

**MEDIA
PLANET**

14 NOVEMBER 2007

LIVING WITH DIABETES

Sharing experiences to combat a global epidemic



changing diabetes one reader at a time

Education and awareness are essential to one-day defeat diabetes. At Novo Nordisk, we are taking diabetes awareness to the streets with our Changing Diabetes Bus World Tour, Changing Diabetes one person at a time.

On November 14, 2007, we hope you will join our partners and Novo Nordisk in celebrating the first ever UN-observed World Diabetes Day, in a call for global change. Find out how diabetes is changing at novonordisk.com





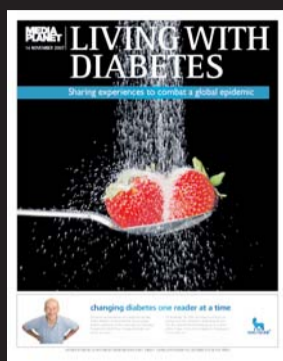
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Coming together to fight the global epidemic of diabetes



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MEDIA PLANET

LIVING WITH DIABETES
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BY VIGGO BIRCH, HEAD OF NOVO NORDISK UK

As a global diabetes care leader, Novo Nordisk recognises that leadership takes more than providing cutting edge diabetes medicines. Our knowledge and position in the global diabetes community mean we have much to offer as a partner in the fight against diabetes. We support many

individual projects around the world to combat diabetes, but our aim is larger. As a business and as a corporate citizen of a world heavily burdened by disease, we want to change diabetes. We want to change the impact diabetes has on lives, change the amount of pain and suffering diabetes causes and change the burden of diabetes on economies around the world. Our main concern is the people with diabetes and we will fight for these individuals so that they can live normal lives - and live well.

The number of people affected by diabetes is growing at such an alarming rate that it threatens to overwhelm the health service. Today, one in 25 people in England and Wales has diabetes, costing ten per cent of NHS spending, and the costs of caring for the growing number of people with diabetes will increase by up to 25 per cent by 2040. Diabetes is more likely to affect poorer or overweight

people, those from black and minority ethnic communities, and the elderly.

Diabetes is growing in prevalence all over the world. The International Diabetes Federation currently estimates that 246 million people worldwide have diabetes in 2007, which is almost six per cent of the adult population. This number is expected to reach 380 million by 2025, or 7.3 per cent of the adult population. Many of these people with diabetes will develop serious medical complications, for which hospital treatment is costly. And as many as a third do not know that they have it so are not taking any action or receiving any treatment.

Recent reports (among others the Health Commission report) claim that the state of diabetes care in the UK is inadequate compared to other European countries. In the UK diabetes is a declared focus area, so everybody from government to people directly affected by the disease have a vested interest in

getting access to the best diabetes care involving the best education, the best advice and the best medical products. In the UK we already have some of the best healthcare professionals, so if we do not give them the possibility to work according to the best standards, we will never achieve the treatment targets. Cost savings or negligence in diabetes care is something we cannot accept and I don't think the UK's health care system can afford not to put some extra effort in to changing the current situation.

Our dedication to improving life for people with diabetes led Novo Nordisk to be a strong partner in the Unite for Diabetes campaign which led to the adoption of the 2006 UN Resolution on diabetes, and as a result today 14th November 2007 is the first UN recognised World Diabetes Day. This however is only one of many steps. We now need to continue to work together to put this resolution into action, to change the future of diabetes.

Health reforms needed to help diabetes battle



BY ADRIAN SANDERS MP (LIB DEM, TORBAY) CHAIR ALL PARTY PARLIAMENTARY GROUP FOR DIABETES

The fact you can live with diabetes is of itself a quantum leap forward thanks to the discovery of insulin in 1921, and to the ever improving efficacy of drugs, treatments and informed regimes for people with either type 1 or type 2 diabetes.

However, preventing diabetes has become the number one priority for those who have looked into the crys-

tal ball and seen the implications of a future world where diabetes continues to rise at a rate well beyond the ability of healthcare systems to cope.

UK policy pays lip service to prevention and is mainly ordered around the National Service Framework (NSF) for diabetes. This is primarily a target driven strategy to level up standards of care based on a programme of change and improvement to raise the quality of services and reduce unacceptable variations. For the majority of sufferers diabetes is a condition they manage alone for 364 days of the year, and only share with the health service at their annual check-up or when things go wrong.

While the NSF and its concentration on standards is crucial, the primary aim of the National Health Service ought to be helping the patient understand their condition in order to manage, control and live with it.

Concurrently, the primary goal for policy makers across government departments ought to be the prevention of diabetes. While this dual strategy

of self-management and prevention is not actually opposed by decision makers, it does not yet lie at the heart of governmental health strategies around the world. This is why securing a UN resolution on diabetes last year was so important and why each year on World Diabetes Day we need to proclaim the progress made and communicate to decision makers the enormity of the task ahead.

In the UK alone up to three million people have diabetes with three quarters of a million of them not yet receiving treatment.

The demands on a universal health service free at the point of use are growing annually and unless measures are taken that address the diabetes pandemic they may not be sustainable.

Reaching a tipping point where governments accept the need for action was the main conclusion of the World Diabetes Leadership Forum in New York this year. That tipping point cannot come soon enough for those living with the condition nor for those most at risk.

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The Oxford Health Alliance



Confronting the Epidemic of Chronic Disease



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WORLD DIABETES FOUNDATION



International Diabetes Federation

Diabetes UK



world diabetes day



changing the future of diabetes

Defeating diabetes is our business and our passion. As a global leader within diabetes care we believe in taking an innovative approach to changing the course of this growing pandemic. Novo Nordisk is proud to play an integral role in the Unite for Diabetes campaign led by the International Diabetes Federation. November 14, 2007, marks the first UN-observed World Diabetes Day since the United Nations Resolution on diabetes was passed in December 2006, bringing together people from over 160 countries in a call for global change.

Diabetes is also fast becoming a future reality for children and young people. Guided by a deep understanding of their needs, we remain committed to finding new ways of helping future generations live full and healthy lives. Action defines how we lead, because everything we do today will help to change diabetes tomorrow.

Find out how the future of diabetes is changing at novonordisk.com



Diet and exercise can help kids avoid type 2 diabetes

Britain is facing a ticking timebomb that is set to rapidly raise rates of chronic disease if children's diets are not improved and they are not encouraged to take more exercise.

That is the worrying warning from Christine Hancock, director of the Oxford Health Alliance (OxHA) which campaigns for better awareness of how healthy lifestyles can reduce rates of chronic diseases, such as type 2 diabetes.

"The truly shocking thing is that we could be raising the first generation of children who don't live longer than their parents," she sums up.

