Reaching new heights
International Diabetes Federation
Promoting diabetes care, prevention and a cure worldwide

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KEEP THE FIRE BURNING

The undertaking that I gave on becoming President of the International Diabetes Federation is the same undertaking that was given by every President since the founding of our Federation more than sixty years ago – including such illustrious figures as Maria de Alva, Sir George Alberti, Pierre Lefèbvre, Martin Silink and, my immediate predecessor, Jean Claude Mbanya. But I assume the Presidency under extraordinary circumstances never before experienced by the Federation. This is a moment of history that troubles our minds and hurts our hearts. Never before has diabetes blighted the lives of so many millions of people worldwide: by our own guarded estimates, 371 million are affected as I write, and millions more with impaired glucose tolerance, the evidence of pre-diabetes. For every minute it takes you to read this page, between eight and 10 people will have died of the complications of diabetes.

These diseases of ours show little mercy: type 1 diabetes which swoops down principally on young people, demanding emergency treatment with life-saving medications to preserve life; type 2 diabetes whose insidious risk factors and devastating effects are at work throughout every society, disabling millions of people and thereby crippling already struggling economies; and gestational diabetes which attacks the bond between mother and unborn child, scattering a legacy of lifelong disadvantage among those in most need of protection.

Therefore, although this is my first Presidential editorial for Diabetes Voice, I want to make contact with you my friends in the diabetes community wherever you are in the world – not an inaugural address or an official communiqué – just a little straight talk among friends. And I intend it to be the first of many.

I am acutely aware of the twist of fate of our democratic process that brought me to this Office, and know that only a very few of you were involved in my election as your President of IDF. So I ask you to support me as your President with your good wishes, your prayers and your continued service to the cause of diabetes. As I take on this wonderful, challenging job, I am indebted to no man, and only to one woman, my dear wife, who has shown me how devoted a carer is to a young person with diabetes.

I did not seek this enormous responsibility, but I will not hide from it. Those who nominated and confirmed me as President-Elect, back in 2009 in Montreal, heard me say that I would, to the best of my abilities, represent those with diabetes and do all in my power to make the Federation forward-looking and effective. I shall never forget that our reason for being is to improve the lives of those with diabetes, and that will be our guiding principle at all times during this triennium and beyond.

In the years leading up to my Presidency, I was involved in the development of an International Charter for the Rights and Responsibilities of People with Diabetes – for like all members of society, people with diabetes have responsibilities as well as rights. As a constituent of the people affected by diabetes, one of my responsibilities is to work with those who care for people with diabetes in order to optimize their health outcomes. I call on you all to redouble your efforts to do the same. The celebrated IDF slogan has lost none of its power and truth with the passage of time: together we are stronger.

Despite the terrifying statistics – mark my words: the prevailing socio-economic circumstances fuelling the global epidemic of diabetes and related chronic diseases will ensure that conditions will get worse before they get better – I do not believe that any of us would exchange places with any other people or any other generation. A few years ago, when I was Chairman of Diabetes UK, I joined IDF’s campaign for the UN Resolution on Diabetes. Not to mince words, we ‘booted down’ the doors of the UN Missions in New York and persuaded sceptical governments to support the Resolution. We were told that we would never succeed. But succeed we did! (See your Editor-in-Chief’s editorial for more.) It confirmed that a group of very committed people with a very clear target can indeed shift global opinion.

More recently, in September 2011, at the UN High-Level Meeting, IDF played a leading role in encouraging national governments to pledge action to benefit people with diabetes. The challenge now is to ensure that the same governments honour the pledges and strive to achieve the targets that can contribute to the improvement of the lives of people with diabetes. IDF will keep a tight grip on the torch that will lead the way in our struggle to achieve our overarching strategic goals: to improve health outcomes for people with diabetes; progressively to arrest the development of type 2 diabetes; and to stop discrimination against people with diabetes. The energy, the faith, the devotion that we bring to this endeavour will light our community and all who serve it. And the glow from that fire can truly light the world.

Michael Hirst
President, International Diabetes Federation
Associations. There is probably as much, if not more, variation in the quality of diabetes care within countries as there is between countries. Local advocacy counts.

Improving the quality of foot care was one of the challenges featured heavily in the 2005 issues of *Diabetes Voice*. The diabetic foot and foot care was, after all, the World Diabetes Day theme for that year. Enormous challenges still remain but at least now there are more potential solutions. Some of the progress which has been made recently in Pakistan is summarised by Abdul Basit and Asmat Nawaz in this issue. Also, News in Brief highlights the new DAFI (Diabetes Africa Foot Initiative). These are making the prevention of foot problems a remote but reachable destination!

Let me close by acknowledging the superb, professional input to *Diabetes Voice* of my predecessor as Editor-in-Chief, Professor Stephanie Amiel. I will do my level best, Stephanie, to keep this particular wheel turning! Also, it is a pleasure to acknowledge the enthusiastic, multilingual work of Tim Nolan, as Editor of this magazine for 10 years. Thank you so much, Tim.

One last thing: I am told that if you point your ‘smart phone’ at this odd-looking square (it is a ‘QR’ code, so they tell me) it can provide a link to a short video. Give it a try!

Rhys Williams is Emeritus Professor of Clinical Epidemiology at Swansea University, UK, and Editor-in-Chief of *Diabetes Voice*. 

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It is good to be back! My previous contribution (2005-2007) as Editor-in-Chief of *Diabetes Voice* seems a long time ago – much longer than it really is. That is probably because a great deal has happened recently in my professional life. The past 10 years have seen us establishing a new medical school in my home city of Swansea, UK. We are now seeing our newly qualified doctors embarking on their careers in medicine, some of them, I hope, inspired to contribute to the world diabetes scene of the future.

In that world scene, a great deal has also happened. The last *Diabetes Voice* editorial I wrote (December, 2007) recalled the magnificent achievement of UN General Council Resolution 61/225 a year or so earlier. That achievement paved the way for a series of global events, such as the UN High-Level Meeting on Non-Communicable Diseases (NCDs) in 2011 and the adoption of the Political Declaration on NCDs. In the Global Diabetes Plan 2011-2021, prepared prior to the Summit, we now have a 10-year framework for action at the highest levels of government, health services and society to further IDF’s vision of living in a world without diabetes and pursuing its mission of promoting care, prevention and that elusive cure – we are likely to have a host of cures when the time comes, and it will! The recently published *International Charter of Rights and Responsibilities of People with Diabetes* reminds us that access to quality health care is a basic human right which should not be denied anywhere nor to anyone.

These high-level pronouncements and plans are essential in order to set the agenda and priorities for the realization of this fundamental right. However, is much local progress being made to ensure access to high-quality care for the individual with diabetes? ‘Diabetes care for everyone’; ‘A focus on the vulnerable’ and ‘Inequalities in health and risk’ were the slogans for World Diabetes Day in 2006. Where are we now on the road to high quality, accessible care for all?

Many countries are moving towards universal healthcare coverage but universal healthcare coverage does not guarantee universal access to quality care. For example, on the day I returned from Brussels in December last year, the headline in one of our national newspapers was ‘Diabetes crisis to cripple National Health Service’. Of course, according to our media, National Health Service is ‘on its knees’ or likely to be ‘crippled’ most of the time. However, this particular headline caught my eye more than most. The newspaper reported ‘thousands dying each year due to poor care’. The UK National Diabetes Audit, on which the reports were based, was able, despite this, to strike an optimistic note: ‘there is a real opportunity to reduce these risks’. Indeed there is.

Also, just yesterday (27 January), deficiencies in diabetes care were featured in our newspapers again. ‘Thousands of diabetics [sic] have their feet amputated because of failings in care’. Diabetes UK calls for the government and the health system to prioritize prevention of diabetes and its complications. The fact that these deficiencies of care still persist and that such a call still needs to be made in our small corner of the diabetes world, is nothing short of a disgrace.

So what should be done? Action at the highest international level, certainly, with this re-establishing and maintaining professional standards but also, at a local level, continued and vigorous action by IDF Member Associations.
IDF and its partners launch new programme to reduce the burden of lower-limb amputations in Sub-Saharan Africa

The International Diabetes Federation (IDF) and its partners have launched a new programme aimed at preventing lower-extremity amputations in Sub-Saharan Africa. The Diabetes Africa Foot Initiative (DAFI) is a multi-stakeholder partnership that will develop a comprehensive, affordable and sustainable foot screening programme for the region.

The diabetic foot is a complication of diabetes that carries a high morbidity and mortality rate in Africa, and is increasing as the burden of diabetes continues to rise. Amputations remain high, despite intensive training of health workers in traditional preventive methods. DAFI aims to address the lack of a common, regionally accepted, sustainable and comprehensive approach for diabetes foot care in the region.

The programme will be implemented in 10 countries: Cameroon, Ghana, Guinea, Kenya, Madagascar, Republic of Congo, Rwanda, Senegal, Tanzania and Uganda. The first phase of DAFI will develop and implement a Risk-Stratification and Intervention Tool and its associated protocol in 10 selected diabetes centres. Health workers from these institutions will be trained in diabetes foot care and certified as Diabetes Foot Care Assistants. In collaboration with national health authorities and local communities, IDF Member Associations will start information activities.

DAFI is a programme led by IDF in collaboration with the IDF Africa Region, the University of Johannesburg, Université Senghor, Université Numérique Francophone Mondiale and Sanofi Diabetes.
BRIDGES supporting excellence in scientific writing

As part of its mission to support the dissemination of best practices around the world, the International Diabetes Federation, through its programme BRIDGES, has launched a series of workshops dedicated to the improvement of abstract and publication writing.

Two workshops have taken place this year: in Dubai (9-10 February) and Miami (16-17 March), where selected BRIDGES-supported projects and IDF Member Associations were fully sponsored to join.

