

# F E N D

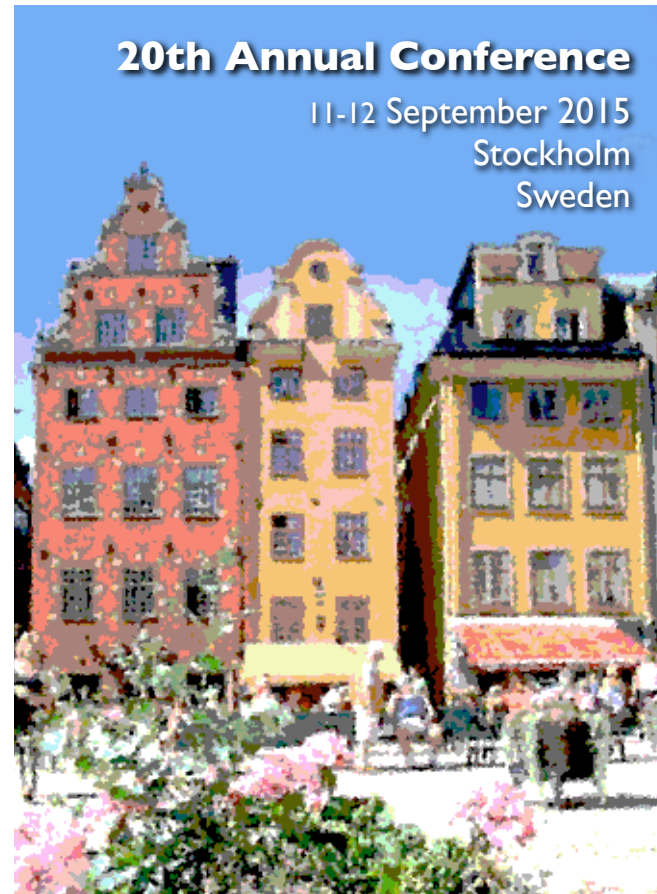
Foundation of European Nurses in Diabetes

## 20th Annual Conference

11-12 September 2015

Stockholm

Sweden



unite for diabetes

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

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**ADDITIONAL CONFERENCE SUPPORT**

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

- **Webcast recordings** *courtesy of Sanofi*
- **Delegate name badges** *courtesy of Menarini Belgium*
- **Conference bags** *courtesy of Menarini Italy*

**CONFERENCE WEBCASTS**

Please note that the keynote presentations will be available to view on the FEND website shortly after the conference. (slides and presenter video).

*Therefore you are courteously requested not to take photos or recordings of presentations.*



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**FEND Distinguished Service Award**

Mrs Stina Wallenkrans (co-founder)
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EADV, ECD, ESNO, EURADIA, ExPAND, FEND Global Partnership, IDF Europe, IDF D-Net, PFED, VDBD
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**International Diabetes Nursing Co-Editors:**

Prof Angus Forbes, *Department of Primary and Intermediate Care, King's College London, UK*

Dr Magdalena Annersten-Gershater, *Faculty of Health and Society, Malmo University, Sweden*

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## FEND Mission Statement

The objects for which FEND is established are:

- To promote for the public benefit improvements in the health and treatment of sufferers from diabetes by the development and promotion of the role of the diabetes nurse specialist throughout Europe.
- To promote for the public benefit the education and training of nurses working in diabetes care throughout Europe, by the development and support of training programmes, including the organisation of conferences and symposia, to further such programmes and the dissemination of information relating to the proceedings at such conferences or symposia.

## Welcome

Dear Participants

On behalf of the Executive committee of FEND it is our pleasure to welcome you most warmly to the FEND 20th Annual Conference and the city of Stockholm.

The conference reflects the complexities and continuing challenges of the diabetes epidemic in Europe. The patient experience is centre stage in this year's programme and marks the significant contribution that people with diabetes make in influencing the provision of care and the characteristics of care. The patient narrative will be of profound interest to all.

FEND continues to play an active role in advocacy, policy development and implementation. To this end as a member of European Coalition on Diabetes (ECD) we are engaged with EU Parliamentarians and also national parliamentarians through ExPAND (the European Policy Action Network on Diabetes).

The contribution of diabetes nurses in meeting the many challenges of the diabetes epidemic is not fully realised in all countries of Europe. To meet this challenge FEND continues to provide an academically accredited training programme led by Prof Angus Forbes, FEND Professor in diabetes nursing, research and education. This programme is available to all members of FEND and it is noteworthy that the cost of this unique programme is funded by FEND.

FEND continues to work with key pan-European organisations within the European Coalition on Diabetes (ECD) comprising EURADIA, FEND, IDF Europe and PCDE.

We thank our distinguished international speakers for their commitment and generosity of time. We thank Prof Andrew Boulton, President EASD for his courtesy and support in permitting this conference to be included in the programme of meetings on the occasion of 51st Annual Meeting of EASD.

We acknowledge with deep appreciation the continuing support of our key sponsors for all of FEND's activities.

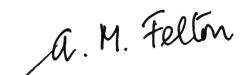
Your attendance at this conference represents diabetes nursing from Europe and beyond – a truly international gathering and evidence of the commitment of the nursing profession to people with diabetes.

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

Kristin de Backer  
FEND Chairman

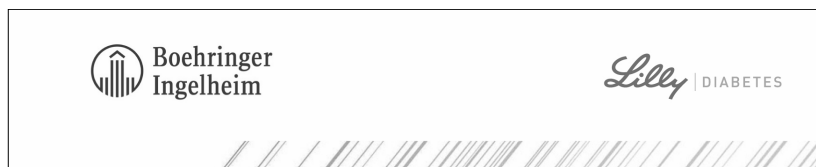


Anne-Marie Felton  
FEND President



Friday 11 September 2015			
0730	Registration and Coffee		
0845	Welcome and Opening Remarks	FEND Chairman FEND President	Kristin de Backer Anne-Marie Felton
		Session Chairs	Prof Regina Wredling Prof Unn-Britt Johansson
0900	<b>Overview of SFSD</b>		Ingela Bredenberg
0930	<b>Diabetes Education – Controversies on Effectiveness</b>		Prof Seyda Ozcan
1000	<b>Improving Biomedical Outcomes through Innovative Psychological Interventions</b>		Prof Khalida Ismail
1030	Refreshments & Exhibition		
		Session Chairs	Tineke Dijkstra Dr Anne Dornhorst
1100	<b>Paediatric Diabetes - Self Management and CSII</b>		Dr Anna Lindholm Olinder
1130	<b>Empowerment Inspired Intervention for Adolescents on CSII</b>		Assoc Prof Janeth Leksell
1200	<b>Genetic and Epigenetic Contributors to Diabetes</b>		Prof Charlotte Ling
1230	Lunch & Exhibition		
		Session Chairs	Prof Angus Forbes Debbie Jones
1400	<b>The Development of Cognitive Dysfunction in Patients with Diabetes</b>		Prof Geert Biessels
1430	<b>Patient Narrative: Type 1 Diabetes - a Blessing and a Curse</b>		Cajsa Lindberg
1450	<b>Diabetes Care – Improvement Through Measurement</b>		Assoc Prof Soffia Gudbjörnsdottir
1520	Refreshments & Exhibition		
		Session Chairs	Prof Seyda Ozcan Birtha Hansen
1600	<b>Policy Puzzle 4th Ed. Diabetes in Europe: The State We Are In</b>		Anne-Marie Felton
1630	<b>Diabetes in Older People – a Matter of Life and Death</b>		Prof Angus Forbes
1700	<b>Genomics in Obesity management</b>		Dr Giles Yeo
1930 2000	<b>Pre Dinner Cocktails Conference Dinner</b> Berns, Stora Salongen, Berzeli Park, Stockholm		

Saturday 12 September 2015			
0840	<b>Welcome Address</b> by EASD President Prof Andrew Boulton		
		Session Chairs	Prof Sally Marshall Anne-Marie Felton
0850	<b>Pre-Pregnancy Care For Women With Type 2 Diabetes: Are They Prepared?</b>		Rita Forde FEND Doctoral Fellow
0910	<b>Adults With New-onset Type 1 Diabetes - What Do We Know About Psychosocial Adaptation?</b>		Mette Due-Christensen FEND Doctoral Fellow
0930	<b>Gender Differences in Diabetes Outcomes</b>		Dr Roetters van Lennep
1000	<b>WHO and the Management of Diabetes – Providing Global Leadership and Partnership</b>		Dr Gojka Roglic
1030	Refreshments & Exhibition		
		Session Chairs	Deirdre Kyne Grzebalski Sijda Groen
1100	<b>Oral Presentations:</b>	1. (see page 21) 2. (see page 22) 3. (see page 23)	Anna Grozou Georgia Noble-Bell Rita Forde
1130	<b>Blood Glucose Monitoring – Harnessing New Technologies</b>		Dr Pratik Choudhary
1200	<b>Patient Narrative: Diabetes, Technology and Me</b>		Jane Robinson
1230	Lunch & Exhibition		
		Session Chairs	Kristin de Backer Ana Paiva
1415	<b>Masterclasses:</b>	<b>1. Therapeutic Interventions, Rehabilitation</b> <b>2. Diabetic Foot Complications: Avoidable or Inevitable?</b>	Dr Dimitri Aerden Lutgart Brasseur Dr Nathalie Denecker
parallel	<b>Guided Poster Tour</b>	facilitators: Deirdre Cregan & Jacqueline Herbst	
1500	Refreshments & Exhibition		
1530	<b>Masterclasses (repeat):</b>	<b>1. Therapeutic Interventions, Rehabilitation</b> <b>2. Diabetic Foot Complications: Avoidable or Inevitable?</b>	Dr Dimitri Aerden Lutgart Brasseur Dr Nathalie Denecker
parallel	<b>Guided Poster Tour (repeat)</b>	facilitators: Deirdre Cregan & Jacqueline Herbst	
		Session Chairs	Dr Colin McIntosh Simon O'Neil
1615	<b>Diabetes and Steroid Use in Cancer Treatments</b>		Sarah Gane
1645	<b>FEND Award Ceremony</b>		Kristin de Backer Anne-Marie Felton
1655	Closing remarks		Kristin de Backer



**18:00 - 20:00 Thursday 10 Sept**

**“Bringing new light to basal insulin therapy:  
Optimising basal insulin starts in clinical practice”**

The image is a dark grey banner with white text. At the top left, it says 'Roche Breakfast Symposium' followed by 'Saturday, September 12, 2015, 07:30–08:30, Hall C4'. In the top right corner is the Roche logo. The main text in the center reads: '“Personalized Diabetes Management: Healthcare providers in sync – holding the key to success”'. At the bottom left is the 'ACCU-CHEK® Solutions For You' logo with the tagline 'Experience what's possible.' and at the bottom right is the 'ACCU-CHEK®' logo.

**07:30 - 08:30 Saturday 12 Sept**

**“Personalised Diabetes Management:  
Heathcare providers in sync – holding the key to success”**

## SWEDISH SOCIETY FOR NURSES IN DIABETES CARE

### Ingela Bredenberg

Chairman of the Swedish Society for Nurses in Diabetes Care (SFSD)

In November 1982 nurses working in diabetes care was invited to a training day during the meeting discussed the start of a national society. After a survey formed an Interim Board continued to work on the formation of the society.

The first annual meeting was 1983 and a constitution were adopted. The society worked from the beginning with the advancement of knowledge in the area of diabetes, imparting knowledge about diabetes, evaluate and contribute to teamwork and fostering cooperation with patient association. It was also important to have annual meetings to share knowledge and exchange experiences.

Its purpose is to collect and organize nurses in their professional work with and has a special interest in diabetes.

Education has been an important issue for the society, which gradually affected the colleges and the increased level of education of our members. The first nurses were educated with a degree as a specialist nurse in diabetes care graduating in 2013.

