntary health organisation advocating improved diabetes awareness, education and care, is pleased to announce the members of its Board of Directors for 2016-2017.

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Anil Bhoraskar (India)  Chair, South East Asian Region
Wayne HH Sheu (Taiwan)  Chair, Western Pacific Region
Obesity in children on rise in developing countries

Obesity in developing countries is on an alarming upward trend, according to a recent report by the World Health Organization (WHO). Globally, in 2013, the number of overweight children under the age of five, is estimated to be over 42 million. Close to 31 million of these are living in low- and middle-income countries. An upward future trend is expected.

A report for the WHO Commission on Ending Childhood Obesity (ECHO) found that almost half of overweight children under the age of five lived in Asia, while some 25% were in Africa. The Commission said the marketing of unhealthy food and drinks was a major contributor. ECHO’s report notes that, in wealthier countries, poorer children are more likely to be obese, partly because of the better affordability of fatty fast food and high-sugar snacks. In poorer countries, meanwhile, the children of wealthier families are more likely to be obese, especially in cultures where “an overweight child is often considered to be healthy.”

As a result of obesity, ECHO said, many children faced obstacles in their life that would continue into adulthood. “Overweight and obesity impact on a child’s quality of life, as they face a wide range of barriers, including physical, psychological and health consequences,” Sania Nishtar, ECHO Co-Chair, said in a statement.

The ECHO report proposes policy recommendations to address three strategic objectives. The first is to tackle the obesogenic environment; the second to reduce the risk of obesity during critical periods in the life-course – preconception and pregnancy, infancy and early childhood, and older childhood and adolescence; and the third is the provision of treatment for children who are obese to improve current and future health. The life-course approach is a new and central dimension to ECHO, calling for the integration and strengthening of current guidance to promote breastfeeding, healthy diet, sleep, and physical activity during infancy and early childhood, as well as for comprehensive programmes for school-age children and adolescents.

The ECHO report reiterates that a new emphasis on childhood obesity can be achieved through integration with existing WHO and other national, regional, and global initiatives. ECHO recommendations are placed within the framework of the Sustainable Development Goals (SDGs), calling for an end of malnutrition in all its forms, reducing premature mortality from non-communicable diseases, and achievement of universal health coverage. ECHO encourages engagement with all stakeholders to address childhood obesity, including the private sector, and is the first implementation-orientated report to be based on the new standards of the SDGs.

Review: Availability and affordability of insulin are problematic

A recently published review in The Lancet (February, 2016) examines factors contributing to the problems of availability and affordability of insulin worldwide. Entitled, “Constraints and challenges in access to insulin: a global perspective”, authors David Beran, Margaret Ewen, and Richard Laing assert that although insulin was discovered in 1921, the drug is
unobtainable to many people with diabetes worldwide. Today, access to the lifesaving medication is poor despite the United Nations (UN) Sustainable Development Goals to address the global problem of morbidity and mortality from non-communicable diseases (NCDs) including diabetes.

A target established by the global action plan for the prevention and control of NCDs (2013–2020) states the need for “an 80% availability of the affordable basic technologies and essential medicines, including generics, required to treat major non-communicable diseases in both public and private facilities.” Targets to treat HIV and AIDS, malaria, tuberculosis, as well as for contraceptives and vaccines, have already been reached in many settings, but are far from being achieved for NCDs. “Today, more than 90 years later, poor access to insulin translates into a life expectancy for a child with type 1 diabetes in sub-Saharan Africa as low as one year,” the author’s state.

Factors contributing to poor availability include: market domination by three multinationals restricting price competition; regulatory aspects on biosimilars as well as patents on insulin devices; mark-ups and taxes within supply chain and the consequent lack of affordability.

In countries where patients have to pay, the average annual cost was USD 35.40 (USD 2.60–141.44) in the public sector and USD 95.71 (USD 6.89–218.40) in the private sector. Affordability in low- and middle-income countries is complex because often the cost of insulin is unaffordable to those who live below the poverty line. In developed countries, such as the USA, 27% of people with diabetes who stopped their use of insulin reported no money to buy, and 5% were sparing their insulin supply. In most cases, this leads to both a higher risk of complications and the risk of early mortality.

What can non-communicable diseases learn from the HIV/AIDS response? Availability of low-cost generic medicines for HIV/AIDS has provided a saving of 50%, helping to scale-up treatment. The World Health Organization (WHO) developed a generics prequalification scheme to provide for good manufacturing practices and quality and efficacy standards for many drugs, particularly antiretrovirals, but insulin is not included in the scheme.

Affordability isn’t the only issue, attainability is also a significant yet parallel barrier. Global control of insulin can mean that countries have a smaller number of suppliers to choose from; smaller government budgets versus the high cost of insulin; poor in-country distribution and finally, unmet needs in lower levels of a national healthcare system.

The authors’ call to action includes prioritization of universal health coverage benefit packages and the development of a WHO prequalification scheme and regulatory framework for biosimilars and insulin.
Europe

In January, the IDF European Region participated in high-level meetings in Malta to gather support for making diabetes a priority for the upcoming Maltese Presidency of the Council of the European Union in 2017. Our heartfelt thanks go to the Maltese Diabetes Association for facilitating these important contacts. Of note, the Maltese National Strategy for Diabetes has just been released. Following IDFE World Diabetes Day events at the European Parliament last November, a Written Declaration focusing on diabetes has been promoted by MEP (Member of the European Parliament) Nicola Caputo.

A meeting of the European Union Diabetes Working Group (EUDWG) took place on February 3 2016 at the European Parliament in Strasbourg, bringing together MEPs and EU Commissioner for Research, Science and Innovation, Mr Carlos Moedas.

South & Central America

On January 26-31 2016 in Cochabamba, Bolivia, the 7th National Camp for Children and Adolescents with type 1 diabetes, called “Friendly Camp Bolivia 2016”, was held. Around 60 participants attended the camp where educational and recreational activities were enjoyed during the four-day experience.

