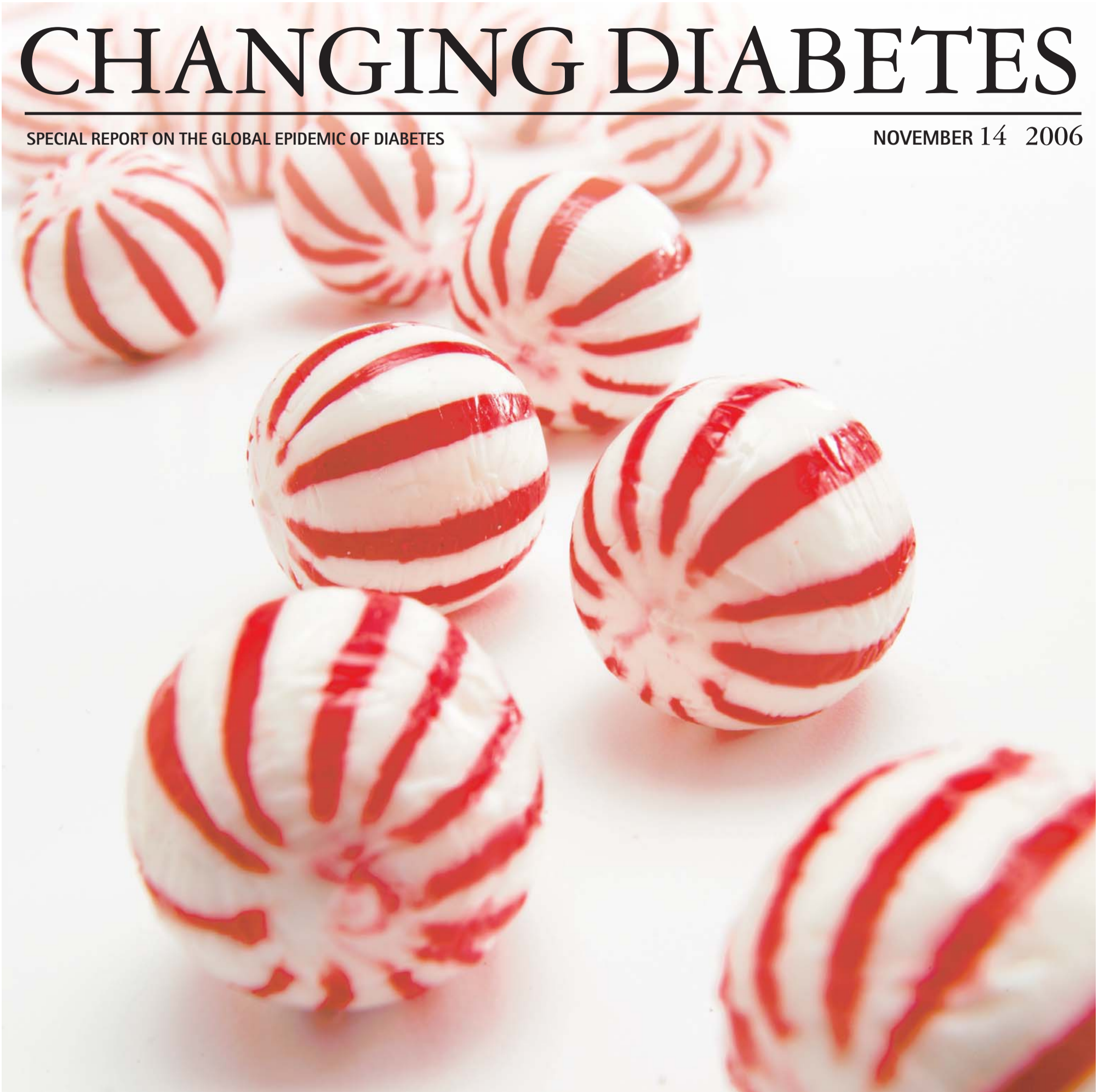


CHANGING DIABETES

SPECIAL REPORT ON THE GLOBAL EPIDEMIC OF DIABETES

NOVEMBER 14 2006



changing diabetes one reader at a time

Collective action is what is needed to one day defeat diabetes. Right now, the Novo Nordisk changing diabetes bus is on a round-the-world tour in support of a UN Resolution on diabetes.

If it comes to your area, please sign the petition for a UN Resolution. If not, sign the petition online at www.novonordisk.com. Because collective action depends on individual efforts.



D I A B E T E S

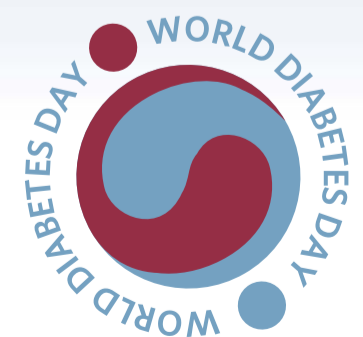


FOR EVERYONE

Today is

World Diabetes Day

visit www.worlddiabetesday.org



14 NOV

World Diabetes Day is an initiative of the International Diabetes Federation.

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Welcome to Changing Diabetes

At Novo Nordisk our passion is to defeat the global epidemic of diabetes. This has been our core philosophy for more than 80 years, ever since our founder Professor Krogh sought treatment for his wife who had diabetes. Since then, we have never forgotten that the focus of everything we do is to provide care for people with diabetes.

Novo Nordisk is acknowledged as a leader in providing insights into the mind and behaviours of people with diabetes. Our DAWN study, the largest in the world of psychological and social factors in diabetes, is about to be expanded to include young people in addition to adults.

We try at every level to provide as much support as we can for healthcare professionals who are on the front line of patient care. We understand that it is often difficult to strike a balance between their calling for high level care and the equally legitimate need to deliver value, according to guidelines, frameworks and performance criteria.

Patient groups such as International Diabetes Federation, Diabetes UK and the Juvenile Diabetes Research Foundation have always been at the forefront of calling for the best medicines, services and

research to serve their members. At Novo Nordisk we respect the right of patients to be represented in the big debate on allocation of healthcare resources, and thus we offer as much support and collaboration to these groups as we can, while always respecting their independence.

Working together will provide a stronger voice for changing the future of diabetes. We are in full support of the International Diabetes Federation-led campaign for a UN resolution on Diabetes. A resolution would give us hope that diabetes is finally going to get the attention that the millions of people all over the world who have diabetes deserve. It would be an acknowledgement that could put diabetes on the agenda worldwide with the gravity we know from other serious diseases such as Aids, especially when more people



▲ Viggo Birch, Managing Director of Novo Nordisk UK, Ireland, The Nordic Countries and Vice President Europe.

die each year as a result of the complications of diabetes.

We have an obligation to keep striving for improvements in diabetes care. Both because we are the world's leading company in diabetes care, and also because anything else would be poor business. Once diabetes achieves a higher status on the international agenda (whether political, cultural or in terms of public awareness), far more people will be diagnosed and treated. We see a UN resolution as a declaration of war on the greatest health challenge of the 21st century.

Foreword from Viggo Birch, Managing Director, Novo Nordisk UK



▲ Martin Silink, President-Elect, International Diabetes Federation

A UN Resolution on diabetes

Coordinated and concerted action is required to defuse the diabetes time bomb. The International Diabetes Federation (IDF) is leading a global coalition of diabetes representative organizations and other key stakeholders to secure a United Nations Resolution on diabetes. The aim is to focus world attention on the need to stop the diabetes pandemic and to raise awareness of this serious-but-silent killer.