"Implementing innovative interventions and projects to prevent diabetes and its complications is a key mission of IDF. The natural next step is to encourage and support the dissemination of methodologies, results and outcomes. These workshops represent a great opportunity for participants to improve their skills and knowledge on how to get their messages out in the world," commented Professor Ayesha Motala (Head of the Department of Diabetes and Endocrinology, School of Clinical Medicine University of KwaZulu – Natal, South Africa and member of BRIDGES Executive Committee), who chaired the workshop which took place in Dubai.

Organized around interactive discussions, group sessions and presentations, these two-day workshops are shaped to address all the needs and questions of participants prior to developing an abstract for an international congress or a paper for peer-reviewed journals. The Dubai workshop was described as "Concise, catchy and in line with my objectives," by one of the workshop participants.

BRIDGES is an IDF programme supported by an educational grant from Lilly Diabetes.
Looking forward to 2015 – for diabetes and development

Lucy Hadley and Mandana Kooijmans

At the UN Millennium Summit in 2000, world leaders made an historic promise to free people from extreme poverty and deprivation. This pledge turned into the Millennium Development Goals (MDGs), which include halting the spread of HIV/AIDS and providing universal primary education by the target date of 2015. This universal contract for eradicating poverty created awareness among the public and political leaders alike, and generated record flows of aid for health and development. But with the 2015 deadline approaching, what real progress has been made? Do inequalities and neglected issues remain unaddressed? If so, which? Moreover, what should replace the MDGs after 2015? As the World Health Organization and UNICEF convene a global consultation to define future global health priorities, the authors of this article outline why diabetes and the other non-communicable diseases (NCDs) must be at the heart of the post-2015 agenda.

The framework of eight goals, 21 targets and 48 indicators overlooked the world’s leading cause of death – diabetes and related NCDs. This exclusion and the overly literal interpretation of the MDGs by many donor countries created a major barrier to securing resources and political commitment for diabetes.

Socioeconomic disadvantage increases vulnerability to the risk from diabetes.

An urgent poverty issue
Diabetes is strongly associated with poverty and deprivation. Not only do the costs of diabetes treatment and care plunge many individuals and families into poverty; socioeconomic disadvantage increases vulnerability to risk from diabetes. Four out of five people with diabetes worldwide live in a developing country, and these diseases (type 1 diabetes, type 2 diabetes, gestational diabetes) are causing over 4 million deaths every year. The majority of people with
diabetes in poor countries are under 60 years old and in their most productive years. In poor countries, diabetes kills family breadwinners and reduces productivity at the national level, exacerbating inequalities between countries and within populations. Diabetes also shares risk factors, co-morbidities and treatment needs with a range of health priorities in poor countries, including HIV/AIDS, TB, malaria, maternal and new-born child health, and nutrition.

Despite this evidence, global resources for health systems in developing countries are earmarked largely for the health priorities of the MDGs, funding programmes to tackle infectious diseases and prioritizing acute care. As a result, health systems are ill-equipped to cope with the dual burden of communicable and non-communicable disease – and unable to provide essential diabetes treatment and care. For example, more than 80% of people with diabetes in Africa remain undiagnosed and at risk from life-threatening complications; and essential medicines for diabetes and NCDs remain significantly less available than those for infectious diseases in low-income settings.\(^1\)\(^2\) Rather than promoting health systems that are holistic and treat the whole person and patients with all diseases, the MDGs have resulted in vertical programmes that neglect many urgent challenges, including diabetes.

The opportunity
Over the last six years, we have made significant progress in building political recognition for diabetes and NCDs as a poverty issue. The UN Resolution 61/225 on World Diabetes Day, the UN Political Declaration adopted at the UN High-Level Meeting on NCDs in 2011 and the UN Conference on Sustainable Development (Rio+20) last year all affirmed that diabetes and other NCDs are leading threats to development in the 21st century and are undermining the achievement of the MDGs.\(^3\)\(^4\)\(^5\) With the 2015 deadline of the MDGs drawing nearer, we have an unprecedented opportunity to ensure that diabetes and NCDs are fully included in the next global development agenda. We must not let the same mistakes happen again.

Healthy people are one of the outcomes of development, and a key indicator of progress.

IDF and our sister federations in the NCD Alliance have initiated a global campaign to ensure that health, diabetes and NCDs remain central to the post-2015 development agenda. We are building strategic alliances with governments and UN agencies, as well as the broader health and development community, and engaging in global debates on how to define health beyond 2015. It is becoming accepted universally that an overarching health goal is needed after 2015. But an intense debate continues on the way in which this comprehensive health goal should be framed. Will it aim to reduce worldwide rates of death and
disability? Will it set a global benchmark for life expectancy? The concept of universal health coverage – ensuring everyone has access to the health services they require without suffering financial hardship – is also gaining traction as an important enabler.

**Twin-track strategy**

First and foremost, we are calling for a target within the overarching health goal that secures action on diabetes and NCDs. In order to engender real progress for people with diabetes worldwide, IDF is calling for this health goal to drive a new type of health system – one that is preventive, can provide lifelong care and disease management, and that treats people not just diseases. Secondly, we are calling for health to be integrated across all sectors – social, economic and environmental. Diabetes is a multi-sectoral issue, requiring a health-in-all-policies approach. The inclusion of health indicators across all the post-2015 goals will ensure that progress in global development impacts positively on the health of people.

**A global conversation**

Over the past six months, the official UN process to define the priorities and structure of the post-2015 development agenda has gathered pace. Unlike the process in 2000 to define the MDGs, the post-2015 process is inclusive and participatory. This provides IDF and our Member Associations with many opportunities to influence discussions and decisions.

A UN High-Level Panel of Eminent Persons (co-chaired by President Ellen Johnson-Sirleaf of Liberia, President Susilo Bambang Yudhoyono of Indonesia and Prime Minister David Cameron of the UK) has been established to prepare recommendations for the UN Secretary General – to be made by May 2013. This group is meeting on three occasions in respective capital cities, and each meeting will include a civil society component – where the voice of diabetes and NCDs is being heard.

At the global level, a series of 11 thematic consultations on development issues has begun. IDF’s foremost priority is to ensure that diabetes is fully represented in the health consultation. This will culminate in a WHO and UNICEF high-level meeting in Botswana in March this year, and will produce recommendations to the UN High-Level Panel on future health priorities.

At the national level, the UN is currently supporting more than 50 consultations across all regions, all of which are open to civil society. And over the next two years, marked by the UN High-Level Review of the MDGs in September 2013 and the inter-governmental process beginning in 2014, governments will develop their national position and negotiate to finalize the post-2015 framework.

**It is critical that the voice of diabetes is heard at all levels on the road to 2015.**

With IDF leading the way at the global level, the strong engagement of national diabetes associations will be critical to determine government positions and keep diabetes central to the dialogue. It is crucial that all IDF Member Associations keep diabetes visible as a poverty issue – in low- and middle-income countries, where the epidemic is most devastating; and in high-income countries in order to shift donor and development aid policies. It is critical that the voice of diabetes is heard at all levels on the road to 2015.

**Call to action**

In an increasingly complex world, where multiple threats – from the economy to the environment – undermine global security, progress in development will be achieved only through the collective efforts of healthy, productive people. IDF is uniting with the wider health community to drive progress in health for all, and make sure that the very grave threat from diabetes is fully addressed.

There is a clear epidemiological, political and humanitarian mandate for the inclusion of diabetes at the heart of the future development agenda. With speculation growing about the state and shape of the world after 2015, we call on the global diabetes community to join our campaign and secure a healthy future.

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Lucy Hadley and Mandana Kooijmans
Lucy Hadley is IDF Policy and Advocacy Administrator.
Mandana Kooijmans is NCD Alliance Policy and Advocacy Administrator.

**References**


ETHIOPIAN DIABETES ASSOCIATION – taking on diabetes against all odds

Ahmed Reja and Misrak Tarekegn

Since its inception, the EDA has remained at the vanguard of efforts to advocate for all people affected by diabetes, regardless of their socioeconomic background. Ours is the first patient-driven association in Ethiopia, and currently comprises 39 regional branches; 99% of our 15,000-plus members countrywide are people living with diabetes. The Association is governed ultimately by a General Assembly, which consists of representatives from the regional branches. Board members are elected every four years according to the Association by-laws, which stipulate also that either the President or the Vice-President (or both) should be a healthcare professional. Our day-to-day activities are managed by Association employees – currently, five permanent and two volunteers working full time. Early in 2009, the Association became involved in advocacy activities aimed at bringing about meaningful changes to the lives of people with diabetes. It has taken an increasingly significant role in the IDF Africa Region, and is engaged in efforts to bring about sustainable improvements in the areas of diabetes and other non-communicable diseases (NCDs). We have become active in the provision of training for healthcare professionals and therapeutic education for people with diabetes, as well as human-rights advocacy work. Moreover, the EDA is an active supporter of programmes dedicated to assisting disadvantaged children with diabetes, such as IDF’s Life for a Child Programme and Novo Nordisk’s Changing Diabetes in Children. Two collaborative projects are underway with the World Diabetes...
Foundation focussing on building capacity in 12 hospitals and improving diabetes-related eye care in five university hospitals.

**EDA played an active role in setting up an NCD Taskforce alongside the Ministry of Health.**

The Association works closely with the Ministry of Health and, five years ago, played an active role in setting up an NCD Taskforce alongside the Ministry and with the support of the World Health Organization (WHO) – the Organization’s Ethiopia office appointed a person to serve as a secretary to the Taskforce. The EDA is represented on that Taskforce by its President and its Programme Manager.