The IDF-SACA Young Leaders in Diabetes (YLD) helped reinforce the Latin-American bonds for diabetes care and advocacy in the region. Members from the YLD included, Natán Pereira Gutiérrez, Laura Ortiz (Sociedad Boliviana de Endocrinología); Melisa Ramirez and Exequiel Ramirez (SAD Argentina) and Tania Campos (FUPADI - Fundación Paraguaya de Diabetes).

Special thanks to Fundación Vida Plena from Cochabamba, Dr Patricia Blanco, Santa Cruz Health Department for NCDs, Dr Roxana Barbero and her team.
In Chile, the Chilean Health Commission unanimously approved help for people with type 1 diabetes who require, but cannot afford, the cost of an insulin pump, estimated to be five million pesos (USD 7,200).

The Sociedad Chilena de Endocrinología y Diabetes stated that all the work developed with the National Health Fund on cost-effectiveness studies made the approval of the insulin pump possible for people in need.

“The insulin pump improves quality of life, increases life expectancy, and reduces complications and future costs,” said Dr Patricio Davidoff, Head of the Nutrition, Metabolism and Diabetes Unit at Clínica Lo Curro.

In Uruguay, a new initiative by the Asociación de Diabéticos del Uruguay (ADU) is offering a diabetes identification card (ID) for its members. ADU has future plans to link the ID cards to what would be the first national registry for people with diabetes.

In April 2016, ADU will begin to offer the ID card to members. The objective of the card will be to help people in critical or emergency situations with diabetes identification, thereby assisting medical professionals with quick evaluation.

The campaign is shared by Sociedad de Diabetología y Nutrición del Uruguay and Sociedad Uruguaya de Endocrinología Médica. The programme has been made possible thanks to the support of Correo Uruguayo and the sponsorship of Bayer and Sanofi.

Western Pacific

The 11th IDF-Western Pacific Region (WPR) Congress and the 8th Asian Association for the Study of Diabetes (AASD) Scientific Meeting will be held on October 27-30, 2016 at the Taipei International Convention Centre in Taipei, Taiwan. The Congress will be held in conjunction with the Chinese Taipei Diabetes Association (CTDA) and the Taiwanese Association of Diabetes Educators (TADE).

The CTDA and TADE are pleased to present the following programmes: the Asia-Pacific Diabetes and Obesity Study Group (APDO) Symposium, the Study Group of Molecular Diabetology in Asia (MDIA) Symposium, the IDF-WPR Asia-Pacific Diabetes Epidemiology and Education Training Course and the IDF-WPR “Train the Trainer” programme.
Q&A: FIVE QUESTIONS ON THE IDF DIABETES ATLAS 2015

Meet Nam Han Cho, President-Elect of the International Diabetes Federation (IDF) and the Chair of the IDF Diabetes Atlas Committee for the 7th edition, who welcomed the opportunity to answer questions about the new *IDF Diabetes Atlas*, and the methodology used to generate estimates.

What was most alarming about the *IDF Diabetes Atlas 7th edition* for the IDF Diabetes Atlas Committee of which you are Chair?

One critical feature about the 7th edition of the *IDF Diabetes Atlas* is that the data shows a continued increase in the prevalence of diabetes. Today, we know that 415 million people (one out of eleven adults) have diabetes and every six seconds a person dies with diabetes. Moreover, every two seconds a new case of diabetes is diagnosed somewhere in the world. This is most alarming and the whole world needs to know about it and take action.

What is significant about the 2015 data? It is the first time IDF has produced a confidence interval to show the range of diabetes cases. Scientists are fully aware that the *IDF Diabetes Atlas* is on track, and understand the validity of the numbers IDF has been reporting since 2000. This is one important aspect of the 7th edition that differentiates it from previous editions.

Which countries or regions today are most critically affected by the diabetes epidemic?

Regions like North America have a high prevalence, but number-wise, the Western Pacific Region, the most populous region of the world, has the greatest number of people living with diabetes totalling 153 million. With 1.9 million deaths among adults with diabetes, the Western Pacific Region had the highest number of deaths due to diabetes. More than 40% of those deaths occurred in China in people under 60.

However, I think more importantly, diabetes is affecting all regions, not just one specific region. One region tends to have more diabetes cases than others at the moment but, for example, the diabetes cases in the Africa Region are increasing very fast! We estimate that more than 14 million people live with diabetes in the (sub-Saharan) Africa Region and two-thirds of this population are estimated to be undiagnosed. However, data sources for this region are very few - more than 75% of all countries in the Africa Region lack nationwide data. This deficiency in reporting must change.
for the future health of the people living in these 49 diverse countries and territories.

Let’s not focus on one regional crisis. The diabetes epidemic is on increase all over the world. It is a global issue.

It has been suggested by a few key opinion leaders in the diabetes community that the 7th edition has limitations including underestimated prevalence and country estimations based on inexact modelling. Can you discuss? In your view, what are the greatest barriers in attempts to report data for the global diabetes crisis?

This question is more of a methodological issue; so called sensitivity analysis. With a sensitivity analysis you probably get a better estimation when you include more risk factors in the model. For example, the level of obesity in each country, age distribution of each country, or family history in the country. But all those details are very difficult to know unless national data is reported. Unfortunately, we have learned that existing publications, especially in developing countries, are so limited. Because of this gap, we used data coming from neighbouring countries and adapted the estimates to provide the country’s rate. So of course, when you do that there are limitations but there is nothing we can do about it.

In this edition, we included many new concepts by giving them a weight. For example, if there was a nationwide publication we gave it more weight than for a localized publication. And if the publication was issued within the past three years we gave it a different weight than for an older publication. If data was based on the oral glucose test versus fasting insulin or a randomised glucose test we gave different weights for the studies depending upon the significance of the data.