There is no such thing as mild diabetes. It is a serious chronic disease triggered by both genetic and environmental factors. A leading cause of blindness, kidney failure, amputation, heart attack, and stroke, diabetes is among the world's most significant causes of death, responsible for over 3.5 million global deaths per year – a similar number to HIV/Aids. Diabetes is understood by few and ignored by many. Currently, more than 230

million people live with diabetes worldwide. This figure will exceed 350 million, over 7% of the adult population, within a generation if urgent action is not taken. Though diabetes is increasingly common, it is frequently dismissed as 'a touch of sugar', 'a disease of the elderly' or 'the consequence of affluence'. These misconceptions are erroneous and potentially dangerous; yet they are surprisingly commonplace.

Diabetes affects people of all ages. The world picture shows type 2 diabetes shifting down a generation. In developing countries, diabetes is most common among people aged 35 to 65. A startling new development is the increase of type 2 diabetes in children and adolescents.

Diabetes hits the poorest hardest. Within 20 years, 80 per cent of all people with diabetes will be

in low- and middle-income countries. In developed countries, the risk of type 2 diabetes is higher among those who are socio-economically disadvantaged. It is possible to live a full and healthy life with diabetes. With access to appropriate care and education, the complications of diabetes can be avoided or delayed. At the same time, it is possible to prevent type 2 diabetes in many people at risk through healthy diet and exercise.

Governments worldwide have a responsibility not only to ensure that appropriate care is available to their diabetic populations, but to promote and legislate in favour of lifestyle opportunities that will promote good health and curb the diabetes epidemic.

Information about the campaign is available at www.unitefordiabetes.org

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What is diabetes?

The first thing that any doctor or researcher has to admit about diabetes is that science is not entirely sure what causes it and there is no cure.

BY SEAN HARGRAVE

That is not to say it is a chronic disease that is incapable of being treated. Far from it; with modern treatments, people living with diabetes can lead full lives whilst the researchers continue their studies to understand what causes the condition which currently affects 3 million people in the UK but is growing rapidly.

There are two types of diabetes, type 1 and type 2. Type 1 is where the body produces no insulin and typically, although not exclusively, occurs in childhood or in teenage years. Type 2 is where the body does not produce enough insulin and the insulin produced does not work effectively. Typically occurs in adults, although the age of diagnosis is now coming down from the

elderly and those nearing retirement to affect many working age people and even teenagers.

Whilst the growing numbers of people with type 2 is being largely put down to poor diet and lack of exercise, those who develop type 1 diabetes do so because they are genetically predisposed to the disease, although in nine cases out of ten, they will not have relatives in their immediate family with the condition - even identical twins only have a 50-50 chance of both developing type 1.

For some unknown reason, a young person's genetic proneness to diabetes will have been triggered by their environment and the debate rages on as to what that might be. One theory is other diseases can trigger diabetes and another, currently in fashion among many researchers, is that we now lead such clean lives that the immune system can be confused and turn in on itself.

Self destruct

Strange as it may sound, this is exactly what causes type 1 diabetes. For some rea-



son, the immune system in a child or teenager will turn on itself and destroy the beta cells in the pancreas which produce insulin which help the body use glucose. Insulin is a hormone which is produced in the pancreas and secreted in to the blood stream. In simple terms it is a key which opens cells doors around the body, allowing them to take in the energy contained in glucose derived from food.

However, when beta cells are killed off - a deterioration that can take years - less and less insulin can be produced until none is made. When this happens, the body cannot process the glucose in



Current and future treatments for diabetes

With type 1 diabetes the body no longer produces its own insulin and so insulin therapy is the only current treatment. It is nearly always administered throughout the day by injection, although in some cases a pump can be used and inhalers are just starting to be used by those with needle phobia, poor control or problems with injecting sites.

There are two general types of insulin which need to be taken. Bolus insulin needs to be injected three times per day around meal times because it is designed to help the body deal with the 'spike' in blood glucose levels after eating. Basal insulin is taken once or twice per day to deal with the background level of glucose found in the blood throughout the day.

Although insulin can be provided today in discrete pen-like sticks, it is not available in pill form because medicine has yet to find a way of getting its large molecules through the gut lining. Outside the body insulin tends to clump together and the gut is full of acid which destroys the hormone, hence injecting it under the skin is the most effective means of getting it in to the blood supply.

The main development with insulin has been to move from using beef and pork insulin to synthetic human insulin grown in the laboratory and then, over the past few years, to further adapt this technology to modern 'analogue' insulins. These slightly alter human, synthesised insulin to make it either dissolve quicker in to the blood stream, so it can work faster, or last for 24 hours for basal injections (see page 8).

Pills

With early type 2 diabetes the body is normally still producing some insulin and so the normal, initial treatment are pills designed to get the most out of what the pancreas is making.

The latest pills coming on to the market offer very effective treatment, assures Professor Stephen Gough, Consultant Diabetologist at University Hospital, Birmingham.

"We've now got some very effective drugs to work alongside the trusted old metformin treatment which helps with insulin sensitivity in the liver," he explains.

"We now also have sulphonylurea to help the pancreas make more insulin and glitazones to make the cells around the body more receptive to insulin. It means we now have effective triple therapy and, in particular, can treat patients that have a reaction to metformin."

Coming soon

However, for the next year few years, Gough is most excited at the prospect of boosting insulin production not through pills but by injections of a hormone called GLP1. This is naturally released by the gut to tell the pancreas that we have just eaten and so it needs to produce insulin to help the body break down the glucose in the food.

The trouble with GLP1 is that an enzyme in the body, called DPP4, breaks it down and so it is likely, Gough believes, that GLP1 injections would be combined with a tablet to block the DPP4 breaking it down.

"We're expecting to see GLP1 injections arrive in the UK next year and they're going to be exciting for type 2 patients because it is likely that it will only be one injection per day and in a





the blood stream and so levels run high causing the body damage and making the person with the condition feel ill – tiredness to the point of fainting and being bad tempered are key indicators – because they are not getting the energy from what they have eaten.

This is why people with type 1 diabetes need insulin injections to manage their condition. By injecting insulin before meals the body is able to break use blood sugar effectively and the person's glucose level stays normal.

Type 2 diabetes is partially similar to type 1, in that there is a genetic predis-

position to the disease, but the majority of cases are attributable to poor diet and lack of exercise which means the insulin-creating pancreas is overworked and so begins to falter, producing less and less insulin until it eventually creates none.

Many type 2 sufferers will at first be able to control their condition through pills, regular exercise and healthy eating but insulin is an inevitability for anybody living with diabetes because when the body eventually stops producing insulin, it must be administered by the person managing their condition.

couple of years time that might be got down to one a week or even one a month," he enthuses. "With a DPP4 inhibitor tablet it should be a very effective way of encouraging the body to make more insulin and it shouldn't have the side effects of weight gain that can come with some type 2 tablets."

Pumps and inhalers

There are also interesting developments under way for getting insulin in to the blood stream without the need for regular, self-administered injections.

As the name suggests, a pump is the equivalent of a store of insulin

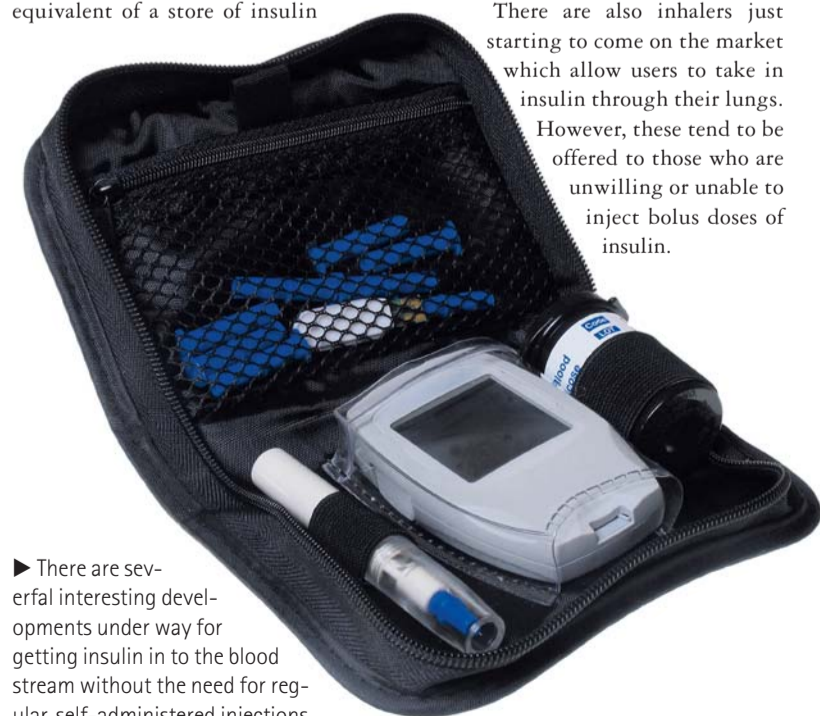
which is connected to a needle that is permanently under the skin. According to Professor David Dunger, a paediatric diabetes specialist, the pumps are not ideal for all people with diabetes but are particularly suited to his line of work.