WHO hired a consultant to assist the group with a situational analysis of diabetes and other NCDs in the country. Based on the findings of that analysis, a series of meetings and workshops was held to stimulate all stakeholders working in the health sector and highlight the need for urgent intervention to stem the tide of NCDs. These activities resulted in the publication by the Ministry of Health of a strategic document on NCDs. Our active participation enabled us to form a diabetes steering group with the involvement of the Ministry. IDF’s Global Guideline for Type 2 Diabetes was endorsed as training material for healthcare professional education.

The Association was a leading member of a consortium of organizations working in NCDs, which in its early days organized regular large-scale awareness-raising events in the lead-up to the UN High-Level Meeting on NCDs in New York. In 2011, the new consortium held its first General Assembly, which was sponsored by Management Sciences for Health – an NGO working to strengthen health systems. Given its commitment to date, and its strong partnership with the Ethiopian Ministry of Health, the EDA was elected to chair the consortium.

Government support was visible again in the sixth joint advanced clinical postgraduate course in the management of diabetes and its complications, run jointly by the European Association for the Study of Diabetes, the American Diabetes Association and IDF; and held in Addis Ababa in November 2011. The opening speech was delivered by the then Deputy Prime Minister and the current Prime Minister Hailemariam Desalegn. Furthermore, the Minister was present at a dinner at the Grand Palace on the second day. This was a unique opportunity for the more than 300 people who had participated in the training.

We are working ‘against all odds’ because communicable diseases remain the priority of the Ministry of Health.

The Association held discussions with key high-level officials, such as the Minister of Trade and Industry, the Minister of
Urban Planning and Development, the State Minister of Foreign affairs and the Minister of Tourism. The response that the Association has received is positive and we can say that there is fertile ground to work towards improving the lives of people with diabetes in particular and NCDs in general.

Despite these achievements, we are working ‘against all odds’ because communicable diseases remain the priority of the Ministry of Health. In fact, as a country we are dealing with a triple burden: communicable diseases, poverty and NCDs. Although our National and Branch Associations are engaged in monthly education sessions for the public as well as people living with diabetes, there is deep-rooted lack of awareness of the magnitude and seriousness of the threat from diabetes. Diabetes and other NCDs are not a priority on the agenda of many of our partners. EDA also has severe human resource and budgetary constraints.

Our healthcare system is organized to tackle communicable diseases and does not have the capacity to deal with NCDs. Although we have several NGOs, none of them focus on diabetes and other NCDs. The lack of healthcare professionals trained to handle NCDs can be considered as a major challenge in our effort to improve the lives of people with diabetes. Therapeutic education is lacking in the follow-up schemes of hospitals for people with diabetes; appointments are sporadic; and self-monitoring of blood glucose is almost non-existent. People have to choose between buying food and paying for the expensive medicines they need to survive.

There is fertile ground to work towards improving the lives of people with diabetes in particular and NCDs in general.

EDA was able to talk with the Ethiopian Pharmaceutical Fund and Supply Agency, which deals with the provision of medications to all public health institutions. According to those officials, even though the agency is willing to provide medicines to institutions, health institutions are not willing to buy all the required insulin or oral drugs because the latter take up the majority of the budget. Hospitals simply do not have the capacity to provide all the medicines that are needed, and this scenario poses a challenge to the Association.

However, we take our successes as our strengths and we will maintain our high spirits and positive thoughts. There are opportunities to improve the lives of people living with diabetes and other NCDs. We have opportunities such as the UN Resolution on diabetes, the UN General Assembly Political Declaration on NCDs, the WHO General Assembly decision on NCD prevention, the African Declaration on Diabetes, the Health Ministry’s emerging focus on NCDs and tertiary healthcare, and the formation of the Ethiopian Consortium on NCDs.

It is important that we garner the support of various partners in order to highlight the important public health, economic and social problems provoked by diabetes and other NCDs. It is only through concerted efforts that we will be able to prevent the devastating effects of diabetes. The EDA is more than ever committed to working with partners to alleviate the suffering of people living with diabetes.

Ahmed Reja and Misrak Tarekegn
Ahmed Reja is Vice-President of the College of Health Sciences at Addis Ababa University, and President of Ethiopian Diabetes Association.
Misrak Tarekegn is Programme Manager of the Ethiopian Diabetes Association.
The influence of social media on diabetes treatment and self-care

Claudia Labate

Technological advances in communication promote the idea of a global village, expanding and extending the power of the individual to ‘be’ anywhere at any time, facilitating instantaneous strong bonds between people worldwide. Here, the author looks at the power of social media as a key to accessing collective knowledge and, ultimately, helping to improve diabetes care and self-management.

Today we are witnessing a paradigm shift in consumer confidence in communication channels. Consumers are increasingly taking the word of recommendations from friends and the opinions they read online over the traditional messages they see on television or in print magazines. If we are to believe global marketers, major companies that do not have an online social media presence are making serious losses every second of every day. Suddenly, anonymous bloggers writing on ‘independent’ blogs or personal Facebook pages have a very strong power of persuasion over consumers who have become wary of traditionally pitched corporate marketing messages.

Social media for NGOs

Social media can be of immense value also to civil society and the non-profit world, although the list of functions may change. NGOs do not rely on sales; we look for objectives or results – collecting useable insulin and diabetes supplies for 8,000 needy children around the world as in the case of IDF’s Life for a Child programme; JDRF’s campaigning to raise many millions of dollars to support research for a cure for type 1 diabetes (they have raised USD1.6 billion since 1970); or the campaign launched in 2012 by IDF targeted at the bilateral and multilateral donors to alleviate the funding gap faced by diabetes and non-communicable diseases.

One of the ways to achieve these outcomes may be to recruit new members, who may be called on to donate money or time, spread campaign messages, write letters, attend demonstrations, or perform whatever task is required to reach the campaign objectives. Anyone can see how leveraging social media to recruit new members and activate and motivate existing ones might be more effective than relying on traditional methods of communications.

Social networks are the perfect environment for igniting movements and organizing people around a cause. Facebook pages, Twitter chats, blog posts, videos posted to YouTube or other sites can massively amplify an organization’s web presence at very little cost.

Some working examples

Tudiabetes.org is a social network created to speak only on issues related to
diabetes of all types. The community also supports the actions of the World Diabetes Day campaign endorsed by IDF. This community united people from California to Brazil.

Já Mediu? (‘Have you measured?’) is the first social network dedicated to diabetes in Brazil.

On Facebook, there are many active diabetes groups. Jóvenes con Diabetes – América Central y Sul (‘Young People with Diabetes – South and Central America’) was formed recently and aims to share personal experiences, foment professional exchanges and actions that can be undertaken jointly via the Internet.

IDF Young Leaders in Diabetes is a community that brings together young people from around the world and enables discussions about all aspects of diabetes from A to Z – ranging from local projects that these leaders are engaged in, to publications, current events, new technologies and ideas, and questions related to their treatments.

With the classic adage in mind, ‘a picture paints a thousand words’, an image was published in Facebook (at the Blue Power Diabetes page) and had a viral effect that reached more than 10,000 unique users in a just two days. It carried the byline: Diabetes is not contagious, being a good example is. Believe it or not, some people still believe the myth that diabetes can be contagious!

A learning process
Nowadays, it is common for an individual who has recently become aware of a problem to seek a related online community and navigate the records of users who have shared their experiences. With the support of this bank of collective knowledge, he or she reflects on the problem, and explores available information, and feels able to act. And this can form a continuous spiral of learning.

However, contrary to popular belief, not all communities provide independent online education to their users. One assumption might be that communities need to have leaders, opinion-makers who are protagonists, and who assist in knowledge management. They take the role of knowing more and providing knowledge to other users.

Yet this does not mean the communities need mediators to be able to ensure learning. Studies indicate that incorrect information published in the communities are ‘self-managed’ by the users and that this is a key element of the collective learning process.

In conclusion
Online communities act as a catalyst in the learning process of the person with diabetes, accelerating behaviour change and adopting of new habits. By sharing experiences with other people in similar situations, people may feel more comfortable asking their healthcare professional – having reflected more on their doubts and feelings, which thus allows them to become more able to make informed decisions.

The ‘patient’ can become the ‘owner’ of his or her diabetes, and less passive about their own treatment, gaining the confidence they need to question and seek to adapt the scientific medical knowledge to the realities experienced in one’s own body – and thus maintain good control of diabetes.

Claudia Labate
Claudia Labate is a counselor, and South and Central American Region – Brazil representative of the IDF Young Leaders in Diabetes project.

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Trust Completely/Somewhat

| Source: Nielsen Global Trust in Advertising Survey, Q3 2011 |

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To what extent do you trust the following forms of advertising? (Global average)
A look ‘upstream’ to Melbourne

Paul Zimmet
In the next few issues, *Diabetes Voice* will be providing advance information, to whet your appetite, about the programme for the World Diabetes Congress 2013, which will take place in Melbourne, Australia, between 2 and 6 December this year. Over the coming months, the Congress Stream leaders, who are listed below, will provide a sneak preview of the contents of their programmes.

The Scientific Programme for the Congress consists of seven Streams, which include the ‘traditional’ ones:
- Basic and Clinical Science (Professor Mark Cooper)
- Education and Integrated Care (Professor Angus Forbes)
- Global Challenges in Health (Professor Linong Ji)
- Living with Diabetes (Professor João Manuel Valente Nabais)
- Public Health and Epidemiology (Professor Jonathan Shaw).

What about the other two Streams? These are new Streams, which we have introduced for the first time for Melbourne. They are:
- Diabetes in Indigenous Populations (Professor Alex Brown)
- Diabetes Research in the 20th Century: A Historical Perspective (Professor Pierre Lefèbvre).

The growing burden of diabetes in Indigenous populations led us to introduce the Indigenous Stream. The very high prevalence rates that were reported nearly 50 years ago in American Pima Indians and the Micronesians of Nauru are now being seen in many other Indigenous groups around the world. This Stream will provide a global picture of the social issues, prevalence, associated co-morbidities and prevention strategies that are ethically and culturally appropriate.

