

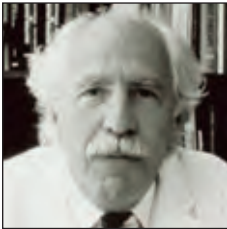
## Prevention through Awareness – Raising Global Awareness of Diabetes and Its Complications

a report by

**Pierre Lefèbvre and Anne Pierson**

*President, and Public Relations Manager, International Diabetes Federation (IDF)*

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Pierre Lefèbvre is President of the International Diabetes Federation (IDF). He is Emeritus Professor of Medicine at the University of Liège, Belgium, where he was Chairman of the Department of Medicine between 1988 and 2000 and Head of the Division of Diabetes, Nutrition and Metabolic Disorders between 1970 and 2000. Professor Lefèbvre's research has been devoted to the physiology and pathophysiology of metabolic regulations, with particular emphasis on glucagon, insulin and physical exercise. He has performed numerous studies on the pathogenesis and treatment of non-insulin-dependent diabetes and obesity. His previous appointments include President of the Belgian Diabetes Association (ABD) and President of the European Association for the Study of Diabetes (EASD). Professor Lefèbvre has published more than 25 books and 900 papers. He serves or has served on the editorial board of more than 20 international journals. He is a member of the Royal Academy of Belgium and the Academia Europaea and has been elected Fellow of the Royal College of Physicians, London.

The International Diabetes Federation (IDF) has recently concluded its World Diabetes Day campaign. This year-long awareness campaign, run by the IDF with the support of the World Health Organization (WHO), aims at informing the public of the causes, symptoms, complications and treatments associated with the condition. The year reaches its zenith on the World Diabetes Day itself, 14 November, when stakeholders from the global diabetes community join in what is both a celebration of the lives of people with diabetes and the world's largest diabetes awareness-raising event. In 2005, there has been a focus on diabetes and foot care. The IDF has received significant help from its Consultative Section on the Diabetic Foot and the International Working Group on the Diabetic Foot – both of which are chaired by Karel Bakker. The aim of the campaign has been to convey and promote the message that it is possible to reduce amputation rates through prevention, aggressive management of existing diabetes and the provision of appropriate education for people with diabetes and healthcare professionals.

World Diabetes Day serves as an important reminder of the increasing global incidence and prevalence of diabetes and the significant human, social and economic costs that this brings. It is crucial to alert the public worldwide to the fact that diabetes is a serious condition that is currently underestimated in terms of its frequency, cost and impact on quality of life. Each year, more than three million deaths worldwide are attributable to diabetes-related causes. The IDF estimates that approximately 194 million people worldwide, or 5.1% in the adult population, have diabetes and that this figure will rise to 333 million by 2025 as a consequence of longer life expectancy, a sedentary lifestyle and changing dietary patterns. This rise is likely to bring a proportional increase in the number of people with diabetes complications.

The general public remains unaware that elevated levels of blood glucose are associated with long-term damage to the body and the failure of various organs and tissues. Diabetes can result in short- and long-term complications, many of which – if not

prevented and left untreated – can be fatal. All have the potential to reduce the quality of life of people with diabetes and their families. This condition has a number of long-term complications that have serious consequences. For example:

- Cardiovascular disease (CVD) may cause fatal complications such as coronary heart disease and stroke. People with diabetes are two to four times more likely to develop CVD than people without diabetes, and people with diabetes and high blood pressure are twice as likely to suffer a stroke as people with high blood pressure alone.
- Diabetic retinopathy may lead to vision loss. The incidence of blindness is 25 times higher in people with diabetes than in the general population. It is estimated that approximately 10% of all people who have had diabetes for 15 years develop severe visual impairment.
- Diabetic nephropathy may result in total kidney failure and the need for dialysis or kidney transplant. Diabetes is the leading cause of kidney failure in the developed world and accounts for approximately 35–40% of new cases of end-stage renal disease (ESRD) each year.
- Diabetic neuropathy means damage to the nerve fibres, primarily affecting the legs and feet. Foot ulcers are common symptoms. Infections in these wounds may ultimately result in amputation of the foot and lower leg. People with diabetes are 25 times more likely to lose a leg than people without the condition.