"The pumps are ideal to give small children quick bolus bursts of insulin," he enthuses.

"The problem you can have with a small child, say a three year old, is that you can give them an injection before they eat but what then if they refuse to eat? That's the beauty of the pumps you can give bolus doses immediately."

There are also inhalers just starting to come on the market which allow users to take in insulin through their lungs.

However, these tend to be offered to those who are unwilling or unable to inject bolus doses of insulin.



► There are several interesting developments under way for getting insulin in to the blood stream without the need for regular, self-administered injections.

Common diabetes myths



Myth: Diabetes is caused by sugar in the blood

A common misconception, particularly reported back by those working to raise awareness of diabetes in the developing world. Blood glucose is completely normal and does not itself cause diabetes, it is the body not producing insulin – which helps the body use blood glucose – which causes diabetes. Too much, or too little, blood glucose is a symptom of diabetes, not a cause.



Myth: Diabetes is something old people get

Whilst type 1 diabetes is typically found in children and teenagers, type 2 was, until recently, typically found in adults. However, poor diet and a lack of exercise is leading to widespread obesity which is being held responsible for type 2 being diagnosed in younger people, even children and teenagers.



Photo: Diabetes UK

Myth: If I manage my condition, I can avoid insulin

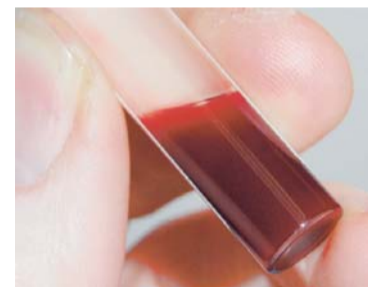
Insulin is a promise, not a threat. It is inevitable that anybody coping with diabetes will be prescribed insulin at some point if they live long enough. When the cells in the pancreas producing insulin deteriorate and eventually produce no insulin, a prescription of insulin is inevitable and not to be feared, it is completely normal.

Myth: If I eat healthily and exercise I will avoid diabetes

Mostly true, although some people have a genetic predisposition to diabetes that means they will inevitably develop the disease. However, exercise and a healthy, balanced diet are among the best way to prevent chronic diseases are the best ways to guard against chronic disease, including diabetes.

Myth: When I get my blood sugars wrong, it's all my fault!

Managing blood glucose level is tricky and can be very annoying when, despite your best efforts, you sometime end up 'high' or 'low'. It is something all those coping with diabetes have encountered at some stage and it is a good reason why many people join an association for those diagnose with diabetes, such as Diabetes UK and others. Being surrounded by people who understand the condition and the difficulties in constantly maintaining good blood sugar levels is often a great comfort to people.



Nurses embracing diversity

The London Borough of Hammersmith and Fulham is one of the most ethnically diverse areas in the UK with an estimated 120 languages spoken within its boundaries.

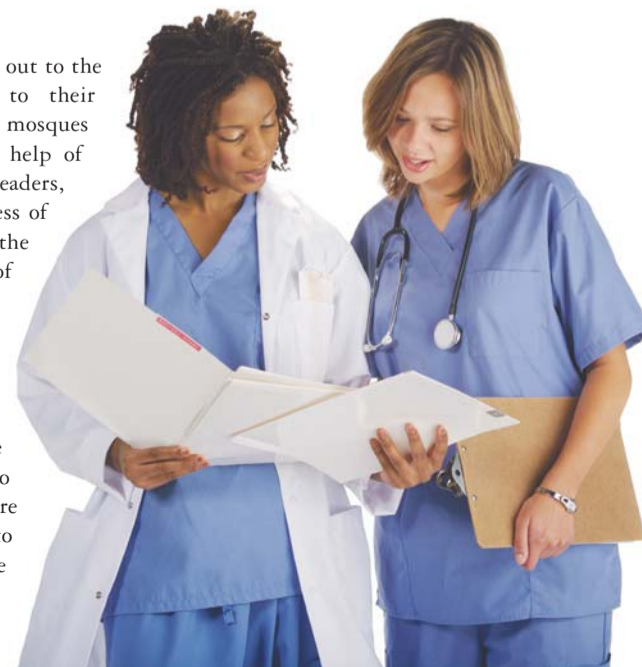
This has obviously posed particular challenges for Grace Vanterpool, Consultant Diabetes Nurse to Hammersmith and Fulham Primary Care Trust and Vice Chair and National Facilitator to the Diabetes Specialist Nurse Group.

She is determined to raise awareness of diabetes in the area among multiple ethnic groups and particularly among those in Asian communities because they have a higher risk of developing diabetes. For this role she is bringing in her learning from a previous role in Slough, which is similarly ethnically diverse.

"In Slough we had a problem with awareness of diabetes and with people not keeping appointments, and a lack of understanding of diabetes," reveals Vanterpool.

"So we went out to the communities, to their churches and mosques and, with the help of community leaders, spread awareness of diabetes and the importance of seeking treatment. We've now got a lot of support in those communities and we managed to ensure clinics are more local to people. We basically built our service around the

people in the community and we managed to get appointment attendance rates up to 94 per cent which is very encouraging."



Global Warning

Our Health on the Planet is at Risk

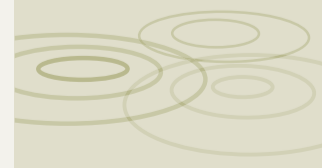


**The worldwide epidemic of chronic disease will soon become uncontrollable.
Three risk factors: tobacco, unhealthy diet, and lack of exercise lead to
the four diseases that cause well over 50% of deaths worldwide.
We must act now to avert a preventable plague.**

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**Confronting the Epidemic
of Chronic Disease**

**The Oxford
Health Alliance**



Simple steps to a healthier life

The Oxford Health Alliance (OxHA) has a very simple message – chronic diseases, including type 2 diabetes, can be prevented by focusing on three key risk factors – smoking, physical activity and diet.

Eating healthily and exercising for half an hour per day (one hour for children) has been a mantra of health professionals for some time but OxHA European Director, Christine Hancock, laments it can sometimes feel like they are preaching to the converted or, at least, the nearly converted.

“The problem with the message of eating well and taking regular exercise is it tends to be listened to by people who are receptive to the message in the first place,” she reveals.

“It is the lower income families that are most at risk from eating too much processed food and not taking enough exercise that we need to get through to, but we tend to have the most success with middle income families that are either already doing well with fresh fruit and vegetables and exercise or are pretty close to taking that step anyway.”

Take the stairs

Hence, the Oxford Health Alliance works with government, food manufacturers, NGOs and other groups with an

interest in the issue to look for innovative solutions to promoting chronic disease prevention. As part of this work, its members regularly go out to talk to employers about what they can do to spread the message to their work forces. Often a very small, simple step can reap huge benefits.