It seems that scientists around the world think IDF’s approach is the right way to manage insufficient data and we believe it works.

If the current trends in diabetes prevalence continue, by 2040 some 642 million people, or one adult in ten, will have diabetes. Given that 75% of all people with diabetes live in low- and middle-income countries, what cost-effective measures are most critical for the future health of these countries?

It is a very tough question because, as you say, 75% of all people with diabetes today live in low- and middle-income countries.

This indicates that there are insufficient screening programmes or awareness initiatives in these countries. Screening programmes and prevention initiatives are the most cost-effective way for measuring diabetes risk. In low- and middle-income countries, there are
limited or no resources at all so this is difficult to resolve.

The development of diabetes care or education materials for low-income countries is a priority for IDF. We have several diabetes education and care programmes for countries that can afford the additional cost, and today we are in the process of helping low- and middle-income countries find better solutions for highlighting risk, detecting the undiagnosed and building stronger prevention programmes.

What do you view as the next step for diabetes epidemiology research? In looking ahead to the 8th edition, what data has been missing and is most critical to source?

I would like to cover more than just diabetes epidemiology issues in *IDF Diabetes Atlas 8th edition*. We do have a good methodology in hand now, and I am sure there will be new scientific reports coming out in the next two years with an ambitious focus on countries that are lacking their own data.

For diabetes morbidity we do not have much information on diabetes complications of the foot. There are a lot of publications coming out on diabetic retinopathy, but they are all coming from developed countries not the low- and middle-income countries.

Epidemiology or the measuring of frequency and prevalence of diabetes is solid, so that is not a problem. I believe we should cover diabetes morbidity and mortality with greater emphasis in the 8th edition.

Nam Han Cho is President-Elect of the International Diabetes Federation for 2016-17.
The authoritative resource on the global impact of diabetes

IDF DIABETES ATLAS
Seventh Edition
2015

www.diabetesatlas.org
THE GLOBAL CAMPAIGN

OVERCOMING DIABETES STIGMA AND HEALTHCARE INEQUALITY

Cajsa Lindberg

Our world needs an initiative like the Young Leaders in Diabetes (YLD) Programme and our goal is clear. We exist because we are helping to build awareness about diabetes worldwide and give young people with diabetes the opportunity for a healthy future.

In my short time as President of the YLD Programme, I have learned that IDF’s young leaders are enormously passionate and dedicated to fighting the global burden of diabetes because there are a multitude of problems that need solutions now.

Thousands of people around the world today are fighting to survive because they cannot access or afford the life-sustaining medication that helps to keep them alive. Despite being around for nearly 100 years, insulin is not always accessible to all people living with diabetes that require it, including many members of the YLD. Listening to their stories is heartbreaking and enormously frustrating. One desperate story came from the experience of a young leader who could not afford modern synthetic insulin, forcing a return to the use of traditional pork insulin, which is considered to have less therapeutic efficacy. Even in countries where insulin and diabetes supplies are available, there are huge inequalities in terms of quality of care, psychological support and access to medical devices. It is evident from reports around the world that the needs of many people with diabetes - children, young adults and adults - are simply not being met.

Elizabeth Rowley, a young leader from the United Kingdom, founded T1 International, an advocacy organisation whose mission is to improve access to insulin, diabetes supplies, medical care and education for people living with type 1 diabetes worldwide. One of T1 International’s initiatives includes raising awareness about the healthcare inequalities facing people with type 1 diabetes who cannot afford or access vital diabetes medication and supplies through #insulin4all.

There is also a huge lack of knowledge and awareness of diabetes in society today. The many misconceptions and prejudices that people with diabetes have to deal with are frustrating. It can contribute
to low self-esteem and a feeling of being a burden on society. The lack of knowledge also means that many people are ashamed to be open about their diabetes for fear of rejection by loved ones or discrimination at school, work and in social situations. For many young people, living with diabetes also means having to deal with that overwhelming sense of loneliness that comes from being different, something that can erode self-confidence and a sense of meaningful place in this world.

Ashley Ng, another young leader from Australia, is a huge advocate for reducing diabetes stigma and discrimination and often writes about it on her blog, Bittersweet Diagnosis. As part of her project, she started and moderates a support group for young adults with type 2 diabetes, a population that is largely misunderstood, isolated and stigmatized. This support group provides members with a feeling of community, helping to reduce isolation while providing a platform for them to share experiences and ideas on raising awareness.

The need for an initiative like the YLD Programme is clear. We exist because young people with diabetes should be able to live life on the same terms as everybody else. It is our duty as young leaders to speak up against these injustices. When my two years as YLD President are over, I hope to have contributed in building a strong and sustainable program that will continue to improve the lives of young people with diabetes all over the world. The YLD Programme should support the development of future leaders of the diabetes community and empower them to fight for health and human equality, not only for their own rights, but for the rights of all people with diabetes. My hope is that YLD members will continue to strive for change on a local, national and global level today, and will continue their important work in leadership roles within diabetes organisations and communities throughout the world tomorrow.

The YLD Programme is a united and passionate movement that speaks with one voice to fight discrimination and advocate for improved awareness and access to insulin and proper care. I am absolutely honored to be working alongside them as their President.

Cajsa Lindberg is President of the IDF Young Leaders in Diabetes Programme.
We must never forget that it’s not all bad news that the number of people living with diabetes in the world continues to rise. At least some of this has a good news element – people with diabetes are living longer (albeit many with established complications). There are some grounds for muted celebration in the battle against diabetes complications – just half a cheer for the moment. The burden is still too formidable and there is too much uncertainty about the present position to merit more than that.