Communication is an important feature for SFSD to impart knowledge. For this, the association initially organized annual symposia, and in 1996 we publish a member leaves the simpler paper which since 2004 has grown to a membership magazine *Diabetescare* with four numbers a year. Our former Chairman Britt - Marie Carlsson ran this project, which suddenly passed away last year.

Our digital time era also requires a website and this was inaugurated in 2004. It is here members today fast read the latest news and find and links to for example FEND.

## DIABETES EDUCATION – CONTROVERSIES ON EFFECTIVENESS

**Prof Şeyda Özcan**

Koç University School of Nursing

Self-management education programme is recommended for all individuals with diabetes. Structured education improves behavioral and medical outcomes by enabling patients to make their own decisions and take responsibilities of their own care. The most successful education programmes are aimed at changing behavior rather than knowledge. Theory-based education programmes have been more effective than non-theory based programmes. Therefore theory-based curricula is one of the key elements to establish a successful programme.

The most studies with educational, behavioural and psychosocial interventions have shown the improvements in glycaemic control, however they have indicated the modest impact and they are unclear for long-term. More and larger studies need to be conducted with a long follow-up period to explore the effect of intervention over time. While current evidence supports the use of change behaviour theories in diabetes education, it is still unclear what behaviour change techniques, frequency, intensity and duration are most effective.

In the recent studies, educational and motivational support has been provided using technology. Technological interventions such as web-based programmes, smartphone applications or short messages by cell phones have had positive impacts on diabetes outcomes. Nevertheless these interventions have limitations to use in all persons with diabetes and should be used in conjunction with diabetes care delivered by healthcare providers.

Recent data have shown the positive results of education for cardiovascular risk reduction and foot care behaviors in the short term. Culturally tailored education programmes have also improved diabetes outcomes. There is a lack of understanding about educational needs of ethnic minorities and underserved populations. Finally, the lack of evidence about cost-benefit of diabetes education is why the lack of adequate educational resources. Future programmes should be designed to reduce these limitations highlighted in this article

## DIABETES NURSES DELIVERING PSYCHOLOGICAL CARE – A PERFECT MARRIAGE?

**Prof Khalida Ismail**

Professor of Psychiatry and Medicine at the Institute of Psychiatry, Psychology and Neurosciences, King's College London

It is now well recognised that people with diabetes can have psychological barriers to self management. The evidence that psychological treatments can help people with diabetes to increase their self-care skills and confidence leading to improved glycaemic control is growing. But what are these treatments? And who should be delivering them? Experts in psychological treatments (psychologists, psychotherapists, psychiatrists etc) are rare and expensive and may not have the diabetes knowledge. Are diabetes nurses the next generation of workforce delivering integrated psychological and diabetes care? My talk will describe the types of psychological approaches and the evidence for their effectiveness in improving glycaemic control. I will then examine the pros and cons of diabetes nurses delivering psychological treatments.

## PAEDIATRIC DIABETES – SELF MANAGEMENT AND CSII

**Dr Anna Lindholm Olinder**

Sachs' children and youth hospital, Stockholm

Treatment with CSII (Continuous Subcutaneous Insulin Infusion) is considered to be the most physiological way to deliver insulin. In Sweden the national guidelines for starting children and adolescents with type 1 diabetes on insulin pumps (CSII) are broad. In 2014, 52% were treated with CSII in Sweden in the paediatric ages.

In infants and toddlers with diabetes insulin pump is the recommended treatment; and it is the treatment used by almost 90%. In this age it is important to be able to give small doses and to be able to correct high glucose values without giving an extra injection. Studies have shown that treatment with insulin pumps can improve the quality of life for the parents in this age group.

In preschool children with diabetes around 60% are treated with insulin pumps. Advantages in this age group is the same as for younger children and in addition it can be easier to educate preschool personal to give insulin, they do not need to give injections, just press the button on the pump.

In the school age and in adolescents the children with diabetes have to take more and more own responsibility. They can handle the insulin pumps technically, but they can easily forget or miss taking bolus doses. Hence, they need reminders and support to handle the self-management. It is important to discuss the distribution of responsibility between the parents and the adolescents.

## EMPOWERMENT INSPIRED INTERVENTION FOR ADOLESCENTS ON CSII

**Assoc Prof Janeth Leksell**

University of Uppsala and University of Dalarna

Treatment with continuous subcutaneous insulin infusion (CSII) among children and adults with Diabetes type-1 in Sweden is increasing. Blood glucose control is often unsatisfactory in adolescents with type 1 diabetes. Theoretically, CSII is the best treatment, but young people often have difficulty to maintaining the improved glucose control over a prolonged period. Guided Self-Determination (GSD) is an empowerment-based person-centered reflection and problem-solving method that intends to guide the patient to become self-determined and develop life skills to manage difficulties in the diabetes self-management.

The aim of this study is to evaluate whether an intervention with GSD-Young in groups of adolescents starting on insulin pumps and their parents leads to fewer diabetes-related family conflicts, increased perceived health and quality of life, and improved blood glucose control. The randomized controlled study will take place at Karolinska University Hospital and Sachs' Children and Youth Hospital, all in Stockholm. Adolescents (80 patients) and their parents who are willing to participate in the study will be divided consecutively into groups of four adolescents and their parents. The groups will be randomized to either intervention or control. All adolescents and their parents will receive standard insulin pump start training. Together with the creators of GSD, we have adjusted GSD-Y to make it fit this study.

To measure the effects of the intervention the following measurements is collected (before intervention and 12 months after): HbA1c, height, weight, insulin requirement, mean frequency of self-monitoring of blood glucose (SMBG), Check your health, and Diabetes treatment satisfaction and Diabetes Family Conflict Scale (DFCS) will be used.

## GENETIC AND EPIGENETIC CONTRIBUTORS TO DIABETES

**Prof Charlotte Ling**

Lunds University Diabetes Center, Malmö, Sweden

It is well established that combinations of genetic and environmental factors affect the susceptibility for type 2 diabetes. While ageing, obesity and physical inactivity represent non-genetic risk factors for type 2 diabetes, genome-wide association studies have identified more than 100 common genetic variants that also influence the risk for the disease. However, epigenetic modifications such as DNA methylation and histone modifications may also promote type 2 diabetes. Indeed, studies from our group demonstrate that epigenetic variation is involved in the pathogenesis of type 2 diabetes.

We have identified epigenetic modifications in pancreatic islets, skeletal muscle and adipose tissue from patients from type 2 diabetes compared with non-diabetic controls. We have also shown that environmental factors, including exercise and diet, affect the

epigenetic pattern in human muscle and fat. Moreover, we recently demonstrated that polymorphisms associated with type 2 diabetes directly modify the epigenetic pattern in humans. Together, we propose a model where combinations of genetic, epigenetic and non-genetic factors contribute to the risk of type 2 diabetes.

## THE DEVELOPMENT OF COGNITIVE DYSFUNCTION IN PATIENTS WITH DIABETES

**Prof Geert Biessels**

Department of Neurology at the Brain Center Rudolf Magnus, University Medical Centre Utrecht (UMCU), the Netherlands

Diabetes mellitus is associated with an increase in the risk of dementia and in the proportion of patients who convert from mild cognitive impairment (MCI) to dementia. MCI and dementia should thus be considered as long-term complications in diabetes. These conditions affect patient management and are a major target for prevention.

In addition, diabetes, both type 1 and type 2, is associated with more subtle cognitive changes, which are referred to as "diabetes-associated cognitive decrements". These cognitive decrements do have structural brain correlates detectable with brain MRI, but usually show little progression over time. Although cognitive decrements do not generally represent a pre-dementia stage in patients below the age of 60–65 years, in older individuals they might represent the earliest stages of a dementia process. Acknowledgment of diabetes-associated cognitive decrements can help to improve understanding of patients' symptoms and guide management.

Future challenges are to establish the importance of screening for cognitive impairment in people with diabetes, to identify those at increased risk of accelerated cognitive decline at an early stage and to develop effective treatments.

## PATIENT NARRATIVE TYPE 1 DIABETES – A BLESSING AND A CURSE

**Cajsa Lindberg**

Sahlgrenska Academy, University of Gothenburg, Sweden

The presentation will present a patient perspective on life with type 1 diabetes. I will talk about how a diabetes diagnosis can change a person's life for better and for worse; about what it is like to grow up with type 1 diabetes, and what it is like to be a grown-up with type 1 diabetes. About how life with diabetes can be both difficult and wonderful at the same time, and what a "normal" life with diabetes actually looks like. I will talk about how engaging in the diabetes world can be a way to turn a weakness into a strength, both for you and for others. I will talk about the important role that health-care professionals play in the lives of people with diabetes, and the importance of empowering young people living with diabetes.

## DIABETES CARE – IMPROVEMENT THROUGH MEASUREMENT

**Assoc Prof Soffia Gudbjörnsdóttir**

NDR, The Swedish National Diabetes Register

The National Diabetes Register (NDR) of Sweden was initiated in response to The Saint Vincent Declaration (published 1990), to provide a tool for continuous quality assurance in diabetes care. The original purpose, to monitor the results of health centres from year to year and to compare these with national and regional means, is still the most important one, while continuous follow-up of guidelines, treatments and complications are as important on a national level. The data reported contain basal clinical characteristics of the patients, as well as measures of risk-factor control and the presence of diabetes complications. Many clinics use templates within the medical record systems to verify that all information relevant to good quality assurance in diabetes care is complete, and thereafter export data to NDR.

In order to create extra value, the NDR web interface, online at ndr.nu, offers functions to use when interacting with the individual patient, such as reports of all information reported to NDR, including medications and risk-factor control. The clinical results are thus reported back to the health centres (printed and instantaneously online), but are also used for scientific analyses. Such are required by the funding bodies to develop the analytical methods by quality registers, and to widely spread information, including publishing in scientific journals.

Ongoing studies address, e.g., the effects of different glucose-lowering therapies, the role of ethnicity and migration, patient-reported outcomes (PROM) and risks of morbidity and mortality in diabetes mellitus.

- Background of NDR
- How does it work?
- Some new results
- Research
- PROM (Patients reported outcome measurements)

## POLICY PUZZLE 4TH ED. DIABETES IN EUROPE – THE STATE WE ARE IN

**Anne-Marie Felton**

FEND President

The European Coalition for Diabetes (IDF Europe, FEND – the Foundation of European Nurses in Diabetes, PCDE – Primary Care Diabetes Europe and EURADIA – the Alliance for European Diabetes Research) publish a triennial survey of diabetes services and some clinical outcomes in Europe – the Policy Puzzle, to monitor the evolution of the current epidemic and report on the national policies and practices that exist across 47 European countries. The population of this Region is over 900M with an estimated 56.3M people with diabetes (Diabetes Atlas 2013).

The presentation will share the key findings and recommendations of the survey.

## DIABETES IN OLDER PEOPLE – A MATTER OF LIFE AND DEATH

**Prof Angus Forbes**

FEND Chair of Diabetes Nursing, King's College London

Older people are a significant and increasing proportion of the population of people with diabetes. They are a very heterogeneous population with a complex range of needs. In terms of managing the care of older people with diabetes it is important to understand the how best to provide treatments safely and effectively. It also important to recognise what targets for glucose control are safe for older people with different risk profiles.

In this presentation consideration is given to the mortality risks in older people with diabetes and the impact as glycaemic control. Consideration is also given to the needs of older people at the end-of-life. A key message from the presentation is that older people are at the new frontier of diabetes care where individualised care approaches need to replace standardised care pathways.



## GENOMICS IN OBESITY MANAGEMENT

**Dr Giles Yeo**

University of Cambridge Metabolic Research Labs

It is an inescapable fact that the underlying cause of obesity is a result of eating more than you burn. The question that is more complex to answer is why some people eat more than others. Over the past 15 years, insights from human and mouse genetics have illuminated multiple pathways within the brain that play a key role in the control of food intake. We now know for example, that the brain leptin-melanocortin signalling pathway is central to the control of mammalian food intake. However, although mutations to genes in these pathways result in extreme obesity, these remain incredibly rare.