“The problem with the message of eating well and taking regular exercise is it tends to be listened to by people who are receptive to the message in the first place”

“I was at a company the other day that had made its stairs more visible and nicer to walk up and down so they didn't look like a grubby fire escape,” Hancock reflects.

“They did so to allow people to walk and talk and meet one another because the lift is not so social. However, that will have a huge impact allowing people to take more exercise without really thinking about it. Another way is to encourage people to walk to work or skip a bus stop or two to ensure they get their half an hour's exercise per day.”

The Alliance is keen not to be total kill joys and points out that the occasional fast meal or burger bar trip will

not hurt, so long as it is, say, once a week, rather than a habit. It also points out the sobering truth that people who opt for a life of sloth and unhealthy eating have a nasty surprise.

“People seem to think that eating what they want and living how they want will take a couple of years off their life at most,” Hancock reveals.

“What they don't seem to take in is that they won't just drop down dead, instead they can suffer very serious illness for many years which seriously affects their quality of life.”

▼ A healthy diet can help to reduce the risk of contracting chronic diseases such as type 2 diabetes

OBESITY FACTS

The Oxford Health Alliance's warning

- One in four adults and children in the UK are obese (the figure is rising)
- Half of all children eat no fruit or vegetables in a week
- 65 per cent of adults and 50 per cent of children do not take the recommended half hour and hour, respectively, of recommended exercise each day
- By 2020 a fifth of NHS resources will go to treating type 2 diabetes, which is preventable



Obesity fuelling global diabetes pandemic

The research is very clear, being overweight or obese is to diabetes what smoking is to lung cancer.

BY SEAN HARGRAVE

Modern living is making people pay a very high price with their health as manual labour and a natural diet are increasingly being replaced by sedentary jobs and rushed meals of processed food. This has been a worrying trend in the developed world for decades but is now impacting the developing world.

“By far the most affected country is the United States where 32 per cent of males and 37 per cent of females aged over 15 has a body mass index (BMI) of more than 30”

Indeed, research published in *Nature Medicine* magazine this year estimated that one in ten children around the world is overweight or obese, the proportion doubles to one in five for children in Chinese cities.

By far the most affected country is the United States where 32 per cent of males and 37 per cent of females aged over 15 has a body mass index (BMI) of more than 30.

With 60 per cent of all cases of diabetes being directly attributable to weight gain, one can see why the World Health Organisation (WHO) last year called for concerted global action to combat the risks of diabetes, and other chronic diseases.

The link between weight gain and diabetes is caused by the extra strain obese people place on the body's organs, including the insulin-creating pancreas, according to Professor David Matthews, Chair of the Oxford Centre for Diabetes, Endocrinology and Metabolism (OCDEM) and Chairman of the recently set up MODEL Group*.

“With obese people, their insulin starts to work less well,” he explains.

“There's then more demand on the pancreas to make more insulin which places it under a lot of strain and it just can't always keep up. Diabetes is not caused just by obesity, though, because there are obese people who do not get

diabetes. There is a genetic propensity to develop the disease as well, but putting on weight is a huge contributing factor to the diabetes pandemic.”

“There is a genetic propensity to develop the disease as well, but putting on weight is a huge contributing factor to the diabetes pandemic”

Indeed through OCDEM research in Sri Lanka, a hot spot for diabetes in the developing world, Professor Matthews reveals that a combination of genetic predisposition and bad diet among people living in the capital, Colombo, has rocketed the incidence of diabetes to 18 per cent. However, among those who still work on the tea plantations and so have manually-demanding jobs and less access to processed foods, the rate of diabetes is still 6 per cent (the same level as found across the United States).

► The link between weight gain and diabetes is caused by the extra strain obese people place on the body's organs

This demonstrates how genetic predisposition can significantly increase the incidence of diabetes and at the same time shows how lifestyles which do not incorporate exercise and a healthy diet can rocket a high background level to alarming pandemic proportions.

What one must never forget, Professor Matthews points out, is that in the developing world a single case of diabetes can destroy the economic

prospects of an entire family. If a parent develops the disease they will generally be incapable of working and the other parent will then look after their partner and the household. This means there is no family income and so children are forced out of school to earn low wages to keep the family afloat.

* *The MODEL GROUP; Management of Diabetes for Excellence, recently formed in response to the growing burden of diabetes and its multiple complications. The group consisting of experts in diabetes care and campaigners for public health has set itself up to pursue excellence in optimising diabetes care and treatment.*



By the light of DAWN

The links between diabetes and kidney, eye, feet and heart problems are well documented but a side effect that has only fairly recently come to light is depression.

Five years ago Novo Nordisk combined forces with the IDF to carry out the most comprehensive research to uncover the psychological factors surrounding diabetes. The fact that being diagnosed with a disease for which there is no cure had been long suspected of also having an effect on a person's mental, as well as physical, health, so the groups set out to quantify the effect.

The shocking statistic, which leapt out from the research, was that the rate of depression among people coping with diabetes is two to three times higher than those without the disease.

"It's an extra burden for many people living with diabetes which is largely unrecognised," comments Soren Skovlund, manager of the Diabetes Attitude Wishes and Needs (Dawn) programme.

"The real problem is that you get a vicious circle. Somebody becomes depressed because they have a disease for which there is no cure and they've constantly got to be thinking about managing the condition and they're worried

about developing complications, such as blindness.

"This constant worrying deepens the depression and when you are low you do not function as well and you are less able to manage your diabetes and so it can get out of control, which makes the depression worse again."

Person-centric care

For Skovlund the research shows the need for people living with diabetes to receive the support of friends, family and a health care professional who can help them manage the disease with a plan built around the individual.

This approach gives the patient somebody who can ensure their treatment is focussed on them and avoids the worse case scenario where somebody is diagnosed, put on pills, told to exercise and warned if they do not keep to the regime they will be prescribed insulin.

"It is perfectly feasible to live a good, full life with diabetes but we need to care for the person behind the disease," Skovlund says.



"This can help with the awful, but treatable, cycle of people getting in to depression and blaming themselves for their condition. One of the huge things we have learned from the research is that up to 60 per cent of people with type 2 admitted they are dreading have to revert

to insulin therapy in the future because it is used against them as a threat.

"This is upsetting for people. They need to realise that insulin is an inevitability and it is not a punishment but an effective means of helping people cope with or control their diabetes."

The Dawn programme is currently gearing up to mark 2007, The Year of the Child, with an ambitious project to help children and their families learn to manage diabetes better. The programme will concentrate on the UK and nine other countries.



Photo: Diabetes UK

▲ Modern insulins are overcoming the problems of earlier insulins that were produced to mimic natural insulin, but could not imitate natural introduction to the body

Modern insulins

Modern insulins are providing much cause for optimism with doctors because they attempt to get over the problem, which has affected preceding insulins, of being artificially introduced to the body rather than created in the pancreas.

There are two types of medical insulin, short term 'bolus' injections which can be given before or after a meal, which help deal with the blood glucose peak the absorbed food will cause, and 'basal' injections which help the body deal with the background level of insulin needed throughout the day and, particularly, throughout the night.

Until recently, insulin has been synthetically produced in the laboratory to appear exactly like insulin produced by the body. However, modern, or analogue, insulins take this process a step further by slightly altering the shape of the molecules that make up the insulin so they can be do their job better.

As Professor David Russell-Jones from the Royal Surrey Hospital in Guildford explains, modern insulins work well because they are designed to get over the fact they are injected under the skin, rather than created naturally in the pancreas.

"With injections you take before meals to cope with the rise in blood sug-

ars the food will cause, the problem has always been the time delay between the insulin going in to the body and working," he reveals.

“Unlike insulins that have come before them, it means they can get in to the blood stream much faster”

"However, by slightly modifying the make up of insulin, modern insulins are able to be a little less 'sticky'. Unlike insulins that have come before them, it means they can get in to the blood stream much faster. It's important because people managing diabetes are normally expected to have an injection half an hour or an hour before eating but, of course, people often don't always know, it can be hard to judge. So, quick acting insulin is really helpful."