"If we don't do something about ensuring children get their five portions of fruit and vegetables and an hour of exercise each day we are going to see huge increases in the proportion that go on to develop type 2 diabetes. In fact, we're even starting to notice that type 2 is now being found in children. It's not common but when you think it was vir-

tually unheard of in children until very recently, it shows the huge problem we're bringing on ourselves."

Indeed the latest government figures suggest that 23 per cent of adults are now obese and that childhood obesity has trebled in the past 20 years to a point where one in ten six years olds and 17 per cent of 15 year olds are now obese.

Healthy advice

To help mitigate the 'timebomb' of poor diet and lack of exercise Hancock has some very straightforward messages for parents and guardians who, despite the pressures of modern living, need to take more responsibility in ensuring their children are not tomorrow's chronic disease statistics.

"I can empathise with parents because when I was brought up we didn't have computer games and fizzy drinks," she says.

"Also, today's families may be single parent and there's an increased likelihood both parents will be working and so there are time constraints and fast food can often seem to be the answer. Nevertheless, we need to reverse the trend for children to take in more calories than they burn off or we will continue to raise obesity rates which, in turn, will rocket type 2 diabetes rates.

"So, parents have simply got to make sure children get their five per day and their hour of exercise each day and cut down on the fizzy drinks, the crisps and the burgers and chips."

Whilst this may sound like a daunting task Hancock reveals there are several subtle ways of encouraging children to increase their exercise levels. "The main thing parents need to

bear in mind is there's no point telling a child to eat healthily and exercise or they'll fall ill in 40 years time, it's just too far off," she warns.

"There's also no point in being unrealistic and expecting them to go to a gym five days a week. It's all about encouraging them to do what they like. A good starting point is walking or cycling to school and then encouraging them to take part in sport. There's a particular problem for teenage girls because they go through a stage of not wanting to run around and getting sweaty, so why not encourage them to take dance classes? And if kids claim to not like fruit and vegetable why not get a blender and make smoothies?"

All round improvement

OxHA is keen for this message to get through to schools so that the importance of nutrition and exercise is taught to children and teenagers so they im-

prove their own health and, one could reasonably assume, they could then champion the cause at home, just as youngsters have in pressuring parents to stop smoking.

"We have colleagues who have done some work in schools to help teachers realise that healthy eating and exercise would have a massive impact beyond the children's health", she says.

"All the studies indicate that when children are eating healthily and are taking regular exercise their attention spans increase and disruptive behaviour decreases. We really think that if teachers were aware of the dramatic improvement they would readily take a lead role in teaching the importance of healthy eating and exercise."

A very simple first step is, when possible, walk children to school and introduce fresh fruit and vegetables at meal and snack times. At present less than half of school children walk to school and only half will eat a single portion of fruit and vegetable in a week. Most worryingly, less than ten per cent of school children eat the five portions of fruit and vegetables per day and take the hour's daily exercise which OxHA is advising is necessary if the country is to avoid sky high rates of type 2 diabetes in the near future.

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Quality of life is usually about getting back to normal

Right treatment and right information top diabetes patients' wish lists

It may come as a surprise but according to two patient bodies who have come together to determine what patients prioritise when they talk about quality of life, most surveys which attempt to measure the term are normally drawn up by clinicians or hospital staff without much, if any, patient involvement.

This has prompted Alex Wyke, founder of patient body, Patient View and Simon Williams, director of patient group communications company Together4Health to join forces to ask patients what they consider to be the most important factors concerning quality of life. The resulting QALYity report is being published this month with the main finding, Wyke sums up, that what patients regard as important to their quality of life can vary from one condition to another.

Right treatment

Most interestingly, with diabetes, as compared to other conditions, such as chronic fatigue syndrome and multiple sclerosis, among others, patients (who were mostly living with type 2, rather than type 1 diabetes) prioritised getting the right treatment, getting the right information and leading a normal life as their top three concerns.

"The health system is very technically orientated and so it's good at measuring technical things, such as how a particular treatment works but it's not good at finding out how patients feel about their overall treatment," she says.

"Priorities vary by age, region and from one condition to another but the major finding for diabetes was that although one would imagine that a

'GP who listens' would be a top priority, it's quite low down the list. People with diabetes just want the right treatment and the right information so they can get on with their lives and manage their condition to the best of their ability."

Back to normal

If the research shows up one major failing, across all the conditions surveyed, it is that the patients want the one thing which Wyke believes the health system is not set up to provide.

"The NHS will measure satisfaction with particular treatments and access to treatment but the overriding thing people want is a return to a normal life," she says.

"They want to rejoin society and be productive, they want to get back to

work but they're mainly relying on their GP who can't always provide that because it's not what they're there for.

"I think people need the equivalent of a personal trainer that can help them get back in to work and advise them on many social issues. Somebody might want to know if they were legally sacked for spending too much time off work when they were ill or, no doubt a common one for people with diabetes, is whether a person can expect an employer to allow them to spend time at the doctor's and diabetes clinics or do they need to take that time off as leave?"

Whole process

Simon Williams agrees and likens most patient research to a speed camera that flashes on just one spot of a

lengthy treatment journey. He also believes that the QALYity report will allow medical professionals to tailor future studies of patient care around questions that are of the greatest importance to patients.

"We need to get away from treatment quality research just focussing on one part of a treatment and concentrate on the patient, we need to look at the whole patient and not that person at just one stage," he says.

"We need patients to have a voice in what they get asked to ascertain if treatment has been successful because GPs and hospital staff need to know that patients want their progress to be matched against a desire to get back to a normal life. Without this realisation there could be a risk some research is done to ensure the right boxes are ticked and a department looks like it has done well yet the patient's whole journey through a variety of treatments has not been measured against how well it has allowed them to return to a normal life and get back to work."

The research is being launched this month with the hope it will help influence future survey of patient satisfaction.

Youth Charter

Just ahead of World Diabetes Day, which this year focuses on youth, Novo Nordisk and the International Diabetes Foundation (IDF) published the Diabetes Youth Charter to help raise awareness of the worrying increases in the incidence of type 1 and type 2 diabetes among children and adolescents around the world.

The Youth Charter is described, in part, as an 'advocacy tool' to help raise awareness of how the global epidemic of diabetes is affecting young people around the world, calling on decision makers, health professionals and governments to work together on improving treatment for diabetes as well as formulating strategies to combat staggering increases both types of diabetes in young people.

Whilst the Charter's authors point out that sufficient data is not available for detailed global statistics, the report points out that diagnosis of type 1 diabetes would appear to be rising at a rate of four per cent and that, in particular, IDF figures show that the rate of toddlers, under the age four, being diagnosed is increasing.

