

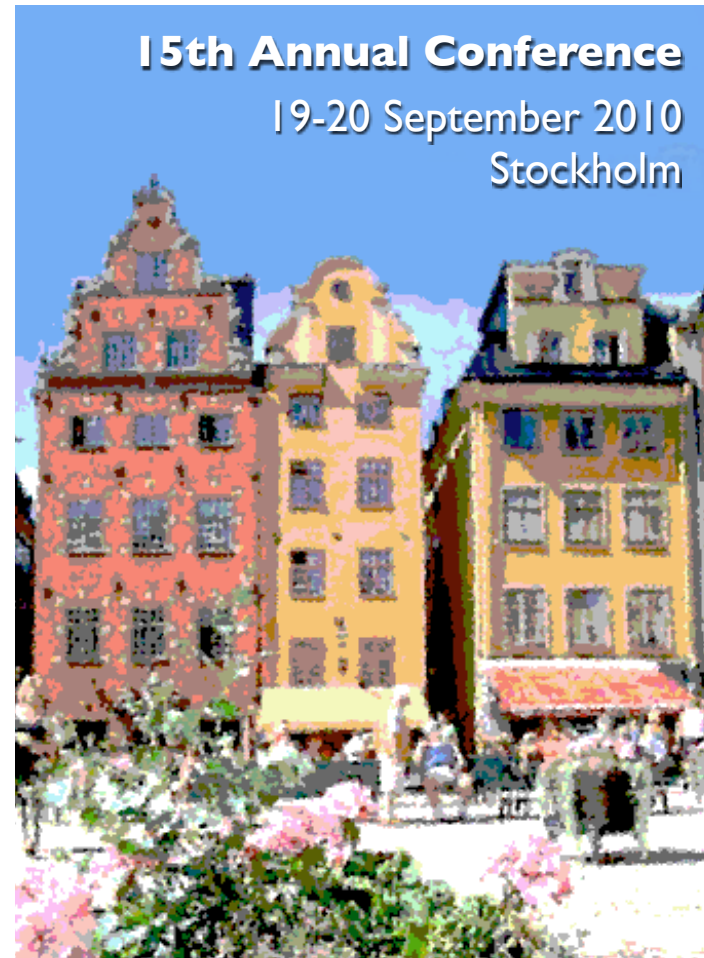
# F E N D

Foundation of European Nurses in Diabetes

## **15th Annual Conference**

19-20 September 2010

Stockholm



The Federation of European Nurses in Diabetes acknowledges and thanks the following sponsors for their continuing support and commitment to FEND:

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We thank the pharmaceutical industries for their participation in the exhibition during the conference and European Diabetes Nursing (the official journal of FEND) and Practical Diabetes International for their reporting of this conference.

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 EURADIA (European Research Area in Diabetes)  
 IMAGE  
 DIAMAP

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## FEND Mission Statement

- To promote acceptable standards and equity of care of people with diabetes throughout Europe
- To develop and promote the professional role of the diabetes nurse in Europe
- To influence European health care policy relevant to diabetes care, education and research
- To cooperate and collaborate with national and international health care organisations

## Welcome

Dear Participants

On behalf of the Executive committee of FEND it is our pleasure to welcome you to the FEND 15th Annual Conference and the city of Stockholm.

The theme of conference – “The Diabetes Epidemic: the Challenge for Europe” will be reflected in keynote lectures and masterclasses.

The significant political recognition of the impact of the diabetes pandemic as manifest in the

- St Vincent Declaration of 1989
- The EU Parliamentary Declaration (April 2006)
- Austrian Presidency Conclusions (June 2006)
- The landmark UN Resolution 61/225 achieved in December 2006
- ECOSOC statement (June 2009)
- Lund Declaration (July 2009)
- UN Resolution on NCDs 64/265 (May 2010)

must ensure that these political statements are realised in national health policies and all sectors of society.

FEND has played and will continue to play an active role in advocacy, policy development and implementation. The appointment of the FEND Professor in diabetes nursing will also advance the aims and objectives of FEND.

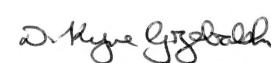
Co-operation with key pan-European organisations is imperative, hence the recent formation of ECD (European Coalition on Diabetes) comprising EURADIA, FEND, IDF Europe and PCDE.

We thank our distinguished international speakers for their commitment and generosity of time. We thank Prof Ulf Smith, President EASD and Prof. Dr. Claes-Göran Östenson, local organising Chairman of EASD, for their courtesy and support in permitting this conference to be included in the programme of meetings on the occasion of 46th Annual Meeting of EASD.

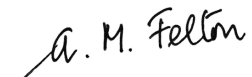
We acknowledge with deep appreciation the support of our sponsors for all of FEND's activities and special thanks also to our FEND volunteers from the Swedish diabetes nursing association.

Your attendance at this conference represents diabetes nursing from Europe and beyond – a truly international gathering and evidence of the commitment of the nursing profession to people with diabetes.

We thank you for your presence and active participation – the conference is now in your hands.



Deirdre Kyne-Grzebalski  
FEND Chairman



Anne-Marie Felton  
FEND President

Sunday 19th September 2010			
0730	Registration and Coffee		
0845	Welcome and Opening Remarks	Deirdre Kyne-Grzebalski <i>Chairman</i> Anne-Marie Felton <i>President</i>	UK UK
	<i>Session Chairs</i>	Prof Regina Wredling Unn-Britt Johansson	Sweden Sweden
0900	<b>An Overview of Diabetes in Sweden – The Nursing Perspective</b>	Mona Andersson	Sweden
0930	<b>Croatian Model: Ethics or Enterprise</b>	Prof Zeljko Metelko	Croatia
1000	<b>Oral Presentations:</b> 1. (see page 17) 2. (see page 18) 3. (see page 19) 4. (see page 20)	Winnie van El Vibeke Zoffman Therese Anderbro Selda Celik	Netherlands Denmark Sweden Turkey
1100	Refreshments & Exhibition		
	<i>Session Chairs</i>	Magdalena Annersten Gershater Rosana Cisic	Sweden Croatia
1130	<b>Prevention of Type 1 Diabetes</b>	Dr Nicola Leech	UK
1200	<b>IMAGE: Diabetes Prevention Manager – a Cause Celebre</b>	Prof Peter Schwarz	Germany
1230	Lunch & Exhibition		
	<i>Session Chairs</i>	Chantal Montreuil Lurdes Serrabulho	Switzerland Portugal
1400	<b>Cardiovascular Risk Assessment in Type 2 Diabetes</b>	Prof Paul Valensi	France
1430	<b>DIAMAP – Charting Diabetes research in Europe</b>	Sarah Hills	UK
1500	Refreshments & Exhibition		
	<i>Session Chairs</i>	Anne-Marie Felton Jacqueline Herbst	UK Switzerland
1530	<b>“The Black Dog” – Diabetes and Depression</b>	Prof Richard Holt	UK
1600	<b>Inaugural Address: Progressing Diabetes Nursing in Europe – The Next Steps</b>	Prof Angus Forbes	UK
1945 2015	<b>Pre Dinner Cocktails Conference Dinner</b>	Intercontinental Grand Hotel Sodra Blasieholmshamnen 8 SE-10327 Stockholm	

Monday 20th September 2010			
	<i>Session Chairs</i>	Deirdre Kyne-Grzebalski Rita Forde	UK Ireland
0900	<b>The International Diabetes Federation and the Consultation Section on Diabetes Education – a Strategic Partnership</b>	Prof Trish Dunning	Australia
0930	<b>New Therapeutics for Diabetes and What is on the Horizon</b>	Prof John Nolan	Ireland
1000	<b>Masterclasses:</b> <b>1. Knowledge-based Nursing Care Promoted by Systematic Literature Review</b> <i>facilitator Nadine van Campenhout</i> <b>2. Improving Inpatient Diabetes Care: (Not) Only a Matter of Efficient Glycemic Control?</b> <i>facilitator Selda Gedik</i> <b>3. How Do We Reach Goals and Targets? Case Studies</b> <i>facilitator Sijda Groen</i>	1. Dr Janeth Leksell Dr Unn-Britt Johansson 2. Dr Marc Egli 3. Dr Anders Frid	Sweden Sweden Switzerland Sweden
	<b>Guided Poster Tour 1</b>	(parallel)	Marianne Lundberg Els Denis
1115	Refreshments & Exhibition		
1145	<b>Masterclasses (Repeated):</b> <b>1. (as above)</b> <b>2. (as above)</b> <b>3. (as above)</b>	1. Dr Janeth Leksell Dr Unn-Britt Johansson 2. Dr Marc Egli 3. Dr Anders Frid	Sweden Sweden Switzerland Sweden
	<b>Guided Poster Tour 2</b>	(parallel)	Chantal Montreuil Marianne Lundberg
1300	Lunch & Exhibition		
	<i>Session Chairs</i>	Kristin de Backer Johanna Rosenberg	Netherlands Finland
1415	<b>CVD Prevention via Collaboration – a Multifactorial Approach</b>	Dr Christina Jarnert	Sweden
1445	<b>Oral Presentations:</b> <b>5. (see page 21)</b> <b>6. (see page 22)</b> <b>7. (see page 23)</b> <b>8. (see page 24)</b>	Feride Badur Dimitri Beeckman Diana Sherifali Anne Haugstvedt	Turkey Belgium Canada Norway
1515	Refreshments & Exhibition		
	<i>Session Chairs</i>	Unn-Britt Johansson Rita Forde	Sweden Ireland
1545	<b>Insulin Resistance and Diabetes in Childhood – Who, When, Why? Pointers from The Early-Bird Diabetes Study</b>	Dr Alison Jeffery	UK
1645	<b>Awards Ceremony: FEND and DESG</b>	Deirdre Kyne-Grzebalski Anne-Marie Felton	UK UK
1700	Closing remarks	Deirdre Kyne-Grzebalski	UK

## AN OVERVIEW OF DIABETES IN SWEDEN – THE NURSING PERSPECTIVE

**Mona Andersson**

Director Solljunga hälsan primary Care center

President Swedish association of Diabetes Specialist Nurses (SFSD)

In Sweden there are approximately 350-400,000 persons with diabetes. Unfortunately we don't know the exact number of nurses who are diabetes specialists, we only know that there are 1300 members in our association, SFSD, Swedish association of diabetes specialist nurses.

All medical care in Sweden is financed by our tax system and can be carried out privately as well as officially.

Patients with diabetes type 1 most often are being treated at the hospitals, while those who suffers from type 2 are taken care of by the primary health care center.

There's a limit of 900 SEK per year for a patient to pay for his/her care, and maximum 1800 SEK per year for their medicine.

The only medicine free of cost in Sweden is insulin.

The diabetes nurse is an important part of the diabetes team and most often the one who is the spider in the web in the care of the patient. Her work consist of customary practice with the purpose to get a well educated patient which is the most important task. A great deal of the work also consists of testing out and following up different facilities.

We put a lot of work and effort to our national diabetes register, which today contains the data from 263,000 patients, that's about 70% of all diabetics in Sweden. The national diabetes register is meant to be used as quality register to develop the care at the local unit.

In 2010 the National Board of health and welfare edited National guidelines of diabetes care, which comprehends recommendations regarding both type 1 and type 2 diabetes as to screening, prevention, lifestyle, glucose control, prevention of CHD, educating and so on. The guidelines are based on EBM.

## CROATIAN MODEL – ETHICS OR ENTERPRISE?

**Prof. Željko Metelko**

Vuk Vrhovac University Clinic, Zagreb Medical School, Zagreb, Croatia

According to the vision of prof. Škrabalo the first legal document about Croatian Model was registered in Government Official Journal "Narodne Novine" No. 1/1972. The principles of action covered general rules, criteria and elements for diabetes health care management in Croatia. These includes mandatory reports, uniform evidence, diabetes register, household visits to immobile patients and patients with complications if necessary, outpatient, home and in-hospital treatment of diabetes and complications and delivery of all necessities for regular treatment free of charge.

The strategy of development includes new cycle every one to three years based on three important activities: collecting and analyzing the data, performing appropriate education of health staff and improving more sophisticated organization of health care.

At national level tridimensional network is formed. Vuk Vrhovac University Clinic for diabetes, endocrinology and metabolic diseases functioning as National Referent Centre for diabetes, communicating with four regional centers, 21 county centers and 1300 primary health care offices.