The major burden of disease is carried by those of us with “common obesity,” which to date has resisted yielding meaningful biological or therapeutic insights. Progress however, has been made with genomewide association studies. For example, sequence variants in the first intron of FTO (Fat mass and Obesity related) are strongly associated with human obesity and carriers of the risk alleles show evidence for increased appetite and food intake. Further GWAS have now revealed more than 100 different candidate genes, most of which are highly expressed or known to act in the CNS, emphasizing, as in rare monogenic forms of obesity, the role of the brain in predisposition to obesity.

As we now enter this ‘post-genomics’ world, I explore how this new information should influence our treatment and management of obese patients throughout the spectrum of severity.

## PRE-PREGNANCY CARE FOR WOMEN WITH TYPE 2 DIABETES – ARE THEY PREPARED?

**Rita Forde**

FEND Doctoral Fellow, Kings College London

The associations between pre-existing diabetes and adverse pregnancy and birth outcomes have been well established with hyperglycaemia at any stage during a pregnancy being a central feature; accordingly, these pregnancies are considered high risk. Early pregnancy is particularly crucial as many women may not be aware that they have conceived; hence take no action to ameliorate the impact of hyperglycaemia.

There has been a shift toward an earlier age of onset of type 2 diabetes and as a consequence, there are now many more women of childbearing age living with this condition. However, women with type 2 diabetes are not always associated with being of reproductive age and within the literature there is evidence that these women are less likely to avail of pre-pregnancy care when compared to women with type 1 diabetes.

To reduce the maternal and fetal risks, women with type 2 diabetes need effective pre-pregnancy care; either to prevent a pregnancy or to reduce diabetes related risk factors prior to conception. We must therefore question how the uptake of this care among women with type 2 diabetes can be improved?

## ADULTS WITH NEW-ONSET TYPE 1 DIABETES – WHAT DO WE KNOW ABOUT PSYCHOSOCIAL ADAPTATION?

**Mette Due-Christensen**

FEND Doctoral Fellow, Kings College London

Around 50% of people who are diagnosed with type 1 diabetes are 18 years or older. No matter the age of onset a diagnosis of type 1 diabetes is a major life event, involving significant physiological, psychological and social changes for the person. Following from the diagnosis a process of ongoing and multifaceted adaptation is initiated.

The impact and experience of diagnosis in adults is distinct from those experienced in children and adolescence as their life experiences and perspectives are more developed and the disease may have a significant impact on employment, economic well-being and relationships. Studies exploring adaptation to diabetes in adults with longer duration of diabetes, suggest that learning to live with diabetes is an ongoing process with a focus on trying to balance life to the effects of the disease.

However, the fact that only about half of adults with type 1 diabetes achieve the recommended treatment target for blood glucose suggests that this process of adaptation can be difficult and demanding. The challenges of adaptation are also evident in the high levels of diabetes distress and depression being reported in this population. Therefore, a better understanding of views and experiences adults at the time of their diagnosis and in the early phase of adaptation to the disease are important in terms of the care that impact positively and negatively on their process of adaptation.

## GENDER DIFFERENCES IN DIABETES OUTCOMES

**Dr Roeters van Lennep**

Department of Internal medicine, subdivision Vascular Medicine of the Erasmus MC, Rotterdam, the Netherlands

Diabetes is one of the major health threads worldwide which affects both men and women in all life stages. In all regions of the worlds the incidence of diabetes is increasing due to increasing lifespan, urbanization and changes in lifestyle leading to obesity. It is estimated that over 387 million people have diabetes, and approximately half of these are women. Diabetes is affecting younger women of reproductive age and increasing the risk of pregnancy complications. The incidence of gestational diabetes is increasing as well. Gestational diabetes leads to increased risk of maternal and neonatal complications and also has long-term health impact, with more than 50% of women with gestational diabetes going on to develop type 2 diabetes within 5-10 years of delivery. The health toll diabetes takes on women is significant, particularly in terms of diabetes-related complications such as heart disease.

Previously it was shown that the cardiovascular in patients with diabetes type 2 that risk of cardiovascular disease is higher in compared to men. The reason for this gender difference is not clear. Proposed causes are later diagnosis of the disease, less aggressive

medical management. Recently it was shown that cardiovascular morbidity and mortality was also higher in women compared to men with type 1 diabetes. Again the mechanism is not clear. Therefore more research is needed to unravel these mechanisms to improve health in women diabetes.

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## WHO AND THE MANAGEMENT OF DIABETES – PROVIDING GLOBAL LEADERSHIP AND PARTNERSHIP

**Dr Gojka Roglic**

Department of Management of Noncommunicable Diseases, Disability, Violence and Injury Prevention, Geneva, Switzerland

Sixteen million people under the ages of 70 years die each year from noncommunicable diseases (NCDs), principally cardiovascular diseases, cancers, chronic respiratory diseases and diabetes. The global prevalence of diabetes in adults in the year 2014 is estimated to be 9%. WHO projects that diabetes will be the 7th leading cause of death in 2030.

In September 2011, Heads of State and Government adopted the UN Political Declaration on NCDs, which included a roadmap of concrete commitments, including a commitment to establish multisectoral national policies and plans for the prevention and control of diabetes and other NCDs.

In May 2013, the World Health Assembly endorsed 9 global NCD targets for 2025. The targets directly related to diabetes are stopping the increase in the prevalence, improving access to essential medicines and improving the management of diabetes. Progress towards achieving these targets is expected to contribute towards , achieving a global target of a 25% reduction in premature mortality from the 4 major NCDs by 2025 . WHO provides technical guidance to member states on setting their national targets and achieving them. A strategic meeting of various stakeholders in 2015 defined the priority actions in diabetes in the next 2 years. The presentation will provide an overview of WHO core functions and priority activities in advocacy and technical work on the prevention and management of diabetes.

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## BLOOD GLUCOSE MONITORING – HARNESSING NEW TECHNOLOGIES

**Dr Pratik Choudhary**

Senior Lecturer and Consultant in Diabetes at King's College London

I imagine living with diabetes and doing a few tests da ay may be like walking on a tightrope with your eyes blindfolded. The patient is only allowed to see where they are going a few times a day, and have to make judgements about where they are and where they are heading based on those few peeks out from under the blindfold. How can we make the most use of those readings??

As an increasing number of patients adopt newer technologies like flash glucose monitoring and continuous glucose monitoring, they are starting to see a lot more of what is going on. As health care professionals and educators, how do we adapt to this changing view. We face two key challenges – firstly – how do we teach the patients to use this new information effectively; and secondly – how do we teach ourselves (and our patients) how to interpret these data to make therapeutic changes without being overwhelmed.

We will evaluate the research evidence to understand how we can set realistic expectations about the technology and look at some simple tricks to make sense of the data, and use the new monitoring data effectively.

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## PATIENT NARRATIVE: DIABETES, TECHNOLOGY AND ME

**Jane Robinson**

In 1983 there were no mobile telephones and in a small town in the UK, the concept of watching television on a telephone was a thing of science fiction. This was the year I was diagnosed with Type 1 diabetes and like telecommunication technology, diabetes-related technology has moved on leaps and bounds from that year. During this narrative, I will describe my relationship with diabetes through the years since diagnosis, as well as how diabetes-related technology has impacted on my care and wellbeing.

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## DIABETES AND STEROID USE IN CANCER TREATMENTS

**Sarah Gane**

North Somerset Community Partnership, UK

The Challenging Journey to Nursing Research – Detecting Hyperglycaemia in Cancer Patients Receiving Dexamethasone

- The emerging idea – the best of 3
- Developing the passion – The research year
- Finding a way – FEND sharing my ambition
- The proposal – 10yrs+
- Where to begin
- The difficult path to approvals
- Where am I now?

**Geert Biessels**

Geert Jan Biessels is Professor of Neurology and chairs the cerebrovascular disease and cognition program at the Department of Neurology at the Brain Center Rudolf Magnus, University Medical Centre Utrecht (UMCU), the Netherlands. He obtained his PhD in 1997 and was certified as a neurologist in 2004.

The development and application of novel imaging markers of vascular cognitive impairment and studies on cognition and dementia in people with diabetes are his two key areas of interest. His research group has evaluated the severity and course of development of cognitive reductions in the presence of diabetes and pre-diabetic stages and has identified brain MRI correlates of impaired cognition. He is currently also involved in intervention studies.

His group currently comprises 15 PhD students with backgrounds in neurology, neuropsychology, radiology, image sciences, geriatrics, epidemiology, and primary care

**Ingela Bredenberg**

RN, Master of Science in nursing with the emphasis on Diabetes, Postgraduate Diploma in Specialist Nursing- Diabetes Care, Chairman of the Swedish Society for Nurses in Diabetes Care.

I have worked as an nurse since 1980 and as diabetes nurse since 1985, the last 20 years in Karolinska University Hospital in Huddinge 20 km south of Stockholm center. Most of the time I work with Type 1 diabetes in outpatient care. Me and my colleagues circulate with educating weeks for patient with type 2 diabetes.

**Pratik Choudhary**

Dr Pratik Choudhary is Senior Lecturer and Consultant in Diabetes at King's College London. He graduated from Indore University in India, and his MD thesis was the UK hypoglycemia study evaluating the

epidemiology of hypoglycemia in type 2 diabetes.

He moved to King's College London in 2005, and has been involved with the type 1 service with a particular interest in patients with problematic hypoglycemia. He is lead for the type 1 service and also diabetes lead for the islet and pancreas transplant programs.

He has a special clinical interest in the epidemiology of hypoglycaemia and the management of patients with problematic hypoglycaemia, with clinical and research programmes involving education, psychology and technology. His other research interests include the investigation of mechanisms of hypoglycaemia unawareness, including the use of neuroimaging to explore brain responses to hypoglycaemia and studies developing psychological and pharmacological interventions to improve or restore hypoglycaemia awareness.

He is Associate Editor for Diabetic Medicine and reviewer for Diabetes UK, Diabetes, Diabetes Care and has written editorials in JAMA, Lancet and Diabetes.

**Mette Due-Christensen**

Mette Due-Christensen has been working as a diabetes specialist nurse at Steno Diabetes Centre in Copenhagen, Denmark. She completed her MSc (Health Science) at the University of Copenhagen. Her main interest has been psychosocial issues around living with type 1 diabetes and she has been involved in development and testing of peer support and psychosocial interventions for people with type 1 diabetes.

In 2013 she was awarded one of the FEND doctoral fellowship positions and started her PhD on adaptation in adults with new onset type 1 diabetes in January 2014 at King's College London.

**Angus Forbes**

Professor Forbes holds the 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); the relationship between cognitive impairment and diabetic retinopathy; supporting patients in insulin intensification; evaluating a telecare intervention to support weight loss in type 2 diabetes; and diabetes prevention in women with GDM. Angus also has an interest in older people with diabetes. Angus 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.

**Rita Forde**

Following completion of General Nursing and Midwifery training Rita joined the diabetes team at the Mater Misericordiae University Hospital, Dublin. She held various positions there including the inaugural Advanced Nurse Practitioner post for diabetes nursing in Ireland. She completed a B.Sc., MSc (ANP) and Higher Diploma (Diabetes Nursing) at University College Dublin and has contributed to local and national working groups on diabetes care.

In 2013 she was awarded a Foundation of European Nurses in Diabetes (FEND) Doctoral Fellowship at King's College London, to explore the experiences among women with type 2 diabetes in relation to pre-pregnancy care.