Whilst the vast majority of children and adolescents are diagnosed with type 1 diabetes, the report points out large increases in the incidence of type 2, which is being largely attributed to poor diet and lack of exercise among the young

people affected. In particular, the Charter draws attention to Japan experiencing a 30 fold increase in young people developing type 2 over the past 20 years and in Western Australia the incidence of type 2 in young people increasing by 27 per cent between 1990 and 2002.

Partnership approach

As well as drawing attention to the effect on young people of the current diabetes epidemic, the Diabetes Youth Charter calls for decision makers around the world to develop care strategies that will help ensure that young people with diabetes receive treatment and that measures to help reduce the incidence of type 2 diabetes are put in place, such as better education for families about the need for a nutritious diet and regular exercise.

One of the major rallying calls the Diabetes Youth Charter makes, Lise Kingo, executive vice president of Novo Nordisk, is for developed countries to help assist developing countries.



A healthy, balanced diet plays a crucial part in avoiding type 2 diabetes

"The Charter really points out how there is a need for partnership if we are to tackle this global problem," she explains.

"The developed nations need to work alongside the developing nations to help them tackle the global epidemic in diabetes."

This is not to suggest that the developed nations hold all the answers because the Diabetes Youth Charter points out there is still much work needed to be done to help young people with diabetes get the best treatment.

"There is still a lot more than can be done in every country to help reduce the incidence of type 2 diabetes by encour-

aging children to eat well and take regular exercise," Kingo adds.

"There is also a great deal more work to be done tackling the psycho-social issues around youth diabetes, so children, adolescents and their families are offered counselling and support that goes beyond the medical treatment for the diabetes itself.

Education key

The IDF and Novo Nordisk hopes that the Diabetes Youth Charter will help motivate decision makers in healthcare systems around the world to do more for children and adolescents with diabetes by improving access to treatment

and educating young people, and their families, on how to better manage their levels and how a healthy lifestyle can dramatically reduce the likelihood of a young person developing type 2 diabetes now and in the future.

Dr Henk-Jan Aanstoot, chair of the Diabetes Youth Charter used the launch of the document to stress how important it is for both developed and less-developed countries to do their best to react to the effect on young people which the global epidemic in diabetes is having.

"More has to be done to diagnose diabetes in children in a timely manner and give them adequate diabetes care," he urged.

"For many children, particularly in the less-developed world, the diagnosis of diabetes is still a death sentence. The family simply does not have the money to allow their child to be treated with insulin and thereby save the child's life. Even in the developed countries, children with diabetes in poor control live 10-20 years shorter than their peers."

IDF president Martin Silink also used the launch of the Diabetes Youth Charter to stress the point that "access to diabetes care, especially for children and adolescents, is a human right which should no longer be ignored. Action must be taken now to prevent the needless deaths of children in both developed and less developed nations. Governments should prioritise childhood diabetes on a par with HIV/Aids, tuberculosis and malaria".

Diabetes put in to its global perspective

With diabetes representing a major global epidemic it may come as a surprise that *Diabetes: A Global Epidemic*, to be aired on Discovery Health channel on Sunday is believed to be the first documentary to tell the story of the chronic condition from every continent (excluding the Antarctic).

The film crew wanted to ensure they covered the effects of diabetes on cultures around the world to underline, what John Whyte, vice president of Discovery Health, claims is its overriding conclusion; a single Western approach will not suit a global epidemic.

“The cultural differences are astounding even though type 2 diabetes is largely being caused by the same problems everywhere, too many calories going in and not enough being used up,” he explains.

“In South Africa we found that people do not mind becoming overweight because it shows they don't have AIDS, so it's seen as a sign of good health to be carrying too much weight. It's similar in India where we filmed. There it's seen as a sign of wealth to be overweight and doctors tell us when they start to get men on a healthy diet and losing weight their wives complain they look thin and unhealthy.”

Unhealthy aspirations

Hence the Discovery Health team found that the first import to any Indian village that is becoming more affluent is always fizzy drinks. When western doctors tell locals the effect over consumption will have on their health they point out that other countries have had these drinks for years so now they are rich enough, so too should they.

A similar message became evident when the film crew visited Brazil and found that people do not react well to North American or European health messages.

“You just can't say to Latin American people go down the gym because it's just not something they do, it's not in their psyche, it's not part of their culture,” explains Whyte.

“So, the solution is to encourage dancing, which is central to their culture. It's an example of how you

can't expect a global problem to be tackled by a single solution.”

The film crew found that just as diabetes can be viewed in different ways by different cultures, the effects of the epidemic can also vary from one country to another, particularly among the young. In South Africa Whyte reveals the film crew felt incredibly touched by the plight of young people with diabetes.

“They end up living in a clinic which basically doubles up as an orphanage, it's terribly sad,” he reflects.

“The problem is the parents cannot afford insulin and there's not always a way of keeping it cold so the children are just forced to stay at the clinic if they want to keep getting insulin.”

The timing of the UK broadcast of the show has been set to coincide with the ending of Diabetes Week at 8pm on 22nd November, following World Diabetes Day on the 14th.



Obesity is leading to alarming rises in the incidence of type 2 diabetes

Diabetes questions answered



What causes diabetes?

Type 1 diabetes, which is diagnosed in children and teenagers is hereditary and is the result of the body's im-

mune system attacking the 'islets' cells in the pancreas which create insulin, the hormone which helps convert sugar, or glucose, in the blood into energy. We do not know why the

body turns on itself in this way but the result is to leave a person dependent on insulin injections for the rest of their life.

Type 2 is normally diagnosed in

people in their middle ages and older (although, alarmingly, it is starting to be seen in children too). This is where the pancreas' ability to produce sufficient insulin decreases, requiring, in the first instance, pills to be taken to boost insulin production and help the body make the most of what insulin there is available to it.

Type 2 can be genetic but it is believed the majority of cases are caused by poor diet and lack of exercise.

Is being moved on to insulin a bad thing?

All too often people living with type 2 diabetes can feel that they have let themselves down when a doctor decides to move them on to insulin injections, but this is wrong. Diabetes is a progressive condition and so the pancreas' own output of insulin can only be stretched so far before insulin is required. The good news is, although insulin injections can be

wrongly thought of as a failure to control levels, patients may find it easier to manage their levels once they are established on an insulin regime that works for them and many will feel healthier because towards the end of oral therapy some patients can be living on very low levels of natural insulin.

Do people with diabetes need to have special diets?

This used to be a common belief but the latest medical advice, from bodies such as Diabetes UK, is that if receiving the correct medical care, a person with diabetes need not avoid all food containing sugar at all times.