### Diabetic Complications are Costly

Complications are responsible for most of the costs of diabetes. Hospital in-patient costs for the treatment of complications are the largest single contributor to direct healthcare costs. For instance, renal failure is extremely expensive if people end up on chronic renal dialysis or with a renal transplant. In the US, it has been estimated that dialysis costs approximately US\$35,000 per person per year and that a kidney transplant costs



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approximately US\$15,000 for the first year and US\$6,000 per year thereafter.

Many of these complications are preventable and, therefore, the associated costs are avoidable. Intensive therapy directed at the control of blood glucose, blood pressure, blood lipids, etc. has been shown to be cost-effective. Even if initial costs are increased, they are decreased in the long term as a result of delayed or prevented complications.

### World Diabetes Day 2005 – Put Feet First, Prevent Amputations

The World Diabetes Day is centred on a theme related to diabetes. Since 2001, particular attention has been paid to complications of this condition. As mentioned above, the 2005 theme has been to raise awareness of the serious complications of the foot in people with diabetes a costly complication that is potentially preventable.

The IDF has led this campaign with the bleak message that somewhere in the world, a leg is lost to diabetes every 30 seconds; it is estimated that up to 70% of all lower-limb amputations are related to diabetes. The objective of the 2005 campaign has been to convey and promote the underlying, more positive idea that it is possible to reduce amputation rates by up to 85% if strategies are in place to prevent or detect and manage diabetes-related foot problems in time.

People with diabetes are at risk of neuropathy and problems with the blood supply to their feet (ischaemia). Neuropathy results in a reduced ability to feel pain. Foot injuries often go unnoticed. Ischaemia can slow down any wound healing. Both neuropathy and ischaemia can lead to foot ulcers. As mentioned above, infections in these wounds may ultimately result in amputation. Approximately 85% of diabetes-related lower extremity amputations are preceded by a foot ulcer.

### Up to Five Per Cent of People with Diabetes Have Foot Ulcers

Diabetic foot ulcers are common. In developed countries, up to 5% of people with diabetes have foot ulcers, and one in six people with diabetes will have an ulcer during their lifetime. Ulcers can be due to a variety of reasons. After neuropathy and ischaemia, the most common are deformity of the foot (from birth, caused by unsuitable shoes or due to previous surgery), injuries (many ulcers are caused by pieces of grit within shoes, rough seams, sharp objects that have penetrated the sole of the shoe or burns, etc.) or infection (in people with diabetes, wound healing is often slow and the body's ability to fight infection may be weakened).

Foot problems are the most common cause of admission to hospital for people with diabetes. In developing countries, foot problems related to diabetes are thought to be even more common. Half of all leg amputations are performed in people with diabetes. In areas where factors such as ethnicity, climate and social conditions increase the risk, the number of amputations is proportionally even higher in people with diabetes.

### Amputation – A Personal, Social and Economic Disaster

The impact of diabetic foot disease on people's lives is devastating. For most people who have lost a leg, life will never return to normal. Amputation may involve life-long dependence on the help of others, inability to work and much misery.

The diabetic foot is also a significant economic problem. In developed countries, approximately 4% of all people with diabetes have a foot problem. They account for 12–15% of the total healthcare resources available for diabetes. In developing countries, it has been estimated that foot problems may account for as much as 40% of the total available resources. In Western countries, the economic cost of an ulcer in people with diabetes is thought to be between US\$7,000 and US\$10,000.

The direct cost of an amputation associated with the diabetic foot is estimated to be between US\$30,000 and US\$60,000. The estimated cost for three years of subsequent care for individuals who have healed their ulcer without the need for an amputation has been estimated to be between US\$16,000 and US\$27,000. The corresponding costs for someone who eventually needs an amputation ranges from US\$43,000 to US\$63,000 – mainly due to the increased need for home care and social services.