**Sarah Gane**

Sarah is a Diabetes Specialist Nurse in North Somerset Community Partnership and has worked as a community based diabetes specialist nurse for 6 years, managing a complex clinical caseload and offering support and advice to primary care clinicians. A significant amount of her time is dedicated to facilitating structured education for people with diabetes, developing and delivering education to health professionals at all levels in the local area.

Sarah has completed a PG certificate & PG diploma in diabetes through the FEND ENDCUP project. She is in her final year of a Masters degree supported by FEND and is conducting a piece of empirical research for the dissertation. She hopes the main study will be completed as a PhD.

She is an independent prescriber. Sarah has a specialist interest in managing diabetes when complicated by steroid therapy often when people are receiving cancer treatments.

**Soffia Gudbjörnsdóttir**

Soffia Gudbjörnsdóttir is associated professor in Diabetes and has the primary responsibility for the NDR, The Swedish National Diabetes Register. She is also an active participant in drawing up the national guidelines for diabetes care, a commission on behalf of the Swedish National Board of Health and Welfare.

Soffia Gudbjörnsdóttir is the project manager of NDR-IQ, a project regarding quality development in diabetes care. The project works with diabetes teams from all over Sweden, and runs a training programme for quality development in diabetes care.

Under Soffia Gudbjörnsdóttir's leadership, a centre of excellence regarding the NDR is being developed, in order to stimulate more active, open use of the data in the register with a view to making diabetes care more effective, and in order to better satisfy the demands of patients, politicians, ordering

parties and hospital principals. Thus Soffia Gudbjörnsdóttir possesses a great deal of knowledge regarding quality work in medical care, national and local guidelines, and the gap between the guidelines and reality. Soffia Gudbjörnsdóttir has an extensive network of contacts and, consequently, great potential for disseminating new knowledge. She is a coauthor of more than 100 publications, mainly about quality in diabetes care.

### **Khalida Ismail**

Khalida Ismail qualified in medicine from the University of Oxford. She is Professor of Psychiatry and Medicine at the Institute of Psychiatry, Psychology and Neurosciences, King's College London and Consultant Liaison Psychiatrist at King's College Hospital. Her research interests are in understanding the epidemiology and underlying mechanisms of depression and related psychiatric morbidity in diabetes, and developing and evaluating psychological treatments to improve diabetes-related outcomes.

### **Jeanine Roeters van Lennep**

After her PhD ("Gender and cardiovascular disease: risk factors, diagnosis and treatment"). Dr. Jeanine Roeters van Lennep completed her training as internist vascular medicine at Leiden University, Leiden the Netherlands. Since 2010 she works at the Department of Internal medicine, subdivision Vascular Medicine of the Erasmus MC, Rotterdam, the Netherlands where she continues her work on gender-based medicine. In collaboration with Department of Gynaecology and Obstetrics she has started a multi-disciplinary outpatient clinic focused on cardiovascular prevention for women who experienced severe pre-eclampsia. Since 2011 she is co-director of the 3-day multidisciplinary NIHES Womens Health Course in which she teaches the subject of Women and Diabetes.

### **Janeth Leksell**

Janeth Leksell is an Associate Professor of Caring Sciences at the University of Uppsala and University of Dalarna. She received her Doctorate in Diabetes Caring Sciences from Uppsala University. Her research interests include patient-centred diabetes care especially among adolescents and those who developed diabetes-related late complications, such as visual impairment. She is currently involved in an evaluation-study of intervention for adolescents starting continuous subcutaneous insulin infusion. The other evaluation study focused on patients with diabetic macular edema.

### **Charlotte Ling**

Dr. Charlotte Ling is a Professor at Lund University and a principle investigator of the Epigenetics and Diabetes Unit at Lund University Diabetes Centre (LUDC), Sweden. She obtained her PhD in Endocrinology at University of Gothenburg, Sweden in 2002. After a postdoc at Lund University, where she studied genetics of type 2 diabetes, she dedicated her research to the study of epigenetic mechanisms causing type 2 diabetes and metabolic disease. Her research group has pioneered the field of epigenetics in type 2 diabetes. They have made several groundbreaking discoveries such as genome-wide epigenetic modifications in pancreatic islets, skeletal muscle and adipose tissue from patients with type 2 diabetes compared with non-diabetic control subjects. Dr. Ling has also shown that genetic and non-genetic factors such as SNPs, exercise, diet, obesity and age alter the genome-wide epigenetic pattern in human primary tissues for type 2 diabetes. Dr. Ling is frequently invited to write review papers and book chapters and to give lectures (e.g. ADA, Keystone and Endocrine Society) on the topic 'Epigenetics in Type 2 Diabetes'. Dr. Ling has been awarded research grants from numerous national and international foundations including the Swedish Research Council, Novo Nordisk Excellence award, EFSD-Lilly and Söderberg.

### **Anna Lindholm Olinder**

Since 1990, I worked as a registered nurse at a thorax surgery ward, and as a tutor for nurse students doing their clinical practice. Thereafter, continuing education and worked as a primary healthcare nurse within school healthcare. In 2009, I began as an adjunct, educating nurse students. Then I came in contact with the project Diabetes Intervention in Västerbotten, part 2 (DIVA 2), and after four years research I defended my dissertation in autumn 2013, "Proximity and distance- Challenges in person-centred care for diabetes specialist nurses in primary healthcare". Since December 2013, I am working as a lecturer at the Department of nursing, Umeå University.

### **Seyda Ozcan**

Prof Ozcan has intense experience in academic/clinical area and international / national settings of diabetes nursing almost 25 years. Currently teaching in undergraduate and graduate programmes in Koç University School of Nursing. Exec.Com.Member (2001-2007;2015- cont), Special Advisor (2007-2014) of FEND; Member of Diabetes Education Consultative Section(2008-2013) and Insulin Taskforce (2014-cont) of IDF; Exec.Com.Member and General Secretary of Turkish Diabetes Nursing Association (1998-2011); Member of Board of Trustee of Turkish Diabetes Foundation (2009-cont). Working for the National Diabetes Education Programme in Turkish Ministry of Health. Some scientific awards, research fundings, published articles, books and chapters in books. Member of the editorial board and review panels of the journals. Visiting professor at the New York University (2004-2005); guest researcher in Uppsala University/Sweden (2006); first FEND Clinical Research Fellow in King's College London&Hospital (2011).

### **Gojka Roglic**

Dr Gojka Roglic has received training as physician and epidemiologist at the University of Zagreb, Croatia, and the London School of Hygiene and Tropical Medicine, London, UK. Before joining WHO, Dr Roglic worked as a clinician and epidemiologist at the University Clinic for Diabetes, Endocrinology and Metabolic Diseases in Zagreb, Croatia. Dr Roglic joined WHO in 1999 and is the medical officer in charge of the WHO diabetes programme within the Department of Management of Noncommunicable Diseases, Disability, Violence and Injury Prevention, based in Geneva, Switzerland. She provides technical advice to member states on public health aspects of diabetes and is responsible for the development and update of WHO norms and standards related to diabetes.

### **Giles Yeo**

Giles obtained his PhD in genetics from Cambridge University in 1997. He then joined Prof Sir Stephen O'Rahilly as a postdoc, working on the genetics of severe human obesity. He was the first to report that mutations in the melanocortin-4 receptor (MC4R) and in the neurotrophic receptor TRKB resulted in severe human obesity. In 2007, Giles became Director of the core Genomics/Transcriptomics facilities and a group leader at the University of Cambridge Metabolic Research Labs. His group is interested in studying the brain control of food intake and bodyweight, and how these might be dysregulated in obesity.

1

## SEVERITY AND SHORT TERM OUTCOME OF ACUTE ISCHEMIC STROKE IN TYPE 2 DIABETES MELLITUS PATIENTS

Anna Grozou, Anastasios Koutsovasilis, Alexis Sotiropoulos, Paraskevi Vergidou, Ourania Apostolou, Ilias Tamvakos, Stavros Bousboulas

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### Background

Acute Ischemic stroke (AIS) consists an intense social and economic problem since it is responsible for 50% of neurological problems and is implicated in 4,5 million deaths per year worldwide.

### Aim

The aim of the study was the investigation of factors determining the short-term outcome of AIS and possible differences among diabetic and non-diabetic patients.

### Methods

156 patients with AIS, hospitalized at an Internal Medicine Department of a tertiary hospital in Greece from March 2010 to March 2013 were eligible in this study. The patients were submitted to a brain computed tomography and all risk factors were recorded. The severity of AIS was evaluated according to Scandinavian Stroke Scale (SSS) at the time of admission to hospital and at a 30-day follow-up.

### Results

Among the study's 156 patients (52.8% male) of average age  $79.76 \pm 10.23$  years, with average score of SSS  $43.62 \pm 11.85$ , 23 suffered a new AIS or ended up between the first 30 days. In univariate analysis, statistically significant factors of outcome were gender (OR=1.23, CI: 1.16-2.87,  $p=0.020$ ), age (OR=1.04, CI: 1.02-1.97,  $p=0.011$ ), diabetes mellitus (OR=1.38, CI: 1.12-2.46,  $p=0.001$ ), atrial fibrillation (OR=1.23, CI: 1.08-2.49,  $p=0.044$ ) as well as the severity of AIS according to SSS ( $p<0.001$ ). In multivariate analysis, factors that maintain their statistical significance are age ( $p=0.014$ ), diabetes mellitus ( $p=0.006$ ), gender ( $p=0.0042$ ) and severity of AIS ( $p=0.001$ ). After adjustment to age, gender loses its statistical significance.

### Conclusion

Diabetes Mellitus, severity of AIS and age of patients are decisive factors for short-term outcome of AIS. Specifically for diabetic patients, duration and regulation of DM are determinative factors.

2

## AN EVALUATION OF A PROACTIVE IN-PATIENT DIABETES TEAM INITIATIVE ON A LIVER UNIT

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### Background

Challenges associated with inpatient diabetes management such as inadequate diabetes knowledge among hospital staff and inappropriate timing of medication is known to negatively impact glycaemic control (Diabetes NSF 2001).

The proactive diabetes team initiative is a diabetes improvement strategy that has been implemented locally to enhance diabetes in-patient care. It includes daily in-patient reviews; electronic monitoring of hypo and hyper glycaemia; therapy modulation; staff training and support; and patients' education.

### Aim

The aim of this study was to evaluate the impact of a proactive diabetes team initiative on diabetes care on the liver unit.

### Method

A prospective audit of 69 patients post liver transplantation or other hepatobiliary diseases with co-existing diabetes on a liver ward over a three month period. Data were collected over three day periods at three six weekly intervals following the introduction of the proactive diabetes team initiative. Data were collected on 'good glucose days' based on national standards: blood glucose levels  $\geq 4$  and  $\leq 11$  mmol/l in a 24 hour period with not more than one blood glucose level outside this range (NADIA 2011).

### Results

Most patients (91%) were on insulin therapy. During observation 1 (pre innovation) only 22% of cases had a good glucose day compared to 61% at observation 3 (post innovation). The data showed that insulin dose adjustment was a significant factor for good blood glucose days ( $p=0.003$ ). A reduction in medication errors was also observed, with no errors for wrong timing of insulin at observation 3 compared to 3% in observation 1.

## 3

### PRE-PREGNANCY CARE: A SYNTHESIS OF THE EXPERIENCES OF WOMEN WITH TYPE 2 DIABETES AND HEALTHCARE PROFESSIONALS

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King's College London, United Kingdom

#### Introduction

Pregnancy among women with type 2 diabetes (T2DM) is increasing. In the United Kingdom, the National Pregnancy in Diabetes audit (2013) reported 44.9% (n=680) of participants had T2DM. Pre-pregnancy care (PPC) is associated with improved maternal and fetal outcomes, yet the uptake is poor among women with T2DM. An understanding of factors influencing engagement with PPC is needed to inform future interventions to promote this care for women with T2DM.

#### Method

Six databases were systematically searched for qualitative studies exploring the experiences and views about PPC that included women with T2DM or healthcare professionals who care for them.