What is key, however, is that a person with diabetes maintains a healthy diet and exercise regime and so avoid junk foods which are high in sugar and fat content. However, this advice is just as apt for people without diabetes, particularly those who wish to follow medical advice and reduce their risk of developing type 2 diabetes by eating five pieces of fresh fruit and vegetables daily and taking half an hour of exercise every day.

Research compares insulin treatment



Researchers are trying to establish how best to move type 2 patients from pills to insulin injections

Working faster for longer: Modern insulins

For people living with type 2 diabetes, initial treatment will normally be pills that are designed to boost the amount of insulin the body produces and to make sure the body gets the most from what insulin is produced.

Due to type 2 diabetes being progressive, most patients will need to be moved on to insulin at some stage. Of course, for people living with type 1 diabetes, there is no insulin production to be boosted and so insulin injections are the only treatment option.

Traditionally insulin used to be sourced from animals but today nearly all people taking diabetes will be offered human insulin which has been produced in a laboratory. The obvious benefit is that human insulin is a more natural medicine to take than animal insulin, although that is not to say that synthetic 'human' insulin is without its drawbacks.

Although it may appear exactly like insulin to the body, the problem is it is not produced in the pancreas but instead artificially injected under the skin. Due to insulin being a 'sticky' fairly large molecule, this can lead to delays in it entering the blood stream and means it is not as well absorbed as insulin created normally within the pancreas.

Less 'sticky'

Hence the latest development in insulin is what are termed 'modern' insulins. These are made by several pharmaceutical companies and, in effect, they are the

same as the human insulins that are most normally prescribed today but their make-up has been slightly altered to allow them to be less 'sticky' and so faster acting in the body.

The premise is that people taking injections of insulin before each meal have normally had to guess when their food is half an hour away but, of course, they do not always know, particularly when eating out. With insulin that is faster-acting, the injection can be taken shortly before eating, taking the guess work out of when a meal may be served.

For long lasting 'basal' injections, it is also believed that modern insulins can be effective at a steady rate over long periods, reducing the risk of blood sugar levels going up and down, particularly overnight when people living with diabetes are most prone to going hypoglycaemic through low blood sugar levels. The one down side, for doctors prescribing drugs, is that modern insulins are a little more expensive than previous insulins because of the large research and development costs incurred in their development.

There are two types of diabetes, type 1 and type 2. Type 1 is a genetic condition through which, for an unknown reason, the body's immune system attacks the pancreas, preventing it from producing insulin, the hormone which breaks down glucose in the blood. This leaves patients, who will most normally be diagnosed during their school years, with only one treatment option, regular insulin injections.

Whilst there are a small, yet growing, number of children who are being diagnosed with type 2 diabetes, it is essentially an adult condition caused primarily by poor diet and exercise, leaving the pancreas struggling to produce enough insulin. Initial type 2 treatment normally consists of a variety of pills which are designed to boost the production of insulin and help the body make the most of what insulin is available to it but ultimately the vast majority of people living with type 2 will need to move on from pills to regular insulin injections.

No 'right' option

As with many shifts in treatment, there is not an accepted means of establishing the best time or method through which to move a patient on to insulin and so Novo Nordisk has funded research comparing the three major insulin treatment regimes GPs are likely to prescribe (and which will normally be combined with the patient's pills for the first, transitional period).

The three options start off a single, daily 'basal' insulin injection, which acts as a background dose designed to last the day or three 'prandial' injections taken before each meal or, as a final option, two daily basal injections with an amount of prandial insulin mixed.

By assessing how more than seven hundred patients across the UK and Ireland respond to one of the three treatment options, Peter Stella, a medical advisor at Novo Nordisk, hopes doctors will be provided, for the first time, with evidence to suggest which may be best for each patient's individual needs.

"Type 2 diabetes is progressive so the vast majority of people with the condition will need to progress to insulin treatment, yet doctors have no scientific research into the relative effectiveness of the three main options available to them," he says.

"The result is that it is normally down to each doctor's own experience, so we designed the 4T study to aid them in making the decision."

First year feedback

The study is one year through its three year course and already the initial results have been released by the researchers involved. No conclusions can be drawn, as the study is only a third of the way through, but there are already some clear findings which Stella has been encouraged by.

"The most important point is that all three therapy options improve a patient's control," he says. "However, it seems that with one single insulin preparation it is difficult to achieve the ideal level of blood glucose control.

"The prandial and the mixture of prandial and basal therapy appears to be having the more favourable effect on lowering blood glucose levels but the basal only route is proving very positive results as well. People are generally unhappy about having to inject themselves when they first move on to insulin, so the fact that only one injection per day as an initial insulin treatment can work efficiently in the majority of them is an important finding. The people on basal therapy are also putting on less weight and we're also noticing that it is better at avoiding low blood sugar levels, factors which are the major fears for patients when insulin treatment is started."

“All three therapy options improve a patient's control”

The next step for the research, over years two and three, is to investigate which treatment options are best once a person receives a second insulin formulation added to his initial insulin treatment.

Another important point to bear in mind is that throughout the first year of the trial, physicians aimed to mimic the frequency of contacts what patients usually experience in primary care setting. This is fundamental to ensuring the researchers get results which are realistic to achieve in day-to-day clinical practice.

From the jungle to the poles, diabetes need not hold you back

For many young people diagnosed with type 1 diabetes the news can be devastating but anybody wondering whether they can still lead a full life need look no further than Katrina Scott. As she begins her second year studying physiotherapy at Birmingham University she is living proof there is nothing to stop a young person living with diabetes enjoying themselves to the full and remaining active.

In fact, Katrina has been on expeditions to the Arctic and Antarctic, has worked with disabled children in Uganda and in her everyday life loves to play hockey, go swimming and dance the night away. The crucial thing, she maintains, is to plan ahead and keep to a regime of regular insulin injections, finger prick blood glucose checks and to ensure friends, family and colleagues are familiar with the condition so they can offer help if needed.

Early diagnosis

Katrina's mother is a nurse and so suspected her daughter had diabetes when she was just four.

"I was losing weight and constantly drinking and passing urine," Katrina recalls. "My mum was worried I was drinking too much and would say I'd had enough to drink but then she'd find me drinking from the tap in the bathroom. I was lucky she recognised the signs and had me diagnosed. It's meant I've lived with diabetes for most of my life, which I think is probably easier than suddenly being diagnosed in your teens."