Beside national continuous postgraduate education in diabetology which is part of legal subspecialization, more than 150 postgraduate foreign students finished the organized education.

Along with these activities CroDiabNET was created, as a tool for everyday work with simultaneous derivation of data for national register of Diabetic patients.

Based on the Andrija Štampar education, creating the Croatian model of diabetes health care was natural determination. Team work, networking, mandatory communication and education, spreading the knowledge and controlling the quality of work were the main determinants of Croatian model development without profitable, but ethical and moral enterprises as the main characteristics. Introducing private primary health care services, this enterprise were transformed in many small profitable enterprises with simultaneous decreasing of interest in enthusiasm, ethics and morality of work.

## TYPE 1 DIABETES – IN PURSUIT OF A CURE

**Dr Nicky Leech MBCHB, MD, FRCP**

Consultant in Diabetes, Newcastle upon Tyne, UK

Diabetes prevalence in European elderly is 10-25% depending on nationality, ethnicity, residence and screening method; approximately 30-50% are undiagnosed. Older diabetic people tend to have isolated post-challenge hyperglycaemia which is associated with increased mortality; a normal fasting plasma glucose does not exclude diabetes. Although predominantly type 2, type 1 and secondary diabetes do occur.

The aim of glycaemic control is to improve cognition and well being, and to avoid metabolic decompensation. There are no randomised controlled trials to guide glycaemic targets in older people. Elderly people appreciate hypoglycaemia poorly, as do their medical staff. I aim for glycaemic control as good as safely possible. One needs to know anti-diabetic drugs well, since comorbidity and frailty are common.

Evidence supports a <140 systolic blood pressure target in septuagenarians (HOT) and a <150 target in octogenarians (HYVET); apart from  $\beta$ -blockers, one can use any agent, but one must understand them.

HPS and PROSPER show cholesterol reduction in free range elderly up to age 82 is beneficial. Dementia is 2-3 times increased by diabetes; exclude hypoglycaemia and vitamin B12 deficiency as causes; good blood pressure control may decrease future dementia risk. Once established, good social support, relaxing glycaemic targets and using agents that do not cause hypoglycaemia are important.

Falls are more common in older diabetic people, due to poor vision, neuropathy, hypoglycaemia, hypotension, and cognitive impairment; multidisciplinary assessment and balance classes can help.

Residential care is more common in diabetes; adequate nutrition, education of care home staff, and medical review are problems.

## CARDIOVASCULAR RISK ASSESSMENT IN TYPE 2 DIABETES

**Prof Paul Valensi**

Department of Endocrinology Diabetology Nutrition Jean Verdier hospital, Paris-Nord University, Bondy, France

Despite intensive control of the risk factors, cardiovascular (CV) disease is more frequent and severe in people with diabetes than in those without. A Finnish study and other studies have suggested that diabetes should even be considered as a “coronary equivalent”. So prevention of CV disease is a key challenge with a primary role for all diabetes educators.

The UKPDS and DCCT/EDIC studies showed that tight control of blood glucose levels applied early after diabetes diagnosis was associated with a lower rate of long-term CV events. However reducing HbA1c level under 7% does not provide a clear CV benefit in particular in diabetic patients with known CV disease (secondary prevention). As to blood pressure and blood lipid levels, the lower it can be, the better – although blood pressure should not be too low.

The Steno-2 study showed clearly that a multifactorial intensive approach is able to induce a 50% reduction of CV events in type 2 diabetic patients with microalbuminuria. This approach is not an easy one; it requires multiple treatments, and patients must be educated. In addition an important residual risk remains to be targeted. Statins play a key role in CV prevention. However the ACCORD-LIPID trial has recently shown that combining fenofibrate with simvastatin may reduce CV risk in type 2 diabetic patients with high triglycerides and low HDL-C levels.

The risk factor targets to achieve may differ according to the a priori estimate of CV risk. This estimate is based on classical risk factors but mostly on the duration of diabetes, the presence of albuminuria, peripheral artery disease and retinopathy. Some markers or risk integrators like carotid intima-media thickness or artery stiffness (pulse wave velocity) may also account for an increased CV risk. Silent myocardial ischemia may be detected by an ECG stress test or better a scintiscan coupled with a stress, in around 30% of patients with type 2 diabetes and other CV risk factors, and coronary stenoses are detected on angiography in one third of those with silent ischemia. Therefore another strategy to reduce the residual risk consists of screening high-risk patients for silent myocardial ischemia and subsequently carrying out a coronary angiography in those with silent ischemia, leading to coronary revascularization when appropriate.

## DIAMAP – A ROAD MAP FOR DIABETES RESEARCH IN EUROPE

**Sarah Hills, RGN, MSc**

Executive Director EURADIA

The aim of DIAMAP was to chart the future of diabetes research in Europe for the benefit of the person with diabetes. The DIAMAP report is intended to guide investment and to suggest means for improved research coordination. Two public databases provide insight into the current research landscape, with information on activity and funding.

### Methods

A survey was undertaken of the European diabetes research landscape (based on questionnaires

returned by researchers from all diabetes research fields and major funding agencies across Europe), along with a strategic road mapping exercise.

All aspects of the diabetes research field were embraced where possible. A multi-disciplinary/multi-professional approach was taken. Individuals with diabetes were represented on the project, alongside academia and industry. Demographic trends and lifestyle factors were considered as well as ageing of the population. Ethical issues as well as health economics and public health also feature across the maps.

### Results

Road maps and reports: The entry point to each road map track is based on major advances in that field. Tracks progress along milestones to reach a common over-arching goal considered important for improved treatment or prevention of diabetes and its complications. Expert groups considered the feasibility of milestones, identified roadblocks preventing progress, as well as specific opportunities for European research.

The individual road maps are part of a whole, stressing the need for crosscutting, interdisciplinary research. The Horizontal Issues section suggests ways to address major obstacles to competitive research in Europe.

A major suggestion is the creation of a European Platform for Clinical Research in Diabetes, to allow centralisation of information, increased involvement of people with diabetes. DIAMAP further recommends cross-fertilisation between academia and the private sector, as well as bridging the gap between researchers, people with diabetes and healthcare providers.

### Future perspectives

Aside from guiding choice of research areas for future funding and ensuring coordination of such research, in the longer term this project cannot succeed unless there is constant monitoring of progress. It will thus be critical to sustain DIAMAP to capitalise fully on the initial investment in this endeavour.

## “THE BLACK DOG” – DEALING WITH DIABETES & DEPRESSION

**Prof Richard I. G. Holt**

University of Southampton

It has been known for many years that the prevalence of depression is higher in people with diabetes. The common view was that diabetes led to depression as a result of either the “psychological stress” resulting from the diagnosis and treatment of the physical illness or mood disturbance as a consequence of the metabolic derangement. More recently it has become apparent that depression may also predispose to diabetes through altered behaviour, increased cytokine production and altered cortisol and catecholamine production.

Depression is a major clinical problem for those with diabetes. It is associated with poor quality of life, worse self care behaviour and increased risk of diabetes related complications and mortality.

There is an emerging body of evidence that shows that treatment of depression in people with diabetes not only improves mental health but also diabetes care. Treatments include both pharmacotherapy and psychological treatments.

Screening for depression should be considered as part of the routine management of diabetes and where present should be treated. Specialist psychological services are often inadequate and under-resourced: a recent Diabetes UK survey found that less than one-third of UK centres had access to these services. Thus the burden of diagnosis and treatment lies within the general diabetes team. The diabetes specialist nurse has a key role to ensure that depression does not remain the forgotten complication.

## **PROGRESSING DIABETES NURSING IN EUROPE – THE NEXT STEPS**

**Prof Angus Forbes**

King's College Hospital

The rising demand for diabetes care could destabilise diabetes care across Europe, undermining recent improvements and impeding further developments in care provision. Therefore, a key challenge for diabetes nurses in Europe is to develop and disseminate evidence-based models of care that will meet this demand. These models must include more efficient and effective methods for supporting self-care behaviours. My address will consider the nature of the nursing contribution to diabetes and how this contribution can be advanced. The main themes of my address will be:

- Developing more comprehensive and efficient models for patient education and self-care
- Integrating clinical and psychosocial interventions
- Building more analytical models of care organisation (informatics and e-Health)

The address will conclude by outlining some key steps for diabetes nursing in expanding its contribution through integrated programmes of research and professional education. In terms of research the address will call for the development of a research strategy for diabetes nursing research in Europe. For education there is a need to agree a process of sustained professional development that will both ensure a minimum basis for competent practice and provide opportunities for ongoing professional development. Nursing has a vital contribution to make to diabetes care, this contribution demands the continued development of a robust knowledge base together with effective methods for knowledge transfer, to ensure maximum patient benefit.

## **THE INTERNATIONAL DIABETES FEDERATION AND THE CONSULTATION SECTION ON DIABETES EDUCATION – A STRATEGIC PARTNERSHIP**

**Prof Trisha Dunning AM**

Chair in Nursing Deakin University and Barwon Health, Geelong, Australia

Diabetes education and care is delivered in a fast changing environment in a world brought closer together by modern communication and transport systems and where the prevalence of diabetes is increasing exponentially. Collaborative partnerships are essential to achieving optimal outcomes for people with diabetes on an individual and a global level. The partnership between the International Diabetes Federation (IDF) and the Consultation Section on Diabetes Education (DECS) has produced education modules that are used throughout the world to train health professionals, standards of care, guidelines and other key documents that support

health professional practice, build capacity and sustainability and have legitimised diabetes education in many areas of the world where diabetes education is still an emerging field. 2010 marks the 60th anniversary of the IDF, an ideal time to reflect on the past and its achievements, learn from the mistakes, improve the present, and plan for the future. The presentation will trace the history of DECS and the development of the partnership with IDF and the significant global impact the partnership has on the global stage.

## **NEW THERAPEUTICS FOR DIABETES AND WHAT IS ON THE HORIZON**

**Prof John Nolan**

Consultant in Endocrinology and Metabolism at St James's Hospital Dublin

There are two important strands to progress in the treatment of diabetes: new treatments themselves (new insulins, and other new medications for Type 2) and new approaches to clinical care, including self-care and lifestyle. This presentation will address both of these strands.

Progress in the treatment of Type 1 diabetes has been based on the translation into practice of the findings of the DCCT study. This has been helped by the development of new insulins, both rapid and prolonged basal acting. Even more rapidly acting insulins are needed, and orally active insulins are in development. Transplantation remains an option only for the few, but stem cell transplantation is an important and promising research area.

The challenge of Type 2 diabetes is the sheer scale of the 'diabesity' epidemic. Numbers of patients are so great that there is a danger that public health resources will simply not be able to cope with the clinical demands. This threatens the scope for individualised and personal care of patients which remains the ideal and ultimate goal. Lifestyle intervention for prevention and early management of Type 2 diabetes is growing in importance. Exercise and dietary intervention is effective in many cases, but faces challenges in actual implementation in modern environments and in modern health care systems. New approaches to obesity management, including bariatric surgery, hold real promise but also present significant challenges in terms of longer term costs and outcomes.

The incretin class of medications are the most important new treatments for Type 2 diabetes – and these will be discussed in some detail. Many other new treatment approaches are undergoing clinical trials, including inhibitors of renal glucose transport, activators of glucokinase and others.

Lessons of caution have been learnt from several of the more recent large studies aiming for ultra-tight metabolic control in Type 2 diabetes. It is now clear that some patients do not benefit from tighter control, and are at higher risk for cardiovascular mortality in particular. The goal of care must still be a personalised and individually tailored approach, addressing all components of health risk, and aiming to optimise both quantity and quality of life for our patients.

## **CVD PREVENTION VIA COLLABORATION – A MULTIFACTORIAL APPROACH**

**Christina Jarnert MD, PhD**

Senior cardiologist, Department of Cardiology, Karolinska University Hospital, Stockholm

The cardiovascular patient is at high risk surrounded by several risk factors such as for example hypertension, hyperlipidemia and smoking. A cardiovascular patient with prediabetes or diabetes is at even higher risk for different complications.

Several studies have emphasised the importance of rigorous sustained intervention in this group of patients. Today we have access to various pharmacological treatment options as well as invasive interventions but also the importance of lifestyle modification, physical activity and smoking cessation has been more underlined.

To achieve all these goals different specialists working together around the patient could be of great value.