#### Results

Nine studies met our inclusion criteria; two focused solely on healthcare professionals (n=68) and seven on the experiences of women with diabetes (n=29). The findings were organised thematically, describing the individual and system level factors that impacted on the uptake of PPC among women with T2DM. The individual level factors included the need to: develop an understanding of the benefits of PPC; respond to the emotional concerns of women with T2DM; address their underlying beliefs; and involve their social network. At the system level, issues about failure to effectively promote PPC, accessibility to care and poor care integration were highlighted. The facilitation of PPC by the healthcare professionals was considered important but often lacking.

This synthesis identified important areas for intervention to improve the uptake of PPC among women with T2DM. At an individual level there is a need to ensure that all women are supported to understand the benefits of PPC in a manner that is congruent with their personal needs and beliefs. At a system level there is a need to ensure that health professionals incorporate PPC into the care of all women with T2DM of reproductive age.

#### Conclusion

Increased awareness about the importance of PPC for women with T2DM is needed. The experiences of women with T2DM and healthcare professionals can augment the understanding of factors influencing engagement with this care and guide strategies to promote PPC among women with T2DM.

## 4

### FORMATION OF A TYPE 1 DIABETES YOUNG ADULT PANEL AS AN EXAMPLE OF PATIENT ENGAGEMENT IN HEALTHCARE RESEARCH: A PATIENT-CENTRED APPROACH TO IMPROVING CARE

Cunningham A.<sup>1</sup>, O'Hara M.C.<sup>2,3</sup>, Keighron C.<sup>4</sup>, Allen G.<sup>4</sup>, Caulfield A.<sup>4</sup>, Duffy C.<sup>4</sup>, Long M.<sup>4</sup>, Mallon M.<sup>4</sup>, Mullins M.<sup>4</sup>, Tonra G.<sup>4</sup>, Simkin S.<sup>5</sup>, Fitzmaurice J.<sup>6</sup> and Dinneen S.F.<sup>7,8</sup>, for the Irish Type 1 Diabetes Young Adult Study Group

1 Endocrinology and Diabetes Centre, Galway University Hospitals, Galway, Ireland

2 Researcher, Galway University Hospitals, Galway, Ireland

3 Researcher, School of Medicine, National University of Ireland, Galway, Ireland

4 Member of the Type 1 Diabetes Young Adult Panel, Galway, Ireland

5 Researcher, Jigsaw, Galway, Ireland, 6 Manager, Jigsaw, Galway, Ireland

7 Head of School of Medicine, National University of Ireland, Galway, Ireland

8 Consultant Physician, Galway University Hospitals, Galway, Ireland

**Background:** This project uses an alternative method within an established NHS service to promote research. This supports the achievement of national targets and facilitates the delivery of high quality commercial and academic research in the UK.

The rationale for this project is to improve the patients' exposure, experience and access to research, facilitate the development of knowledge and skills within research, and provides nursing career and academic opportunities.

Within Europe this method of working is not unheard of; however remains uncommon.

**Aim:** Our aim is to share the experience and knowledge gained and highlight that it is possible to further enhance nursing careers, increase the profile of research and help towards meeting European, national and local targets by crossing these mostly separate roles.

**Method:** The Clinical management team supported two junior diabetes specialist nurses (DSN) to work one day a week each, dedicated to research delivery. This sparked an interest in the senior members of the DSN team, whom later embraced this model of working within their revised job plans. Staff received relevant exposure to research specific training. We have introduced a lead research nurse who works 50% of her time as a DSN to support clinical staff involvement with delivering research, and enabling research to happen.

**Result:** This project has gone beyond simply having a dual skilled people delivering trials; we also have integrated clinical service-research management and governance meetings and patient pathway reviews for research, all of which resulted in improved performance within the clinical service. This model has also been adopted by other Allied HCP.

**Conclusion** By adopting an integrated approach to research, we have not only delivered a high standard of research but we have also managed to improve on nursing skills, knowledge and job satisfaction, increase the portfolio of research offered, better support the needs of our academic colleagues and industry and ensure patients have the access to research they are entitled to. Support from the senior clinical and research teams were essential to the development of this initiative.

5

## PRACTICAL AND EMOTIONAL SUPPORT CORRELATE WITH PSYCHOLOGICAL WELL-BEING AND PATIENT ACTIVATION AMONG ADULTS WITH SEVERE OBESITY UNDERGOING GASTRIC BYPASS SURGERY

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<sup>4</sup> Centre for Evidence-Based Practice, Bergen University College and Department of Paediatrics, Haukeland University Hospital, Norway.

**Background:** A person with diabetes should have sufficient information, skills and positive attitudes in order to realize daily diabetes self-management effectively.

**Aim:** It is the determination of problems of persons with diabetes / their life experiences and their expectations on diabetes management.

**Method:** During the qualitative study, implemented between January – April 2014; data were collected via interview form and close interviewing methods, and 15 persons with diabetes, who accepted to participate to the study among 94 persons with diabetes who had individual diabetes training and participated at least once to the diabetes communication maps group training, were included to the study. No subjective and non-guiding questions were asked, and replies, received via one on one interview technique, were recorded. Interviews, which took at least 20 minutes, were recorded by an audio recorder and written texts of the data were issued within 24 hours. The persons with diabetes were informed about the study and their written consents were obtained. Figures and averages were used for demographical features. During analysis of the qualitative data, content analysis method was employed.

**Result:** Feelings Of Patients For Initial Diagnosis: It is seen that when patients had heard about the initial diagnosis, they were shocked, sad, and felt anxiety and refusal as well as quilt as they were not careful enough and did not take measures.

Daily life experiences with diabetes: It is seen that routine applications, such as healthy nutritional habits, exercises and regular sugar measurements, were their most difficult issues during transition to the new life style.

Diabetes management and impacts of education: It is seen that persons, who got diabetes education, have more persuasion of being diabetes a chronic disease and it can be kept under control. Besides, they also mentioned that they perceive their disease as a chronic disease and had more control on progress and treatment on diabetes after taking diabetes education.

Institution preference for diabetes management: Importance of diabetes team and expectations; it is seen that most of the patients with diabetes apply to the institution upon recommendation, and their expectations were highly fulfilled, and they always recommend the services, rendered by the institution.

**Conclusion:** Starting to educate persons about diabetes when they were initially diagnosed is helpful for the persons to overcome with diabetes. Maintaining continual education and support is more efficient for continuance of self managements of persons.

6

## EMPOWERING THE PATIENT IN THE THERAPEUTIC RELATIONSHIP: THE ROLE OF LITERACY IN THE MANAGEMENT OF TYPE 2 DIABETES

Lopes, Isabel; Costa, Lúcia

CHUC-HUC- University Hospitals of Coimbra, Coimbra, Portugal

### Background

Nurses play an important role in the empowerment of people to the self-management of a chronic disease like type 2 diabetes. They face a responsibility and the challenge of helping a patient in the knowledge and capacity building for the everyday self-care.

### Aim

Improve health literacy and empower people with type2 diabetes in taking a decision to manage and comply with their therapeutic regimen and self-care.

### Method

An educational program was implemented, in a sample of 19 people with type 2 diabetes, across 2 months beginning on the 19th of February and finishing on the 22th April of 2014 in the UCSP (Unidade Cuidados de Saúde Personalizados) in Eiras, Coimbra. Three questionnaires were applied: DKQ-24 (Diabetes Knowledge Questionnaire), SDSCA (Summary of Diabetes Self-Care Activities) and Newest Vital Sign- Portuguese version, before and after the intervention project. Formative group sessions were implemented and the main topics were; diabetes as a chronic disease, physiopathology; acute and chronic complications; nutrition, healthy food choices, food wheel, labels reading; feet care, vigilance and injuries prevention; treatment options; glycemic self-control and its importance; exercise, benefits, recommendations and care.

### Result

A total of 35% increase in the knowledge about the disease. An average improvement of 1.54 days in the compliance with self-care of eating and an average improvement of 0.74 days in the compliance of specific eating self-care. A 36.8% increase in health literacy level for the individuals with an initial adequate level of literacy and an increase of 42.1% literacy level for people with initial limited literacy.

### Conclusion

Health education programs are important to give information, to educate and to motivate for a better quality of life by decreasing complications of the disease.

7

## DEVELOPMENT OF A PATIENT REPORTED OUTCOME MEASURE FOR THE SWEDISH NATIONAL DIABETES REGISTER

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<sup>1</sup> Gothenburg University, Gothenburg, Sweden and Dalarna University, Falun, Sweden

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<sup>4</sup> Gothenburg University, Gothenburg, Sweden and Register Center Västra Götaland, Gothenburg, Sweden

### Background

There is a growing emphasis on the need for a more person-centred diabetes care and the importance of the perspective of individuals living with diabetes being included in the outcomes of research and clinical diabetes care. The Swedish National Diabetes Register (NDR) is a clinical tool and a means for quality improvement and assessment of diabetes care. An important way forward is to include patient-reported outcome measures (PROMs) based on the perspective of the patient.

### Aim

To develop a PROM for the NDR and establish evidence for face and content validity.

Method: In this methodological study both qualitative and quantitative approaches were used. The items were generated from qualitative interviews (n=29). Experts reviewed and assessed relevance, using content validity index (CVI). Cognitive interviews (n=6) pre-tested the PROM, examined face validity and gained knowledge about how the PROM was interpreted and perceived by the target group.

### Result

The PROM consists of 33 items including two main parts. Part 1 (21 items) covers how the person feels and how things are going with the diabetes. Part 2 (12 items) covers support from diabetes care. Item-level CVI (I-CVI) ranged from 0.60 to 1.00 with 5 items below the critical value of 0.78. Scale-level CVI (S-CVI/Ave) was 0.86, above the stated limit of 0.8 for acceptable. According to the cognitive interviews, the PROM was considered to have a relevant content and to add value to diabetes care and to the NDR.

### Conclusion

We have established evidence for content and face validity of a newly developed PROM to be integrated as a clinical tool and a systematic measure within the NDR. Further testing will evaluate item and scale properties using Item Response Theory (IRT), test-retest reliability, and sensitivity to change.

8

## EXPERIENCES OF LIVING WITH DIABETES AND EXPERIENCES OF DIABETES CARE AS A BASIS FOR A TAILORED PATIENT REPORTED OUTCOME MEASURE FOR THE SWEDISH NATIONAL DIABETES REGISTER

Svedbo Engström, M.<sup>1</sup>; Leksell, J.<sup>2</sup>; Johansson, U-B.<sup>3</sup>; Gudbjörnsdóttir, S., MD<sup>4</sup>

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<sup>2</sup> Dalarna University, Falun, Sweden and Uppsala University, Uppsala, Sweden

<sup>3</sup> Sophiahemmet University, Stockholm, Sweden and Karolinska Institutet, Stockholm, Sweden

<sup>4</sup> Gothenburg University, Gothenburg, Sweden and Register Center Västra Götaland, Gothenburg, Sweden

### Background

The National Diabetes Register (NDR) of Sweden acts as a clinical tool and a means for conducting quality improvement and the assessment of diabetes care as well as for epidemiological research. There is a growing emphasis on the perspective of individuals living with diabetes and the need for a more person-centred diabetes care. At present, the NDR lacks patient-reported outcome measures (PROMs) based on the perspective of the patient.

### Aim

To generate a basis for a PROM, the aim of this study was to describe important aspects in life for adult individuals with diabetes.

### Method

Twenty-nine semi-structured qualitative interviews were conducted and analysed using content analysis. Participants were adults with type 1 diabetes mellitus (DM) (n=15) and type 2 DM (n=14). Purposive sampling generated a heterogeneous range of characteristics.