You may wonder why we would have an apparently ‘backwards-looking’ Stream – the History of Diabetes in the 20th Century. The reason for this may seem disrespectful to new and younger researchers in the diabetes arena! However, Professor Pierre Lefèbvre, the Stream leader, and I thought that this was an essential subject to address. It seems that, with the advent of PubMed and similar literature databases, very significant earlier discoveries in diabetes often are not referenced in contemporary publications. Let me cite a recent instance of a paper in a *Nature* publication. It detailed mechanisms relating to the action of the insulin receptor. No acknowledgement was given to the paper from the late 1970s by Jesse Roth, a truly landmark report in diabetes and endocrine research, in relation to the discovery of the insulin receptor. The History Stream will include lectures from such luminaries in diabetes research, such as Jesse Roth, Jørn Nerup, Pierre Lefèbvre and George Alberti.

It is my hope that these new Streams will prove popular and enhance interest and the debates on diabetes research, care and prevention. Following on from the innovation of the IDF Award Lectures in Dubai – lectures that replaced earlier named and regional award presentations at IDF Congresses – we will have an IDF Award Lecture for each Stream given by a significant figure in research or diabetes-related activities in relation to that particular Stream.

As Chairman of the Programme Committee, I am delighted that *Diabetes Voice* will be keeping you up to speed with some early information as to the format of the Programme and its objectives. I look forward to welcoming you all to Melbourne – recently designated the most liveable city in the world – and to our wonderful summer weather!

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**Paul Zimmet**
Professor Zimmet is Chairman of the Programme Committee, World Diabetes Congress 2013.
The impact of diabetes in Indigenous people – putting an end to harm on harm

Alex Brown

Indigenous communities represent almost 5% of the world’s population – nearly 400 million people. Increasing international interest in the health and socio-political needs of Indigenous peoples was reflected in the 2007 UN Declaration on the Rights of Indigenous People. Therein lies recognition that Indigenous people represent some of the poorest and most marginalized communities within nation states. The International Diabetes Federation’s 2013 World Diabetes Congress in Melbourne, Australia has for the first time created a specific stream dedicated to in-depth discussion of Indigenous issues. Underpinning the Stream is the objective to promote action to overcome the appalling burden of diabetes on Indigenous people.

The 2013 WDC will highlight the challenge of diabetes in Indigenous communities.

While there are important ties that bind us across the globe, heterogeneity remains the most enduring feature of an Indigenous experience – whether viewed within or across cultural groups. There is no ‘pan-Indigenous reality’. Far from it: there are wide variations within and across Indigenous populations in terms of context, history, the impact of colonization and progress in the fight for cultural preservation, legal, social, institutional rights and access to lands and territories.
The most pressing and consistent picture is one of shared disadvantage in health and social status. In many nations, Indigenous people have the lowest life expectancy, the highest infant and premature adult mortality, and occupy the lowest social strata. Among these lists of critical concerns, non-communicable diseases are the leading, or among the leading, causes of premature death, disability and health disparity. What binds us is not just the celebration of eons of wisdom and the ability to connect with one another and the world around us; it is our shared experience of disease.

For Indigenous Australians, diabetes, heart disease and chronic kidney disease account for more than half the gap in life expectancy.

Diabetes is a worldwide epidemic, and in many instances, Indigenous people shoulder a disproportionate burden. In Australia, for example, up to 30% of Aboriginal and Torres Strait Islander people have type 2 diabetes. In some communities, more than half of all adults over the age of 50 are affected. Diabetes is also the most common cause of end-stage renal failure; diabetic retinopathy is the leading cause of blindness in the working-age population; and diabetes is a co-morbid condition in over a third of people with heart failure. Diabetes is a potent driver of cardiovascular conditions, which remains the primary cause of death and disability in people living with diabetes. For Indigenous Australians, diabetes, heart disease and chronic kidney disease account for more than half of the gap in life expectancy.

The innovative Stream highlighting Indigenous issues is exciting in its breadth and in the scientific, political and clinical expertise of the invited speakers. The programme includes extensive discussion of the landmark work among The Pima people of North America, which helped lay the foundations for our understanding of the broad and alarming impact of diabetes in vulnerable communities. Improving clinical models of care and community prevention approaches will remain a key focus throughout the Stream sessions. There will be a broad discussion to improve our understanding and the ways in which we can overcome the complex determinants of diabetes in Indigenous people – and the role of nation states in producing, and therefore mitigating, disparity. Dedicated symposia will explore the impact of diabetes in Indigenous women, young people and children. Moreover, we will be honoured with the attendance of traditional healers from around the world to discuss their experiences with, and approaches to tackling, diabetes in their communities from a culturally embedded perspective.

Reducing disparities in the rates and impact of diabetes via appropriate healthcare and social reforms represents a major challenge that will be difficult to surmount – particularly as these require coordinated action within and between healthcare and health-related social institutions, and across a range of complex government funding structures. Nonetheless, IDF and the World Diabetes Congress offer a critical starting point to coordinate the clinical, research and political endeavours of the world’s leading experts in order to improve the health and wellbeing of our most vulnerable citizens. Perhaps if we used as a starting point the wisdom of Indigenous elders, we could create a better future for all people. In an essay in 2007,1 William Tilmouth, Former Executive Director of Tangentyere Council (Alice Springs) warns of compounding the harm to health during the colonial period, and looks to the pillars of Aboriginal life to rebuild and galvanize the foundations of healthy life.

“...This failure to recognize Aboriginal peoples’ expertise, knowledge and wisdom causes harm on top of harm. It is the essence of the injury of colonization, lived and re-lived throughout successive generations. The primary target of harm is the foundation of Aboriginal life: our Law, Family, Country and the obligation to look after each other. These things guide every aspect of Aboriginal life. They create and sustain harmony with all things and all people through time. They guide us to survival against all adversity. They mandate our relationships, our obligations and responsibilities to each other and all things on and within the earth. They ensure that resources are never depleted, but sustained for all time. They mandate healthy environments, nutrition and a healthful way of life, spiritually, emotionally, physically and mentally. These are the foundations of healthy life.”

Alex Brown
Professor Brown is Head of Aboriginal Health, South Australian Health and Medical Research Institute, Adelaide, Australia. He leads the Stream on Indigenous Health at the IDF World Diabetes Congress in Melbourne, 2013.

Reference
When dinosaurs walked the Earth...

Diabetes Research in the 20th Century: A Historical Perspective

Pierre Lefèbvre

It was Mao Zedong who famously coined the timeless adage that ‘you need knowledge of the past in order to understand the present, and thus be able to prepare for the future’. These wise words have been taken up as the motto of a new Stream at the IDF World Diabetes Congress in Melbourne later this year: Diabetes Research in the 20th Century: A Historical Perspective.

Despite the title of this report, please do not expect to find a Jurassic Park of endocrinology, where you might learn about the prehistoric origins of diabetes itself – drawn after millions of years from dinosaur fossils or from insects preserved in ancient blobs of amber... Would that we could! Nevertheless, our Stream will reveal the origins of much of our contemporary diabetes knowledge – and there will be dinosaurs.
This Historical Perspective will comprise a selected number of outstanding Scientific Sessions headed by the very pioneers who challenged our early scientific knowledge and have shaped current opinions in key areas of diabetes.

The ten one-hour sessions that make up the Stream will take the audience on a journey that during the previous millennium might have seemed inconceivable. Each of the lectures will be led by one of the innovators who, at the time, played a crucial role in creating life-preserving knowledge, and who has remained at the vanguard of their field – despite the passing of the years!

In this Stream, perhaps more so than many others, it will be fascinating to hear discussions between the Chair of each session and the celebrated Lecturer; and for many in the audience, this will be a once-in-a-lifetime opportunity to engage with a living legend of diabetes research. By way of an appetizer, listed below are a selection of the topics to be covered in this novel Stream.

- Insulin research – central to our understanding of hormones and how they work
- The interplay between autoimmunity and genetics in type 1 diabetes
- The strange story of glucagon – casual bystander or key player in diabetes?
- The evolution of insulin therapy from the pancreatic extracts used in Toronto in 1921 to the high-tech insulins of today
- What has happened in type 2 diabetes management – past, present and future perspectives
- Diabetes in children – the long hard road from early death sentence to normal life expectancy
- Taking stock of progress in genetics – from yesterday’s ‘geneticist’s nightmare’ to today’s reality
- A look through the diabetes toolbox – from tasting to testing urine, via finger-pricking and HbA\textsubscript{1c}, to continuous blood glucose monitoring
- The rich history of gestational diabetes
- The saga of nutrition in 100 years: from outright starvation, to the components of healthful lifestyle

The original idea for such a Stream could only have come from a man with his own lengthy historic perspective of diabetes, the Chairman of the Programme Committee, Paul Zimmet. Like the Master Kanbei in Kurosawa’s The Seven Samurai, Professor Zimmet called upon me and a band of other laboratory-hardened experts – George Alberti, JJ Gagliardino, Anant Nigam, Jesse Roth, Samad Shera and John Turtle – who, far from weary of campaigning, jumped at the chance to share the knowledge we have gained over the decades through our modest roles in ground-breaking research.

In reply to our invitation to take part in this Stream, one of our Lecturers confirmed that he would be more than happy to collaborate in his capacity as ‘a walking dinosaur’. And so shall it be, dear participants in the IDF Congress in Melbourne: you will have the opportunity to meet a number of living, breathing dinosaurs of diabetes research! Joking aside, our list of lecturers reads like the Who’s Who of Diabetes Research in the 20th Century. They will tell you where the challenges lay at the time they made their contributions – that younger investigators might learn from our travails – and I have no doubt that they will surprise you with their relentless enthusiasm, great talent and generosity. I urge you not to miss this golden opportunity to hear the diabetes history-makers in action.
Using community theatre to promote diabetes education and prevention in Fiji

Philip Szmedra

“What we hear, we forget; what we see, we remember; what we do, we understand.”