Katrina has not allowed diabetes to get in the way of polar expeditions

For fellow students, or first-time jobbers who have, or are about to, leave home, she has some useful words of advice. "Never keep your condition to yourself, it's not a secret, the more your friends know about diabetes, the more they can help you and the less frightened they are of it," she says. "People often don't realise how important it is for someone with dia-

betes to have a biscuit or cereal bar to hand in case their blood sugar level drops. It's all too easy for housemates to come home from a night out and scoff your emergency supply – I always keep biscuits and sweet drinks in my room so they're safe! Telling your friends means they know what to do if your blood sugar levels go awry when you're out dancing. My friends are great and they know if I start to look dazed or wobbly that I'm going hypo (low blood sugar) and they need to give me a sweet drink. If they didn't know the signs, they might think I'd had too much to drink and ignore it and I would become unconscious."

Expeditions

Katrina has always led an active life and has coped with diabetes at the two extremes the planet can offer – the Polar Regions and equatorial Uganda. Katrina needs to inject insulin four times a day. Extremes of heat or cold make insulin ineffective.

"In Africa with the problem of heat I was lucky there was one fridge in the village where we were working at a school for disabled children," she says.

"When we travelled I had to put my insulin pens in a mini cool bag".

In Antarctica, Katrina trekked to the base camp used by a father and son team who were walking to the South Pole to raise money for diabetes research.

"Here I had the opposite problem. To stop my insulin from freezing, I had to have it strapped to my body to keep it warm. Because of the cold and extreme activity, I had to eat a lot more than normal therefore I had to keep checking my glucose levels, which meant taking a glove off to prick my fingers, which were freezing! I also adapt my insulin regime significantly to cope with the conditions."

At the age of 17, three years after her Antarctic trip, Katrina took part in an expedition to the Arctic. "While

trekking through freezing cold, slushy glacial rivers I had to try to stop my blood glucose meter getting wet", she recalls. "I kept it in a dry bag, however, to keep it totally dry proved impossible, so as soon as the camp stove went on I'd dry it out."

She monitored the responses the harsh environment had on her blood sugar and other physiological measurements and compared them with the non-diabetics in the team. She found that her glucose levels could rise and drop to far greater extremes than her colleagues.

Keeping sporty

Now back at college, embarking on the second of a three-year degree course, Katrina is determined to combine her profession with her passion for the outdoors and sport.

"It's so important you don't let diabetes run your life for you," she says. "Once you understand your own body and how it reacts to activity you plan accordingly. For example, before playing a game of hockey, I eat a snack and check my blood sugar levels at half time and after the match. It's the same with going out clubbing. Although I don't drink to excess I still have as much fun as my friends, the only difference is I have to keep a check on my blood glucose levels and stock up with bar snacks! I also make sure my friends have a key to my room so if my blood sugar is very low over night they can give me a sweet drink or food to help me wake up and recover."

The clear message from Katrina is that if young people living with diabetes are careful and plan ahead to manage their blood glucose levels and tell friends, colleagues, teachers and tutors about the condition, they need not feel held back from living a full and active life, even if their travelling takes them to the icy extremes of the Poles or the heat of the African jungle.

Lessons in diabetes offered for UK schools

Statistically most schools will have at least one pupil with type 1 diabetes yet it is unlikely most pupils will know what causes the condition and how best to help out a friend who looks like they may be about to suffer a 'hypo'.

Hence the Juvenile Diabetes Research Foundation (JDRF) has recently launched its Classroom Toolkit which it hopes will improve both pupils' and teachers' understanding of the condition and help young people living with diabetes to feel supported by class mates.

"The tool kit is designed along the national curriculum to fit in with key stages 1 and 2 and comes with lesson

plans to help explain diabetes," explains JDRF's CEO Kate Addington.

"It's got scenarios the children can role play with in a classroom to help them understand what to do if a friend who has diabetes goes wobbly in the playground, and other situations.

"It's also packed with useful information on nutrition and has exercise guides, with 60 different exercises, so

children are aware of how they can reduce their chances of developing type 2 in later life."

Artificial pancreas

The JDRF has also recently been buoyed by encouraging early results from a programme it funds to develop an artificial pancreas by linking an insulin pump and a blood glucose monitor. The idea is that, if future more detailed trials are

successful, a person living with diabetes would never need to inject themselves with insulin again. Instead the meter would feed blood glucose readings to an insulin pump which would inject the insulin via a small tube.

"In the UK we're funding the work to come up with a computer algorithm which will link the two pieces of kit to act like the brain, deciding how much insulin needs to be injected automatically by the pump," Addington explains.

"We've only had very early feedback on the research and it seems to be going very well, although obviously proper

clinical trials will need to be held before we know if it works. At the moment, though, it appears to be particularly useful in helping combat the highs and lows in blood glucose levels that can occur when people are sleeping.

"Although we're a foundation set up to help find a biological cure, this mechanical cure would be a real help to a lot of people, if it is proven to work."

This will rely on clinical trials as well, Addington points out, as researchers managing to combine the glucose meter and insulin pump into a small unit that can be more comfortably worn by its eventual users.



A CATALYST FOR CHANGE

THE **WORLD DIABETES FOUNDATION** IS THE ONLY INTERNATIONAL FOUNDATION DEVOTED SOLELY TO FUNDING PROJECTS WITHIN DIABETES CARE

World Diabetes Foundation is dedicated to supporting prevention and treatment of diabetes in the developing world through funding of sustainable projects. The World Diabetes Foundation creates partnerships and acts as a catalyst to help others do more.

The Foundation strives to educate and advocate globally in an effort to create awareness, care and relief to those impacted by diabetes.

The World Diabetes Foundation has funded 128 projects to date with a total portfolio of USD 115.1 million of which USD 38.1 million are donated by the Foundation. The projects funded by the WDF will in the coming 3-4 years potentially influence the diabetes treatment, prevention and awareness efforts of 58.4 million people directly in the developing countries.



WORLD **DIABETES** FOUNDATION

The World Diabetes Foundation was established in 2002 through a commitment of 500 million Danish kroner (USD 83 Million) to be allocated over a period of ten years by Novo Nordisk A/S. The Foundation is registered as an independent trust and governed by a board of six experts in the field of diabetes, access to health, and development assistance.

For further information about our projects and funding possibilities, please visit our website: www.worlddiabetesfoundation.org

World Diabetes Day

World Diabetes Day is a poignant reminder that diabetes is a global epidemic that can hit hardest in developing countries who may not yet have rolled out comprehensive education programmes to raise awareness of the condition and, for type 2 diabetes, pass on health tips to aid prevention.

Among many campaigns around the world, the World Diabetes Foundation has been working in China and India to help raise awareness how changing lifestyles can lead to people becoming overweight and dramatically increase their risk of developing type 2 diabetes.