### Result

The overarching theme "To live a good life with diabetes" constituting the two main categories "How I feel and how things are going with my diabetes" and "Support from diabetes care in managing diabetes". Diabetes and its management can be a great challenge for the individuals with the disease. With the ultimate goal of feeling good in the present and future, diabetes care needs to be tailored to individual needs regarding access, timing, content, medical treatment, and technical aids.

### Conclusion

The interviews have provided a sound base voicing the perspectives and verbal phrasing of individuals with diabetes that can be used to develop a tailored PROM for the NDR.



9

## DIABETES SPECIALIST NURSES´S PREPAREDNESS IN INITIATING GROUP EDUCATION FOR PERSONS WITH TYPE 2 DIABETES

**Stenbäck M.**

Continuing Education and Professional Development, Academic Primary Health Care Centre, Stockholm, Sweden

### Background

One of diabetes nurse's main commitments in diabetes care is to educate persons with diabetes. Current evidence suggests that group education has better effect on metabolic control, quality of life and self-care ability than individual patient education. Despite that only 20 % of primary healthcare centers work with group education in Sweden.

### Aim

To describe the diabetes nurse's perception and preparedness to initiate group education for people with type 2 diabetes in primary care in Stockholm.

### Method

Qualitative focus group interviews with semi-structured questions were chosen as method. Three focus group interviews with diabetes nurses (n=8) in primary care were conducted. Focus group one and two did not work with group education while focus group three worked with group education. The data was analyzed using qualitative content analysis. The study was conducted between march 2013 to may 2014.

### Results

One theme that emerged was "obstacles and tools to start group education" including four categories: "diabetes care loses focus", "concerns with starting group", "develops her role in healthcare" and "individualized care". The first and second category addresses obstacles and the third and the fourth category addresses tools to start group education.

### Conclusion

Support at different levels is a prerequisite for nurses´ preparedness to start group education as well as integrating patient group education in the organizational structure. This meant organizational support from the workplace by director and colleagues, a clear structure for how group education will be carried out and individual support through knowledge and own commitment. Even a patient centered approach is an important tool in patient education.

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## THE INVISIBLE HAND OF DIABETES IN YOUNG ADULTS WITH TYPE 1 DIABETES

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**Background:** Young adults (18 – 30 years) who are under treatment at the Groene Hart Hospital in Gouda are very poorly regulated in terms of diabetes control. More than 80% of them do not succeed in achieving an acceptable HbA1c level, in spite of intensive guidance by the medical specialist and diabetes nurse. More understanding is needed in why this is so.

**Aim:** To obtain understanding of the grounds for poor regulation and level of self-management.

**Method:** Of the 56 young adults with HbA1c > 69 mmol/mol treated in our department, 17 were purposively invited to participate in a qualitative study. Ten of them (response rate 59%; 5 males / 5 females) were interviewed in semi-structured interviews that were subsequently coded thematically and inductively.

**Result:** The interviewed young adults expressed disappointment in their failing body and their inability to counter this. While some gave in and tried to ignore their diabetes, others vigorously attacked the disease by measuring their rates repeatedly. Their entire life seemed to be controlled by diabetes. The perception of the disease is strongly determined by the environment; some kept their diabetes to themselves. Most respondents felt rejected by their healthcare professionals who tend to label their poor regulation as lack of acceptance, knowledge or motivation.

**Discussion:** The demands posed on young adults to self-manage their diabetes are high, while this does not correspond well to their phase of life. To successfully integrate their disease in daily life, understanding what causes self-management to fail is crucial. Healthcare providers should support patients in looking for solutions that meet individual needs and abilities.

**Conclusion:** Diabetes nurses should focus on patient experiences and give more recognition to the efforts made by young people to keep their disease under control. This provides opportunities to talk about the quality of diabetes control. The focus should not be on HbA1c, but rather on ways in which young adults themselves can shape their life with diabetes.

Keywords:

Type 1 diabetes mellitus; self-management; self-efficacy; HbA1; quality of life

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## ANXIETY AND DEPRESSION SYMPTOMS IN PATIENTS WITH DIABETES MELLITUS

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### Background

Anxiety and depression symptoms in patients were showed.

### Aim

To determine the anxiety and depression symptoms among the subjects, their prevalence and their connection with the patients' age and the diabetes duration.

### Method

During the two years, screening for depression and anxiety symptoms was performed in the patients who came first time for the examination to the Clinic. The PHQ-9 was used for depression and GAD-7 for anxiety symptoms ANOVA test proved the correlation between the anxiety and depression symptoms with the subjects' age and the diabetes mellitus duration.

### Result

In the study participated 1160 subjects. The average age was  $60 \pm 12$  years, the average duration of the diabetes was  $5 \pm 6$  years. 52.67% of the subjects tested had no anxiety symptoms, 26.12% had symptoms of mild, 12.59% of moderate and 8.62% of severe anxiety disorder. The highest percentage of anxious subjects, 46.64% was in the age group of 51-65 years. The highest percentage, 45.86% had no depression symptoms, 29.05% had mild, 15.43% had moderate and 9.66% had severe depression symptoms. The highest percentage of depressed (46.64%) was in the age group of 51-65 years and the age group over 65 years (33.97%). The highest percentage of the subjects (57.16%) were with the newly discovered diabetes mellitus of the duration up to one year, in 34.48% the duration was up to 10 years, in 6.90% 11-20 years and in 1.47% it was over 20 years. A significant correlation has been shown between the diabetes duration and depression ( $p < 0.001$ ). Equally, there is the correlation between the diabetes mellitus duration and anxiety ( $p = 0.02$ ).

### Conclusion

It has been shown beneficial to use screening method for depression and anxiety symptoms in patients whom we meet first time when they come for control to the diabetes policlinic. Almost half of these patients needed some way of support in dealing with the diagnosis and in how to cope with their disease.

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## INFLUENCE OF SELF BLOOD GLUCOSE MEASUREMENT CONDITIONS IN THE ASSESSMENT OF GLYCAEMIC CONTROL

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### Background

Self blood glucose measurement (SBGM) is intended for the assessment of blood glucose accumulation at certain moments during the day with reference to decision-making concerning diet, exercise and therapeutic treatment.

### Aim

The aim of this study is the examination of factors involved in SBGM and the evaluation of the influence of SBGM conditions on its result.

### Methods

359 type 2 diabetes mellitus patients (T2DM) were eligible in this study. Capillary blood glucose was measured twice (1st blood drop, dry cleaning of the finger and second drop from the same spot) in 178 patients (Group A) and it was measured twice in 181 patients (Group B) under the same conditions as at Group A but after washing and drying the finger before scarification. Venous sample was collected for all patients. Patients' HbA1c, medication, somatometric measurements, intercurrent diseases and psychological state, using PHQ-9 scale were recorded.

### Results

Out of 359 patients aged  $65.27 \pm 11.86$ , 259 (72.1%) had HbA1c target level. There was a statistically significant difference between first and second drop in Group A patients ( $29.69 \pm 8.18$  vs  $24.78 \pm 6.26$ ,  $p = 0.048$ ) as opposed to Group B patients ( $18.75 \pm 6.45$  vs  $17.68 \pm 5.77$ ,  $p = 0.238$ ). The difference between capillary and venous blood glucose was higher in Group A for both the first ( $29.69 \pm 8.18$  vs  $18.75 \pm 6.45$ ,  $p = 0.039$ ) and the second ( $24.78 \pm 6.26$  vs  $17.68 \pm 5.77$ ,  $p = 0.044$ ) in comparison to Group B. Factors affecting the difference in patients of the first group were age (OR=1.109,  $p = 0.023$ ), diabetes duration  $\geq 10$  years (OR=1.563,  $p = 0.011$ ), gender (OR=1.237,  $p = 0.033$  for male) and depression according to PHQ-9 results (OR=2.356,  $p = 0.001$ ).

### Conclusion

Conditions during self blood glucose measurement can affect the result and the therapeutic choice. Older patients with longer diabetes duration and patients with depression seem to have the most significant differences.

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## REGIONAL PREVENTIVE ACTIONS – SYNERGY OF INTERGENERATIONAL SUPPORT.

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### Background

Insulin resistance along with hyperglycaemia and inflammation are associated with increased risk in patients after an ACS.

### Aim

The aim of this study is to examine the correlation of major cardiovascular events (MACE) after an ACS with the markers of insulin resistance and inflammatory markers in all glycaemic categories.

### Methods

536 patients who were admitted to the Cardiology Department were included in the study. Insulin-resistance indexes (HOMA- Homeostasis Model Assessment and QUICKI- Quantitative Insulin Sensitivity Check Index) and inflammatory markers (hs-CRP, WBC, fibrinogen and ESR) were measured. All non diabetic patients went under an oral glucose tolerance test one month after discharge. Study's end-points (MACE) were death of cardiovascular origin, a new ACS and revascularization during hospitalization and 12 months after the ACS.

### Results

199 (37,12%) patients were normoglycaemic, 168 (31,34%) were known diabetics, 59 (11%) newly diagnosed diabetic patients and 110 (20,52%) were IGR (IGT and IFG) patients. hs-CRP (HR=2.612, p=0.001) and HOMA index (HR=1.967, p=0.009) were significantly correlated with MACE during hospitalization for all patients. hs-CRP, HOMA and QUICKI indexes were correlated with MACE in a multivariate analysis for known diabetes patients (HR=1.542, p=0.023, HR=1.482, p=0.039 and HR=0.810, p=0.031 respectively), newly diagnosed diabetes patients (HR=2.401, p=0.035, HR=1.364, p=0.046, HR=0.832, p=0.041) and IGRs (HR=1.354, p=0.023, HR=1.269, p=0.047, HR=0.782, p=0.036) 12 months after the ACS. Only hs-CRP (HR=1.477, p=0.032) remained significant in a multivariate analysis for normoglycaemic patients.

### Conclusion

HOMA and QUICKI indexes are correlated with the appearance of major cardiovascular events during hospitalization as well as the 12-month follow-up period regardless of patient glycaemic profile along with hs-CRP.

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## INTEGRATED SELF-MANAGEMENT EDUCATION IN TYPE 2 DIABETES: A CRITICAL INTERPRETIVE SYNTHESIS

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### Background

Patient-centred self-management education (SME) improves patient care and prevents complications. Although proposed in many national and international recommendations, the uptake of such programmes with about 25% of people with type 2 diabetes is low indicating that SME is often not integrated in routine care. The concept of integration is used in different ways and dependent on numerous factors that relate to patients, healthcare professionals, and the system, within which SME is delivered. Therefore, a better understanding of the concept of integration in relation to SME is needed to enable better uptake and outcome of such programmes.

### Aim

The study aimed to explore components of integration within current models of SME and to conceptualise a theoretical model.

### Methods

Critical interpretive synthesis was used to explore the core concept 'integration' according to the theory of complex adaptive systems (CAS) in relation to SME. An integrated search for qualitative and quantitative articles was conducted in May 2014 in the following databases: Medline, Health Management Information Consortium, PsycINFO, Cinahl, Education Resources Information Centre, Scopus, Web of Science and Cochrane Library with medical subject headings and free text keywords referring to adults with type 2 diabetes, integrated care and self-management education.

### Results

From both qualitative and quantitative studies 19 articles were synthesised to conceptualise the five areas of integration in SME according to CAS. These components focused at different levels: 1) interpersonal integration with person-centred care through corresponding interactive relationships of receiver and deliverer, 2) programme integration containing programme content and delivery according to underpinning philosophy and educational needs, 3) interconnection relating to interdisciplinary team with collaborative working across different organisational sectors to enhance continuity of care, 4) contextualisation defining how programmes adapt to individual and contextual needs and 5) system integration consisting of shared visions of involved participants with access to adequate human, financial and social resources.

**Conclusion:** The theoretical conceptualisation provides an understanding of the multicomponent construct of 'integration' in SME with different interacting components that influence individual behaviours and relationships. The theoretical model needs further exploration in a natural setting.