## **INSULIN RESISTANCE AND DIABETES IN CHILDHOOD – WHO, WHEN, WHY? POINTERS FROM THE EARLYBIRD DIABETES STUDY**

**Alison Jeffery MSc, RGN, RM**

Peninsula Medical School and Derriford Hospital, Plymouth, UK

Faced with the twin epidemics of obesity and diabetes affecting ever younger adults and teenagers, early identification of those at risk, and an understanding of the pathological processes involved are paramount to prevention. EarlyBird aims to understand which children develop insulin resistance, and why.

Popular opinion holds that under-activity and over-nutrition are to blame, but a closer inspection reveals multifaceted, interlinking factors all of which increase metabolic risk. Studying a group of healthy children and their parents twice a year throughout their school years is providing an invaluable and detailed record of growing up in the 21st century. EarlyBird measures include detailed anthropometry, body composition by DEXA, fasting blood measures of metabolic health, physical activity by accelerometry, dietary questionnaires, resting energy expenditure and tonometry to measure arterial stiffness. I will present key findings from the first 10 years of the EarlyBird study, including the contribution of parental weight, infant weight gain and habitual physical activity to trends in insulin resistance.

The availability of annual measures of insulin secretion and sensitivity in healthy children is a unique resource, and I will show how plotting their trends gives powerful insight into exactly when the process leading to diabetes begins – evident up to two years before diagnosis.

## **Mona Andersson**

Mona Andersson is a diabetes specialist nurse and Director of Solljunga hälsan primary Care center. She is also President of the Swedish association of Diabetes Specialist Nurses (SFSD).

## **Trisha Dunning AM**

Qualifications: RN, MEd, PhD, Graduate Certificates: Obstetrics, Infant Welfare, Paediatrics, Family Planning, Aromatherapy, Relaxation Massage. Graduate Diplomas: Health Education, Professional Writing.

Trisha is the inaugural Chair in Nursing at Deakin University and Barwon Health in Geelong, Victoria. She is an active member of many local, national and international committees concerning diabetes, medicines and complementary therapies. These include the Barwon Health and Deakin University School of Nursing Research Ethics Committees, Department of Health Victorian High Risk Medicines Working Party and the National Medicines Advisory Committee. She is a vice president of the International Diabetes Federation (IDF) and Chairs the IDF Consultative Section on Diabetes Education. She is a member of the editorial board of several peer-reviewed journals and is widely published in books, journals and magazines. Trisha writes regular columns in Diabetes Conquest, the magazine of Diabetes Australia and The Australian Diabetes Educator.

## **Prof Marc Egli**

After completing his medical studies at the University of Berne in 1995 and his specialist training in internal medicine and endocrinology at the University Hospital of Lausanne, Switzerland in 2005, Marc Egli has been practicing and teaching clinical diabetology with a particular focus on therapeutic patient educa-

tion and chronic care issues. He is currently involved in the steering groups of several institutional programmes, among which the implementation of a multidisciplinary foot care team, a novel group education approach based on patients' perspective dealing with uncertainty in diabetes self-management, and a programme aimed at the improvement of inpatient diabetes care. Within this latter project, he has developed diabetes management and decision aids tailored to the specific needs and contexts of individual clinical services through an ongoing collaborative approach with their health care professionals. Past activities include experimental research in the field of high-altitude medicine and mechanisms of metabolic insulin resistance.

## **Prof Angus Forbes**

Professor Forbes was recently appointed to FEND Chair of Diabetes Nursing. He is based at King's College London and has held an honorary post as a specialist diabetes nurse at King's College Hospital since 2003. Prof Forbes is an active researcher in diabetes, recent studies include: a national scoping project on diabetes care and organisation; an assessment of the nursing contribution to chronic disease management (diabetes); and telephone intervention to support weight loss in type 2 diabetes. Angus also runs a wide range of different courses for health professionals in diabetes. He has an interest in E-health and psychological interventions in diabetes. Angus was previously: a senior lecturer in diabetes at King's College London; a lecturer in health services research at University College London Medical School; and a health visitor and district nurse in East London.



**Dr Anders Frid**

Graduated from Medical School June 1977; Internship completed May 1980. Specialist in Internal Medicine January 1985. Thesis for the degree of Dr. Med. Sc. (Ph D) March 1992 at Karolinska Institute of Stockholm: Insulin Injection and Absorption. 1987 – 2001 Specialist at Dept of Special Medicine, University Hospital of Lund. Since October 2001 tenure as Specialist (senior consultant) at Clinic of Endocrinology, University Hospital SUS, Malmö, Sweden. Responsible for the Diabetes Nurse education at University of Malmö. Have published papers regarding treatment of diabetes, injection technique and gestational diabetes. Clinic of Endocrinology, University Hospital MAS, S20502 Malmö, Sweden.

**Sarah Hills, RGN, MSc**

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Richard's clinical responsibilities include the pregnancy clinic, young adult clinic and the cystic fibrosis related diabetes service. He is the Chair of the Council of Health Care Professionals of Diabetes UK.

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In my daily work, I work as a nurse, researcher and teacher at Högskolan Dalarna and Uppsala University. My interest area is patient education and psychosocial support for people living with a life-long disease like diabetes, a disease that requires a very advanced self-care of the individual, especially when complications are a fact.

I hold a mandate for the Board of the Swedish Association of Nurses in Diabetes and is the scientific secretary of the Swedish Society of Nursing.

My belief is that the Nurse may well meet the criteria for an academic profession, but in the future health care team's role is likely to become increasingly central to ensuring good and safe care for the individual patient.

**Prof John Nolan**

John Nolan is Consultant in Endocrinology and Metabolism at St James's Hospital Dublin (since 1996) and leads the Metabolic Research Unit at Trinity College Dublin. He heads a cross-university diabetes research group within the new Dublin Centre for Clinical Research (DCCR), a partnership between Trinity College Dublin, University College Dublin and the Royal College of Surgeons in Ireland. His research focuses on the mechanisms and treatment of insulin resistance in Type 2 diabetes. He has published more than 100 papers with key discoveries in *Diabetes*, *The Journal of Clinical Investigation*, *New England Journal of Medicine* and *Diabetes Care*. He is the recipient of many awards and honours, and has been a state of the art lecturer at international scientific meetings. He has received diabetes-focused grants from the 5th and 6th Framework programmes of the European Union. He is a member of the Executive of the European Association for the Study of Diabetes (EASD) and is Chair of Postgraduate Education for the EASD, since 2006. He is a member of the American Diabetes Association and the Endocrine Society, and an Executive Member of the Association of Physicians of Great Britain and Ireland. He is on the Steering Committee of the EU DIAMAP project and chairs its section on clinical science and clinical care. He is currently Associate Editor of the EASD journal *Diabetologia*, and will serve as its Deputy Editor from 2010 to 2016.

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**1****OPTIMIZING DIABETES MANAGEMENT FOR DIABETIC PATIENTS WITH CHRONIC RENAL FAILURE**

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**Background**

The incidence of diabetes mellitus is increasing and as a consequence also the number of diabetic patients with end stage renal disease. Treatment like dialysis or kidney transplantation is intensive and causes a large burden, often resulting in decreased attention for diabetes care. A quality improvement process was initiated to develop a 'Shared Care Model' offering integrated diabetes and renal care. This study aims to determine effects of implementing the model on process indicators and patient-related outcomes.

**Material and methods**

Backbone of the model is provided by a nurse practitioner who integrates both areas in accessible diabetes care according to Dutch National Guidelines with emphasizing self-management. The model was adapted for patients in three stages of renal failure; pre-dialyses, dialyses and post kidney-transplantation (NTx). At baseline, in 212 patients' information about quality of care was collected from medical records (17 pre-dialysis, 61 dialysis, 105 NTx). Mean age: 59 (±12) years, men: 54%, type 1 diabetes: 23%, type 2: 63% and 14% secondary diabetes. Only in 106 patients, follow-up information was obtained, because of high mortality (31%, especially in dialysis group) or referral to another hospital (19%, especially post-transplant group). Sixty-four patients completed questionnaires about self-care behaviour (SDSCA, CIDS), diabetes-related distress (PAID) and health-related quality of life (HR-QoL: RAND-36).

**Results**

After follow-up standards controls improved in comparison to baseline, 85 vs 39% received >3 diabetes consultations, 79 vs 24% had >4 HbA1c measurements, 93 vs 48% had an eye examination, 94 vs 41% received a feet examination. HbA1c decreased significantly in all, especially in patients with initial HbA1c >7% (8.8% -> 7.7%). According to health care professionals' score self-care improved significantly, however this was not confirmed by patients' self-reports. Despite the additional attention and demands for self-management, patients did not experience an increase in diabetes burden. HR-QoL remained stable over time.

**Conclusion**

Introducing the Shared Care Model improves the process of care and patient-oriented outcomes, without an increase in diabetes-related distress.

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**RELEASING KNOWLEDGE EMPOWERS PEOPLE**

**Background**

Though highly recommended, empowerment is difficult to implement in clinical practice. Barriers to empowerment were previously revealed by grounded theories and resulted in the development of a mutual problem solving method, Guided Self-Determination (GSD). A randomised controlled trial confirmed that GSD was effective in group-training for adults with type I diabetes and poor glycaemic control by improving patients' life skills with diabetes including their glycaemic control. A qualitative evaluation confirmed that GSD helped patients and nurses overcoming the barriers and connected the accomplishment with co-creation of a certain kind of knowledge, Releasing Knowledge.

**Aim**

To explain and illustrate the empowering potential of Releasing Knowledge.

**Methods**

Constant comparative analysis was conducted in evaluation of GSD used by nurses and patients admitted because of persistently poorly controlled type I diabetes. Audio-taped conversations and interviews were analyzed from 11 nurse-patient dyads using GSD reflection sheets filled in by patients before and between appointments. Constant comparative analysis led to the development of the theory of Releasing Knowledge.

**Result**

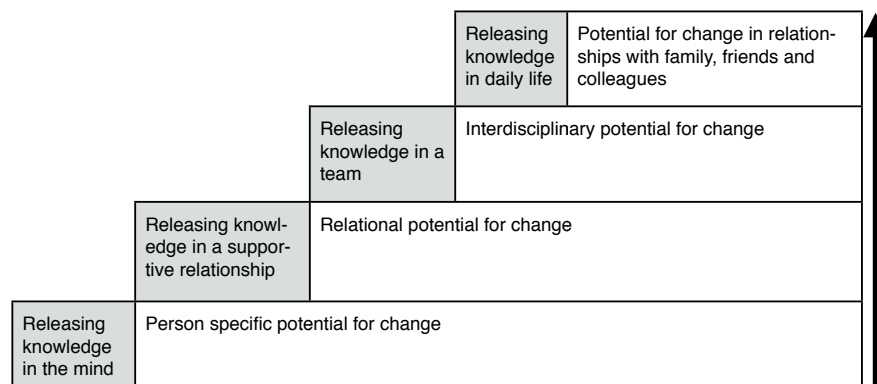


Figure 1. Releasing knowledge and the potential for change released at four stages.

Releasing knowledge moved through four stages: releasing knowledge: 1. in the patient's mind; 2. in a supportive relationship; 3. in the team; 4. in daily life with family and friends. The basis for releasing knowledge was the patients' self-insight achieved by filling in GSD reflection sheets at home. The process of Releasing knowledge not only empowered the patient, but also HCPs and significant others.

**Conclusion** The theory of releasing knowledge explains how GSD initiates an empowering process of not only the patient but also of a supportive HCP, the team and significant others such as family, friends and colleagues. Findings recommend mutual problem solving methods to be used in difficult diabetes care.

**3**  
**FEAR OF HYPOGLYCAEMIA IN ADULTS WITH TYPE 1 DIABETES**

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**Background:** Research shows that fear of hypoglycaemia (FoH) affects quality of life and may also have a negative impact on metabolic control in patients with type I diabetes.

**Aim:** This study examined FoH in adult patients with type I diabetes and its association with demographic and disease specific factors.

**Method:** Questionnaires were sent by mail to all patients with type I diabetes identified in the local diabetes registries of two hospitals in Stockholm, Sweden (n=1387). The Hypoglycaemia Fear Survey (HFS); the worry-subscale and the aloneness-subscale from the Swedish version of HFS were used to measure FoH. Demographic and disease specific factors included gender, age, duration of diabetes, HbA1c, self monitoring of blood glucose, frequency of severe, moderate and minor hypoglycaemia, symptoms during hypoglycaemia, history of hypoglycaemic unawareness and self reported episodes of "hypoglycaemic symptoms" during hyperglycaemia were collected from patients self reports and medical records. Univariate analysis and multiple stepwise linear regression analysis were used.