In keeping with the youth theme of this year's World Diabetes Day much of the work has involved working with young people so they realise that the less healthy diets that often accompany rising economic prosperity can raise the likelihood of developing type 2 diabetes.

By preventing diabetes (and other related risk factors such as obesity and hypertension) complications such as

heart attacks, paralytic strokes, blindness, kidney failure and limb amputations can also be prevented.

"WDF has funded several projects that are directed at raising community awareness and health promotion as part of the prevention strategy. A strong preventive approach targeting young people and the general population will increase the chances of slowing the diabetes pandemic, particularly in societies such as India and China that are undergoing rapid economic transition", explains Dr Anil Kapur, managing director of the WDF

"The WDF currently supports two major health promotion and preven-



world diabetes day

tion projects in India. These projects aim to develop a comprehensive sustainable model involving lay people, school children, parents, healthcare workers, primary healthcare centres, NGOs and development groups in a collaborative effort to promote healthy living and to pass on knowledge through the school curriculum to encourage change in the living behaviour at home and in the schools."

The projected outcome of these projects will have an estimated impact of educating 160,000 school children, 8,000 school teachers and 8,500 parents.

Work in China

A similar health promotion project in China aims to provide advocacy through school interventions, media communication and training of healthcare professionals and lifestyle consultants. The projected outcome of the media awareness campaign will reach out to 1.94 million people. Approximately 2,000 healthcare professionals from 690 primary care units will be trained in identifying high risk individuals and providing proper guidance on behavioural modification to prevent type 2 diabetes.

Raising awareness of diabetes is crucially important because the WDF has found that in the Qingdao area in China, where it is working, only one in five urban people and one in ten rural dwellers are aware of the chronic condition. Raising the level of awareness,

Facts

- 1.6 billion people in the world are overweight or obese
- Obesity and being overweight are major risk factors for type 2 diabetes
- By 2015, it is estimated 2.3 billion adults will be overweight and more than 700m will be obese
- Ten per cent of children around the world are estimated to be overweight or obese
- People are eating food that is high in saturated fats and sugars at the same time as increasing urbanisation and sedentary lifestyles mean people burn fewer calories each day

the foundation believes, can only help reduce the growing prevalence of diabetes in an area where 7.5 per cent of the population has diabetes.

Model Group

Any groups concerned by the current thinking on any particular medical issue can sometimes be accused of representing a minority interest, no matter how valid the issues they raise.

It was for this reason that the Model Group was formed to give the general public and health decision makers a guide to diabetes which also called for a more open debates on treating the chronic condition.

The group included representatives from diabetes specialists, primary and secondary healthcare decision makers, GPs, nurses and patients groups, among many others. Whilst the report the group produced this year *Diabetes: Finding Excellence?* can be used as a guide for anybody who wishes to know more about the condition, the chairman of the Model Group, Professor David Matthews, chairman of the Oxford Centre for Diabetes, Endocrinology and Metabolism (OCDEM), points out it also call for an open debates on diabetes treatment.

"When I launched the report at the House of Commons I joked that one element of it was to be like a Rupert Bear annual in that anyone could pick it up at any time and look at the graphs and the captions to get a quick view of diabetes and its effects," he reflects.

"Further to that though there is a lot of heavily researched text which raises some very serious issues about how we treat diabetes."

Better funding

The major concern Matthews and his fellow Model Group's representatives have with current NHS thinking is that the treatment of diabetes is being underfunded because it is a 'quiet' area which will not generate negative publicity.

"The problem with diabetes is it's a silent disease, you don't get people on long surgery waiting lists or dying on trolleys in A&E," he says.

“The problem with diabetes is it's a silent disease, you don't get people on long surgery waiting lists or dying on trolleys in A&E”

"It means it's an area where second healthcare decision makers can cut costs by pushing patients to primary care and nobody in the general public really notices because there's no surgery target that either is or isn't being met.

"We agree that nine in ten diabetes patients can be treated perfectly well by a GP but the problem is that the one in ten who do need access to a top quality clinic at a hospital is not always the same one in ten, it varies as people manage their levels and then at another stage may need extra support."

Ultimately Matthews and the Model Group argue that diabetes funding in second care can be cut because the effects are not immediately noticeable.

"You could close every diabetes clinic in the country tomorrow and you wouldn't see an immediate effect," Matthews adds.

"Give it four or five years though and then there would be a massive cost as people turn up at hospital with strokes, heart attacks, renal failure, going blind and needing amputations. So it's an easy short term view to take and we think that there needs to be a more open debate. I'm not totally against targets but one has to balance this with the simple fact that if we spent money early on with diabetes you can save a lot of money further down the road by preventing the associated complications that arise when it's not properly dealt with."

Model youth

As far as treatment of diabetes among children and teenagers Professor David Dunger, Professor of Paediatrics at University of Cambridge, Addenbrooke's Hospital believes the government is largely on the right wavelength.

"I think there is a lot more concern among Model Group members for treatment of adults than there is for the youth," he says.



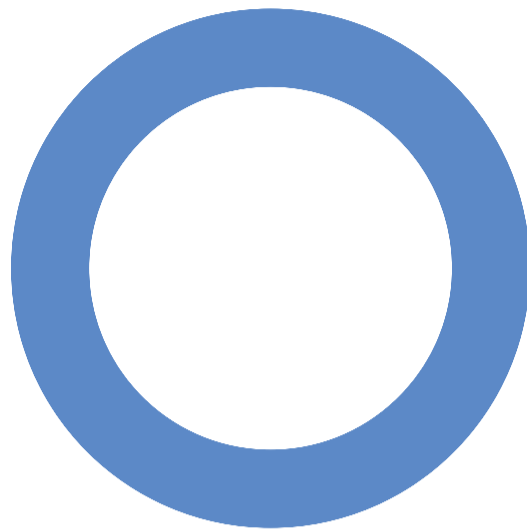
The Model Group gives all those involved in diabetes care a voice

"The government is suggesting that regional centres of excellence should be set up to help treat children and teenagers who, of course, are totally insulin dependent, unlike many adult, type 2 patients. The idea is that people from a regional centre of excellence could help train people in their locality and they would be there for the more challenging young patients who are normally the minority but they can take up the majority of work, particularly if there are complications, such as avoiding insulin for fear of putting on weight.

"So I think the government is largely thinking in the right way, the

obvious questions now are which centres will be the areas of excellence and how will they be funded."