A group of US researchers base their hypothesis to improve diabetes outcomes on the anonymous statement above – one that encapsulates the power of community theatre. The underlying premise is to involve people in the educational process, establish a connection in which people feel comfortable and are entertained, and feel that the message that is being transmitted is one that they can accept easily and, crucially, incorporate into their daily lives. Attempts by ministries of health in the Pacific Island region to encourage behaviour-change in order to help prevent diabetes and/or improve diabetes management and overall wellbeing have not been successful. The author of this article believes that a well-executed community theatre programme may help improve the lives of Pacific Island peoples affected by diabetes.

Many Pacific Island nations are experiencing a diabetes epidemic: 40% of the adult population of Nauru is affected by the disease, as is 26% of adults in Samoa, and 25% in both the Indigenous Fijian and Indo-Fijian groups in Fiji.¹ These high prevalences have been attributed to increasing levels of urbanization, changes in diet and, increasingly sedentary lifestyles. Epidemiological research has firmly established a relationship between these consequences of higher living standards and ill health.² The peoples of the region may also have a genetic predisposition to type 2 diabetes and obesity – what has been termed the Thrifty Gene hypothesis, in which the ability to store fat was beneficial to the original settlers of the Pacific Islands but has become detrimental since.³ As Paul Zimmet, a noted Australian diabetes researcher commented, "What AIDS was in the last 20 years of the 20th century, diabetes is going to be in
the first 20 years of this century. It is wiping out Nauru, the Marshall Islands, Tonga. Name any island, and diabetes is its main health threat.

The situation was not always so. Before a strong Western influence was felt in the Pacific Region, beginning in the 19th century but especially after World War II Pacific Island peoples’ eating patterns included root crops, tropical fruits and vegetables, fish and game – all foods rich in nutrients and low in processed sugars and fat. There was little incidence of obesity or the illnesses that are characterized by being severely overweight, including type 2 diabetes.

Shortly prior to the independence movement in the region, which began in the 1960s, the wage economy started to become a familiar phenomenon: people could, for the first time, afford to import their food rather than having to farm, fish or hunt. The food that was, and continues to be, imported was far higher in sugar, salt, fat and cholesterol than the traditional foods of the islands. This economic transformation led to a ‘mortality transition’, whereby people began to fall ill and die from non-communicable diseases (NCDs) as well as infectious diseases.

Problems of communication
In earlier work in Fiji, Kiribati and Nauru, our team attempted to measure the impact of lifestyle illnesses on economic development. We found that educational methods used by health ministries, such as pamphlets, posters, lectures and public service advertisements in local media, were not making a real impact on target populations. Neither the men nor the women in those islands considered such sources of information to be important in helping to manage or improve their physical condition and wellbeing. Most importantly, our work revealed that there was little interest generally in reading educational pamphlets or attending informational programmes dealing with health responsibility or disease management.

Imported food was, and continues to be, far higher in sugar, salt, fat and cholesterol than the traditional foods of the islands.
Community theatre

A second phase of our work dealt with improving the means by which messages about diabetes management and prevention are communicated. During our earlier work we were impressed by the quiet dignity with which people dealt with the long hours they had to wait in order to spend just a few moments with a physician or nurse at the outpatient clinics (for diabetes, hypertension and/or heart disease).

It occurred to us that this might be an appropriate venue to introduce community theatre in order to focus on the ways in which their condition could be managed better and their lives improved. Our idea was that the use of community theatre in this setting could be an effective method to educate as well as entertain.

We were impressed by the quiet dignity of people waiting long hours to spend just a few moments with a physician or nurse at the outpatient clinics.

Measuring the outcomes

We are addressing the following research question: would adults with diabetes who receive diabetes education information through community theatre have improved HbA₁c levels after experiencing a community theatre intervention, compared with before the intervention? Moreover, would people with diabetes who are exposed to community theatre have a higher Health Promoting Lifestyle Profile II and EQ-5D scores than a (control) group of people who receive diabetes education information through more traditional sources – posters, brochures, and public health lectures from health professionals? We have decided to measure also whether diabetes-related distress can be affected by varying degrees of exposure to community theatre.

Community participation

While the initial community theatre programme will use professional actors, the key to ensuring a lasting impact will be the use of community members themselves in the principal theatrical roles. The provision of training for community members to select the topics to be dramatized, prepare the plays, and participate as actors in the performances will be central to the success of our initiative.

These troupes will visit other towns and villages throughout the island to promote diabetes management and prevention and establish a network of community theatre ‘cells’ all over Fiji. Members of these cells will perform variations of the major themes presented by the professional troupe every two weeks during the 24-month research period. We hope that this will insure continuity and the long-term sustainability of the project. The amateur troupes will be provided with seed money to maintain their activities during the six-month intervals when the professionally trained actors are absent.

Training community members will build up an informal regional network of dramatists with strong potential to do social good and provide important tools to engender social change. We believe
that the use of citizen actors will increase community awareness and participation, and enhance the probability that the long-term effects will be positive and enduring.

**Plan of action**
Our plan is to engage with the local community and learn from it. We will talk with community and faith leaders, as well as NGOs working in community health. It will be crucial to engage those involved in the visual and dramatic arts and prominent individuals representing the generational mix in the community. We want to develop a teaching tool that will be dynamic and effective now and well into the future – because, sadly, we expect diabetes to plague the region for years to come.

**We expect this project to be followed closely by Health Ministry officials seeking cost-effective ways to tackle the diabetes epidemic in Fiji.**

The theatre troupe will stage presentations emphasizing diabetes prevention and management, as well as healthy lifestyle behaviours. Skits and sketches will address the content areas of the Standards for Diabetes Self-Management Education Program of the American Diabetes Association, which include the following:

- The diabetes disease process and treatment options
- Incorporating nutritional management into people’s lifestyle
- Using medication safely and for maximum therapeutic effectiveness
- Monitoring blood glucose and self-management decision making
- Preventing, detecting and treating acute complications
- Preventing, detecting and treating chronic complications
- Developing personal strategies to address psycho-social issues and concerns
- Developing personal strategies to promote health and behaviour change.

We have a good working relationship with the Fiji Ministry of Health and the personal endorsement of the current Minister of Health. Our research group is committed to involving the greatest number of Fijian clinicians and other health professionals to develop culturally appropriate content. The skits will be developed based on the best practices in diabetes education and, very importantly, on the cultural sensitivities of the people of Fiji.

**Initial venue**
We will focus our initial efforts on the town of Labasa, on Vanua Levu, Fiji’s second largest island. Labasa has a population of about 28,000 and Labasa Hospital is the diabetes referral centre for all clinics on the island. We believe that the limited entertainment prospects available to the citizens of Labasa will serve to enhance interest in community theatre, compared with the larger urban centres, such as Fiji’s capital, Suva, or the country’s second city, Lautoka.

**Sustainability**
Ultimately, if the community theatre project is successful, we will petition the Fiji Ministry of Health to provide long-term funding for the amateur troupes established by the project. Our previous work in Fiji measuring the impact on economic development of diabetes and other lifestyle illnesses received a great deal of attention from both Government and the media. We expect this project to be followed closely by Health Ministry officials seeking cost-effective ways to tackle the diabetes epidemic in Fiji.

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**References**
Overcoming cultural challenges and improving diabetes education – a real-life experience from Lebanon

Claudia Matta

Lebanon is a small country whose geography has contributed to a culturally diverse society. Situated on the eastern shore of the Mediterranean Sea, Lebanon sits at the intersection between Africa, Europe and the Middle East. Over the centuries, waves of visitors, settlers and invaders have contributed to the rich cultural and religious diversity of the Lebanese people – 4 million of whom live in Lebanon, with another 6 million living around the world making up the sizeable Lebanese diaspora. In fact, Lebanon remains a mosaic of ethnic and religious groups. Against this multiethnic backdrop, efforts to improve the quality of diabetes education have to encompass multiple social and cultural sensitivities. Here, Claudia Matta, an educator from Lebanon, reports on her experience using educational tools developed in partnership with the International Diabetes Federation.

A prolonged civil war between 1975 and 1990 devastated this country, but Lebanon has since rebuilt its infrastructure and institutions – despite the periods of political instability between 2005 and 2008 and the war of July 2006. However, significant challenges remain in terms of shoring up the provision of medical and other social services here.

Our location on the eastern Mediterranean has made Lebanon an historic gateway to the Middle East. Lebanese society reflects a constellation of cultures that were brought here by waves of visitors, settlers and invaders over the centuries.
The activities enable participants to explore their personal beliefs about diabetes.
It is precisely Lebanon’s multiethnic environment, with its wealth of traditions and languages, that makes diabetes education such a fascinating and enriching line of work. In particular, we have had very positive experiences using a state-of-the-art educational tool developed in partnership between IDF and a company called Healthy Interactions (and with the support of Lilly Diabetes). A year and a half ago, a national programme was launched to support people with diabetes, which included the use of the Diabetes Conversation Map™ as endorsed by the Lebanese Society of Endocrinology, Diabetes and Lipids. IDF, as part of a tri-party agreement with Healthy Interactions and Lilly Diabetes deployed this tool for group education around the world.

The content of the tool is specific to diabetes and focused on therapeutic group work, and very importantly, it does not in any way promote products. Currently in use in more than 100 countries, the tool is available in some 35 languages. Although health authorities in the Middle East have endorsed the Maps, implementing their use in Lebanon has not been without its challenges.