For basal injections, the problem has always been making the one or two injections most people managing their day-long insulin needs will take to last as long as possible. In the past, insulins which did not last long enough could typically cause blood glucose levels to go out of balance overnight.

However, with analogue, modern insulins the small adjustments to their make up can help them last longer in the body. Professor David Russell-Jones is particularly excited by a new modern insulin which his laboratory is testing to establish if it offers a better treatment than previous insulins.

"It's very encouraging so far, we're sure that it works better because it works in the body more naturally," he points out. "The problem with all insulin administered by people controlling their condition is it's not created in the pancreas where it's supposed to be and so it doesn't get in to the blood stream via the liver. It can mean you get insulin in tissue where you don't want it rather than the natural path of pancreas to liver to blood stream."

"The modern insulin molecules are made to be slightly bigger so they can fit in to the liver but not other soft tissues. It's got to be better to go nature's route."

This ability for modern insulins to better recreate the way insulin works in the body is giving health care professionals greater confidence they can help people coping with diabetes to keep their blood sugars in balance and, hopefully, lessen the risk of complications associated with diabetes.

Patient case studies

When the Spanish police told Sergi Vernet, 25, from Tarragona in Spain his type 1 diabetes meant he could not be a police officer, they probably had no idea of the depths of his resolve.

Sergi is a member of the Novo Nordisk Youth Panel and founder of the Spanish Novo Nordisk Youth Panel. These panels are groups of young people determined to raise awareness about the chronic disease, both locally and globally, and push for a UN Resolution on the condition.

Part of being on a Youth Panel is a commitment to drive change in attitudes to diabetes and so, it may come as little surprise that Sergi did not take the police's decision lying down. Instead he is taking the Spanish government to court to overturn a rule he believes shows the Spanish authorities do not understand diabetes.

"The police say they cannot allow anybody diagnosed with diabetes to become a police officer because the Spanish police is armed and they fear I could get too low with my blood sugar levels and go crazy with a gun," he explains.

“The police say they cannot allow anybody diagnosed with diabetes to become a police officer”

"It's something that's never happened and when I went to Washington with the Youth Panel I met a police sergeant who is who managing his condition and is doing just fine. He controls his levels and has no problems at all on the job."

Sergi has been told by his lawyer that the Supreme Court in Madrid is expected to rule on the case in January or February next year.

To underline his commitment to changing opinions to diabetes, Sergi is a prolific marathon runner, having completed nine marathons around Spain with no ill-effects.

"I don't manage my levels during the race, I just eat a lot more carbohydrate and take extra insulin before I run and then manage my level afterwards," he explains.

"I hope that if I can I can demonstrate to the Spanish government that I can run marathons then there is no reason they can stick to this rule that prevents people diagnosed with diabetes becoming police officers."

Diabetes diagnosis explained all

Mathilda Meloni had felt for a long time before she was diagnosed with type 1 diabetes a year ago that there may be something wrong with her. The 27 year old loved going out and socialising with friends but always found that she would get very tired and, particularly during her college years, she noticed she had



▲ Mathilda Meloni, project manager at Mediaplanet, had long felt that there may be something wrong with her

developed a regular craving for sweet treats. "It wasn't until I'd been really ill for a month that my dad, who's a doctor, flew in from Rome to see me and took me back with him to a clinic," she remembers.

"I just felt awful, just getting up and going out the door was too much effort and I was drinking something like 10 litres of water a day."

Mathilda is very philosophical about her diagnosis, feeling it answers the question of what was wrong with her for several years but it was also a lot better than the other diagnosis her father had considered.

"He thought it was either leukaemia or diabetes, and obviously it's a lot better to have diabetes," she reasons.

"I'm fine with the condition, I take my injections before I eat and I'm on a really good insulin injection I take before bed that lasts for 24 hours. The main change is I now have to work out a lot which is good for feeling healthy, but bad because I'm a bit lazy by nature when it comes to the gym."

"I think diabetes has shown me that, like with many things in life, you have to enjoy things in moderation. I still have a glass or two of wine with friends and I try to keep a healthy diet and exercise so it's not that bad. I even got used to the injections really quickly which surprised me because I used to be a real needles freak!"

What has interested Mathilda is that the doctors in Rome where she was diagnosed revealed her parents' families come from European 'hot spots' for diabetes,



Lapland and Sicily, which is why she and two cousins have contracted the disease.

Undiagnosed

Angela Wright believes her type 2 diabetes had probably gone undiagnosed since the birth of her last son 36 years ago. The retired nurse from Solihull was actually diagnosed 16 years later and has been on insulin for the past 20 years after an initial prescription of pills proved ineffective.

However, until two years ago, she had always found it really difficult to get her levels right and her recommended doses of insulin was getting worrying

large, causing her to become very hungry and pushing her weight up.

Fed up with being overweight and feeling unwell, she was put on a new long lasting basal insulin two years ago which has changed her life.

"It's given me back my life, I'm so happy," she enthuses.

"I lost a stone and a half in the first month and after three months I'd lost four stone and it's stayed off. It was so hard for me I was trying not to eat and was going down the gym but the weight just kept on piling on. I was at my whit's end but my new insulin has turned my life around."

Six burning issues

Dr Alexandra Wyke is a member of the recently formed QALYity Patient Panel* and set up Patient-View.com so patients from around the world can have their views surveyed and then presented to health authorities, drug companies and the media.

The virtual patient group's work has identified what Wyke describes as six burning issues in diabetes care.

1 Improve life, don't just extend it

"Patients want quality of life. They say they don't want drugs that extend their life if the quality of life is low."

2 Involve patients in clinical research

"Clinicians undertaking new trials should talk to patients about what they should measure. Academics or drug companies don't listen to what patients think would be a successful outcome for the trial."

3 Be more aware of patient needs

"Unless people are very pushy, patients will often not get the best treatment for themselves. They may only get some relief for their condition when there is actually a drug out there that would work better, if they were put on it."

4 Useful, local information

"People say there's lots of information but a lot of it is on really generic web-

sites. People just don't get told of the choices they have that affect their own treatment in their locality."

5 Access to doctors

"The NHS has become far too fond of measuring 'outcomes' and you can't blame them because that's how doctors and hospitals get better funded. The trouble is it can mean they are measuring objectives when they should be making themselves more accessible to patients."

6 Better help for children

"The modern NHS is really prioritising type 2 which can make children with type 1 and their parents feel they are not a priority. A good case to show this is you expect drugs have been trialled on children but, because it's a tricky area, most of the time they have not. They just say take half an adult dose, or whatever."

* The QALYity Patient Panel, is a new UK based initiative which has brought together patient groups and other relevant stakeholders to address patient quality of life issues.

Written Declaration on Diabetes

Whilst it continues to put its weight behind the call for a UN Declaration on diabetes (page 12), the Federation of European Nurses in Diabetes has joined the IDF in welcoming this Spring's endorsement by the European Parliament, by an absolute majority, of a Written Declaration on Diabetes.