### Reducing the Number of Amputations Significantly Through a Relatively Low Investment

Aggressive management of the diabetic foot can prevent amputations in most cases. Even when amputation takes place, the remaining leg and the person's life can be saved through good follow-up care from a multidisciplinary foot team. Education of people with diabetes and healthcare providers is essential. The latter need to be trained in order to detect problems early and take appropriate action. The principles of ulcer treatment are:

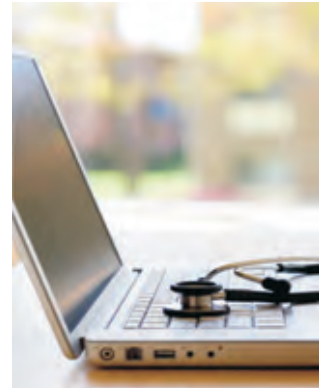
- relief of pressure on the foot;
- correction of poor blood supply;



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- treatment of infection;
- good control of diabetes, blood pressure, blood lipids and cessation of smoking;
- cleaning and dressing wounds, as well as removing hard skin and dead tissue;
- education of people with diabetes and their relatives; and
- determining the cause of ulcers and helping the patient to prevent recurrence.

Ideally, foot care should be provided by a multidisciplinary team. This should involve the person with diabetes and his or her family along with healthcare professionals from different specialities. The ideal team would include a physician, a nurse, a specialist educator, a podiatrist, a surgeon, an orthotist (shoemaker) and an administrator.

In a perfect world, there would also be regional and national collaborations between key players in foot care. Adequate provision of resources must be made to ensure that minimum standards are reached and that a few key conditions are in place, such as:

- a process of diabetic foot screening;
- foot care education programmes and training for people with diabetes and healthcare professionals, including a programme for training podiatrists;
- a diabetic foot emergency service to ensure the rapid treatment of infection and other foot emergencies;
- a footwear service to ensure the use of appropriate shoes; and
- good record keeping.

Sufficiently frequent preventative foot care and ulcer care are also essential.

### The Need for Improved Foot Care Worldwide

For the first time, the campaign shifted from the focus on a specific day to year-long themed awareness raising. Throughout 2005, the IDF has drawn attention to the need for improved foot care for people with diabetes worldwide. The federation achieved this through a variety of activities and actions. The leaflet *Put Feet First: Prevent Amputations*, the publication *Diabetes and Foot Care: Time to Act* and campaign materials, such as posters and other informational tools, have been available

for many months. Regional press conferences have taken place in the seven regions of the IDF. The first one, which took place in India in February 2005, saw the launch of the campaign in a country where people are at a particularly great risk. India is host to the largest diabetes population in the world, with an estimated 35 million people affected. The IDF estimates that this figure will double within the next 25 years.

Other press briefings have taken place in Cameroon, Russia, the US, Belgium, Thailand and, finally, Brazil, which hosted the main press conference on World Diabetes Day itself (14 November). Brazil was chosen because diabetic foot care has improved tremendously in this country over the last 12 years, due mainly to the implementation of 62 foot clinics throughout the country. This has contributed to a significant decrease in amputations across the country. The reductions have reached an inspiring 77% in the centre that was established in Brasilia.

The campaign has been driven through a wide range of activities organised by IDF member associations, World Health Organization (WHO) collaborating centres and other partners. Activities have ranged from sports events to radio and television programmes and free screening to workshops and exhibitions. In 2005, it has been noticeable that more diabetes representative organisations than ever engaged in a concerted effort to disseminate the same awareness messages. The key message that 'every 30 seconds, a leg is lost to diabetes' has resonated widely in the global media.

The activities that surround the global awareness campaign are only successful if people at risk of diabetes become aware that they need to act to prevent diabetes and if those already living with diabetes receive the quality of care that they deserve.

In 2006, the theme of the World Diabetes Day campaign is diabetes in the disadvantaged and vulnerable. Worldwide, there are communities that are disadvantaged in terms of their access to diabetes care and information, either because of their socioeconomic situation, their ethnic origins, their remoteness from care or any other barrier. The IDF and WHO and all diabetes stakeholders will work to raise awareness and highlight the message that every person with diabetes deserves the best quality of awareness, care and prevention that is available to them. ■

*This article is based on information from the IDF publications Diabetes and Foot Care – Put Feet First, Prevent Amputations, a World Diabetes Day leaflet (2005), and Diabetes Atlas, second edition (2003).*