We know that the devastating long-term complications of diabetes can be prevented or at least their onset significantly delayed by a combination of strategies and activities, all of them conceptually simple but often difficult to put into practice. They are: the prompt diagnosis of diabetes; effective control of blood glucose, lipids and blood pressure; anticipatory foot, renal and eye care; attention to diet and physical activity and avoiding tobacco use.

Lower limb amputation

This devastating complication of diabetes provides the clearest picture of some improvement over recent years. This is partly because it is, in many countries, well documented in hospital in-patient databases. The review by Moxey and colleagues,1 while confirming that the risk of amputation in people with diabetes is still at least ten times that in people without diabetes, showed significant reductions in amputation rates in populations served by specialist foot clinics. It may well be that amputation rates have fallen by as much as 50% over the past 10 to 15 years. However, risks are still large and the data available are mainly just for the high-income countries of North America, Europe and Australia. The picture in most low- and middle-income countries is unclear. An exception to this is Pakistan which has seen a marked change recently in the availability of foot care and in which amputation rates in people with diabetes are reported to have almost halved between 2008 and 2010.2

Diabetic retinopathy

There are some grounds for optimism here, too, but this optimism needs to be tinged with caution in that improvements are only documented in populations in which there is an emphasis on good metabolic control and in which eye examinations, sometimes through regular screening, can be backed up by the availability of laser treatment. An example of success is the halving of the overall incidence of blindness (between 1999 and 2008) in Israel.3 As the authors of that report comment, the decline they observed resulted mainly “from age-related macular degeneration, glaucoma, diabetic retinopathy and cataract”.

Many aspects of the UK National Health Service need fixing but it is heartening to realise that the combination of universal health coverage, a national retinal screening programme and
and ophthalmological back-up with laser treatment for all who need it has meant that diabetic retinopathy is now no longer the most common cause of blindness in working age people in England and Wales. That doubtful accolade now goes to inherited retinal disorders.

**Nephropathy in youth and end stage renal disease in adults**

There is much less optimism in terms of nephropathy as a complication of both type 1 and type 2 diabetes in US youth. Of 96,171 commercially insured patients aged less than 18 years with diabetes, 3,161 were recorded as having nephropathy. The annual prevalence of diabetic nephropathy over the years studied (2002-2013) trebled (to 3.44%). Some of this increase may be accounted for by better identification and recording of kidney disease. However, any true increase in this patient group is, as yet, unexplained and is of great concern.

The incidence of end stage renal disease (ESRD) is dependent not only on the quality of diabetes care (particularly in relation to the early identification of nephropathy and the quality of the management of hyperglycaemia and hypertension) but also to the availability of renal dialysis and organ replacement. There is evidence that, at least in the USA, changes in the incidence of ESRD have occurred in recent years – a decrease among younger adults with rates of ESRD more common now in older than in younger adults. Of course, with the rise in diabetes prevalence seen in most countries, the absolute numbers of people living with diabetes who have ESRD has risen as have the rates in the USA when expressed in relation to the total population rather than the diabetic population. In some communities (such as first-nation Australians with diabetes), the numbers of people needing dialysis is most concerning.
Cardiovascular disease

One of the possible reasons for the increase in ESRD rates seen in older people with diabetes in the USA may be the result of declines in mortality from acute myocardial infarction. This change was the most prominent reduction reported by Gregg et al.\(^5\)

Unfortunately, the position in low- and middle-income countries is again unclear. Realistically, and given the way that the worldwide “epidemiological transition” in long-term conditions is playing out, it would be wise to be cautious and be on our guard for a continued rising tide of heart disease and stroke in people with diabetes living in these countries. Furthermore, these life-threatening complications will be affecting relatively young people who are economically active and have family responsibilities.

Overall, therefore, there is some justification in celebrating limited success in the battle against the long-term complications of diabetes but only in some places and in some people. Three cheers are certainly not justified, nor two nor even one. One half cheer, however, just might be.

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References

HEALTH DELIVERY

THRIVING, NOT JUST SURVIVING

Jason Baker and Graham Ogle

Until recently, survival rates for children with diabetes in many African countries were dismal – few survived to adulthood. Now, due to dedicated efforts of local centers, supported by IDF Life for a Child (LFAC) Programme and other programmes, this situation is happily changing. Numbers are rapidly rising in various countries. But what happens when these young people age-out of these programmes, which by necessity have age limits as otherwise they cannot support newly-diagnosed children? Most government health services can’t yet provide the insulin and other supplies needed at an affordable cost. The young adult must purchase them, and often they simply can’t afford them.

However, if they can gain an education and skills so that they can earn an adequate income, they can look after themselves – problem solved! This is easier said than achieved but it can be done, if people believe in these young men and women, encourage them, and provide them with vocational training and microcredit opportunities. The charity Marjorie’s Fund has taken up this challenge, fostering these initiatives and also providing ongoing diabetes education. In Rwanda, this involves support and enhancement of the unique programme of the Rwandan Diabetes Association, a six-month residential programme that provides vocational training and diabetes education programme for young adults supported by LFAC.

Marjorie’s Fund also has innovative programmes underway in three other countries. These efforts are reaping benefits one by one, young adults with diabetes are also thriving, in turn inspiring the younger children coming after them.

Marjorie’s Fund

Imagine being a young adult, whose family must choose between paying to treat your chronic, long-term medical condition or having shelter, food on the table or educating your siblings. Tragically, these types of family decisions will direct the trajectory of your life with type 1 diabetes into independent adulthood. Will you struggle to survive or will you have a chance to fully realize your potential and thrive?

Marjorie’s Fund is a leader in the effort to
empower adolescents and young adults living with type 1 diabetes to effectively manage their condition and thrive. In many parts of the world, support programmes that exist to help children with type 1 diabetes obtain medications, testing supplies, and education on diabetes management, have a cut-off for people at age 26. Frequently there is a dearth of local infrastructure, programmes or economic opportunity to enable young adults with type 1 diabetes to obtain essential but very expensive diabetes care.