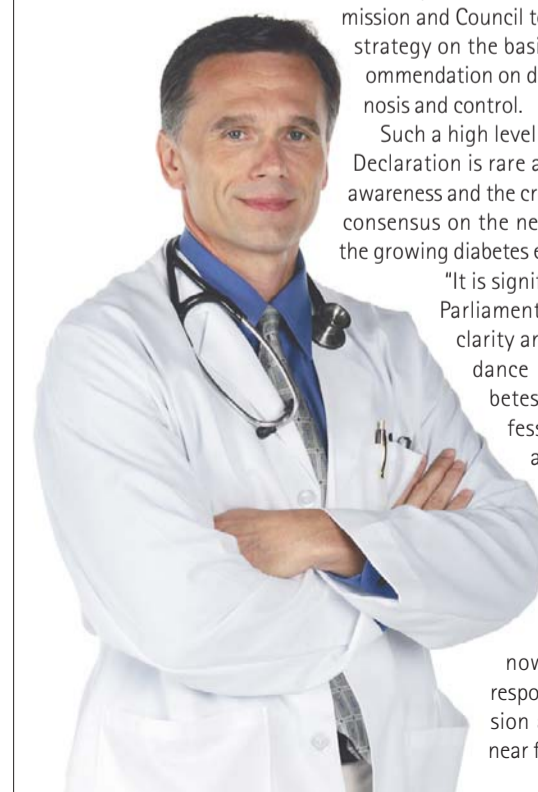
Declaration

The Declaration, tabled by John Bowis MEP together with his colleagues Georgs Andrejevs, Dorette Corbey and Karin Scheele, urges the Commission and Council to prioritise diabetes in EU health policy, to encourage Member States to develop national diabetes plans and, crucially, calls on the Commission and Council to develop an EU diabetes strategy on the basis of an EU Council Recommendation on diabetes prevention, diagnosis and control.

Such a high level of support for a Written Declaration is rare and highlights the acute awareness and the cross-party, cross-national consensus on the need for urgent action on the growing diabetes epidemic in Europe.

"It is significant that the European Parliament has spoken with such clarity and sensitivity, in concordance with people with diabetes, their health care professionals and EU citizens across Europe, as to the urgent need for constructive action," commented Anne-Marie Felton, Chairman of FEND.

"We hope that this will now be reflected in the response of both the Commission and Council in the very near future."



Diabetes control for a longer and healthier life

Diabetes is a condition that has attained epidemic proportions globally and the UK is no exception.

Diabetes is a disease in which the body does not produce or properly use insulin, which is a hormone that is required to convert sugar, starches and other food into energy. It can be caused by both a genetic predisposition and environmental factors such as obesity, poor diet and lack of exercise. If left uncontrolled, diabetes can damage the key organs in the body like the heart, blood vessels, eyes, kidneys, nerves and

can cause foot ulcers leading to amputations. In fact, a substantial proportion of patients are found to have diabetic complications at the time of diagnosis itself. Diabetes not only takes a toll on one's personal life but also affects productivity and relationships.

In spite of these complications many who live with diabetes fail to monitor their condition adequately. Patients are under the impression that their diabetes

is under control, despite their lack of knowledge of their blood sugar levels. This problem is partly a result of the lack of education about the critical importance of tests like HbA1c, currently one of the best ways to monitor diabetes control, or about insulin therapy.

There is a lot one can do to maintain good control in diabetes. Regular testing of blood sugar levels is important. Blood sugar levels can change from minute to minute and hour to hour. So even if you test your blood glucose regularly, you cannot determine what your blood sugar was over a period of time.

“Insulin can help control blood sugar levels in a more efficient manner than tablets, potentially delaying or preventing diabetic complications”

Doctors have now started insisting on the HbA1c test, which reflects the level of glucose control in your blood over the previous 8-12 weeks. It is like getting your blood sugar's batting average. Everyone has good and bad days, but the most important thing is that



you are taking measures to control it.

Insulin can help control blood sugar levels in a more efficient manner than tablets, potentially delaying or preventing diabetic complications. Anti-diabetic tablets push the pancreas to produce insulin and prolonged use of pills eventually leads to exhaustion of the insulin producing cells in the pancreas (beta cells). Early use of insulin may help to prevent damage of beta cells. Insulin has been found to have beneficial effects on blood fats too. Thus insulin use becomes essential in the cor-

rect management of diabetes.

Companies like Novo Nordisk have undertaken extensive research to understand not only the scale, but also the reasons behind the problem of diabetes. Their IMPROVE programme is aimed at helping people with diabetes improve control of their condition.

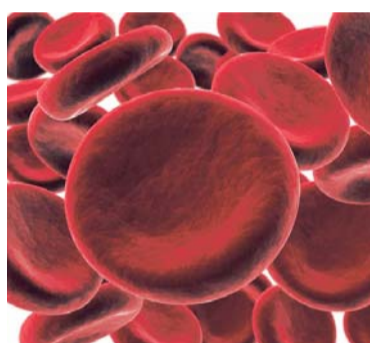
Diabetes is here to stay, but a few essential changes in everyday life, like a healthier diet, exercise, insulin therapy and good control over HbA1c levels, can prove to be a stepping-stone to a longer and healthier life for people with diabetes.

UNDERSTANDING HBA1C

Red blood cells contain a protein called haemoglobin. The function of this molecule is to transport gases such as oxygen and carbon dioxide through the blood. Glucose can attach itself to the haemoglobin molecule. Once the glucose is attached, it remains there until the red cell dies.

As blood glucose levels rise, more and more glucose becomes attached to the haemoglobin molecule. The haemoglobin A1c or the HbA1c blood test shows the percentage of sugar stuck on the haemoglobin. This provides an indication of your average blood glucose for the past 2-3 months or so. If your average blood sugar is high, a lot of sugar will be stuck to your haemoglobin.

The HbA1c test should be taken every six months if your control is good, and every three months if your control is poor.



ACCESS TO DIABETES CARE

World Diabetes Foundation is dedicated to supporting prevention and treatment of diabetes in the developing countries through funding of sustainable projects in education, capacity building, distribution and procurement of essential drugs and monitoring.

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

The projects funded by the WDF will in the coming 3-4 years potentially influence the diabetes treatment, awareness and advocacy of 35,840,000 people directly in the developing countries.

WDF was established in 2002 through a commitment of 500 million Danish Kroner over ten years by Novo Nordisk A/S. The foundation is registered as an independent trust in Denmark and governed by a board of six experts in the field of diabetes, access to health and development assistance.



Diabetes hitting developing countries

Diabetes is not just a pandemic in the developed world, the World Diabetes Foundation is keen to point out; it is a massive problem in the developing world too where the price of economic 'progress', and the urbanisation that comes with it, is less physical activity and a worsening diet.

Countries such as India, China, Pakistan, Indonesia, Brazil and Bangladesh have the dual problem of the young generation being over nourished yet the generation that are currently 30 to 40 and older were probably undernourished as children, particularly when developing in the womb. It is a lethal combination which is fuelling a diabetes pandemic.

"Under nourishment of the mother during pregnancy means that the developing child in the womb gets programmed to survive on less food, so when this child becomes an adult and has adequate amount to eat, even this is too much for them to handle," explains WDF's Managing Director, Anil Kapur.

"So the combination of under nutrition in the past and over nutrition now is one of the reasons why developing nations account for seven of the ten countries worst affected by diabetes. The irony is that this is happening in

countries where the governments and public health authorities are either unwilling to accept or ignorant of the threat of diabetes. There is little understanding of diabetes and how it can be treated or prevented. Instead governments are putting most of their health care resources into communicable diseases, such as HIV/Aids and malaria."

Education is key

Hence the World Diabetes Foundation is dedicated to supporting programmes that help governments and public health workers spread information about the problem of diabetes. "We concentrate on local solutions that educate people locally," Kapur sums up. "We help train doctors and nurses in

▶ Rapid economic development is bringing the diseases of affluence to countries such as India and China

developing countries how to diagnose and treat diabetes and how to educate people to live healthy lives and help avoid the condition.

We also fund setting up eye and foot clinics to treat people with problems that are often caused by diabetes, as well as facilities to improve the access to diabetes care so that these problems can be avoided in the first place. Most of the time people have no idea they are diabetic and come too late when complications have already set in."