**Discussing issues scientifically can lead to a consensus on possible solutions.**

**Embracing cultural diversity**
When the Diabetes Conversation Map™ is used in group-based education sessions, people always stand up! Gathered around the Map, participants from different social and cultural backgrounds tend to become engaged quite easily in discussions about their diabetes. The ensuing exchanges often reveal cultural differences that are not easy to overcome. For instance, in many low- and middle-income countries, the use of traditional medicine is widespread, particularly in rural areas – and Lebanon is no exception. In this context, diabetes education can be a particular challenge.

In the case of these discussion-mediated tools, activities are provided that enable participants to explore their personal beliefs and even their misconceptions about diabetes. Discussing these scientifically creates a deeper understanding of the problem and leads to consensus on how possible solutions may be found.

**Group education sessions should be characterized by empathy and solidarity.**

**Effectiveness and benefits**
A large and growing bank of evidence backs the assertion that therapeutic diabetes education is the keystone of care – improving self-management, preventing complications and reducing the cost of care. Guided interpersonal dialogue can provide a non-threatening, supportive environment to explore complex issues. It is not uncommon to witness a participant come to an important realization about their diabetes and/or the deep-seated beliefs or attitudes that affect their perception of the condition. These, of course, impact strongly on a person’s ability to self-manage his or her diabetes.

According to the popular saying, ‘a problem shared is a problem halved’. Group education sessions should be characterized by empathy and solidarity; having the understanding of a group of peers can help people to build the confidence they need in order to self-manage their condition effectively.

Diabetes educators working in Lebanon face a range of challenges. Finding the time to organize and prepare group sessions can be difficult in some cases due to a lack of support for diabetes education from some hospital authorities. In this instance, a good option has been to invite doctors to take part in the negotiation sessions in order to highlight the importance and potential effectiveness of therapeutic education as a conduit to excellence in healthcare management.

**Inform and inspire**
The programme to support people with diabetes has been rolled out countrywide. From just one collaborating diabetes centre in August 2011, we are now 22 institutions based around Lebanon. The success of the programme has motivated a number of institutions to include it as part of their nurse-training curricula.

One healthcare provider recently commented that she had “witnessed a huge difference in my patient’s attitudes towards his diabetes after three sessions”. Such testimonials are an inspiration to me, and a strong reminder of the importance of my job and the difference it – and I – can make in a person’s life.
BRIDGES Research Net

Testing a new approach to translate research achievements into improved quality of care worldwide

Juan José Gagliardino

Incorporating scientific advancements into daily clinical practice is a logical and practical process by which to improve the quality of care provided to people with diabetes. Yet this potentially beneficial approach remains a largely unresolved issue in contemporary medicine. Significant progress has been made through translational research to bring research benefits ‘from bench to bedside’ or, more accurately in this case, ‘from lab to lifestyle’ to the benefit of people with diabetes and those at risk. However, as the author points out, challenges remain. In this article, Juan José Gagliardino describes a novel approach being taken by the International Diabetes Federation via its BRIDGES programme to optimize and diffuse the public health benefits of the translational approach being applied in research projects underway worldwide.

Strong interest exists in partnerships between the community and academia as a means to improve population health through clinical research, and the issue has been addressed through translational research, which aims to bridge the gap between research and daily care. In order to facilitate this process, in 2006 the US National Institutes of Health put forward the Clinical and Translational Science Award (CTSA) programme. At the same time, primary care Practice-Based Research Networks (PBRN) – another strategy to close the gap between scientific achievements and their
application in daily-care practice – found that less, rather than more, translation is required to apply research to practice when clinicians are involved in deciding what to study, how to study it, and how to evaluate and present their results.

**Translational challenges**

The process of ‘marrying’ research with daily practice is not always a smooth one. It often requires a paradigmatic shift in terms of relationships, conceptual frameworks and even the languages used by different partners in order to communicate. The relationship between PBRN and the CTSA programme is in its ‘getting-to-know-you’ phase, and the participants are currently negotiating their expectations. It is possible, as has been suggested by a number of authors, that PBRN might evolve gradually from clinical laboratories into collaborative learning communities that use both traditional and non-traditional methods to identify, disseminate and integrate new knowledge in order to improve primary care processes and patient outcomes.

In 2007, based on this collaborative principle, the International Diabetes Federation (IDF) and Lilly Diabetes agreed to take up an active role in translational research via IDF’s Building Research in Diabetes Global Environments and Systems (BRIDGES) programme. BRIDGES is managed independently by IDF and supported financially by an educational grant of USD 10 million provided by Lilly Diabetes. The overarching objectives of BRIDGES are to reduce the risk of developing type 2 diabetes and its chronic complications; and ensure improved access to evidence-based practice for people worldwide who have already developed the condition.

The results of BRIDGES activities – completed or still underway – across six continents have demonstrated the efficacy of community-based translational research projects in addressing the diabetes epidemic, as well as in strengthening partnerships within and between local communities and national health authorities. BRIDGES has facilitated the construction of an international scientific network of experts in diabetes, and has been the catalyst behind a process to promote good-quality, evidence-based practices and procedures.

**New strategies were required to enhance the power of translational research.**

The wealth of experience gained during these recent years enabled us to recognize that although the traditional mechanisms of support for projects have been successful, new strategies were required to enhance the power of translational research. With this in mind, IDF has begun testing a new initiative, ‘BRIDGES Research Net’. It should be noted that BRIDGES aims to reduce the risk of developing type 2 diabetes and complications, and improve access to evidence-based practice for those affected worldwide.
Research Net uses unspent funds allocated to the 4th round of BRIDGES funding. The aim of this initiative is to strengthen the sustainability of current projects while replicating effective strategies in further locations – disseminating positive project outcomes and implementing successful interventions worldwide with (from the outset) the participation of local researchers and the direct involvement of local authorities.

A key condition of this initiative will be the involvement of local health authorities, including health ministries, researchers and IDF Member Associations, in order to devolve ownership of all activities and guarantee long-term self-sustainability. Moreover, the participation of these key stakeholders will produce a quantum leap in awareness of diabetes; and significant improvements in primary and secondary prevention.
and treatment – and ultimately, optimized quality both of the care provided to and of the lives of people with diabetes and those at risk.

In order to select successful outcomes to date, BRIDGES Executive Committee and BRIDGES Review Committee will focus on the 38 projects (34 countries) that have already received grant funding, and are dedicated to primary and secondary prevention. The chosen interventions (and methodologies) are then to be replicated in other locations around the world following a call for tender in the current year.

In an attempt to guarantee the success of this initiative, we will use the model developed for D-START, which involves the participation of international experts, the provision of training workshops, and continuous follow-up during the intervention phase. (Visit www.idf.org/d-start for more on D-START.)

BRIDGES Research Net in action
BRIDGES Research Net will be tested on a project underway in Alexandria, Egypt, which is evaluating the impact of an educational preventive foot care centre for people with diabetes. With a reasonable financial investment and over a relatively short period, this project achieved impressive results in diabetic foot management in Egypt:

- Providing self-care education for 3,600 people with diabetes and training for 2,700 professionals
- Reducing the prevalence of diabetes-related nail infection from 65% to 27%
- Reducing the prevalence of active diabetic foot ulcers from 11% to 3%
- Initiating diabetes foot care teams in eight Egyptian universities.

A call for tenders is being drawn up based on this successful intervention. In order to ensure future self-sustainability, the active role of local authorities will be stressed in the tender conditions and clearly outlined in the application process.

Multi-party interaction will contribute to improvements in the quality of care provided to people with diabetes.

Selected applicants will join a three-to-four-day onsite workshop, managed by the Principal Investigator of the Egyptian project, ensuring that the quality of the original intervention is reproduced. Routine evaluations will take place during the period of implementation to make certain that the intervention is running smoothly, that it is fully adapted to local needs, and that the pre-defined outcomes are measured and remain attainable.

It is our strong belief that BRIDGES Research Net will help to close the gap between basic and clinical research achievements and their incorporation into daily care practice, while strengthening relationships among local researchers, health ministries, academic organizations and IDF. This multi-party interaction will contribute also to improvements in the quality of care provided to people with diabetes, and the incorporation of effective prevention strategies into daily practice at every level. These measures and the overall approach of the initiative will play a key role in preventing the development and progression of chronic complications. Such outcomes will help to reduce the burden of diabetes on society in general, and, above all, contribute to improved quality of life for people with diabetes.

For more information about this new initiative, please contact us at bridges@idf.org.

Juan José Gagliardino
Juan José Gagliardino is member of the BRIDGES Executive Committee. He is the Director of CENEXA (Centro de Endocrinología Experimental y Aplicada), La Plata, Argentina, which depends on the Universidad Nacional de La Plata and the Consejo Nacional de Investigaciones Científicas y Técnicas La Plata; CENEXA is also a PAHO/WHO Collaborating Center for Diabetes.

References
SGLT2 inhibitors – a useful addition to therapy?

Rhys Williams and Jeff Stephens

SGLT2 stands for ‘sodium-glucose linked transporter 2’. This is a protein within the kidney tubules that regulates the reabsorption of glucose in the kidney. There is also, predictably, an SGLT1, which is present in both the kidney and the gut. In the kidneys, under normal circumstances, virtually all the glucose that passes into the urine from the blood is reabsorbed by the action of SGLT2. In diabetes, the abnormally high concentrations of glucose in the blood mean that this reabsorption mechanism in the kidney is overwhelmed, so that glucose passes into the urine – hence glycosuria (glucose in the urine) – one of the fundamental features of diabetes (and often the means by which it is first detected). A new class of drugs – SGLT2 inhibitors – is beginning to make an appearance as an oral anti-diabetes medication that may be used alone or in addition to other oral medications (such as metformin or sulphonylureas) or insulin for people with type 2 diabetes.