**Result:** A total of 764 patients participated in the study, 380 men and 384 women, mean age 43.3 years and mean HbA1c 7.0% (normal < 5.0%). Significant associations between the HFS worry-subscale and frequency of severe hypoglycaemia, frequency of symptoms during minor hypoglycaemia, gender, "hypoglycaemic symptoms" during hyperglycaemia and unawareness of hypoglycaemia were found. For the HFS aloneness-subscale significant associations with frequency of severe hypoglycaemia, frequency of symptoms during minor hypoglycaemia, gender, frequency of minor hypoglycaemia, HbA1c, unawareness of hypoglycaemia and visits to hospital due to severe hypoglycaemia were found. Separate analyses for gender showed that FoH was more prevalent in females and also indicated a somewhat different pattern of factors associated with FoH with fewer significant factors for females than for males.

**Conclusion:** This study confirms previous research which identifies the frequency of severe hypoglycaemia as the most important factor associated with FoH. Gender, hypoglycaemic unawareness, "hypoglycaemic symptoms" during hyperglycaemia and HbA1c were also identified as significant factors predicting FoH. This is the first study to document gender differences with respect to FoH in adult patients. This indicates the need of further research.

## 4

### AN INTERVENTION TO IMPROVE THE INSULIN ADMINISTRATION SKILLS OF PEOPLE WITH DIABETES: “REMINDING BY SMS MESSAGES”

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#### Background

How and where insulin is injected is important to maintain the optimal effect of insulin therapy. People with diabetes should have adequate knowledge and skill of proper insulin injection.

#### Aim

To remind the basic knowledge on insulin administration, by SMS messages, and to assess the effect of this intervention on improving insulin administration skills in people with diabetes.

#### Method

A single group, pre-post test design was used in this study. The sample included 221 type 1 and type 2 patients using insulin, who were under routine care and follow-up in the diabetes clinics in eight cities. After the objective was explained and the informed consent forms were signed by patients, patients filled out the “Interview Form” including 16 questions, and the “Insulin Injection Skills Form” consisting of 13 items assessing by 4-likert-scales. Later on, 12 short messages via cell phones on insulin administration were sent to the study group, twice weekly for the following 6 months. At the end of 6 months, all messages reached every patient by 4 times. Furthermore, the “Insulin Injection Skills Form” was applied again on the 3rd and 6th months to check the knowledge gained by the SMS reminders, and HbA1c values were also checked. Frequencies, one or two-way analysis of variance and correlation coefficients were implemented in SPSS.

#### Results

Among the patients (type 1/type 2: 98/122) in the study, the mean age was 39.8±16.2 years, 54.3% was male and the duration of diabetes was 11.0±7.2 years. Following the SMS messages the insulin administration skill scores increased by the 3rd and 6th months ( $p<0.001$ ), the number of sites used for injections and the rate of rotation of administration sites ( $p<0.001$ ), increased. Mean of A1c decreased by 0.42%, on the 6th month ( $p<0.003$ ). Insulin injection skill scores did not show any difference according to demographic features, type of diabetes, and the frequency and duration of insulin use.

#### Conclusion

The intervention of reminding by SMS at least once a week by SMS messages, contributes to improving insulin injection skills.

## 5

### ORAL MEDICATION ADHERENCE IN PEOPLE WITH TYPE 2 DIABETES

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#### Background

Medication adherence is a key factor to ensure the adequate control of type 2 diabetes. Multiple drug use in patients with type 2 diabetes in long-term is a necessity to keep blood glucose at the target value, to control blood pressure and lipids and other diabetes-related complications for management.

#### Aim

The objective of this study was to assess the medication adherence and its effecting factors including life quality, treatment satisfaction and metabolic control in the people with Type 2 diabetes.

#### Method

The sample was comprised of 200 people with type 2 diabetes from two diabetes outpatient clinics in Istanbul. The data was collected by one-on-one interview by using Med-Take (medication adherence) tool, Standardised Mini Mental Test (SMMT), WHO-5 and Diabetes Treatment Satisfaction Questionnaire (DTSQ). Frequencies, t-test, chi-square, Mann-Whitney-U, One-way Anova, Kruskal Wallis and correlation tests were used to analyse data using SPSS Client version.

#### Results

32.5% of patients was in 40-49.9 and 37.5% was in 50-59.9 age group. HbA1c average was 7.14±1.53. 64.5% of sample was women. The diabetes duration was 5.06±4.64 years and 88.5% had another chronic illness except diabetes. The average of daily taken pills was 5.50±2.48, average of oral antidiabetic (OAD) pills was 3.36±1.7. The average medication adherence score was 77.21±15.26. The highest score recorded on hypertension medication adherence that was 81.17±17.86. Medication adherence increased in people having well economic situation ( $p=0.009$ ), taking information about medication ( $p=0.01$ ), observing medical nutrition therapy ( $p=0.002$ ) and attending regular health checks ( $p=0.003$ ). Medication adherence was low in people living alone ( $p=0.04$ ). There was no correlation between medication adherence and life quality ( $p>0.05$ ). Medication adherence improved by increased treatment satisfaction ( $p<0.01$ ). OAD adherence was correlated with mental test score ( $p=0.02$ ). HbA1c, FPG and LDL cholesterol decreased significantly in people having high medication adherence ( $p<0.001$ ).

#### Conclusion

Increased oral medication adherence improves diabetes control. Health Care Professionals should evaluate the medication adherence in people with type 2 diabetes regularly. The strategies including education to increase the medication adherence should be a part of routine diabetes care and follow-up.

6

## DIABETES: DEVELOPMENT AND PRELIMINARY PSYCHOMETRIC TESTING OF AN INSTRUMENT TO EVALUATE THE EFFECTIVENESS OF PATIENT EDUCATION

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**Background:** The International Diabetes Federation Atlas 2006 estimates that the diabetes prevalence rate in Belgium is 7.9% of the adult population. The majority of diabetes management is executed by patients outside the clinical setting (self-management). Effective self-management requires knowledge/skills, an adequate level of self-efficacy, and the ability to make daily decisions about treatment and lifestyle. Structured education is accepted to be an integral part of diabetes management. A rigorously constructed and psychometrically validated instrument can be used to assess the effect of education in diabetes patients.

**Aim:** To develop a valid and reliable instrument to evaluate the effectiveness of education on (1) patients' knowledge (2) self-efficacy, and (3) self-care.

**Method:** A literature review was performed to develop the instruments. Face and content validity were evaluated by 2 endocrinologists, 2 general practitioners, 1 podiatrist, 2 dietitians and 6 nurses with an extensive experience in diabetes care. A convenience sample of 188 diabetes patients participated to evaluate construct validity and internal consistency. Item difficulty and discriminating index of the multiple-choice test items in the knowledge instrument were evaluated.

**Result:** A 21-item multiple-choice knowledge instrument, reflecting knowledge about 'glycemic control' and 'medico-social management aspects', was developed. The self-efficacy instrument included 32 statements, reflecting 'treatment and compliance' and 'general lifestyle'. The self-care instrument included 30 items reflecting 'nutrition', 'treatment', and 'lifestyle'. The content validity of the instruments was between 0.79-0.88. Scores of Type I diabetes patients (mean=0.80, SD=0.15) were found to be statistically significantly higher than those of Type II patients (mean=0.60, SD=0.21) ( $P < 0.001$ ). The item difficulty index of the items in the knowledge instrument ranged between 0.54 and 0.89. Values for item discrimination ranged from 0.26 to 0.68. The internal consistency reliability (Cronbach's  $\alpha$ ) were between 0.79 and 0.86.

**Conclusion:** Preliminary psychometric testing suggests that the instruments are reliable and valid. The instrument can be applied in patient education and research. Further research should include testing the instrument in clinical settings to explore the relation between clinical parameters (eg. blood glucose and Hgb A1c) and instrument scores

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## DETERMINING THE EFFECT OF A COMMUNITY-BASED APPROACH FOR THE SELF-MANAGEMENT OF DIABETES.

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### Background

Diabetes is a global health problem that needs to be addressed at all levels, including the individual, clinical and community level. Diabetes Hamilton (DH) is a community-based support program that serves people with diabetes in a large urban city in Canada (Hamilton, Pop. 500,000). DH has been operating for 10 years and is designed to facilitate diabetes self-management. It includes a website, public forums, evidence-based quarterly publications to the public and health care providers, a community-based diabetes resource inventory, and a voluntary registry of people with diabetes.

### Aim

The effect of enrolment in DH was assessed by comparing the annual rates of: a) clinical outcomes; b) use of medical care services; c) self monitoring; and d) use of cardio-protective therapies in Hamiltonians with diabetes who registered for DH as of December 31, 2005, versus all other Hamiltonians known to have diagnosis of diabetes for >2 years.

### Method

In a cohort study using administrative health data, 2122 DH registrants were compared to 29 349 individuals with diabetes in Hamilton who do not participate in DH.

### Result

Approximately 68% of DH participants and 56% of non-DH participants had diabetes for greater than five years. After adjusting for length of diabetes, socioeconomic status, age and sex, DH participants were more likely to self-blood glucose monitor (OR 3.74;  $p < 0.01$ ), more likely to see a specialist (OR 1.54;  $p < 0.01$ ) and more likely to be on medications for cardio-protection (OR 1.46;  $p < 0.01$ ). Participation in DH did not decrease the rates of all cause emergency department visits (OR 1.01;  $p = 0.87$ ), all cause hospitalizations (OR 1.10;  $p = 0.08$ ) or rates of macrovascular events (OR 1.12;  $p = 0.20$ ).

### Conclusion

The findings suggest that a free community-based diabetes support program does play a beneficial role in individuals living with diabetes, particularly with self-management skills and treatments.

8

## THE HYPOGLYCEMIA FEAR SURVEY - PARENT VERSION: COMPARISON OF MOTHERS AND FATHERS REPORTS ON THE WORRY SUBSCALE ITEMS IN Å POPULATION-BASED STUDY

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### Background

In a population-based study we showed fear of hypoglycemia as measured by the Hypoglycemia Fear Survey – Parent version (HFS-P) to be higher in mothers compared to fathers of children with type I diabetes. Associations between the HFS-P worry subscale scores and both parental emotional distress and poor metabolic control in the child indicated a need of enhanced focus on parental worries of hypoglycemia including differences between mothers and fathers.

### Aim

The aim of this sub study was therefore to analyze differences between mothers' and fathers' single item scores in the HFS-P worry subscale.

### Method

Mothers (103) and fathers (97) representing 115 children (1-15 years) with type I diabetes participated in the study (response rate: 72%). The HFS-P consists of a worry and a behavior subscale and the worry subscale described in this study includes 15 items measuring anxiety-provoking aspects of hypoglycemia. Cronbach's alpha for the worry subscale was 0.89 for both the mothers and fathers. Exact Wilcoxon tests were performed to analyze differences between mothers' and fathers' answers on each item.

### Results

Mean age of the 115 children were 10.6 yrs (range 1.6-15.9), mean diabetes duration 3.9 yrs (0.3-14.2) and mean HbA1c level 8.1% (SD 1.03). The Exact Wilcoxon tests showed significantly higher scores in the mothers versus the fathers on the items concerning "hypoglycemia while asleep" (mean mothers' score/fathers' score, P) (3.37/2.91, P = 0.001), "no one being around to help during a reaction" (3.28/2.91, P = 0.002) and "child having seizures or convulsions" (2.93/2.59, P = 0.004). These three items are among the five subscale items with the highest scores in both the mothers and the fathers.

### Conclusions

The results indicated that the mothers were more worried than the fathers for both severe hypoglycaemia to occur and for the risk that the child should not receive suitable treatment when hypoglycemia occurs. These gender differences should be taken into consideration when the parents' roles and responsibilities for the child's diabetes care are discussed in consultations.