Without adequate supplies and support, these young adults inevitably become chronically unwell and develop devastating complications in their early lives. The cost is high and despite generations of family members sharing the economic burden, the struggle almost always ends in a painful, untimely and early death. Marjorie’s Fund is fighting to change this unjust circumstance.

Marjorie’s Fund was founded in memory of Marjorie Namayanja—a Ugandan health educator and advocate whose story epitomizes the struggle between life and death, between surviving and thriving, and is the inspiration behind Marjorie’s Fund. Marjorie was just three years when she was diagnosed with type 1 diabetes. She was provided with enough insulin and glucose testing supplies to allow her to survive into young adulthood, but not enough to avoid diabetic complications. She was just 29 years old when she died, succumbing to diabetes-related kidney failure.

Marjorie required weekly dialysis treatments to stay alive, but could only afford a few, infrequent sessions, leading to a slow, painful death. Throughout this unpleasant time, Marjorie continued her efforts to educate both patients and healthcare providers on how to better manage type 1 diabetes in hopes of preventing others from suffering her fate. Until her premature death, Marjorie recounted her story as a speaker at various medical conferences and fought to change a system which had limited her own care because of a lack of resources.

Marjorie continues to touch the lives of others with type 1 diabetes through Marjorie’s Fund. We promote diabetes self-management and directed methods to obtain sustainable access to diabetes treatment resources. We aim to help patients residing in resource-poor settings create viable means for diabetes care and ultimately impact their likelihood of leading productive lives.

We provide financial and curriculum support to the Rwandan Diabetes Education Center (RDEC), an initiative started by the Rwanda Diabetes Association (Association Rwandaise des Diabetiques). A novel education programme has been developed where students are taught to be proficient in diabetes self-management skills, learn how to grow diabetes-friendly foods, and learn a trade to help support the cost of their insulin and diabetes testing supplies.

Early results from evaluations of the Center’s graduates are promising. A case in point is Marie...
who was diagnosed with type 1 diabetes at the age of 17 in a small village outside of Kigali, Rwanda, and was struggling to survive. After graduating from the RDEC and armed with diabetes self-management training and baking skills, she started a small business selling baked goods to her local village. Marie earns enough money to purchase her insulin and glucose testing supplies, and has a garden where she grows vegetables using agriculture skills she learned at the Center. She now has home, food, and health security and is looking ahead to a bright future.

Masereka Robert of Kasese, Uganda, now 27 years old, has lived with type 1 diabetes since the age of 17. As a teenager living in an isolated, rural region of Uganda on the border with Congo, Robert received insulin and testing supplies from programmes targeting children. Eventually the time approached when he would be aging out of this support. In order to survive, Robert worked as a barber, earning enough money to purchase a small supply of insulin and testing strips, just enough to keep him alive.

Robert realized a need to mobilize his local diabetes community to give himself and them a better chance to thrive so he co-founded the Diabetes Consultation Association (DCA) with the goal of providing education, improved diabetes treatment supply allocation, and the chance for better economic health to local people living with diabetes. Significant barriers exist, however, to achieve this lofty ambition and to help the 100 DCA members living with type 1 diabetes find the care they need.

Since 2013, Marjorie’s Fund has collaborated with Robert, the DCA and the nearby Kagando Mission Hospital to enhance healthcare access and emergency diabetes supply provisions for people living with type 1 diabetes. Marjorie’s Fund is now forming the Marjorie’s Fund Diabetes Education Center in Kasese, Uganda using the pioneering and unique model established at the RDEC.

Marjorie’s Fund also supports similar educational initiatives in India, The Gambia and in the United States. In New York City, it is working to build a larger support network for adolescents and adults living with type 1 diabetes, and linking them to international beneficiaries to create a larger and more intimate diabetes support community.

The amazing success of programmes targeting children living with type 1 diabetes has increased the number of adolescents and adults surviving with type 1 diabetes in resource-poor settings, most of whom need help. Marjorie’s Fund is interested in ensuring that the management of type 1 diabetes care is improved, regardless of economy, geography or age. Those involved in Marjorie’s Fund want children with type 1 diabetes to not only survive childhood, but to live long, healthy, productive lives and thrive as adults. Marjorie’s poor access to care ultimately succumbed to her complications, but with the help of Marjorie’s Fund others need not.

For further information on Marjorie’s Fund and how to help their initiatives, visit www.marjoriesfund.org.

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Graham Ogle is General Manager of the IDF Life for a Child Programme.
TB AND DIABETES: RISKS, MANAGEMENT AND IMPROVING OUTCOMES

Lydia Makaroff and Maria Hein Hegelund

This World Tuberculosis (TB) Day, March 24 2016, the World Health Organization (WHO) is calling for renewed commitments and action in the global fight against TB – one of the world’s top infectious killers. While effective diagnosis and treatment of TB saved an estimated 43 million lives between 2000 and 2014, TB remains one of the world’s biggest threats, with 1.5 million people killed by the disease every year. The WHO End TB Strategy, adopted by the World Health Assembly in 2014, serves as a blueprint for countries to reduce the number of TB deaths, cut new cases and ensure that no family is burdened with catastrophic costs due to TB.1

The association between the global diabetes epidemic and the high number of TB cases, particularly in South-east Asia and the Western Pacific, is a global public health concern. Prevalence of diabetes is increasing globally, and almost half of the 415 million estimated to have diabetes worldwide are undiagnosed. Considering that 75% of the total number of people with diabetes live in low- and middle-income countries, 2 it is of great concern that these same countries also struggle with high rates of TB.

TB is a bacterial infection that can spread through the lymph nodes and bloodstream to any organ in your body, although it is most often found in the lungs. TB is spread in the air when people who are sick with pulmonary TB expel bacteria, for example by coughing.