On the face of it, the concept of treating diabetes by increasing glucose loss in the urine may seem rather bizarre or at least counter-intuitive. The presence of glucose in the urine of people with diabetes historically has been regarded as abnormal and is one of the classical symptoms associated with the condition. Yet here is a class of drug that actually increases the extent of this abnormality as a means of lowering the concentration of glucose in the blood. Of course, lowering blood glucose, along with lowering blood pressure and blood lipids, is of benefit in reducing – or at least delaying – the long-term problems associated with diabetes. But could there be undesired effects of high glucose levels in the urine?

A range of benefits
Dapagliflozin, a member of this class of medication, has been tested in Phase 3 trials as single therapy, and as an add-on to existing oral therapy1,2,3 and insulin1.
in people with type 2 diabetes. (For an explanation of the phases of clinical trials, see Box 1). No trials have yet been reported on the use of this class of drug in people with type 1 diabetes. The consensus from these trials is that not only is blood glucose control improved, but there is also modest weight loss. There is also a small, beneficial effect on blood pressure, and there is no appreciable risk of hypoglycaemia, compared to treatment with sulphonylureas. Dapagliflozin is licensed for use in Australia, Denmark, Germany and the UK. The price of the drug will vary from country to country but is likely to be comparable (or, perhaps, slightly cheaper) than the gliptins – so called, DPP-IV inhibitors. However, the Phase 3 clinical trials have shown a significant reduction in insulin dosage when used with dapagliflozin. This could potentially lead to considerable savings. Furthermore, with the decreased frequency of hypoglycaemia associated with this product, there may be benefits to the person and concomitant savings in healthcare costs. In the USA, another drug in the SGLT2 inhibitor class, canagliflozin, has recently been recommended for approval but is not yet available for use.

**BOX 1: THE PHASES OF CLINICAL TRIALS**

**Phase 1** trials are the first time a new drug is tested in people. These are small trials (usually 30 people or less) in which the participants are monitored very closely, often in a laboratory situation. They aim, principally, to establish the most likely active dose of the drug and to identify any short term adverse effects (side effects) which may impact on safety.

**Phase 2** trials involve a larger number of participants and aim, principally, to establish the efficacy of the new drug: does it do what we want it to do in the best possible circumstances (close monitoring of dosage and adherence) as well as continuing with the monitoring of adverse effects and tolerance.

**Phase 3** trials are even larger trials, which establish the effectiveness of the new drug: does it have the required effects when used in circumstances that approximate real life? There is frequently a comparison with an existing treatment or a placebo. Economic aspects of the new treatment are also explored, as well as continued monitoring of adverse effects on a longer-term basis, compared with Phase 1 and Phase 2 trials.

**Phase 4** trials are sometimes known as ‘post-marketing trials’. They take place after a new drug has been licensed and their main focus is on the adverse effects, particularly when these may be rare – hence a very large number of participants are recruited – or long-term – hence these trials may persist for years.

It might be expected that increasing the excretion of glucose in the urine would cause an increase in the frequency of urination and infections in the urinary tract and genitals. To date, in the trials that have been published, increased frequency of urination has not been reported as a significant side effect – at least not to the extent of participants wishing to discontinue the treatment. As for urinary tract infections and genital yeast infections: both were increased in frequency in the participants (the latter particularly so in women) but these could be treated with standard therapies. Discontinuation of the drug as a result of these infections was rare in the trials and genital yeast infections appeared not to re-occur after initial treatment. It remains to be seen whether these adverse effects will be more troublesome in routine practice.
**BOX 2: A PERSON WHO MIGHT BENEFIT FROM AN SGLT2 INHIBITOR AS AN ADDITION TO EXISTING MANAGEMENT**

Mr A is a 45-year-old man with type 2 diabetes diagnosed 10 years ago, and which is complicated with obesity, high blood pressure and high cholesterol. He was initially treated with diet and lifestyle advice for three months but rapidly moved to metformin and sulphonylurea therapy. During the past 12 months, his blood glucose has not been well controlled and he has gained weight. In order to improve his glucose control, he has been started on insulin, in addition to his metformin. Despite regular increases in the insulin dose, there has been little effect on blood glucose; but there has been significant weight gain. At his recent diabetes review, his random blood glucose was 14.9 mmol/l (269 mg/dl); HbA1c 8.0%; blood pressure 140/70 and cholesterol 3.9 mmol/l (150 mg/dl).

Why might Mr A benefit from an SGLT2 inhibitor being added to his existing therapy?
- It has been shown that an additional 0.6% reduction in HbA1c can be achieved when a drug of this class is added to insulin therapy.
- This combination is associated with lower insulin doses and fewer increases in insulin dose.
- There may also be a reduction in blood pressure.
- There may be weight loss as a result of excess glucose being excreted in the urine.

Hypoglycaemia did occur more frequently in the SGLT2-inhibitor-treated participants in these trials but, as mentioned above, an explanation for this may be that insulin and/or oral drug dosages were not reduced quickly enough to compensate for the drop in blood glucose that was achieved. Incidentally, the average drop in blood glucose, corresponding to the 0.6% reduction in HbA1c given in Box 2, may not seem much; but this is an average and people with higher blood glucose concentrations at the start of therapy are those likely to benefit most. Also, this being an average drop, it does not mean that every person will benefit. In some people, there was no drop – or even a rise may be observed.

There are some people in whom the use of this class of drug is not recommended. These include people known to have significant impairment of kidney function. Also, if someone is receiving a diuretic for the treatment of blood pressure (such as furosemide, bendroflumethiazide), they need to be aware that these medications may interact to provoke excess water loss and possible dehydration. In the last few years, there has been considerable concern in relation to cardiovascular risk – heart attack or stroke in relation to new diabetes treatments. Of reassurance, to date, no cardiovascular risk has been observed with this group of medication. However, the results of Phase 4 trials (see Box 1) are required in order to answer these questions definitively.

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The answer is…

So what is the answer to the question posed in the title? Yes, SGLT2 inhibitors are likely to make a useful contribution to the currently available range of diabetess medication, most usually as an add-on to existing oral or insulin therapy. However, they are not a wonder-class of drug and more information about long-term safety is required. Also, people being treated with them will need to adjust to the fact that, contrary to what they may have learnt, some glucose in the urine is not necessarily a bad thing.

**References**


Preventing diabetes-related amputations in a developing country – steps in the right direction

Abdul Basit and Asmat Nawaz
In Pakistan, between 4% and 10% of people with diabetes develop a foot ulcer, and more than 10% of those ulcers lead to an amputation. The 'diabetic foot' is saddling Pakistan's already resource-constrained economy with a tremendous and growing cost burden. Significant achievements have been made in preventing diabetes-related foot ulcers and improving foot care throughout the country, including the implementation of a highly effective 'Step by Step' programme. Under the auspices of that programme, training is provided for physicians, diabetes educators and foot care assistants. As a result, a large number of foot care teams have been trained. Indeed, a nationwide network of foot clinics has been a key outcome of the Step by Step approach. Among key results to date has been a significant reduction in nationwide rates of amputation. However, as the authors point out in this report, further preventive and curative strategies are needed.
Akram is a middle-aged man with diabetes living in a remote rural community. With no accessible diabetes services in the area, an ulcer that had developed on Akram’s right foot worsened over a period of months. By the time he reached our foot clinic in Karachi – after an agonizing two-day journey – a below-the-knee amputation was his only treatment option. The agricultural worker’s foot might have been saved had there been a foot clinic within reasonable distance of his village.

Another person’s story is no less tragic despite the urban setting. Bano is a woman with diabetes living in Karachi who had lost her left leg to diabetes two years ago. Some months ago, an ulcer developed on her right foot as well, but with only one member of her household in employment, Bano could not afford to pay for early treatment to save her remaining leg. She underwent an amputation above the knee, leaving her severely disabled for the rest of her life.

There are hundreds of thousands of Akrams and Banos living in the developing world, and, sadly, Pakistan is no exception. With a population of 178 million, some 6.6 million of whom have diabetes, Pakistan is among the top 10 countries in the world in terms of diabetes prevalence. We are on track for a diabetes population of nearly 11.5 million by 2030. Currently, among people with diabetes, it is estimated that nearly 10% develop foot ulcers; it is reckoned that around 40,000 people lose a leg to diabetes every year in Pakistan.

The diabetic foot represents a tremendous cost burden on those affected and their families, as well as on the country’s economy and society as a whole. This is true for resource-constrained countries throughout the developing world. In Pakistan, where the average per capita health spending is EUR 2 per year, the average direct cost of treating the simplest ulcer is EUR 24 – more than ten times average health annual health expenditure per person.

Only 15 years ago, without any trained podiatrists or any trained diabetes educators, diabetic foot services did not exist in Pakistan – indeed, neither did the concept of a multidisciplinary foot care team. When the Baqai Institute of Diabetology and Endocrinology (BIDE) was founded in 1996, the seriousness of the situation almost immediately became apparent. Supported by an established and growing evidence base confirming the effectiveness of therapies to prevent foot ulcers – it is possible to reduce the amputation rate by up to 85% – the Institute’s long-term work to provide comprehensive foot care quickly got underway.

**Initial steps**

The first diabetic foot clinic in the country was established at the Institute. We began seeing people with diabetes-related foot complications on priority basis. The diabetic foot was considered an emergency condition, and people with diabetes-related foot problems were accepted 24 hours-a-day, with no need for a prior appointment.

We concentrated on training in particular, and the development of diabetic foot care teams. Our faculty provided training for educators and foot care assistants. Some physicians were sent abroad, many to the UK, for periods of specialist training. In view of the high cost of surgical procedures and the low priority given by surgeons to the diabetic foot, we started training our physicians in diabetic foot surgery, making these interventions more cost- and time-effective.

Low-cost offloading devices were developed locally, making them almost universally affordable. Special software was developed, data collected and diabetic foot research initiated. As a result of these efforts, the amputation rate at our centre decreased from 27.5% in the period 1997 to 2003, to 13.6% in the period 2004 to 2009.