Whilst these questions remain to be answered it is the hope of the Model Group that the *Diabetes: Finding Excellence?* report will serve as a guide to the chronic condition and help the public, politicians and healthcare professionals garner a better understanding of the chronic condition and open up a thorough debate as to whether today's savings on medical treatments, such as diabetes clinics in secondary healthcare, could lead to major problems and greater expense further down the line.



world diabetes day

change

Diabetes can affect anyone, anywhere at anytime. At present, there are some 246 million people around the world with the condition. That number is expected to grow to more than 380 million people by 2025. We must act now to defeat this silent killer.

unite

On 14 November 2007, the world will unite and address the devastating consequences of diabetes. It can be controlled and even prevented. Learn how and what you can do to change the future of diabetes. Join Novo Nordisk in supporting and implementing the United Nations Resolution on diabetes and in creating awareness this World Diabetes Day.

change diabetes – unite on 14.11.07

www.diabetesbus.novonordisk.com

changing diabetes



World Diabetes Day is marked around the world



The London Eye is expected to be illuminated in blue tonight to mark World Diabetes Day

The first World Diabetes Day will be marked around the world today by a wide variety of events, including the London Eye and the Empire State building being illuminated to appear blue, the colour synonymous with the campaign to get a day for diabetes recognised by the UN.

The first World Diabetes Day will be marked around the world today by a wide variety of events, including the London Eye and the Empire State building being illuminated to appear blue, the colour synonymous with the successful campaign to get a day for diabetes recognised by the UN.

Celebrations will be centred on New York, home of the United Nations which agreed with campaigners that diabetes is a chronic condition that places strain, not just on people living with the disease, but also society as a whole.

Hence the Novo Nordisk Changing Diabetes bus will be in New York as part of its five continent tour, helping to raise awareness of diabetes, its symptoms, its treatment and, with type 2, the steps that can be taken to avoid it.

Keeping momentum

Whilst these will be very public acts drawing attention to the global epidemic of diabetes, medical health professionals have been working hard to ensure that now there is a World Diabetes Day the central reason for it being officially recognised by the UN is acted on.

“The support for this Resolution demonstrates that all nations have recognised the severity of the worldwide diabetes pandemic and have committed to urgently dealing with this. In this way, nations have acknowledged that the access to diagnosis, prevention and proper care of diabetes constitutes a human right which should no longer be violated,” says Lars Rebién Sørensen, CEO and president of Novo Nordisk.

It was for this reason that the pharmaceutical company helped to organise, in March, the first Global Changing Diabetes Leadership Forum where 185 medical health professionals from more than 20 countries congregated to discuss ways forward in tackling the alarming worldwide rise in diabetes through better diagnosis, treatment and prevention strategies.

Barometer of change

At the Forum, Novo Nordisk agreed that a Changing Diabetes Barometer will measure and share the worldwide progress in the fight against diabetes on an annual basis around World Diabetes Day. To support the Changing Diabetes

Barometer, Novo Nordisk will, on an annual basis, publish a report with key findings from the Barometer.

“The Barometer is a tool that will provide healthcare professionals, patient organisations, politicians, institutions and media with valuable information on how to improve the quality of diabetes care, bring down diabetes related complications, extend patients’ life expectancy and reduce costs.” says Lise Kingo, executive vice president of Novo Nordisk.

In keeping with the theme for the inaugural World Diabetes Day, Novo Nordisk has also recently published research from its DAWN (Diabetes Attitudes, Wishes and Needs) Youth programme which looked at the psycho-social issues surrounding children and adolescents, as well as their families. The report points out the widely-accepted need for young people, and their immediate family, to be offered better medical support, diabetes care at schools and, where necessary, counselling so the family group can help the family member control their blood glucose levels to the best of their ability.

Diabetes brings increased risk of depression

Although diabetes is a condition caused by the pancreas not producing enough, or any, insulin, some of the largest health challenges it can pose for patients are mental as well as physical.

This mental strain of coping with diabetes can lead to depression, anxiety and stress as patients battle to keep their blood sugar levels under control because, even though half of all people with diabetes admit to having problems controlling the condition, the majority will always blame themselves and feel guilty they are not managing their condition better.

Hence studies have shown that people with diabetes are two to three times as likely to suffer from depression which, when combined with the increased anxiety of managing their condition, ensures the symptoms are worse than those suffered by a person with depression but no diabetes.

Little help

However, very few people living with diabetes are offered psychological assistance or counselling and, according to Soren Skovlund, head of the DAWN programme, which aims to raise awareness of the psycho-social issues surrounding diabetes, this can have a very hard impact on children with the condition, and their families.

“We are working to raise awareness that with diabetes the whole family is the patient and medical health professionals need to be aware of the issues that can cause young people with diabetes to skip injections or become depressed,” he says.

“The classic example is where children think their parents are nagging them and so rebel, yet the parents have this huge anxiety every day they wave a child off for school that they could go hypo at any time and they wouldn’t be there to help out.

“So there’s a huge role for counselling for the whole family, particularly in the UK. We’ve carried out studies in many countries and it’s fair to say the UK suffers the most from this inter-family conflict that can lead to children missing injections. This is a huge problem. In recent international research 90 per cent of the children questions admitted to skipping at least one injection per month.”

When dealing with young people

with diabetes DAWN is also working to show doctors and nurses that although there are a lot of alarming statistics surrounding the global epidemic of diabetes, it is very important to give the youth a positive message. Young people, the project’s leaders have found, react most favourably to hope and positive help in showing them that although they have an, as yet, incurable condition, there are effective strategies to ensure they can lead a full life.

Not costly

One of the problems with mentioning counselling is that health authorities can be afraid that making a positive step towards tackling psycho-social issues will bring large demands on finite resources.

However, the clear message from Skovlund is that, at its simplest level, taking on board these extra issues and hopefully dealing with them so they do not develop into mental health problems does not necessarily require large increases in expenditure.

“Most of the time it is more about reorganising a clinic and offering some extra training to staff,” he points out.

“There are 12 centres across Europe which have shown you can look at the psycho-social side of diabetes through better training and use of existing resources. Staff can be trained to help work with a family to help them come to terms and deal with a child’s condition and they can also be trained to look out for and spot the signs of depression.”

The alternative, Skovlund points out, is to ignore the tensions within families affected by diabetes and not to consider mental health issues when treating people with diabetes. This, however, as experience is showing, simply leads to people needlessly suffering as their relationships are strained and they feel guilty about not managing their condition better – a destructive cycle which doubles or trebles the likelihood of a person with diabetes suffering from depression.



the charity that cares
about people with
diabetes

Diabetes UK

School staff could prove an immense help to families with children living with diabetes with just a small amount of extra training, according to Diabetes UK, which recently began distributing education packs to schools to raise awareness of the condition.

The literature is designed to encourage schools to consider having a person responsible for ensuring that children with diabetes are monitoring their blood glucose levels and keeping to their required insulin injections. For the youngest of children, the charity also hopes school staff could be helped to become confident enough to administer insulin doses.