Kapur's message to governments and public health authorities in developing countries is that although there are obviously good reasons to fight Aids and malaria, they should not continue to ignore diabetes because it is far cheaper, and humane, to educate people to avoid diabetes and to get treatment if they do have the condition. The alternative is to end up having to treat people with diabetes at a later stage when they may also have developed a range of kidney, heart, eye and feet problems.

“The combination of under nutrition in the past and over nutrition now is one of the reasons why developing nations account for seven of the ten countries worst affected by diabetes”



All aboard the changing diabetes bus

For the next 18 months, Novo Nordisk's new rolling initiative, the Changing Diabetes Bus, will visit schools, market squares and government buildings on five continents. The doors of the bus will be open to everyone who wants to learn more about diabetes.

BY THORBJØRN FORSBERG

It has been called the most ambitious initiative in Novo Nordisk's history with regard to spreading the word about diabetes. A gigantic diesel-fuelled vehicle with side panels that can be extended to enlarge the interior space. Hi-fi equipment within that could easily be the envy of even the biggest electronics and the cab fitted out so the driver can live in it. In other words: welcome to Novo Nordisk's Changing Diabetes Bus.

Visitors can have their blood glucose level measured onboard and can also sign a petition supporting a United Nations Resolution on diabetes. There is also a drawing contest and computer games for children.

The bus was launched on 13 September in Copen-

hagen, and subsequently parked outside Christiansborg (the Danish parliament building), Town Hall Square and Field's Shopping Centre. Several thousand people stopped to take a look. At the time of writing the bus is in Germany, and over the next 18 months it will roll thousands of kilometres across five continents. Precisely which countries will be visited has not yet been made public.

Lorry or bus?

A number of people probably think the vehicle

looks more like a lorry than a bus. So why the name? "People can board a bus, while a lorry carries goods. We invite everyone who is interested inside our bus so they can learn more about diabetes," explains Charlotte Ersbøll, vice president, Corporate Branding.

Regardless of what the multi-wheeled vehicle does or does not resemble, the message is unambiguous. It is about diabetes, both type 1 and type 2, and its four corners are divided into themes about which you can read more on the internet (see the net address at the end of the article).

Dramatic development

The Changing Diabetes Bus is part of Novo Nordisk's contribution to the International Diabetes Federation's (IDF's) campaign to put diabetes on the United Nations' agenda. It supports the

bottom-up approach which aims to reach one billion people with information about the disease.

“In order to defeat this pandemic, we need to combine prevention, detection and treatment methods together with raising awareness of diabetes and its alarming consequences”

"In order to defeat this pandemic, we need to combine prevention, detection and treatment methods together with raising awareness of diabetes and its alarming social, humanitarian and economic consequences," says

Lise Kingo, executive vice president at Novo Nordisk. Diabetes, primarily type 2, is developing into a pandemic, and the number of people with diabetes around the world is increasing explosively. Poor developing countries like India are experiencing an increase in the number of people with diabetes that risks decimating their healthcare systems. It will also slash life expectancy due to complications.

According to statistics and forecasts from the World Health Organization (WHO), the number of people with diabetes in India will increase by more than 150 per cent from the year 2000 to 2030. In Angola in the same time frame the increase will be 175 per cent, and in Mauritania almost 203 per cent! According to WHO, the worldwide increase from 2000 to 2030 will be 114 per cent.

• You can find out more about the bus and follow its progress online at novonordisk.com/diabetesbus



UN to consider diabetes resolution

Three years ago, a 17-year-old American girl, Clare Rosenfeld, who has type 1 diabetes, sat with her mother in the family's kitchen. Here a vision took form.

"Wouldn't it be wonderful if we could get children and young people around the world to work in unison to get diabetes on the United Nations' health agenda?"

She shared this vision with Martin Silink, President-Elect of the International Diabetes Federation (IDF). It has since then become the stated ambition for the IDF and is today shared by diabetes societies, industry and other stakeholders all over the world.

"It was one of the best suggestions I've ever heard. A UN Resolution is recognition of the disease that will provide the beginning of the focus we need to get on countries political agendas to gain the same recognition and consideration as other pressing chronic diseases such as malaria, TB or HIV/Aids," Martin Silink says.

World Diabetes Day

The IDF-led 'Unite for Diabetes' campaign aims at getting diabetes on the agenda of the United Nations on World Diabetes Day 2007, and in that process reaching one billion people with messages about the importance of diabetes action. The real change starts at the Government level and through political will, but is also needs to be pushed from the grassroots. Industry, diabetes communities, healthcare professionals and others who share the concern of this campaign are uniting to get a stronger voice.

Novo Nordisk, a world leader within diabetes care, is supporting this worthwhile initiative as the company shares the same vision of lasting change and improvement in the way it cares for people with diabetes or at risk of diabetes.

Lise Kingo, executive vice president of Novo Nordisk, confirms that: "We need to reach out to the broader public and educate them on the facts; particularly that diabetes can affect anyone at any time. We believe that lifestyle choices can play a huge role in preventing the disease and our aim is to educate as many people as possible to take action on their own behalf."

“The IDF-led 'Unite for Diabetes' campaign aims at getting diabetes on the agenda of the United Nations on World Diabetes Day 2007”

IDF has secured sponsorship from the People's Republic of Bangladesh to serve as the official sponsor of the Resolution. "Bangladesh is in the Asian hot

spot for the diabetes pandemic," points out Silink. "They've realised that economic development is probably behind the spread of the condition and that it is also then holding back further development, so they're presenting it to the UN not just as a health matter, but an economic development issue. That's hugely powerful and it shows the UN that diabetes is a whole government issue, it's not just about individual health ministries in each country, it's about society as a whole and it impacts greatly on economies."

Other countries have also been enlisting in the cause. In some cases, IDF has received commitment from the highest ministerial levels of government.

Combine forces

If a UN Resolution on diabetes were passed, the IDF believes it would help greatly because it would forge closer ties with organisations like the World Bank and Unicef who have development issues at the heart of their remit. It will also further strengthen existing ties between the World Health Organization (WHO) and IDF and so can only be good for spreading awareness about diabetes and prompting governments to take 'whole government' approaches to the pandemic.

The Resolution is expected to go before the UN's Second Committee within a matter of weeks and if

approved would then go before the General Assembly itself. Then, if passed, it would become an official UN Resolution before the end of 2007. Whilst the drafting and negotiating process of the Resolution at the UN continues, the broad public can show their support by signing a petition for such a UN Resolution at www.unitefordiabetes.org and emailing the 'blue pin' emblem to their friends online.

"It's a blue pin because that's the colour of the United Nations," Silink points out. "We're hoping it will become as big a symbol for the fight against diabetes as the red ribbon has for HIV/Aids."

Tackling type 1 diabetes

Being told you have diabetes can obviously be shocking news but for young people diagnosed with type 1 diabetes, it is particularly troubling because it currently means a life time of coping with a condition that can have serious side effects if not properly controlled.

could one day be implanted. We're also doing a lot of work with helping to identify those people that are at risk of type 1 diabetes and also dealing with the complications that arise from it, such as early diagnosis of eye problems so people can be treated before they go blind.

"Ultimately, though, with enough funding and continued determined scientific research we believe we will find the causes of and develop a cure for type 1 diabetes."

In the meantime, Addington advises concerned parents not to hesitate to take a child to the doctor if they are showing signs of insatiable thirst, constant trips to the toilet, weight loss and tiredness because the sooner a doctor is seen, the sooner the child can be treated, should they be diagnosed with type 1 diabetes.

www.jdrf.org

This is why Juvenile Diabetes Research Foundation (JDRF) is focussing on finding the causes of and a cure for type 1 diabetes. The Foundation was set up in America 30 years ago by volunteer parents of children with type 1 diabetes with the goal of funding research to help children better manage the condition and to ultimately cure it.

The Foundation has been active in the UK for the past twenty years where Chief Executive, Karen Addington (herself diagnosed with type 1 at the age of 12) explains the rapid rise in the condition around the world means a cure is more important than ever, and will come one day.