**The amputation rate fell from 11.5% to 6.6% in the period between 2008 and 2010.**

**Some bigger steps**

An important international diabetes conference was organized in Pakistan in 2006. It was a mega-event, with the participation of recognized figures in the field of diabetes from around the world, including Karel Bakker, Andrew Boulton, Rayaz
Malik, Rhys Williams, Margaret McGill and others. The diabetic foot was one of the key themes and the focus of many discussions at the event. In the aftermath of that conference, and in response to an emerging need for coordination at the national level, the Pakistan Working Group on the Diabetic Foot was established, comprising leading diabetologists based around the country.

A major development took place in 2007, with the inception of a Step by Step foot care programme, launched in Pakistan as the National Diabetes and Diabetic Foot Programme, after notable successes in other developing countries, including India and Tanzania. That game-changing three-year project was funded by the World Diabetes Foundation. Creating awareness on diabetes and the diabetic foot was an overarching objective: more than 5,700 people received education on diabetes and its complications through public awareness programmes; and some 6,000 school children received education on living a healthy lifestyle.

Healthcare professional training – rooted in the concept of a team-based approach – was perhaps the most conspicuous component of the project. More than 170 foot care teams, each consisting of a doctor and a paramedic, were developed via training courses in basic and advanced foot care.

In order to improve accessibility to foot care, a nationwide network of 115 diabetic foot clinics was established with the involvement of teams trained on our basic and advanced courses. Our computer software was refined and improved to store large amounts of data and improve overall management at the clinics. Results from the clinics show that in the period between 2008 and 2010, the amputation rate decreased significantly – from 11.5% to 6.6%.

The outcomes so far are encouraging but an enormous amount of work remains to be done. It is estimated that across Pakistan – a country with an area of 796,095 km² – the need exists for more than 1700 new diabetic foot clinics. The steps we are taking now are towards that target. Basic courses for foot care teams are currently underway using only local resources.

To date, 600 teams have been trained; a further 600 will be trained this year – giving rise to the establishment of many more much needed clinics. Additionally, we aim to develop an electronically interlinked network of 12 major foot care centres throughout the country. Accurate, reliable data are essential if we are to provide adequate and appropriate services. To this end, a comprehensive diabetic foot register and amputation register will be maintained.

Very importantly also, bulk manufacturing and distribution of low-cost offloading devices made with locally sourced material are playing a key role in reducing the impact of the diabetic foot in Pakistan. The use of customized footwear can be effective in helping to prevent foot ulceration. Our plan is to provide training for our footwear technicians under the supervision of international experts. These trained technicians will go on to conduct train-the-trainer programmes and set up units to begin manufacturing low-cost therapeutic footwear.

Awareness initiatives and educational campaigns focusing on the diabetic foot must be intensified. Discussions are underway with colleagues nationwide to plot a course for the early implementation of these activities countrywide.

**Trained technicians will conduct train-the-trainer programmes and set up units to manufacture low-cost therapeutic footwear.**

Despite the limited resources, significant progress has been made to improve diabetic foot care in Pakistan. However, further concerted efforts are required at the national level. When all the stakeholders are motivated, engaged and equipped, the already considerable benefits for society will be shared and multiplied.

### References


The world is never enough

An interview with Josu Feijoo

There is nothing ordinary about Josu Feijoo, a 47-year-old mountaineer from Vitoria, in the Basque Country – except perhaps that like millions of people around the world he has type 1 diabetes. He lives by his own maxim: the future belongs to those who believe in the beauty of their dreams. A glance at his curriculum vitae tells us that Josu has had more than a few dreams, and he has believed in them enough to transform them into reality. A tremendously proud people, Basques are not known for their modesty but they are admired and respected the world over for their strength – physical and emotional – and in this sense, Josu, again, is just another vasco. But he is also an extraordinary athlete, who has taken himself to places most of us will only ever see on a screen; and he has pushed himself to daunting and dangerous physical and emotional limits. He has gained himself a place among the world’s mountaineering élite – he is recognized as one of the most hardened adventurers on Earth. And now he wants to take a massive step beyond.
Diabetes Voice: What are the ‘Seven Summits’? What does it mean to you to have been the first person with diabetes to conquer them all?
Josu Feijoo: The Seven Summits is an international project that involves climbing the highest mountain in each continent. I am the 288th person to have done it, and, as you say, the first with diabetes. There’s no doubt it’s an achievement. But I also went on to do the ‘Grand Slam,’ which, as well as conquering the Seven Peaks, involved me dragging a 125 kg sled to both the North and the South poles. Those journeys were tough. They took me two weeks each and I reached the poles without any help. There are only 21 of us in the world to have achieved this.

DV: You completed that Grand Slam in just 10 years, including of course climbing Everest and Aconcagua, and your efforts have been recognized worldwide. What makes you keep going? Are you driven by a desire for international awards?
JF: Not at all! The prizes are great – bring them on, I say! But those awards just recognize one’s hard work and sacrifice, and they serve as motivation for other people with diabetes around the world… but that is not what drives me on. I do it because I want to push myself beyond my own limits. I am a mountaineer and I am ambitious – and, anyway, if other people can do it, why can’t I?

DV: What dreams did you have before you were diagnosed with type 1 diabetes?
JF: Pretty much as they are now. I always dreamt of climbing Everest and being an astronaut. In fact, when I talk at conferences, I always begin by asking the audience, What if dreams really did come true?…

DV: Tell us about the day you were diagnosed with type 1 diabetes. If you could go back in time, what would you tell Josu Feijoo on that day? What have you learnt about diabetes that you did not know back then?
JF: It was a tremendous blow. I was 24 and I had no idea about diabetes or even what it was. I had just finished my degree in Engineering, I was working, and all I wanted to do was climb mountains and enjoy the nightlife! If I could go back in time, I would tell myself to stay calm: “your quality of life will get better [I look after myself]. You are going to climb Everest, and you are going to be an astronaut and go into space. You are going to live at NASA and receive training at the Yuri Gagarin Space Centre; you will get married and have a beautiful daughter. Don’t worry! Life goes on and diabetes will be just another companion along the way.”

DV: You are getting ready to go on a truly amazing journey. Have you had to do any special training to prepare yourself physically? Tell us what it feels like to be in a gravity-free environment.
JF: To tell you the truth, the physical training has been really tough. I have felt at times that I wouldn’t make it; but I’m doing what I love doing. The centrifuge, which I have undergone 11 times, places you at 5.4 Gs and your head weighs 80 kg; each arm weighs 48 kg! You have to withstand a body weight eight times its normal weight, and if you move a millimetre, you can break your spine and remain tetraplegic, so it is a very dangerous exercise.

Being gravity-free is an amazing feeling. You really float! But your stomach gets tied up in knots, and it is normal to spend a couple of days afterwards vomiting – but the floating is just fantastic. I always wanted to fly a plane and now I pilot a MiG-29, the most advanced fighter plane in the world. I still can’t believe it! I carry out manoeuvres in search of 4 or 5 Gs so that my body will know how to respond on the journey into space.

Then there is the hydro-lab. Wearing a space suit that weighs 135 kg, I am submerged to a depth of 12 m in a replica of the International Space Station. There, I carry out exercises that only 59 people have ever completed. I’d seen this done in films (like Armageddon and Space Cowboys) and to have done them myself, it really is mind-blowing. There are videos of me carrying out these exercises on my website (www.josufeijoo.com).

DV: Will you have to carry out experiments related to blood glucose control while you are in space? I understand that you will be testing new equipment and artificial insulin. What exactly will you be doing while you are in orbit?
JF: I’ll be testing a slow-acting insulin that has a three-day period of action. That insulin is already on the market in some north-European countries. Here in Spain, things move a little more slowly, and I have been working on this project for seven years now.

The ‘star research’ will be on cytokines. The scientists I am working with have already ‘cured’ diabetes in genetically modified mice – the modified mouse models developed by Pedro Herrera at the University of Geneva. They have demonstrated that in the worst-case scenario (total absence of insulin due to the destruction of pancreatic beta cells), the mice have been seen to recuperate part of the beta-cell mass, and survive without injections of insulin.

The key to this discovery is that it is the first time an animal model has developed without inflammatory damage. However, what is even more interesting is that the re-emerging beta-cell mass has occurred due to a process of ‘transdifferentiation’ from alpha cells – cells that are found on the pancreatic islet, beside the beta cells, and which are known to produce glucagon. In other words, parts of the alpha cells become beta cells and produce insulin instead of producing glucagon. The next major step will be to test this in humans – and that is where I come in!

DV: Your scientific goals aside, what do you want to achieve during this latest adventure?
JF: First of all, I want to reach outer space – it has been my lifelong dream. Then I want to help improve quality of life for people with diabetes, and, who knows, contribute to a cure. I also want to prove that a person with well-managed diabetes can meet any challenge. Do you think it has been easy to undergo all those tests, fly a MiG-29 and climb Everest? Well I can tell you; it hasn’t. I have had to suffer just like anyone else in those situations, and transcend my limitations, just like anyone else. Yet society still puts up barriers to people with my condition. I don’t want to show the world that people with diabetes are the same as everyone else; I want to show that we can be better – ha ha!

DV: And the million dollar question: have you got any projects lined up for after your return from outer space?
JF: After my latest round of tests and challenges, which I passed with flying colours, the Russian Space Agency has invited me to go and ‘live’ in the International Space Station – to continue carrying out experiments on my own body and with embryonic stem cells with the ultimate goal of finding a cure.

But the journey will cost around EUR 40 million. So now I am engaged in the search for funds – a multimillionaire philanthropist perhaps, or a foundation, who is aware of the acute need to cure diabetes. Any help I can receive along the way will be most welcome!
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