9

## A STRUGGLE WHEN DIABETES IS OBJECTIFIED OR EXPERIENCED AS A COHERENCE WHEN ILLNESS IS INTEGRATED –

### LEARNING TO LIVE WITH DIABETES THREE YEARS AFTER

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**Background:** Living with chronic illness means a variety of changes and consequences for everyday life (Charmaz 1983, Meleis) where persons with DM provide 99 % of the care themselves, and are responsible for the daily management of their disease (Charmaz, 1983, Funnell and Andersson, 2003, Funnell and Andersson, 2004, Hernandez, 1995). The focus on the process of learning to live with DM is useful to increase the understanding of this group of patients and thus these patients could meet in a way that better facilitates their learning process.

**Aim:** to illuminate the meaning of learning to live with diabetes mellitus three years after being diagnosed.

**Method:** A selective sampling approach was used. Interviews were conducted with people diagnosed with DM three years earlier. The participants were asked to narrate about their experience of living with diabetes. Thirteen informants were chosen. The transcribed interviews were analysed using a phenomenological-hermeneutic method.

**Findings:** Four themes; Living is easier when diabetes is a part of me, Feeling freedom by being dependence or independently of others, Making the life-puzzle come together – a delicate balance of valuing, Others being a part in my life with diabetes.

**Comprehensive understanding and reflections:** The meaning of learning to live with DM is understood as a movement between objectifying a disease and integrating an illness. A movement along a continuum between the objectified disease; separate from oneself and one's life and the complete interaction between the illness, self and one's body in a specific situation.

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## 10 CHARACTERISTICS OF CHILDREN WITH TYPE I DIABETES DIAGNOSED BEFORE FIVE YEARS OF AGE

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### Background

A number of studies reported shifting of type I diabetes mellitus (T1DM) towards younger age, with increasing incidence specially in children younger than 5 years.

There are indices that T1DM in that age has some distinctive characteristics such as: higher genetic susceptibility, faster beta-cell destruction, marked metabolic deterioration and less frequent remission.

### Aim

To compare clinical and laboratory characteristics of children with T1DM diagnosed under 5 years of age with children diagnosed at an older age.

### Patients and methods

79 (53.8% males, 46.2% females) T1DM patients were diagnosed before the age of 5: mean age  $2.9 \pm 1.2$  years, range 1.0-4.9 years (group 1) and of 115 (47.0% males, 53.0% females) were 5 years or older at diagnosis: mean age  $10.5 \pm 3.1$  years, range 5.0- 17.9 years (group 2) data were gathered concerning circumstances at diagnosis: sex, age, season, family history of diabetes, and laboratory testing results (blood glucose level (BG), HbA1c, signs of diabetic ketoacidosis (DKA), HLA-DR3 and -DR4, ICA, GAD and I-A2 antibodies).

### Results

Two groups differed in season of onset (group 1 peak incidence at summer and group 2 at autumn;  $p=0.023$ ), BG (group 1  $27.4 \pm 9.5$  mmol/L, group 2  $24.3 \pm 10.0$  mmol/L;  $p=0.014$ ), and HbA1c level (group 1  $10.6 \pm 2.0\%$ , group 2  $11.8 \pm 2.2\%$ ;  $p<0.001$ ) at diagnosis. Other tested variables did not show differences between two groups.

### Conclusion

The newly observed predominance of incidence of T1DM during summer in group 1, might be due to susceptibility of this age group for enteroviral infections, which are a putative trigger for clinical manifestation of diabetes.

Higher BG and lower HbA1c level possibly reflect a shorter duration, but higher levels of hyperglycaemia in group 1, suggesting faster metabolic deterioration at that age. However, there was not a noted higher frequency of DKA, implying early identification and an increasing awareness for occurrence of diabetes at the youngest age.

## 11 DIABETES SPECIALIST NURSES, EMPLOYMENT TRENDS AND WORKFORCE PLANNING.

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### Background

Previous studies in the UK have identified how the roles and responsibilities of DSNs have expanded considerably in the last 10 years with opportunities for development into leadership roles. This has been in response to the increasing prevalence of diabetes and Government directives.

### Aim

To establish a database of DSNs working in the UK to help predict manpower needs over time and assist with workforce planning and address how many DSNs are working in the UK, the work setting and roles being carried out, the qualifications gained and band level awarded.

### Method

The working group developed and piloted a questionnaire which was mailed to all identifiable DSNs in the UK (using the Diabetes Data Directory and membership of Diabetes UK and the Diabetes Inpatient Specialist Nurses Group). Questionnaires were emailed or posted in September 2009 and responses collected until January 2010. Results were analysed using Excel and SPSS (v17).

### Result

A response rate of 61% (838) was achieved. Respondents gave 238 separate job titles representing the role of the DSN. 47% of DSNs work in the hospital, 22% work in the community and 28% work in both. 76% indicated that their role includes general adults, 41% inpatients, 23% paediatrics but only 10% in research. 74% have a diabetes diploma/certificate, 54% have undertaken ad hoc degree modules and 17% have a diabetes related degree. 18% have completed ad hoc Masters modules and 8% have a diabetes related Masters. 40% have completed non-medical prescribing courses. 11% have no clinical lead for their service.

### Conclusion

Fewer DSNs are working across both hospital and community settings jeopardising opportunities for joint working, sharing knowledge and skills including prescribing which is unique to the UK. Most DSNs are qualified to the level required of DSNs however it is concerning that some services are operating without a clinical lead. The data gathered present a picture of the nature of UK diabetes specialist nursing, however by repeating this study annually, it will identify trends with which to guide service and manpower planning in the future.

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## STRUCTURED BLOOD GLUCOSE MONITORING USE SIGNIFICANTLY IMPROVES GLYCEMIC CONTROL IN POORLY CONTROLLED, NON-INSULIN TREATED TYPE 2 DIABETES

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### Background

Evidence shows that self-monitoring of blood glucose (SMBG) use is effective in managing insulin-treated diabetes, however, the value of SMBG in non-insulin-treated diabetes remains controversial.

### Aim

The Structured Testing Protocol (STeP) study assessed the effectiveness of structured SMBG use in poorly-controlled insulin-naïve type 2 diabetes (T2DM) subjects.

### Method

In this 1-year, prospective, cluster-randomized, multi-center, clinical trial, 483 poorly-controlled (HbA1c  $\geq 7.5\%$ ), insulin-naïve T2DM subjects from 34 US primary care practices were randomized to active control (ACG) or a structured testing (STG). The STG used an easy-to-use paper tool that facilitates collection and interpretation of 7-point glucose profiles over 3 consecutive days. STG subjects completed the tool on a quarterly basis and brought it to medical visits. All patients received free a SMBG system and training in its use. STG patients and physicians received standardized instruction in SMBG pattern recognition and interpretation; STG physicians also received an algorithm for suggested medication strategies in response to observed SMBG patterns.

### Results

At 12 months, the intent-to-treat (ITT) analysis revealed a significantly ( $P=0.04$ ) greater reduction in mean (SD) HbA1c over time in the STG compared with the ACG:  $-1.2\%$  (0.09) vs.  $-0.9\%$  (0.10);  $\Delta = -0.3\%$ ; 95% confidence interval  $-0.54$  to  $-0.01$ . Per protocol (PP) analysis showed a significant ( $P<0.003$ ) and even greater mean (SD) HbA1c reduction in the STG compared with the ACG:  $-1.3\%$  (0.11) vs.  $-0.8\%$  (0.11);  $\Delta = -0.5\%$ ; 95% confidence interval  $-0.75$  to  $-0.16$ . In both groups, SMBG frequency was positively associated with HbA1c improvement; STG patients achieved significantly greater HbA1c improvement without requiring more frequent SMBG than ACG patients. STG patients were significantly ( $P<0.0001$ ) more likely to receive at least one treatment change recommendation (pharmacologic and/or lifestyle) over the study period than ACG patients, 94% vs. 63%. Over time, patients in both study groups showed a significant ( $P<0.05$ ) decrease in depression.

### Conclusion

Appropriate use of structured SMBG significantly improves glycemic control in poorly controlled, non-insulin treated patients without increasing emotional distress.

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## THE PREVALENCE OF LARGE FOR GESTATIONAL AGE OFFSPRING AFTER IMPLEMENTATION OF A NEW INSULIN TREATMENT GUIDELINE IN WOMEN WITH GESTATIONAL DIABETES.

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### Background

In 2008 we changed routine treatment of gestational diabetes from biphasic human insulin to biphasic insulin aspart, and implemented an algorithm for initiating and adjusting insulin dose. The aim of our study was to evaluate the effect of this change on birth weight and the prevalence of pregnancy related complications.

### Method

The study population included all insulin treated women with GDM delivering in 2007 and 2009 at Rigshospitalet fulfilling the following inclusion criteria: GDM diagnosed and insulin treatment initiated  $< 34$  weeks with the first HbA1c below 6.5%, singleton pregnancies and at least two HbA1c tests with  $\geq 3$  weeks' interval. The insulin treatment was initiated and adjusted by a nurse the first 14 days and thereafter by an endocrinologist. The 07-cohort received biphasic human insulin twice daily with individual start dose and adjustments while biphasic insulin aspart was initiated in the 09-cohort with 0.3 IU /kg twice daily and thereafter adjusted according to a written titration guideline. The prevalence of large for gestational age (LGA) infants and neonatal morbidity defined as the need for treatment with i.v. glucose or antibiotics, or treatment for respiratory distress syndrome or jaundice.

### Results

The two cohorts were comparable with regard to baseline HbA1c and HbA1c prior to delivery (5.7(0.4) vs. 5.8(0.4) and 5.8(0.4) vs. 5.8(0.4)). The 2009 cohort was diagnosed and initiated insulin treatment on average 21 days earlier ( $p<0.05$ ) and tended to be less overweight (NS). In the 2009 cohort offspring birth weight was significantly lower, evaluated by the Z-score ( $p<0.01$ ) as well as the prevalence of LGA (20/54 (37 %) vs. 8/47 (17 %)  $p<0.05$ ). Moreover neonatal morbidity was lower (14 vs 4  $p<0.05$ ).

### Conclusion

The prevalence of LGA infants and neonatal morbidity were lower after implementation of the new insulin treatment guideline as part of routine treatment. Whether this is due to the change in the insulin treatment algorithm or other factors, as earlier initiation of treatment, remains speculative.



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## AN ETHNOGRAPHIC STUDY OF PARENTS WHO HAVE CHILDREN WITH TYPE 1 DIABETES

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### Background

Internationally, only a small body of research is available which explores parents lived experience of having a child with type 1 diabetes. The majority of research in this area is quantitative and so, this qualitative study using an ethnographic approach was conducted to give some insight into how parents cope with having a child with type 1 diabetes. An ethnographic approach was chosen to explore the behaviours and norms of a parent support group and the impact this had on their day to day management of diabetes.

### Aim

This ethnographic study aims to describe the behaviours, norms and the culture that existed in a support group for parents who have children with type 1 diabetes.

### Method

Interpretative ethnography can provide participants with the opportunity to describe in their own terms, the everyday experience of having a child with type 1 diabetes.

Three methods to gather data were used: participant observation in the parent support group, semi structured interviews with members of the parents support group and a reflective fieldwork journal kept by the researcher throughout the process of conducting research. The parent support group consisted of thirty parents. At the monthly meetings, there was on average, six-ten parents. The researcher attended these meetings for seven months recording field note observations. Eight audio taped interviews were undertaken with eight parents. Reflexivity was employed by the researcher to ensure that they were conscious of their views on the research results.

### Results

The emergence of five prominent themes was evident from the data. These were: the space where things are sorted, impact of diagnosis, carrying the burden, food for thought and experiences with schools.

### Conclusion

This study provides valuable research into what a parent support group gives to parents who have children with type 1 diabetes. The study explores the parents' needs met by the group and mothers talked in-depth about the burden they carried. This study provides essential research into parents' experiences with their child's school.

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## THE IMPACT OF A FAMILY NURSING INTERVENTION ON COPING IN PARENTS OF AN ADOLESCENT WITH DIABETES

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### Background

When a family member gets diabetes it affects the whole family. Parents of adolescents with diabetes have to adapt to new circumstances, take care of their own wellbeing and the welfare of the whole family. The support of nurses in diabetes clinics regarding the metabolic control is important, but the wellbeing of family members must not be forgotten.

### Aim

The purpose of this study was to determine if coping strategies in parents who had adolescents with diabetes, 13 to 18 years of age, changed 6 months after a short term educational and support nursing intervention. The theoretical framework for this study was family nursing, the Calgary family assessment model and the Calgary family intervention model.