Most people who are exposed to TB never develop symptoms because the bacteria can live in an inactive form in the body, but 5-20% of infected people will develop active TB over their lifetime. Active and untreated TB can kill many of those infected. Active TB is associated with a suppressed immune system, as seen in people with diabetes.2 It is for this reason and the growing number of people affected that places type 2 diabetes in the category of a high TB risk factor, adversely affecting both the presentation and treatment response to the disease.

Diabetes increases the risk of active TB

People with diabetes have a 1.3 to 8.9 times increased risk of developing active TB, compared to people without diabetes. People who have had diabetes for at least ten years or more are at the highest risk. Furthermore, people who have poorly controlled diabetes, who are male, or who live in urban environments are also at
Diabetes affects TB severity and treatment outcomes

Diabetes also affects both TB severity and treatment outcomes. The most common method for diagnosing TB, developed more than 100 years ago, is sputum smear microscopy. However, people with co-existing TB and diabetes may be diagnosed later and have a higher rate of sputum positivity, which means they are more likely to transmit the infection to others. Diagnostic delay results in an extended period without treatment, which further increases the risk of more severe symptoms and transmission of the infection. It is therefore crucial to obtain sputum negativity as quickly as possible.

While TB is typically associated with involvement of the upper lung field, people with diabetes and TB are more likely to have lower lung field involvement and lung cavities. Lower lung field involvement can sometimes lead to misdiagnosis as pneumonia, carcinoma, or abscesses. TB with lung cavities is associated with a higher risk of relapse, treatment failure and multidrug resistance. Furthermore, diabetes itself is associated with increased risk of developing multi-drug resistant TB. Treatment of people with co-existing TB and diabetes is associated with lack or delay of sputum conversion (i.e. it takes longer for sputum samples to become clear of bacteria), a higher proportion of treatment failure and relapse. Often, the prognosis for these patients is worse than in people diagnosed with TB without diabetes.

Management of people with concurrent diabetes and TB

The DOTS (Directly Observed Treatment, Short-Course) strategy was developed by WHO in the 1990s and has been a successful strategy in TB treatment in developing countries. The DOTS strategy builds on five main components: government commitment, diagnosis through sputum smear microscopy, standardised short-course chemotherapy with first-line drugs under direct observation, uninterrupted drug supply and systematic monitoring and accountability.

Management of diabetes is challenging, especially in low- and middle-income countries where resources are limited. Access to medication is costly and unpredictable, there is limited awareness of symptoms and lack of health professionals and medical records. As the prevalence of type 2 diabetes is increasing rapidly in low- and middle-income countries, there is an urgent need to find solutions to manage diabetes as well as concurrent TB and diabetes. Aspects of the DOTS strategy also have the potential to be successful in management of diabetes, such as improved training of nurses, standardised guidelines and protocols, supply of essential drugs and an electronic medical record system.
TB treatment in people with concurrent diabetes and TB

TB treatment of people with TB and diabetes usually follows the standard treatment regimen for drug-susceptible TB. However, people with diabetes may respond differently to TB drugs, and may also have a higher body mass index than people without diabetes. Several changes have been suggested including adjustment of drug doses according to weight, increasing doses of particular anti-TB drugs and extending the duration of TB treatment.11

Diabetes management in people with concurrent diabetes and TB

Glycaemic control is important to prevent diabetes-related complications. Better glycaemic control may also result in less severe presentation of TB and more favourable treatment outcomes. Active TB may induce insulin resistance, which is often reversible after completion of TB treatment.11

Glucose testing is important during and after TB treatment. It requires more individualized treatment with close co-operation between health worker and patient, which may be especially difficult in resource-constrained settings. Drug-drug interactions between some TB and diabetes drugs can cause both hypoglycaemia and hyperglycaemia.11

Optimal health care for people with concurrent diabetes and TB

Since it has been demonstrated that the DOTS strategy is feasible and successful in TB treatment, a modified DOTS strategy for TB-diabetes treatment is worth considering. Treatment of drug-resistant TB is complicated and therefore the DOTS-Plus strategy has been developed, which has a more individualised treatment regimen and which may prove more effective in treating people with concurrent diabetes and TB.

For people with concurrent diabetes and TB, it is important to consider all factors related to both TB treatment and diabetes management. The strategy should also include monitoring of both TB and diabetes, including measurements of blood glucose, blood pressure, blood lipids and renal-, haematology- and liver-functions. Furthermore, people with concurrent diabetes and TB need to understand the importance of continuing diabetes management and to be aware of the early symptoms of TB relapse.11 A joint treatment regimen requires collaboration between different health professionals and patients, as well as the sharing of medical records. Including pharmacists to assist in any drug-related problems such as compliance and adverse drug effects may also improve outcomes.12 Early counselling and education of people affected may also help improve outcomes.

Bidirectional screening

Early detection of TB in people with diabetes is crucial, and implementing bidirectional screening has been suggested in areas in which TB and diabetes are prevalent. Globally, almost half of the diabetes cases are undiagnosed2 and approximately 37% of active TB cases are undiagnosed.1 Screening would enable higher detection rate and early initiation of suitable treatment. However, we have yet to find the most suitable and cost-effective screening strategy.

Conclusion

People with diabetes are at increased risk of developing active TB. Physicians managing people with diabetes should be aware of the risk of active TB and have a high index of suspicion in any person with diabetes who
exhibits suggestive symptoms, is losing weight or has suboptimal control of their diabetes. Similarly, physicians treating people with TB should include screening for diabetes as part of their investigation. If a person has concurrent diabetes and TB, their physician could consider a more individualized TB treatment strategy. Both health professionals and the people receiving treatment should be aware of possible drug-drug interactions, as well as the importance of the careful management of diabetes.

Lydia Makaroff is the Epidemiology and Public Health Manager at the International Diabetes Federation. She has ten years’ international experience in non-communicable disease research, a PhD in medical research and a Masters in Public Health.