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**LIFESTYLE OF YOUNG ADULTS WITH TYPE 1 DIABETES**Serrabulho L.<sup>1</sup>, Matos M.G., Psych PhD<sup>2</sup>, Nabais J. Chemistry PhD<sup>3</sup>, Raposo J.F., MD PhD<sup>1</sup><sup>1</sup> APDP Diabetes Portugal (Education and Research Centre – APDP/ERC) - Lisbon<sup>2</sup> Faculty of Human Kinetics, Lisbon University - Lisbon, Portugal<sup>3</sup> Evora University – Evora, Portugal

**Background:** Continuous adherence to diabetes treatment and instability at several levels, namely social, occupational, familiar and emotional, common at this life stage, can affect quality of life of young adults with type 1 diabetes (T1D).

**Aim:** Evaluation of lifestyle, health behaviour, satisfaction with life, social support, treatment adherence, representations about diabetes and psychological adaptation of young adults with T1D.

**Methods:** Quantitative study with questionnaires applied to 278 young adults with T1D, aged between 18 – 35 years, age average  $27 \pm 5$  years. 50% were female, diabetes duration  $14 \pm 7.7$  years.

Statistical analysis were descriptive and correlational.

**Results:** Youngsters present good personal and social competencies, consider having good social support from family, friends and health care team and refer the benefits of group activities with peers.

They report satisfaction with life as  $6.6 \pm 1.7$  (scale 0-10).

Most of youngsters show good dietary intake (83%), one third practice recommended physical activity.

Adherence to insulin therapy (77% administer  $\geq 4$  times a day, 6% use insulin pump) and glucose monitoring (73% monitor  $\geq 3$  times a day) was satisfactory.

However, mean value for HbA1c was  $8.7\% \pm 1.6$  with highest HbA1c levels being related to less global adherence to diabetes treatment ( $r = -0.153^*$ ), less health perception ( $r = 0.377^{***}$ ) less satisfaction with life ( $r = -0.185^{**}$ ), less psychological adaptation to diabetes ( $r = -0.167^*$ ).

25% present diabetes complications.

Most of youngsters agreed with positive representations about diabetes and showed good psychological adaptation to diabetes. Best representations about diabetes were positively correlated with adherence to nutrition ( $r = 0.190^{**}$ ) and insulin therapy ( $r = 0.247^{***}$ ). Best psychological adaptation to diabetes was positively correlated with adherence to nutrition ( $r = 0.181^{**}$ ), glucose monitoring ( $r = 0.179^{**}$ ) and insulin therapy ( $r = 0.241^{***}$ ).

**Conclusion:** Most of young adults showed satisfactory lifestyles, good personal and social competences, social support and satisfaction with life, agreed with positive representations about diabetes and presented good psychological adaptation.

They presented a reasonable adherence to diabetes treatment, although with less satisfactory metabolic control and a quarter of young adults referred having diabetes complications. Youngsters with better representations and better psychological adaptation present better adherence to diabetes treatment and better metabolic control.

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**PERSPECTIVES OF YOUNG ADULTS WITH TYPE 1 DIABETES RELATING TO THEIR LIFE AND TO DIABETES**Serrabulho L.<sup>1</sup>, Matos M.G., Psych, PhD<sup>2</sup>, Nabais J. Chemistry, PhD<sup>3</sup>, Raposo J.F., MD PhD<sup>1</sup><sup>1</sup> APDP Diabetes Portugal (Education and Research Centre – APDP/ERC) - Lisbon<sup>2</sup> Faculty of Human Kinetics, Lisbon University - Lisbon, Portugal<sup>3</sup> Evora University – Evora, Portugal**Background**

The frequent changes at social, occupational, family and emotional levels during emerging adulthood can affect adherence to diabetes care and the quality of life of young adults with type 1 diabetes.

**Aims**

The aims consisted on the evaluation of perceptions, representations and opinions of young adults relating to their lives and to diabetes.

**Methods**

This investigation included a qualitative study, using 6 focus groups, with 4 to 6 participants in each group and posterior content analysis. The participants were 30 young adults with type 1 diabetes (10 male and 20 female), aged between 18 and 34, average age 26 years old.

**Results**

This study gave a chance to share the young adults' perceptions, opinions and feelings. The results are similar between gender.

Youngsters consider leisure activities and the social support from family, employers, colleagues and friends very important, relating to emotional aid and support in diabetes care. Regarding leisure and physical activity, they consider it to be similar to friends without diabetes, since they care about diabetes treatment.

They referred difficulties about nutrition, physical activity, insulin therapy and metabolic control. They talked about their beliefs and perceptions about living with diabetes, namely diabetes control's difficulties.

They also mentioned the benefits of group education activities and summer camps with other youngsters with diabetes, relating to acceptance, adaptation to diabetes and wellbeing, as well as the good support of health care team.

**Conclusion**

Youngsters shared their experiences and perceptions about diabetes during focus groups. In spite of the difficulties at this stage of life, most of young adults with type 1 diabetes showed good adaptation to diabetes.

Based on this study we conclude that young adults consider their physical and leisure activities to be similar to other youngsters, since they care about diabetes.

They related difficulties with adherence to diabetes treatment and metabolic control.

The young adults highlighted the good social support from family, friends and multidisciplinary healthcare team and referred the benefits of group activities with peers, which help them to better deal with diabetes.

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## WEIGHT LOSS BY UNDERGOING BARIATRIC SURGERY IN OBESE PEOPLE WITH DIABETES (ODM2)

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### Background

Patients with extreme obesity and body mass index (BMI) over 40kg/m<sup>2</sup> can lose weight undergoing bariatric surgery(BS). In case when patients have associated diseases as hypertension and high blood fats, the BS could be indicated when BMI> 35 kg/m<sup>2</sup>.

### Aim

In obese patients with diabetes mellitus type2 (ODM2) laboratory parameters and quality of life were monitored before and after the BS.

### Methods

The study included ten patients(ODM2), 6women, 4men, nine patients receiving insulin therapy.Their body weight (BW), BMI, HbA1c, RR, retents lipids, the number of drugs for lowering blood pressure and lipids, and dosage of insulin (IU) were monitored. Follow-ups were carried out after six months, one, two and four years after the BS.

### Results

Before BS, weight of all patients was on average 120.6 kg, BMI 43.3 kg/m<sup>2</sup> and HbA1c 9.0%.They were treated with the 124.3 IU insulin.With appropriate treatment they had normal values of retents and lipids. In all ten patients, half a year after BS, body weight decreased on average by 17%, BMI by 18%, HbA1c by 20%, receiving on average 23% insulin less.After one year, in all seven patients body weight was decreased by 26%, BMI by 25%, and HbA1c by 12%, receiving on average 14% insulin less.After two years, in four patients body weight was decreased by 27%, BMI by 23%, HbA1c by 8.3%, receiving 45% insulin less. In three patients, after four years, body weight was decreased by 22%, ITM by 17%, HbA1c by 16%, and they were receiving 45% insulin less. Retents and all lipid fractions were all the time within the normal range. Before BS, blood pressure was on average 155/85 mmHg and after BS it was 145/80 mmHg.

### Conclusion

According to the results, we can say that BS is a right choice for the ODM2 patients. All patients feel excellent after BS, and they are very satisfied with the treatment. They use 59% less medicines for blood pressure,33% less for lipids and take 44% insulin less. In all ODM2 was significantly decreased BW(-22%) and HbA1c(-16.6%).Treatment requires a team approach including an endocrinologist, a dietician, a psychologist, a family doctor, a cardiologist, a gastroenterologist, an anaesthesiologist, a surgeon, an educator and the good cooperation of the patient.

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## EDUCATION TO IMPROVE SAFETY OF INSULIN SELF-INJECTION IN PATIENTS WITH TYPE 2 DIABETES: RECOMMENDATIONS BASED ON AN ANALYSIS IN A GROUP OF PATIENTS USING INSULIN PENS

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**Background:** Periodic assessment of a patient's injection technique and the technical condition of the equipment is an integral part of diabetes patient care.

**Aim:** To identify errors in insulin self-injection technique among patients with type 2 diabetes and to determine the scope of education that they should receive.

**Methods:** A group of 4513 patients with type 2 diabetes, ≥ 18 years of age, took part in this research and educational project. The assessment of injection technique was made during two visits. The patients were divided into two groups: group A changed insulin pens, after an independent decision of the patient and doctor, group B used the same pen. The teaching of injection techniques included demonstrations and instructions. Three surveys were completed for each patient: one medical questionnaire (medical history and inclusion in the program) and two nursing questionnaires (evaluation of injection technique).

**Results:** The following results were obtained for group A and B during the first/second visits. Correct storage of insulin pens and new insulin cartridges A:87.18%/93.81% vs B: 90.36%/94.19%; p <0.01 and A:95.43%/99.09% vs B:97.23%/99.75%. Proper mixing of insulin A:51.23%/79.23% vs B:57.10%/81.79%; p <0.001. Rotating injection sites each time A:64.47%/79.96% vs B:66.50%/82.19%; p <0.001. Ejecting 1-2 units before the injection, pinching up a fold of skin A:62.88%/67.55% vs B:63.25%/67.00%; p <0.001, the knowledge on the subject A:90.28%/98.77% vs B:91.37%/99.26%; p <0.001. Awareness of the need to select needle length A: 51.12%/94.95% vs. B:55.30%/93.69%; p <0.001. Proper choice of needle size in practice A:44.73%/79.79% vs B:52.27%/78.34%; p <0.001. Replacing the needle: after every injection A:6.7%/28.44% vs B:7.12%/27.23%; p <0.001, after several injections A:31.19% vs. B:36.65%, when replacing cartridges A:17.12% vs B: 17.05%. Lack of pen hygiene A:41.81%/5.11% vs B: 39.80%/6.14%; p <0.001. Cleaning the pen daily A: 4.35%/18.78% vs B:4.34%/19.18%.

**Conclusions:** 1. Basic errors in insulin injection technique were found in both groups, especially with respect to changing needles. 2. Upon the second visit, most of the evaluated parameters improved significantly; although they still deviated from the desired state. 3. Periodic patient education is necessary and special attention should be given to motivating the patient, because the degree of compliance with safety guidelines increased disproportionately to the observed increase in the level of knowledge.

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## THE INFLUENCE OF COMPLICATIONS ON THE QUALITY OF LIFE OF TYPE 2 DIABETES MELLITUS PATIENTS

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### Background

Patients with chronic diseases show a lower quality of life compared with patients with acute diseases, a fact which probably affects patients' adherence to treatment and their ability to achieve therapeutic targets. Diabetes Mellitus (DM) is associated to chronic microvascular and macrovascular complications affecting the quality of life of individuals with DM on the psychological, social and economic level.

### Aim

The aim of the present study is to examine the influence of different complications on type 2 DM patients' life as it is recorded by SF-36 assessment scale.

### Methods

214 type 2 DM patients were enrolled in the study. Participants filled the SF-36 questionnaire consisting of 8 different scales (General Health (GH), Physical Functioning (PH), Social Functioning (SH), Mental Health (MH), Role-Physical (RP), Role-Emotional (RE), Bodily Pain (BP), and Vitality (VT)), while their chronic complications were already recorded in their medical files. Medical treatment and the level of glucose control through HbA1c values were recorded.