### Method

A quasi experimental design was used in the study, with one group pretest-posttest design. Descriptive statistics was used for data analysis and significance tests to study the affect of the short term educational and support intervention. Participants were 23 families of adolescents 13-18 years of ages with diabetes (22 mothers and 19 fathers). The intervention consisted of three phases: (a) group education (b) support interview for parents and (c) support groups for the adolescents.

### Results

The main findings were that mother used significantly more coping strategies than the fathers. After the short term educational and support intervention, the fathers found positive coping strategies to be significantly more useful than the mothers.

### Conclusion

The study implies that a short term educational and support intervention based on family nursing, can be helpful nursing intervention for parents in the adaptation phase to life with diabetes.

## 16 IMPROVING THE RELIABILITY OF CAPILLARY BLOOD GLUCOSE MONITORING: USING THE FIRST OR SECOND DROP OF BLOOD

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**Background:** Self monitoring of blood glucose (SMBG) is an important tool to achieve good glycaemic control. Several aspects concerning SMBG need attention. Eg, there is no general agreement regarding the use of the first or second drop of blood for glucose monitoring.

**Aim:** Our aim was to investigate the influence of having clean or soiled hands on glucose concentration in the first and second drop of blood.

**Methods:** Eligibility criteria: diabetes type 1 or type 2, using insulin, age above 18 years. A cross-sectional, 'within subjects' design was used. Capillary glucose concentrations were measured in two consecutive drops of blood without washing hands, after washing hands and after soiling the fingers with fruit.

Wilcoxon Signed Rank Test was used.

**Results:** Recruitment took place between September 2009 and January 2010.

123 patients: 63 (51%) men, 66 (54%) diabetes type 1, mean age was 54,4 years (SD 14,2) mean HbA1c was 58 mmol/mol (or 7,5% SD 1,3).

Table:

glucose concentrations (mmol/L) and median (interquartile ranges) in different circumstances

	First drop	Second drop	control
Without washing hands	9.0 (6.7 – 12.9)	8.9 (6.6 – 12.4)	8.8 (6.5 – 12.5)
Washing hands	8.7 (6.5 – 12.3)	8.8 (6.5 – 12.8)	
Soiled finger	14.9 (10.5– 21.6)	9.0 (6.5 – 12.6)	8.9 (6.4 – 12.2)
Washing hands after soiling the finger	8.4 (6.3 – 11.9)	8.5 (6.2 – 12.1)	8.7 (6.2 – 12.1)

After wiping the first drop of blood of unclean hands, the glucose concentrations are still 10% higher than the control measurement in 5 – 14% of the patients.

### Conclusion

The first drop of blood of unclean hands should not be used to allow a reliable glucose measurement. The first drop of blood can only be used when the fingers are clean.

## 17 “CAPTAIN OF THE SHIP” – A QUALITATIVE STUDY ON PATIENTS’ EXPERIENCES WITH A SOLUTION FOCUSED BRIEF THERAPY IN A SELF-MANAGEMENT PROGRAMME

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### Background

A large number of patients with diabetes are reporting high prevalence of emotional distress, anxiety, depression and reduced health-related quality of life. There are many factors influencing on psychological well-being and how to cope with living with diabetes, and health care providers struggle to find suitable tools to promote better health and well-being among their patients. It is shown in previous research that using a Solution-Focused Brief Therapy enhance higher self-confidence and less emotional distress symptoms.

### Aim

The aim of this project was to develop communication tools to promote better health and well-being among persons with diabetes using a Solution-Focused Brief Therapy approach, and to explore the experiences of patients who had taken part in the self-management programme; “Captain of the ship”.

### Sample and Method

Focus group interviews were conducted among 10 patients with diabetes, age 40-65, both men (N=5) and women (N=5). The interviews were held at the Center for Patient Information and Education after finishing the course. Also, a follow-up interview was conducted 4 months later.

### Results

Preliminary findings show the patients experience of reflecting in a more positive manner related to the questions. Setting their own goals about lifestyle promote life satisfaction and more positive attitudes about the future. Conclusion: By focusing on how to cope with living with diabetes in this self-management programme the focus in life changes into a more optimistic course.

## 18 DIABETES NURSES' DISTRIBUTED EXPERTISE

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### Background

Patient education and counselling is an integral part of diabetes prevention and care. Consequently, it is important that diabetes nurses possess good education skills. In the future work, expertise can no longer be described as the skills of the individuals only, instead, as socially shared capability of networks and teams and as the collaborative expertise. This brings challenges for the education of diabetes nurses as well.

### Aim

The purpose of this paper is to describe the experienced diabetes nurses' collaborative learning in an authentic on-line course in patient education and counselling.

### Methods

The data in this study were the students' (14) online discussions (three forums; 717 contributions). The data were analysed by using both quantitative and qualitative content analysis.

### Results

The analysis included an indicator describing students' participation in its quantitative dimension: the forums included 717 contributions from 14 students during the seven weeks' course. The forums were: technology in patient education (235 contributions), special needs in patient education (265 contributions) and written patient education material (212 contributions). The most discussed topics were benefits of technology, patients with different cultural background, diabetes and anorexia, and poor quality of education material in Internet. The qualitative indicators of the collaborative process were dialogue, depth of discussion, reactivity to proposals and conclusiveness of conversation. Dialogue was expressed in reciprocal trust, sense of belonging and perception of positive interdependence. Depth of discussion was manifested in development of interaction chains, contributions built on other contributions and in sequences of reciprocal answers. Reactivity to proposals was represented in proposals of new ideas followed by a group discussion, in critical evaluations and argumentations. Moreover, conclusiveness of discussions was manifested in gist of collaborative activities, integration of ideas, synthesis of ideas and summarizing contributions made by the students.

### Conclusion

Diabetes nurses developed towards distributed expertise during the course through a collaborative online process. The positive results of the online course emphasise the significance of opportunities for diabetes nurses to share their experiences and tacit knowledge.

## 19 THE LINDA DIABETES PREGNANCY PROGRAMME (LINDAPREG)

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**Background:** Sufficient bloodglucose levels (BG) are important during Diabetes in Pregnancy (DP) like GDM, type-1 or type-2 to prevent complications. There is less evidence of pregnancy Selfmanagement Education Programmes (SMEP). We developed LINDAPREG according to international guidelines (IGL) including diabetes pregnancy pass and brochures for patients. 30 topics like nutrition, healthy life style and insulin therapy are mediated in 6 interactive computer animated settings each taking 90 minutes.

**Aims:** Evaluation whether LINDAPREG achieves aims of IGL or not.

**Method:** LINDAPREG was performed in single and 3 group terms. A prospective study was conducted between 1.10.2008 and 30.4.2010, analyses and calculation done in Excel.

**Results:** 18 women with DP (14 GDM, 2 Typ-1, 2 Type-2) reflected 1 dropout (moving), 3 smokers, 10 insulin treatments, 11 cesarians, 1 surfactant deficiency, 3 babies with hypoglycemia, 12 breastfeedings, no ketoacidosis or severe mothers hypoglycemia.

Babies hypoglycemia were mild and shortly fully recovered, the surfactant deficiency occurred under smoking.

	Age	Gestation weeks	Monitoring weeks	height cm	weight kg	triglycerides
mean	31.0	38.19	14.2	50.6	3.515	202
max	42.0	40.3	31.7	54	4.600	351
min	23.0	33.9	1.9	45	2.400	55

	start	end	start	end	start	end	start	end	start	end	start	end	start	end	Insulin
	A1c		BMI		RR sys		RR dia		BGProfil		prae-prandial		post-prandial		IE/Kg/day
mean	6.1	5.8	32.7	34	112	114	72.3	75.3	6.5	5.6	5.6	4.9	7.5	6.3	0.51
high	11	6.9	52.4	53.1	141	147	93	93	11.2	5.1	6.5	9.3	15	10	115
low	5	5.4	18.4	22.6	88	90	50	50	5.4	3.7	5.1	3.2	3.4	4.2	0.04

	Guidelines	Result
6 point BG profile mean value ranges	4.71 – 5.8	5.6
praeprandial lower than	5.0	4.9
postprandial lower than	7.8	6.4

In the satisfaction questionnaire all patients agree with the programme.

**Conclusion:** The Results comply with the requirements of IGL.

Despite high ratios of insulin treatment (58,8%) and cesarian (64,7%), the hypoglycemia ratio (17,6%) was low.

The LINDAPREG is qualified for selfmanagement treatment in Diabetes and Pregnancy.

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## SEXUAL DYSFUNCTION AMONG DIABETIC WOMEN – AN INVISIBLE PROBLEM

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### Background

One of the long term complications of diabetes is neuropathy which can be manifested by problems related to sexual dysfunction both among men and women. Sexual health is an important, but often neglected, component of diabetes care. When it comes to men the connection between diabetes and sexual dysfunction is well known. Research clarifies that also 40-50 % of women with diabetes have problems with their sexuality. Despite this fact several studies indicates that the question is seldom discussed with women by the health care providers at the primary health care centre.

### Aim

The aim of the study was to elucidate the conversation between the diabetes nurse and the female diabetes patient when it comes to sexual health.

### Method

The study was based on interviews with five diabetes nurses practicing in primary health care centres in the Stockholm area. Four open questions were used in the interviews.

### Result

The result showed that the majority of the diabetes nurses lacked readiness to address questions about sexual health with female diabetes patients. They brought up other genital problems such as fungal infections and incontinence, but seldom mentioned sexual dysfunction. There was a lack of documentation regarding sexual health. All participants expressed the need for more knowledge to increase their readiness for discussing this issue. They asked for guidelines and written material such as brochures to the patients. Increased cooperation with the GP was also regarded as a quality assurance.

### Conclusions

The diabetes nurse has a unique possibility to emphasize matters of sexual health. This possibility is due to the fact that she/he often is comfortable in her/his profession and often has established a good relationship that makes it easier for the patients to feel confident. Despite this the problem seems to remain invisible. The participants expressed the need for more education in this area. To achieve the readiness to illuminate the subject it is important to investigate the possibilities of further education in Sweden.

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## UNAWARENESS OF HYPOGLYCAEMIA IN YOUNG PATIENTS WITH T1D TRANSFERRED FROM A SPECIALISED PAEDIATRIC TO AN ADULT CENTRE

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### Background

Episodes of hypoglycaemia (HG) are one of the main adverse effects limiting the efficacy and safety of intensified treatment with multiple insulin doses (MID) in patients with Type 1 diabetes (T1D). Repetition of these episodes diminishes the warning symptomatology and predisposes the appearance of severe HG.

### Aim

The aim of this study was to evaluate the prevalence of unawareness of HG in a group of young patients with T1D on transfer from a paediatric to an adult centre.

### Patients and Methods

All the youths with T1D evaluated on transfer from a specialised paediatric to an adult centre were consecutively included in the study with clinical and laboratory data being collected in all. Awareness of HG was determined using the Clarke test in which a score  $\leq 2$  is considered as normal awareness.

### Results

The results of 51 patients treated with MID were analysed (age  $18.5 \pm 0.9$  years, 23 women, duration of T1D of  $8.7 \pm 4.5$  years, HbA1c  $8.4 \pm 1.6$  %). Anomalous awareness of HG was detected in nearly 20 % of the patients (19.6 %). On comparison of patients with a normal awareness of HG, those with an abnormal awareness had a history of a greater number of HG episodes per week ( $p < 0.05$ ) and of severe HG in the previous year ( $0.50 \pm 0.34$  vs.  $0.09 \pm 0.1$ ;  $p < 0.01$ ). No differences were found in either the duration of T1D or age or HbA1c.

### Conclusions

Despite the progressive improvement in the application of educational programmes aimed at the implementation of intensified treatments with MID, a considerable proportion of young patients continue to have difficulties in HG awareness. It is therefore necessary to systematically evaluate this aspect and adapt the therapeutic education programmes aimed at this subgroup of patients.

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## “WE ARE NOT ALONE IN THIS” – PATIENTS AND RELATIVES SHARING EXPERIENCES IN WORK SHOPS

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### Background

Living with Diabetes influences the person with diabetes as well as and his/her relatives. Challenges in every day life with diabetes can be difficult to share with others who do not have diabetes in the family.

### Aim

We wanted to create an opportunity for persons with diabetes and their relatives to exchange views and experiences with others in a similar situation.