"Type 1 is so difficult because there is a genetic predisposition but it's not a major factor because 9 in 10 children who get diagnosed have no family history of diabetes," she points out.

"So we're dedicated to finding out why there are now so many new cases of type 1. We're seeing a 3 to 4% increase every year so we suspect there's an environmental factor.

"It's important because not only is it tough to be diagnosed as a child with a condition there is no cure for, but you have to remember that if not managed effectively - and it's so difficult to manage your blood glucose levels perfectly - diabetes can have truly awful side effects. It can take 15 years of your life and it's responsible for more than half of blindness among people of working age."

Funding research

JDRF funds research around the globe that is multifaceted and hopes to ultimately find a cure for diabetes, possibly through the use of stem cells to regener-

ate the damaged cells in the pancreas that cause diabetes or by making the body accept a transplanted pancreas or insulin producing cells without the need for a patient to take immunosuppressive drugs for the rest of their lives.

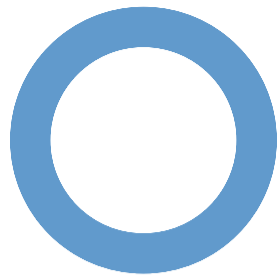
"There's a lot of really promising research that we're funding," says Addington. "One area to help treat diabetes is to combine automated glucose meters with insulin pumps so you could have, basically, an artificial pancreas that



▲ The Resolution is expected to go before the UN's Second Committee within a matter of weeks



▲ Juvenile Diabetes Research Foundation Chief Executive, Karen Addington



unite for diabetes

**To do nothing is
not an option**

**Sign the petition:
www.unitefordiabetes.org**

The campaign for a United Nations Resolution on diabetes.



International Diabetes Federation

Measuring up with Diabetes UK

DIABETES IN THE UK

- 4 per cent of the population has diabetes
- £5bn annual cost to the NHS of diabetes
- 5 per cent of the NHS budget spent on the condition
- 2.2m people in the UK have diabetes
- A further 750,000 are undiagnosed

Of the 3 million people that have diabetes in Britain, 750,000 do not realise they have the condition, warns Diabetes UK. By the time they are diagnosed, sometimes up to 12 years too late, 50 per cent of people are already developing serious complications.

The charity, which provides information and support to those managing diabetes, their friends, family and carers, has recently launched its Measure Up campaign. This carries the simple message that people can assess their risk of developing type 2 diabetes by measuring their waist.

White males with waists of 37" or more and females with waists of 31.5" or more are at increased risk of developing diabetes – for South Asians the risk increases for males with waists of 35" or more. A quick risk test, which includes questions on other risk factors and symptoms, is available on the Diabetes UK website.

Douglas Smallwood, CEO of the charity Diabetes UK ▶

Anyone who thinks they are at risk should make an appointment to see their GP to be tested. According to Douglas Smallwood, CEO of the charity, the campaign is a powerful way of trying to reach those at risk of developing type 2 diabetes as well as those who have the condition but are yet to be diagnosed.

Helping the NHS

The charity is not only active in running groups to help people with diabetes, it



also is involved in advising the NHS and the government, at a local and national level, to ensure the best treatment for everyone.

"We have 400 voluntary groups around the country providing support and information," Smallwood reveals.

"With over 175,000 members, it makes us one of the largest voluntary patient member groups in Europe, but we are really looking to build on this. The NHS spends a massive £5 billion a year treating diabetes and complications arising from diabetes, a sum which could be reduced if everyone received the high standard of education needed to manage their condition more effectively.

"There are still many inequalities across the UK both in terms of those at risk of developing the condition and the level of care received by those already diagnosed. For example, those in lower socioeconomic groups are 2.5 times more likely to have diabetes and three times more likely to develop complications."

These findings, and more, are summarised in a report *Diabetes and the Disadvantaged* launched by Diabetes UK and the All Party Parliamentary Group for Diabetes to mark World Diabetes Day. The report also offers possible solutions to reduce health inequalities in the UK.

www.diabetes.org.uk



IDF warns of global pandemic

New figures from the International Diabetes Federation (IDF) illustrate clearly that the world is in the grips of a diabetes pandemic. Anyone who doubts the serious nature of this pandemic should take 10 seconds to reconsider.

BY SEAN HARGRAVE



diabetes has crept down twenty or thirty years and is now affecting the working population," he points out.

"People who do not realise this think it's an old person's disease, but we are even seeing increasing numbers of children and young adults develop type 2 diabetes, which was previously unheard of."

Whole of government

IDF is the global advocate for people living with diabetes. The organisation promotes diabetes care and prevention, and is engaged in raising awareness of diabetes and its complications. It wishes to convince governments worldwide to take diabetes seriously and adopt a 'whole of government' approach to tackle the pandemic.

“The solution requires schools to put sport back at the core of their curricula and encourage healthy eating habits”

"The diabetes pandemic is caused by something in our society, in our environment, so it needs all government ministries to be involved, not just health," insists Silink.

"The solution requires schools to put sport back at the core of their curricula and encourage healthy eating habits; it requires towns to be designed so that they are safe and encourage exercise; it requires better access to public transportation."

IDF is leading a broad coalition of stakeholders to convince governments to support a United Nations Resolution. The Bangladesh-sponsored Resolution asks UN Member States to recognise the seriousness of diabetes and encourages action to curb the pandemic. If it succeeds, November 14, World Diabetes Day, would be recognised as an official UN day.

KEY NUMBERS

- > 230m Number of people now living with diabetes
- > 350m Projected number of people living with diabetes in 2025
- > 1m Number of yearly amputations as a consequence of diabetes
- > 3.5m Annual deaths as a result of diabetes
- 10 Somebody dies from diabetes every ten seconds
- 5 Somebody is diagnosed with diabetes every five seconds
- 7% Total of the world's population diagnosed with diabetes
- 70% Total of the world's population with diabetes living in developing countries

Every 10 seconds two people develop diabetes and one person dies of the disease. Diabetes is a global killer responsible for over 3.5 million deaths a year. IDF represents more than 190 diabetes organisations in over 150 countries. Their soon-to-be-published *Diabetes Atlas* (third edition) reveals that more than 230 million people are living with diabetes and projects that the figure will have increased to over 350 million by 2025.

Professor Martin Silink, President-Elect of IDF (he becomes President in December), points out that misconceptions about diabetes are widespread.

Diabetes is not taken seriously and is often dismissed as a disease of the elderly. "The figures are shocking but what is really surprising is the fact that type 2



▲ People can assess their risk of developing type 2 diabetes by measuring their waist



If you are a man and your waist is wider than 37 inches you could need a test for diabetes

1. Overweight?
 2. Over 40 years old?
 3. Diabetes in your family?
 4. Black or South Asian origin?
- Two or more of these risk factors could mean you have diabetes which can lead to blindness, amputation, kidney failure, stroke and heart attack if not diagnosed. The crucial measurement for a woman is 31.5 inches or more. See your doctor now for a quick test.

To find out more on the risk factors of diabetes visit www.diabetes.org.uk/MeasureUp



changing the way diabetes will be defeated

Current projections show that more than 333 million people will be living with diabetes, by 2025. If nothing is done to slow the epidemic, we will all pay the price. Diabetes costs billions to national economies in lost productivity and strains even the best health care systems. It is not any one person, country or company's problem – it is everyone's.

That is why Novo Nordisk is proud to be an active supporter of the International Diabetes Federation-led campaign for a UN Resolution on diabetes. A UN Resolution will focus the world's attention on prioritising diabetes education, prevention and care. We believe that each one of us – whether it is in the lifestyle choices we make at home or in supporting changes to a national health care budget – has a part to play in changing diabetes. And that if we all take action together now, we can stop those projections from becoming reality.

www.novonordisk.com


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