Maria Hein Hegelund is completing her Masters of Science in Global Health.

References

In nearly every issue of Diabetes Voice, we have provided an opportunity for people living with type 1 diabetes, type 2 diabetes and gestational diabetes to express their feelings on a multitude of issues or challenges in our Diabetes voices instalment. This month, we thought it was time to hear from people who, upon learning from a medical professional that they are at risk, are working hard to prevent a diagnosis of type 2 diabetes. Unsurprisingly, strong similarities are evident in the stories we hear from people who live in very different geographical locations including Africa, Asia and Europe.

The signs and symptoms of type 2 diabetes develop slowly and in some cases are hard to recognise. In the stories that follow, we hear from people that had no symptoms of hyperglycaemia, but for others, fatigue, thirst and blurred vision gave them enough cause for worry to seek medical care. Many of our contributors had an awareness of family history which led them to consider their own risk of diabetes. For others, it was necessary to overcome the shock of understanding their diabetes risk before moving forward. It's clear that acceptance, education and guidance are key for success.

Please join us in thanking our Diabetes voices contributors both for sharing their stories and for having the courage to take initiative for a healthier future.

Overcoming denial

“I was born in a small village in Vihiga County, Western part of Kenya. I was the fifth child and first born daughter in a family of 15 siblings. When growing up, I aspired to be a nurse. My parents, who were both teachers by profession, encouraged me because of my passion for attending to the sick and the elderly.

In my early days as a nurse, I enjoyed caring for people who were diagnosed with diabetes ketoacidosis (DKA), and wound dressing which included diabetic foot ulcers. I was never in a hurry to hand over the care of a person with DKA until I knew they had recovered. Little did I know later on in life I would be diagnosed with pre-diabetes. Many times before, I would tell myself, ‘I hope I will never be diagnosed with a bad health condition’.

Soon I was to accept a lead role in diabetes care when I was nominated to start the Kenyatta National Hospital Diabetes Unit. During this time, I provided diabetes education for inpatient and outpatient care.

In 2004, my mother, who had high blood pressure, developed a complete heart block, which required an urgent pacemaker implant. During routine investigation, she was diagnosed with type 2 diabetes. She had been accompanied by my elder brother who thought it wise to check his blood glucose, too. He was
also diagnosed with type 2 diabetes. I declined to check my blood glucose, reassuring myself I could not have diabetes since I had no signs or symptoms.

In 2006, I started experiencing blurred vision. I approached one of the clinicians who advised I do an oral glucose tolerance test. Results revealed I had glucose intolerance. At that moment I recalled my previous thoughts, ‘Not me with one of these medical conditions’. Denial set in immediately. Since the clinician was a close friend, she took me through all the processes of diabetes education, even though I already knew the information. A dietician was also involved and I was given a prescription of metformin to take daily. I took the education seriously and began my treatment.

Currently, my blood glucose ranges between 4 and 7 mmol/L (72-126 mg/dL) and I continue to take metformin. I keenly observe my diet and I maintain a regular exercise regime. Above all, I live a vibrant life with pre-diabetes, and I am proud of myself for meeting the challenge. I give full support to my patients who live with diabetes and I consider myself a good example for them to follow. Today, I’m the Nurse Manager of the Diabetes Centre, Kenyatta National Hospital where I practice full time diabetes education.”

Kimaiga Grace Jaika, 55 years
Vihiga County, Kenya

**HEALTHY EATING**

and physical activity

**COULD PREVENT** **IS AN IMPORTANT**

**UP TO 70%** of type 2 Diabetes

**PART OF EFFECTIVELY MANAGING** type 1 Diabetes

**Taking control of my health**

“When I was in my third trimester of pregnancy, I failed my oral glucose tolerance test and was told I had gestational diabetes. After my son was born, we were both tested again and found to have normal blood glucose levels. However, the risk of developing type 2 diabetes remained high for both of us, and I knew that I needed to be more active and eat a healthy diet in order to decrease this risk.

For the first few years after his birth, I found it challenging to improve my lifestyle while feeling constantly tired and sleep-deprived. After being woken every two hours during the night, I hardly wanted to start the day with a healthy breakfast or a brisk walk. I often reached for a chocolate bar or fast food to ‘reward’ myself for getting through the day.
It wasn’t until my son’s fourth birthday that I finally felt I had enough time and energy to take control of my health. I began by making a weekly meal plan and grocery list, and spent Sunday preparing lunches and dinners for the following week. I now include green leafy vegetables, unsweetened yogurt, and nuts in my meals.

I now also schedule three evenings a week to go to the gym. Knowing that I needed to be at a group fitness class ensures I turn up on time, and the energy from the other people keeps me working hard for the whole hour.”

Lydia Makaroff, 36 years
Brussels, Belgium

Taking out my forgotten bicycle

“My mother and two brothers developed type 2 diabetes. Two years ago, after my annual physical examination, my tests revealed that my blood glucose was higher than the normal range. I went to see the doctor and she asked me to take an oral glucose tolerance test. I was told at that moment that I am a person with pre-diabetes. That was the first time I heard the word pre-diabetes, because before that I was only familiar with the term diabetes. I can still remember that particular day: it was a sunny afternoon, and the doctor sat near the window and spoke to me in a soft voice, telling me, ‘You are now standing only one step away from diabetes. That is to say, you still have the chance to avoid developing type 2 diabetes. But without your effort, you cannot avoid it.’

I asked myself, what should I do? I also wondered why me? I talked a lot with the doctor in that afternoon. She told me that only by changing my lifestyle could I prevent diabetes.