### Method

We invited 48 persons with diabetes who had previously attended a support group and their relatives to participate in two work shops focusing on the psychological challenges in living with diabetes. The participants were invited to contribute with their own views and experiences and listen to others in various small groups and in plenum. The meeting was facilitated by two diabetes nurses, a doctor and a psychiatrist who had participated in the support groups. The workshop was evaluated by a questionnaire with four different questions about the benefit from participating and the satisfaction with the work shop programme rated on a 5 point Lickert scale from not at all (0) to very much (5). The participants were also asked to state their benefit from participating as one sentence in an open-ended question.

### Results

Eighteen patients and 15 relatives participated in at least one of the work shops. The questionnaire showed that the participants rated their benefit from participating as a four. They valued dialogues in groups most with a mean rating of 4,1. Answers to the open-ended question focused primarily on benefit from talking to others with the same kind of experiences and gaining knowledge of how patients and relatives perceive living with diabetes, respectively. Both patients and relatives expressed a need for more time and opportunities to be in work shops like this.

### Conclusions

There is a need for opportunities for patients and relatives to learn from each other concerning how living with diabetes is perceived in every day life.

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## STUDY FOR INULIN INJECTION TECHNIQUES

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**Aim:** This study was designed to determine and assess the effectiveness of insulin administration and the injection errors, in type 1 and type 2 diabetic individuals using insulin, in our country.

**Method:** The study included 597 individuals with type 1 and type 2 diabetes (age: 48.1 ± 14.7 years, HbA1c: 8.24 ± 1.63, body mass index (BMI): 28.3 ± 5.9 kg/m<sup>2</sup>, duration of insulin use: 6.85 ± 6.9 years), randomised from 17 centers in Turkey. A patient questionnaire form consisting of 40 items was prepared to evaluate the administration technique of the diabetic individual and a nurse questionnaire form of 12 items was prepared for the examination of injection sites, and the results of these questionnaires were assessed in this study.

**Results:** The needle length of 83.7 % of the patients had not been changed since diagnosis, and 44% of the patients were leaving the needle on the pen. The pen needle length was 8mm in 83.5%, 5-6 mm in 6.2%, and 10-12.7mm in 5.3% of the patients. 87.7% of the abdominal injections were administered with a skin pinch and 95.4% with a 90° angle, 10.4% of the femoral injections were administered without a skin pitch and 95.6% with a 90° angle, and 24% of the arm injections were administered without a skin pitch and 78 % with a 90° angle. Among the patients 36.1% claimed they had no pain during injections, 23.4% claimed they had mild pain, and 35.6% claimed they had mild to moderate pain from time to time. According to their own statements, 32.8% of the patients felt pain because it came across to a nerve, 16.9% because of incorrect injection techniques, and 12.1% because they had used the same needle. Among the patients, 31.1% stated that they had and/or continuing to have lipodystrophy, and 15% stated that sometimes they administered the injection on the lipodystrophy sites. Those with lipos are less likely to rotate within injecting sites than those without lipos (p=0,000). Patients with lipos rate the pain of injection higher than those without lipos (p=0,000).

**Conclusion:** Errors in the selection of pen needles and the injection site, and in administration techniques were observed in most cases. The regular assessment of administration techniques will contribute to the stabilization and effectiveness of the treatment, and the regulation of optimal glycemia.

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## A MODEL FOR POSTGRADUATE DIABETES EDUCATION: NATIONAL INSULIN EDUCATION PROGRAMME (NIEP)

Seyda Ozcan<sup>1,2</sup>, Gulhan Cosansu<sup>2</sup>, Selda Celik<sup>2</sup>, Belgin Bektas<sup>2</sup>, Nurdan Yildirim<sup>2</sup>, Nermin Olgun<sup>2</sup>, Semra Erdogan<sup>2</sup>, Sevgi Oktay<sup>2</sup>, on behalf of NIEP Group<sup>3</sup>

<sup>1</sup>Project Manager of NIEP, <sup>2</sup> Diabetes Nursing Association, <sup>3</sup> Diabetes Nurse Educators who were trainers in NIEP

**Background:** United Nations(UN) resolution addressed the strategies to demand whole-of-government actions besides the actions of agencies responsible for healthcare. NIEP, in Turkey, is an answer to UN call for action of developing programmes including education for the prevention and treatment of diabetes with partners such as governments, non-governmental organizations.

**Aim:** NIEP was established to increase the knowledge of HCPs(mainly nurses) on Insulin Management(IM) while decreasing their potential mistakes on it.The main purpose of the programme was to give patients better healthcare service on IM.

**Methods:**An educational kit on IM was prepared:

*Slide Set:* Consists of 41 Slides, half of which is taken from IM section of IDF Diabetes Education Modules and the other half built from educator's own learnings.

*Educators' Manual:* Guided educators how to use the slides during training.

*Instruction and Letters:* Sent to the diabetes/nurse educators and directors of hospitals to explain the aim and process.

*IM Handouts:* Four insulin handouts (insulin injection,lipodystrophy and site rotation,injection devices,10 rules to improve insulin implementations) were prepared.

*Pretest-Posttest:* Pretest and posttest (in 3rd month after training) were implemented.

All hospitals in Turkey were invited to participate. Diabetes/nurse educators trained the groups of 20-50 nurses who are working in various departments of hospitals such as internal medicine, surgery, peadiatry, ICU. 9,000 nurses were trained by 248 diabetes/nurse educators in 45 cities, 106 hospitals. 6,493 pretests and 4,400 posttests were implemented (Figure 1).

**Results:** 67% of participants was nurse, 13% was midwife.Working duration of HCPs was 11.23±8.03 years.Attending at any diabetes education after graduation was very limited(29.4%).The first evaluation of the tests reflected the improvement on insulin knowledge and implementations after education.Further analysis of data will be over soon. Programme witnessed a great demand and participation from nurses. Education module was placed in continuous education programmes of hospitals(in 70% of participated hospitals). Insulin handouts were printed as poster and they are being used in the hospitals and nursing schools.

**Conclusion:** Since the program having a snowball effect, was applied via diabetes/nurse educators it had the potential to reach huge population groups.The education program was coordinated by Turkish Diabetes Nursing Association with collaboration of Turkish Ministry of Health and IDF.NIEP started an innovation in continous education on diabetes in Turkey.

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## MANAGING DIABETES AT THE END OF LIFE

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<sup>4</sup> Deakin University and Barwon Health, Geelong Australia.

### Background

Information about managing diabetes at the end of life is scarce.

### Aim

a) To develop holistic guidelines for managing diabetes at the end of life that encompass the Palliative Care Outcomes Collaborative (PCOC) and Liverpool Pathway; b) Evaluate the Guidelines in palliative care settings.

### Methods

An expert advisory committee (AC) was established. Data were collected from a comprehensive literature review, palliative care (n = 10) and diabetes experts (n = 10) and individual semi-structured audio-taped interviews with people with diabetes (PWD) (n = 14) in various PCOC phased and their relatives (n = 12). Guidelines were developed using an iterative, consultative process with the AC. Palliative care staff used the draft guidelines to plan care for PWD in all POCC stages and provided written anonymous comments and participated in a subsequent group discussion.

### Findings

No empirical evidence was identified in the literature. Diabetes experts have little involvement once the PWD enters palliative care services. Palliative care experts focus on managing symptoms but had little knowledge about diabetes contribution to symptoms such as pain, dehydration and depression. Many felt blood glucose monitoring (BGM) was invasive and insulin was 'curative.' PWD and their families wanted BGM continued and blood glucose controlled to avoid hypo and hyperglycaemia, which increased their discomfort and stress. The guidelines were helpful for planning care, especially in the terminal phase, and were easy to use.

### Conclusions

The Guidelines are primarily based on expert opinion in the absence of empirical evidence. PWD and their families contributed to the guidelines, which increased their holistic focus. Evaluation suggests they are easy to use and assist with care planning for PWD at the end of life.

## E 1 EVALUATION OF SELF-MANAGEMENT DEGREE AND FAMILY SUPPORT IN PATIENTS WITH DIABETES MELLITUS USING A STRUCTURED QUESTIONNAIRE

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### Background

Diabetes represents a real global epidemic that affects all levels of society. Regardless of their background, each person with diabetes requires medical care, education and a very complex support.

### Aim

The main objective of this study was to identify the degree of diabetic person self-management and family support to increase the diabetes self-management.

### Method

A cross-section analysis of an unselected patient group (n=100) of our Center has been developed. Data were collected by a questionnaire with 13 items (item 1-7 self-efficacy, item 8-13 family support), each item was scored from 0 to 5. The clinical and biological data were collected from the medical records.

### Results

43% of the patients answered they do a lot of physical exercises; 46 % believe they can do more when advised; 27% of the patients are confident they can test their blood sugar without help and 51% adhere to the self-medication recommended scheduled; 45% keep their diet most of the time, 22% are able to examine themselves for possible foot lesions; 44% feel they get a lot of support from their families, 48% feel they are being appreciated for what they do to maintain their health; 44% are encouraged to do more physical exercises; 37% are helped with the medication;

35% get help in choosing healthy food; 34% have their meals cooked or bought by their families based on the doctor's recommendations.

Significant correlations were observed between

- the glycemic values (correlation coefficient 0.213,  $p = 0.034$ ) and adherence to self-medication scheduled;
- abdominal circumference (correlation coefficient of 0.201,  $p=0.045$ ) and adherence to diet recommendation;

### Conclusion

The study shows that diabetic patients are given the necessary support by their families; support that eventually leads to a better control of the diabetes and helps delay or prevent complications. To obtain good results the therapeutic education should be extended to patient's family.

## E 2 DIABETES EDUCATION ON THE ANTENATAL WARD

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Maternity Hospital, Helsinki, Finland

### Background

Diabetes and pregnancy is a great challenge to the health care professionals. The pregnant diabetic's type 1 has not good glucose level as it should be. Gestational diabetics have a risk to get diabetes type 2 in the future without lifestyle changing. Midwives are working with young diabetics and they must have knowledge, positive attitude and capability to give information about diabetes risk.

### Aim

To find out midwives' knowledge, capability and attitudes against diabetics and diabetes.

### Method

The information of the midwives' knowledge, attitude and capability are collected by two questionnaire surveys. The first questionnaire was in August 2009 and after that seven lessons were organized about diabetes on the antenatal ward in University Hospital. The last lesson was in January 2010 and then was the second questionnaire.

### Result

13/15 (86.6%) of the midwives experienced diabetes lessons beneficial in the practical patient care. The lessons stimulated to look for more knowledge about diabetes and complications. The education gives courage to inform diabetics.

### Conclusion

The diabetes education is important to improve knowledge in diabetes, because midwives' role in the prevention of the diabetes complications and diabetes type 2 among gestational diabetics is essential. The education should be systematic and continuing in order to give the best result.

**E 3****SELF EFFICACY IN A GROUP OF OVERWEIGHT AT RISK TEENAGE BOYS: DOES IMPROVING SELF ESTEEM HAVE A POSITIVE EFFECT IN BEHAVIOUR CHANGE EVEN IF THE INTERVENTION IS OF A SHORT DURATION?****Jones D.J., CDE**

King Edward VII Memorial Hospital, Point Finger Road, Paget, Bermuda

**Background**

Today more children are diagnosed with type 2 diabetes than type 1 diabetes; obesity, the most common health problem affecting children, is the underlying cause. The causes of obesity are complex but the risk is acknowledged to be greater if one or more parent is obese and if the child has low self-esteem. Childhood obesity is recognised as a significant health risk by The Ministry of Health in Bermuda leading to diabetes and heart disease. Historically, overweight adolescents have failed to respond positively to traditional methods of nutritional education.

**Aim**

The aim of this study was to investigate whether a creative programme on a Tall Ship would improve self esteem in a cohort of overweight teenage boys, resulting in weight loss through improved nutrition and increased activity.

**Method**

12 overweight teenage boys, with a mean weight of 220.5 lbs and a mean waist measurement of 39 inches, were referred by their family physician or school counsellor, for an intensive week's sailing programme on a Tall Ship. The primary focus was sail training; the secondary focus, to impart an understanding of the importance of good nutrition and exercise. Nutritionists, educators and a physician were part of the team and male crew members served as role models for the boys.