"Ultimately the long term aim would be to get back the school nurse," explains Mike Hales, marketing director of Diabetes UK.

"It's such a shame they don't exist any more. For now, though, we're trying to get the message out there that schools can really help families by just making sure children are keeping to their regimes and that for young children that maybe cannot inject themselves, a member of staff is trained to do it for them.

"The alternative is parents having to stop off at school half way through the day to give an injection which is far from ideal and can put strain on their careers."

To raise awareness of the additional factors that affect children with diabetes, the charity will be marking World Diabetes Day with not only a parlia-

mentary reception in London but will also be sending a British child and its mother to meet MEPs in Brussels.

Extra challenges

Diabetes UK believes that many of the additional challenges which children and teenagers face, along with their families, can be overlooked and so is due to campaign heavily next year to raise awareness and understanding of how diabetes can have a different impact on the youth.

"The classic problem is family conflict through other children resenting the child with diabetes getting a lot of attention and maybe being the reason why none of them are allowed sweets or treats," says Cathy Moulton, Diabetes UK's care advisor.

"That's why it's so important for us to get our message over to families that people with diabetes can eat a normal balanced diet with the occasional treat so long as it is after a meal so the body is already digesting food."

Teenagers also face the twin problems of being at an age when they are liable to rebel against authority and, particularly with girls, can be steered by media and peer pressure to risk their health in a bid to avoid putting on weight.



Diabetes UK is helping school staff to get a better understanding of diabetes

"There's a misperception among teenagers that insulin makes them put on weight and so injections can be avoided" "The problem is that weight loss is a symptom of diabetes and so when a young person is diagnosed and put on insulin, the weight loss is stopped and they can think they've put on weight.

"It's leading to a huge problem of young people, particularly girls, of what's being called 'diabulemia' where they do not keep to their insulin regimes. Add to that the problem of teenagers rebelling against the regime of constantly having to check blood glucose levels and taking insulin and we've got a big problem on our hands.

Some young people are doing themselves terrible damage further down the line because, unchecked, glucose is sticky and so blocks up small arteries which leads to problems with eyesight, kidneys and sexual dysfunction as well as increasing the risk of heart attacks and strokes."

Gradual change

Part of the solution Diabetes UK believes could be to have a better hand over of care when patients turn 16. At this age children move from paediatric care to adult care and often they receive less support and have to attend clinics at a different location. Rather than have such a definite age limit, Diabetes UK is

advocating that patients transfer to adult care when they are ready to manage their own blood glucose levels without the support of a paediatric team and that the transfer is made easier by doctors and nurses from adult treatment centres visiting paediatric clinics so they are a familiar face when a patient attends their first appointment in unfamiliar surroundings.

The Medical Conditions at School education pack was produced by Diabetes UK in conjunction with The Anaphylaxis Campaign, Asthma UK, Epilepsy Action and Long-Term Conditions Alliance. Visit www.medicalconditionsatschool.org.uk for more information.

Economic cost of diabetes

There is universal agreement that the problem of diabetes is growing significantly worse in both developed and developing countries. This much we know, but what is less frequently explored is the burden that this epidemic is placing on our economies.

BY ROB MITCHELL, A SENIOR EDITOR AT THE ECONOMIST INTELLIGENCE UNIT

For example, what are the true costs of treating diabetes and its complications, and what is the extent of the lost productivity and earnings that arise from illness, disability and early death caused by the condition?

It may at first appear somewhat cold-hearted to express a chronic disease that causes such massive human suffering in purely economic terms but research of this nature is extremely important. It is only by having a strong grasp on the true cost of a disease to society that policy makers from a variety of backgrounds are able to make informed

recommendations on which to base the efficient allocation of scarce resources.

This is not to say that such a calculation is easy. There are numerous barriers that stand in the way of putting a figure on the economic cost of diabetes, including a lack of available data, and a tendency for deaths caused by complications of diabetes, such as heart disease and kidney failure, not to be attributed to the underlying cause on death certificates.

Varying cost

Working with the data and information that are available, the Economist Intelligence Unit produced a report* earlier this year, sponsored by Novo Nordisk, that

explores the economic cost of diabetes to five countries: China, Denmark, India, the UK and US. All are countries that face mounting costs from diabetes but, because they are at different stages of their development, the scale of the problem varies considerably between them.

The research found that, out of these five countries, India currently carries the biggest burden. Expressed as a percentage of gross domestic product, the country currently incurs costs equivalent to 2.1 per cent of GDP in 2007. Among the developed countries, the United States faces the biggest burden, with an estimated cost equivalent to 1.2 per cent of GDP. The UK faces costs in the region of 0.4 per cent of GDP, while Denmark in-

curs costs equivalent to 0.6 per cent of GDP. In the case of China, there were insufficient data to calculate healthcare costs, but lost productivity costs alone are equivalent to 0.6 per cent of GDP.

The five countries studied for this report spend significant sums of money every year on treating diabetes and its complications. For example, the US spends \$134.8bn annually, or six per cent of its healthcare expenditure. Cutting back on treatment, however, is not an option. If countries do not invest in prevention, early diagnosis and treatment, the costs in future will escalate dramatically. Individuals who were not diagnosed and treated in the early stage are far more likely to suffer from serious complications, such as heart disease, and these are far more expensive to treat than early stage diabetes.


Moving on

It is clear that a better understanding of the scale the challenge that diabetes represents requires further consistent, clearly defined research, far

beyond the study that we conducted for this report. Obtaining better data on diabetes costs and prevalence means that healthcare professionals must be encouraged and, if appropriate, incentivised to diagnose diabetes and make correlations between complications of the condition and their underlying cause. Research organisations must then collect and share this data at a national and international level, and then contextualise it for key policy-makers in government, healthcare and business.

However, a lack of data should not hold up the urgent action that is required to address diabetes and other chronic diseases. We already know what to do to counter obesity and smoking. In a similar way, stakeholders must all work together to make the small changes needed to create societies in which the healthy choices are the easy choices.

**The Silent Epidemic: An economic study of diabetes in developed and developing countries is available from www.eiu.com/silentepidemic*



Every 10 seconds
2 people develop
diabetes around
the world.

Watch

Diabetes: A Global Epidemic

the world premiere documentary from Discovery Home & Health

Finally, a sweeping documentary that takes you to the frontlines of diabetes around the world. Witness personal accounts from patients and doctors—and find out about the challenges ahead.

Premieres

November 22, 8PM



Funded by an educational grant from Novo Nordisk as part of its *Changing Diabetes* Leadership Initiative.