After the talk with my doctor, I understood that not only my ‘diabetes family’ puts me in a high risk category for diabetes, but more importantly, my lifestyle habits are also responsible for my elevated blood glucose or pre-diabetes status. At that time, I was 178 centimetres tall (5 feet, 10 inches) with a ‘big body’ of 90 kilograms (198 pounds). Now that I’m retired, I spend most of my time reading books, surfing the internet and cooking. I seldom had a physical examination for my health. I rarely walked and even drove to the nearby supermarket. I realised I had to make some changes.

I bought a pedometer and started walking everyday. I also took out my forgotten bicycle. I committed to walking at least 10,000 steps per day and I ate no more than 250 grams of carbohydrate daily. I also tried to eat more
vegetables. Within six months, I lost ten kilograms and my fatty liver disappeared. When I check my blood glucose today, it is always in the normal range. Moreover, I feel full of energy and even my daughter says, ‘Dad, you look younger now!’

To tell the truth, I am so happy to have been warned about pre-diabetes and my high risk for developing type 2 diabetes. Otherwise, I might not have had the chance to change my lifestyle and I would not be so healthy now. I will never stop working hard to keep healthy and I will continue my effort to stay away from diabetes.”

Mr Lu, 67 years
Beijing, China

Giving priority to my health

“For the past 14 years, I have been running a catering business in Mumbai. My work is very stressful and my hours have always been highly erratic. The only time I have to spend with my wife and children is on Sundays. My sleep and mealtimes have also been irregular; the food available to me at work is meant for celebrations such as weddings and birthdays - rich in fat, sugar and calories. Over a period of time, I began putting on a lot of weight which was not taken notice of since obesity runs in my family. My mother was diagnosed with type 2 diabetes at 45 years and is on medication. Recently, I attended a medical camp where I had a healthcare screening. The facilitators advised me to consult an endocrinologist as my blood glucose levels were borderline for diabetes. The doctor confirmed that I have pre-diabetes and this came as a complete shock to me because I had no apparent symptoms. As I learned more about pre-diabetes and my medical tests, I was told my HbA1c was 6.2%. When my wife and I visited the clinic, the dietician told us how to achieve a balanced diet and make better decisions for healthy food options. My doctor strictly advised me to take a 40 minutes brisk walk or other exercise on a daily basis. My healthcare professionals made me aware that the consequences of my pre-diabetes could lead to a diagnosis of type 2 diabetes and also cardiovascular disease. To monitor my progress, I was told that I would need regular blood glucose tests.

I had no choice but to make suitable changes to my lifestyle and dietary habits. My wife and I set out making plans for all the required changes. At work, I committed to a 9-5 workday, six days a week. This simple change helped me to carve out time for my daily walks. I also made healthy lunches to eat at work which helped cut down...
on fat content by 30-40%. I am a vegetarian and I was advised to eat whole cereals, whole pulses of 2-3 servings and 5-6 servings of vegetables and fruits in a day. For my protein, milk and milk products were also advised in moderation.

It has been four months since the blood test, and I have been doing my best to follow my diet and exercise, but often immense pressure at work affects my routine. Barriers for me include walking after work, when the Mumbai traffic jam impacts my ability to reach home, and my weakness for sweets. My HbA1c result after three months stands the same, but I have lost eight kilograms of weight in four months. I am determined to put in more effort and strengthen my willpower to become more consistent in my daily walks and healthier eating.”

Deepak Suchak, 36 years
Mumbai, India

Taking diabetes seriously

“I live in Kigali, the capital of Rwanda, with my wife and three children. I am a lecturer at a private university in Kigali.

In order to improve my skills, some years back, I made the decision to pursue an additional university degree in Uganda, the neighboring country to the north of Rwanda. I signed up for a course in Kampala, Uganda’s capital, located at 650 kilometers from Kigali which is about nine hours by bus. Travelling back and forth frequently, my daily life became very busy and stressful. One of the things that suffered most was my diet and I quickly gained a lot of weight.

Although it is not always easy to secure an appointment with a doctor in Rwanda, I managed to do so and make time for the appointment. The doctor asked me to reduce my weight because it was adversely affecting my health and increasing my blood glucose levels.
I really did not understand the significance of his words and I did not take it seriously. I had never met anyone with type 2 diabetes.

One day, on the bus to the university in Kampala I met one of the educators from the Rwanda Diabetes Association (RDA) and we discussed diabetes and my risk. The RDA educator explained to me the long term dangers of my poor eating habits and other lifestyle issues. The educator convinced me to visit the RDA diabetes centre to get regular education sessions with the nutritionist.

They urged me to check my blood glucose at the centre’s office because I was scared after being informed about the consequences of complications. After one year working on my diet and regular exercise, my weight has dropped from 120 kilograms (255 pounds) to 93 kilograms (205 pounds) and my blood glucose ranges fell from 200-245 mg/dL (11-14 mmol/L) to 80-90 mg/dL (4.4–5 mmol/L).”

Elson Ntakirutimana, 44 years
Kigali, Rwanda

The importance of a happier, brighter future

“I learned about type 2 diabetes from my grandmother because she lived with it and as a child I watched her take injections before every meal. I knew when I was young that she could not eat sweets and I understood diabetes was a serious disease. Today, I know I am at risk for type 2 diabetes because it is in my family, and I worry. Lately, I started feeling unwell, drinking a lot of water and feeling tired, so I became concerned if my blood glucose might be high. I must confess I enjoy cakes and sweets and indulge a bit. I decided it was time to check at the hospital to see if I had developed type 2 diabetes, but fortunately the test came back negative, but I am at risk. The doctor advised that I need to eat a healthier diet and eat more vegetables and fruit – less sugary foods and less starches, like substituting sweet potato for white rice. The doctor also told me I need to exercise more regularly.

As for my challenges, it can be hard to control my appetite, and say no to dessert when it is offered to me. What helps me is to remind myself that a healthy life without type 2 diabetes and other related complications will translate to a happier, brighter future. This idea keeps me going in the right direction.”

Meiling Xiao, 30 years
Shanghai, China
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