**Results**

Improved self esteem, demonstrated by willingness to participate in all of the activity related exercises such as swimming and cleaning the ship and eating healthy foods resulted in not only weight loss but a positive attitude towards good nutrition and increased activity. By the end of the week, mean weight was reduced to 215lbs and waist measurement to 38". At 6 months, mean weight was reduced to 205lbs and waist measurement to 36.6"

**Conclusion**

This Tall Ship programme highlights the need for more creative programmes for overweight adolescents to improve self esteem, thereby combating obesity and preventing diabetes and its devastating complications.

**E 4****SUCCESSFUL INSULIN PUMP THERAPY IN HUNGARY****Halmos E., diabetes educator**

retired deputy manager in a Health High School, Budapest, Hungary

**Background**

Continuous insulin infusion therapy is presently the most up-to-date treatment form for Type 1 diabetics. The indication to introduce this therapy involves those Type 1 patients, whose disease can't be optimised by daily insulin shots with pen. The use of pumps in Hungary started in 1999, and now, more than 2000 patients are involved in this treatment form, and their number is increasing.

**Aim**

The aim of our research: to take into consideration, what kind of problems may occur during pump therapy, and how to solve them.

**Methods**

Describing suitable blood samples to target. Filling out a questionnaire, working up the data by mathematical-statistical method. Data processing, getting from Type 1 diabetics, took place in the pump centers, randomly, apart from their age, and gender. We received 250 questionnaires, out of them 225 could be evaluated. Most important questions were underscored and will be presented.

**Result**

Most frequently mentioned problems, apart from the duration of diabetes, educational level, were as follows:

Change of needles, permanently wearing the pump resulted in inconvenience, fear from hyper- and hypoglycemias, local (inflammatory) reactions, significance of quantitative diet while using the pump, continuous contact with the caring team, and requirement for education.

The majority of our patients found their life more safe, partly because of dosing the insulin via canula.

**Conclusion**

Based on the evaluation of the questionnaires, it was established, that the patients started the pump therapy mainly by medical recommendation. They got the starting knowledge from the doctors, diabetes-specialized nurses, and in some cases from the staff of the pharmaceutical companies as well. Between patients and treating staff there is a strong contact, which was highly appreciated by the patients. The research couldn't verify the supported improvement of HgBA1c levels. The quality of life improved significantly, life became more flexible. Due to our experiences, important criteria of successful use was the suitable motivation of the patients, the permanent education, which has to be further developed by the treating staff.



## E 5 EFFECT OF A SHORT TERM INTENSIVE EXERCISE PROGRAM ON WEIGHT LOSS AND THE SUBSEQUENT IMPACT ON THE REDUCTION OF LIFESTYLE RISK FACTORS.

Hope J.

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### Background

There has been a dramatic increase in the prevalence of overweight and obesity within the past decade, and consequently, an increase in obesity-related co morbidities, such as cardiovascular disease and Type 2 diabetes. The challenges to losing weight are many and varied. In recent years there have been a growing number of reality themed television programs focusing on weight loss, using intensive exercise regimes in a competitive based environment, all of them demonstrating the major weight loss results which can be achieved in this type of setting.

### Aim

This paper will examine the outcomes from one such weight loss and intensive exercise program and note the impact it had on the reduction of individual lifestyle risk factors.

### Method

24 obese and morbidly obese participants competed in a short term intensive exercise weight loss competition. Their mean age was 38, mean total body weight was 262lbs and the mean BMI >40.5. Participants were randomised into 4 teams, A, B, C, and D, and were followed over a 10week period.

Baseline measurements included total body weight, percentage of body fat mass; total body water, hydration level, fat free mass and estimated muscle and bone weights, blood pressure, blood glucose and waist measurements.

### Results

At 10 weeks the mean reductions were, body weight 228.6Lbs (↓12.8%), total fat percentage reduction 34% (↓22.95%) and BMI 34.6 (↓14.5%). No change was found in the fat free mass or the total body water percentage, hydration levels ↑12.3% and the estimated muscle and bone mass saw a slight decrease of 3%. Systolic blood pressure ↓13.6% and diastolic blood pressure ↓16.6%. Blood glucose ↓22.5% and waist measurements ↓15.7%.

### Conclusion

The significant weight loss seen after participating in this 10 week intensive exercise program and the improvements seen in the individual lifestyle risk factors reduction associated with obesity are without doubt impressive. The question to be asked now, is this weight loss sustainable?

## E 6 INTRODUCTION OF PROBLEM-BASED EMPOWERMENT APPROACH INTO THE DIABETES PATIENT EDUCATION IN LATVIA.

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### Background

In spite of the great strides that have been made in the treatment of diabetes, many patients do not achieve optimal outcomes and still experience devastating complications that result in a decreased length of life and quality of life. In Latvia we have a very poor average HbA1c in diabetes patients (according to DEPAC study > 9%). Economical crisis almost ruined the diabetes patient education. To introduce a nurse for diabetes care we need to prove efficacy of group education versus individual education performed by endocrinologists during the regular meetings. Group education should be cheaper what is tempting for politicians to. Empowerment approach is well known philosophy in diabetes patient education in the United States and introduced, developed and implemented by Martha M. Funnell and Robert M. Anderson from the University of Michigan Health System.

This approach is based on three fundamental aspects of chronic illness care: choices, control, and consequences. The choices that patients make each day as they care for diabetes have a greater impact on their outcomes than those made by health professionals. Diabetes remains a self-managed illness where patients provide 99% of their own care. As the role of patients has become more complex and demanding, empowerment is more viable as a philosophy for diabetes education. The concepts of problem-based empowerment are constructed according to Empowerment approach and Social Learning Theory.

### Aim

to prove efficacy of group education performed according to empowerment approach versus individual diabetes patient education.

### Method

The group education will consist of four weekly two-hour group sessions. Clinical measures: HbA1c, lipids, blood pressure, and weight. Patients will complete The Diabetes Empowerment Scale Short-Form (DES-SF) and the Diabetes Attitude Scale-3 (permission from The Michigan Diabetes Research and Training Center is needed). Data will be collected before and after the intervention. Statistical methods in the study will be chi-square tests for categorical distributions and Student t tests for continuous variables.

### Conclusion

Before the start of the research study a pilot study will be conducted to find weakness of design.

## E 7 ASSESSMENT THE QUALITY OF SELF-CONTROL OF THE BLOOD GLUCOSE IN PATIENTS WITH DIABETES MELLITUS TREATED WITH INSULIN THERAPY

Stepanow B.

Polish Federation for Diabetes Education, Warszawa, Poland

### Background

The range of education in diabetes include outfit in the knowledge about diabetes as well as forming of proper practical ability. Self-monitoring of blood glucose (SMBG) used by patients is an essential element of diabetic treatment.

### Aim

The aim of the study was to assess the quality of self-control of the blood glucose in patients with diabetes treated with insulin therapy.

### Method

The study included 200 diabetic patients in randomly selected group of Diabetes Center of Poland, aged  $40.4 \pm 10.1$  years, the mean body mass index was  $29.1 \pm 5.63$  kg/m<sup>2</sup> with mean diabetes duration  $9.7 \pm 7.8$  years, who were on insulin therapy for  $2.3 \pm 1.2$  years. All patients were given 5 day education training in their Diabetes Centers. The specially made survey was used in researches. Assessed: number of daily glycaemia measurements and obeying recommendations of Polish Federation for Diabetes Education (PFED), which concern principles of conducting the measurement of the blood glucose level on glucometer. Patients were divided into two groups: group A ( $< 3$  glycaemia controls/day), group B ( $\geq 3$  glycaemia controls/day).

### Results

We noticed significant difference in HbA1c level between group A and group B:  $9.7 \pm 1.7$  and  $6.5 \pm 1.4\%$  respectively ( $p < 0.0001$ ). In both groups stated: lack of the exchange lancet after every glucose testing, 80% patients throw out i.e. lancets, test strips for examining the blood glucose level to waste-paper basket.

### Conclusion

Neglect self-control of the blood glucose in patients with diabetes points to need lead systematic re-education during every consultation in Diabetes Center. In Poland absence of the guidelines how to deal with waste which contain blood and come into existence in house.

Document was published on behalf of the Association Polish Federation for Diabetes Education (PFED) to all medical consultants, associations ill from diabetes and learned societies with the plan to issue common guidelines.

## E 8 MISTAKES IN PRACTICE MADE BY PATIENTS WITH DIABETES MELLITUS USING INSULIN

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<sup>1</sup>Private Mesa Hospital Responsible Nurse of Diabetes Education, Ankara, Turkey

<sup>2</sup>American Hospital Responsible Nurse of Diabetes Education, İstanbul, Turkey

### Background

Insulin use is prone to mistakes as it is an application requiring knowledge/ability. Ability of people on application influences success of treatment.

### Aim

This study has been conducted in order to indicate mistakes made by insulin administration by patients.

### Method

The study has been conducted with 52 literate patients, not having any manipulation-visual problem, who agreed to participate in the study, were seen for the first time by Diabetes Education Nurses of American Hospital and Private Mesa Hospital between 01.10.2008-28.02.2009. Insulin application techniques have been examined and false/lacking knowledge and applications have been determined.

### Result

27 criteria have been determined related to insulin administration, +1 fault point for each faulty application has been calculated. It has been determined that 7.7% of patients didn't have any lack of knowledge/application. Fault scores have been found as 5.1 for individuals learning insulin administration from diabetes nurse, 14.5 for those learnt from company staff, 10.0 for those learnt by own themselves. Fault scores have been 4.9 for those taking personal education, 9.0 for those taking group education. Fault score has been determined as 3.75 for those with Type I DM, 6.5 for the ones with Type 2 DM. Fault scores of individuals not having any social security have been found to be 8.2 compared to 5.2 having a social security. Fault scores have been 5.3 in females, 7.09 in males. Fault scores increase as insulin administration period and DM age increase. It is 3.3 for people with insulin application time of less than 6 months, 5.0 for application time between 6-12 months, 6.95 for application time between 1-5 years, 8.9 for application times of more than 5 years. It has been found 1.0 in those with DM age of less than 1 year, 5.5 for the ones with 1-5 years, 7.08 for the ones having DM age over 5 years.

### Conclusion

Detailed education should be given to patients, who are using insulin or who were planned to use insulin, by diabetes education nurse. Knowledge/capabilities about insulin administration should be controlled in interviews after education.

**FEND AWARD**

1999	T. Birdsall	UK
2000	D. Weisman P. Nikkanen	Israel Finland
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2002	A. Munzinger B. Osterbrink C. Nonn	Germany
2003	M. Vidal	Spain
2004	P. Banck-Petersen	Denmark
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**DESG AWARD**

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# First Announcement 16th FEND Annual Conference

Fri-Sat 9-10 September 2011  
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On behalf of the Federation of European Nurses in Diabetes we cordially invite you to attend the 16th Annual Conference of FEND

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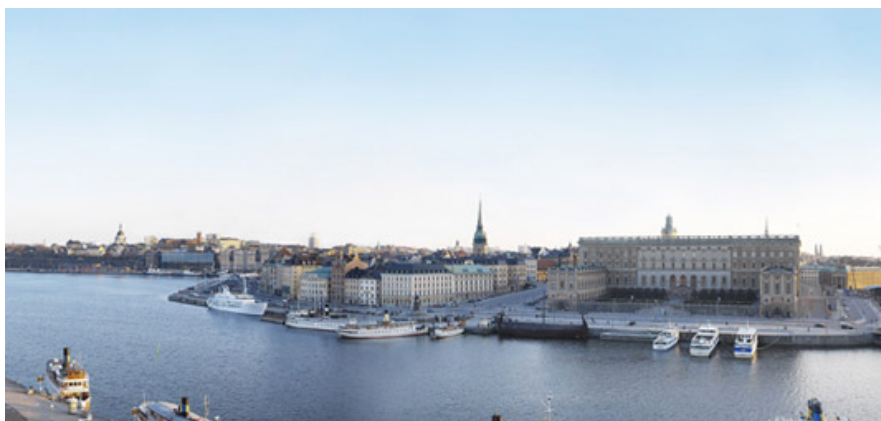
47th EASD Annual Meeting  
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Sunday 19 September

1945 Pre dinner drinks  
2015 Conference Dinner

*Musical entertainment*  
Ulla-Carin Börjesdotter (vocals)  
Backa-Hans Eriksson (bass)  
Malou Meilink (flute)  
Jonathan Fritzén (piano)



Venue

**Intercontinental Grand Hotel**

Sodra Blasieholmshamnen 8  
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