### Results

Among individual complications, a correlation of coronary disease was observed with PH ( $r=-0.289$ ,  $p=0.033$ ), GH ( $r=-0.256$ ,  $p=0.030$ ), RP ( $r=-0.233$ ,  $p=0.041$ ), RE ( $r=-0.269$ ,  $p=0.038$ ) and VT ( $r=-0.209$ ,  $p=0.044$ ). Presence of neuropathy was correlated with PH ( $r=-0.215$ ,  $p=0.044$ ), RP ( $r=-0.305$ ,  $p=0.028$ ), BP ( $p=-0.489$ ,  $p=0.008$ ), SH ( $r=-0.499$ ,  $p=0.012$ ), GH ( $r=-0.217$ ,  $p=0.046$ ), RE ( $r=-0.474$ ,  $p=0.018$ ) and VT ( $r=-0.212$ ,  $p=0.040$ ). Diabetic nephropathy was correlated with GH ( $r=-0.294$ ,  $p=0.031$ ), PH ( $r=-0.227$ ,  $p=0.044$ ) and RP ( $r=-0.275$ ,  $p=0.038$ ). Diabetic retinopathy was correlated with GH ( $r=-0.321$ ,  $p=0.026$ ), PH ( $r=-0.274$ ,  $p=0.033$ ), SH ( $r=-0.301$ ,  $p=0.030$ ), RP ( $r=-0.266$ ,  $p=0.041$ ), RE ( $r=-0.387$ ,  $p=0.026$ ) and VT ( $r=-0.421$ ,  $p=0.018$ ).

### Conclusion

Microvascular and macrovascular complications affect the quality of life of individuals with type 2 DM. The presence of complications seems to have a specific effect. Diabetic kidney disorder, neuropathy, diabetic retinopathy as well as coronary disease significantly affect the quality of life of individuals with type 2 DM in different ways.

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## PRIMARY HEALTH-CARE NURSES' PERCEPTIONS OF WORKING WITH INTERACTIVE EHEALTH SUPPORT

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### Background

The number of people diagnosed with type 2-diabetes is increasing globally. Self-care support on the Web then becomes important, because it can improve the probability that an increasing number become aware of and are willing to take greater responsibility for their chronic illness. The challenge is to put both the caregiver and patient at the centre and based on their different perspectives try to find the appropriate forms for the use of digital technology for self-care support.

### Aim

To describe primary health-care nurses' perceptions of interactive eHealth support

### Method

Primary health-care nurses ( $n=20$ ) from 5 health care centres in northern Sweden participated in focus group interviews. The interviews were recorded, transcribed and analysed using qualitative content analysis.

### Result

The use of eHealth and new IT systems in their daily work gave the primary health-care nurses mixed feelings. They stated that it is an important tool that creates more working tasks, they found it easy to quickly search for knowledge, but at the same time being constantly updated felt consuming. The human being and the clinical gaze may be lost in the amount of data, while documentation can improve patient safety.

### Conclusion

It is necessary that health professionals feel they have the support and training to support patients in the use of various eHealth functions. Self-care support through the web is important for the future and can be an alternative to personal visits. A trend towards increased use of digital tools in eHealth self-care management, provided that the implemented appropriately, can lead to primary health-care nurses will use new tools and given incentives to continue working towards a more person-centered care.

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## FOCUSING ON LIFE BEYOND NUMBER - A CASE STUDY ON GUIDED SELF-DETERMINATION (GSD)

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### Background

Susan, a 24-year-old woman, was one of 200 patients between 18 and 35 years old with type 1 diabetes who participated in a randomised controlled trial (RCT), testing the effectiveness in this age group of a flexible version of guided self-determination (GSD) prior proven effective in adult care. For 10 years Susan had been living with a complex of poor glycaemic control, an eating disorder, non-attendance and psychosocial distress. During the intervention, she changed her perception of diabetes tremendously and also improved her glycaemic control.

### Aim

To examine how an individual with a complex chronic disease experiences GSD. The case study should provide insight into how the autonomy supportive intervention is experienced, from the person perspective.

### Methods

A case study was conducted one year after Susan had finished the trial. Susan was interviewed by two external interviewers who were not involved in the intervention. The interview was thematically analyzed. An overview of Susan's diabetes management from onset until after the GSD intervention was made based on the interview, treatment and complication status and electronic patient record data on HbA1c. Finally, changes on psychometric scales, measured before and after the intervention, were included.

### Results

Susan benefitted from this flexible intervention, breaking out of her isolation by focusing on what was personally important for her and going through an empowering process with improved HbA1c and psychosocial functioning.

### Conclusion

The study shows:

- The importance of shifting the focus from 'numbers' to the patient's life with diabetes
- That unspoken difficulties and non-accepted diabetes had to be illuminated before a time-consuming integration process could start
- That breaking isolation through communication is a helpful way to achieve good diabetes control
- That time can be used more efficiently when patients work at home to clarify their difficulties

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## PREVALENCE OF DIABETES AND HEALTH STATUS OF ICELANDIC NURSING HOMES RESIDENTS 2003-2012. A POPULATION BASED STUDY

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### Background

Diabetes is an increasing problem among old people as well as being a contributing factor in their need for institutional care. Comorbidity and use of medication is often greater among people with than without diabetes.

### Aim

The aim of this study was to investigate prevalence of diabetes in Icelandic nursing homes over the period 2003-2012. As well as to compare health, functioning, medication use and medical diagnosis of resident with diabetes to those without diabetes, living in nursing homes in 2012.

### Method

Retrospective study of 16.169 Minimum Data Set 2.0 assessments, which is the data assessment tool of the Resident Assessment Instrument (RAI). Further analysis were conducted for data from the year 2012 (n=2337).

### Result

Mean age from 82.3 (SD 9.1) to 85.0 years (SD 8.4) and women were 65.5% to 68.0%. Number of residents with diabetes increased from 10.3% in the year 2003 to 14.2% in 2012 ( $p \leq 0.001$ ). Mean age of residents with diabetes (n=332) in the year 2012 was 82.7 compared to 85 years for others (n=2005). Residents with diabetes had more skin problems, used more medication, their cognitive performance was better and their involvement in activities greater. They were more likely to have hypertension, arteriosclerotic heart disease, stroke, renal failure, manic depressive disorder, diabetic retinopathy or amputation. They were however, less likely to have an anxiety disorder, Alzheimer's disease or osteoporosis.

### Conclusion

Residents with diabetes are younger than other residents and their cognitive performance is better, their care and treatment may however be complicated and needs to be adapted to each individual. Diabetes is an increasing problem in nursing homes and therefore an area where more knowledge among staff is needed

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### INTERPROFESSIONAL COLLABORATION PRACTICES BETWEEN HEALTH CARE PROVIDERS INVOLVED IN DIABETES CARE IN VAUD CANTON, SWITZERLAND: RESULTS FROM A CROSS-SECTIONAL SURVEY

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**Background:** Interprofessionnal collaboration is a dynamic and interactive process of communication and decision-making enabling various health care professionals (HCP) to synergistically influence the quality and effectiveness of care. Despite the fact that a Cantonal Program on Diabetes runs since 2010 and is designed to limit diabetes incidence and improve management of diabetic patients, there were no data measuring interprofessionnal collaboration practices between the HCP involved.

**Aim:** Evaluate interprofessionnal collaboration practices between HCP involved in diabetes care using a mixed method design. This presentation reports the quantitative section of the study.

**Method:** *Design:* 1) Cross-sectional electronic survey and focus group interviews. *Participants:* GPs; Community Health Nurses, DNS and Diabetologists. *Instrument:* Validated French Version of "Intensity of Interprofessionnal Collaboration" including 24 items categorized in three dimensions: 'Sharing care activities' (8 statements); "Interprofessionnal coordination" (9 statements); "Level of conflict associated with the collaboration" (7 statements). Scores are calculated by dimension (0-5 max) without possibility to generate an overall score. *Analysis:* 1) Means and Standard Deviations (M; SD) on numeric variables; 2) Proportions (%) on categorical variables.

**Results:** N= 332. Dimensions: Sharing care activities (M 3.7; SD -0.7); highest score Community Health Nurses (M 3.8; SD 0.7); lowest score DNS and Diabetologists (M 3.4; SD 0.8). Interprofessionnal Coordination (M 3.4; SD -0.7); highest score Community Health Nurses (M 3.5; SD 0.6); lowest score DNS and Diabetologists (M 3.0; SD 0.5). Level of conflict associated with the collaboration (M 2.2; SD-0.8); lowest scores GPs and Community Health Nurses (M 2.2; SD 0.8); highest score DNS (M 2.8; SD 0.9) and diabetologists (M 2.6; SD 0.9) indicates a perception of highest conflict level.

**Conclusion:** Despite the low amplitude of variations in scores between the different HCP categories and HCP specialties, Community Health Nurses and GPs are more inclined to share care activities and coordination. They also show the lowest perception of conflict level

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### BARRIERS TO PATIENT'S SELF-CARE MANAGEMENT FOR THE PREVENTION OF DIABETIC FOOT COMPLICATIONS: RESULTS OF 2013 CODIAB-VD COHORT FOLLOW-UP

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**Background:** Despite a consensus on the recommendations for prevention of diabetic foot complications that can be theoretically achieved by improving patient's self-care management, many patients are still consulting in outpatient clinics for diabetic foot complications with various degrees of gravity. However, according to our knowledge, very few studies are investigating barriers to self-care management for prevention of diabetic foot complications from the patient's perspective.

**Aim:** Describe the barriers to patient's self-care management for prevention of diabetic foot complications from the patient's perspective.

**Method:** Descriptive cross-sectional analysis 2013 of the CoDiab-VD cohort tracking data including: 449 adult diabetic patients, living at home, residing in the canton, without major cognitive disorders, reading and writing French; recruited in 2011-2012 in pharmacies. *Instrument:* postal self-administered questionnaire, reviewed by an expert's panel, including a section labelled "diabetic foot" that explores four dimensions: Foot care examination; level of information received; frequency of diabetic foot problems; knowledge/beliefs on the prevention of diabetic foot complications.

**Results:** 395 patients (88% participation). Mean age: 65.5 years; Type 2 diabetes: 85%. Only 57.9% have had a control of their feet in the past 12 months, mainly performed by primary care physician. For 60.7% of patients, an instrument (diapason or monofilament) was used for this control; 43.8% didn't receive any information on their diabetic foot risk; 53.7% had no demonstration of the gestures for preventive diabetic foot care, while 46.2% reported currently calluses, ulcers, or seeps. In addition, 26.3% don't know the most important causes of the diabetic foot complications.

**Conclusion:** This study identifies insufficient diabetes foot care, characterized by a poorly documented diabetes foot examination and gaps for information on diabetic foot risk, knowledge and preventive actions. These results could be considered as barriers for the development of an effective patient's self-care management for the prevention of diabetic foot complications.



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## INTERVENTION AT SCHOOLS: PROMOTING HEALTHY NUTRITION AND PREVENTING OBESITY AND TYPE 2 DIABETES

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### Background

The growing incidence and prevalence of overweight and childhood obesity are a serious public health problem. Healthy nutrition and physical activity practice are important behaviors to improve healthy lifestyle and decrease overweight.

School is a place of excellence for the development of daily activities with the children within health promotion, along the years.

### Aims

Promote healthy nutrition and physical activity practice with school community, to prevent obesity and type 2 Diabetes.

### Methods

In this project were performed 36 educational sessions about healthy eating at national level. Having covered 1512 of various levels of education (preschool-12th grade), aged 4-19 years.

At the end of the session the participants filled in questionnaires related to knowledge about nutrition and satisfaction with the session.

The educational sessions' moderators (educational technician and nurse) had a facilitator role, with positive reinforcement without judgements, improving proximity and involving the participation of students and teachers, through active methodologies

### Results

Relating to a sample of 120 students of primary school, aged between 6 and 10 years old, 99% answered correctly to the questions related to healthy nutrition. They considered the sessions as "Educative", "Amusing" and "Spectacular presentation".

They refer that learned:

*"many new thing about nutrition and diabetes", "new things and now I will not eat so many sweets and chocolates, so, I will take care about that", "I learned more things that I can tell my parents", "what we can eat not to become fat".*

About healthy food:

*"I think it was very good because we talked about fruit and vegetables", "I enjoyed very much because I learned to know other vegetables and having a healthy nutrition".*

Teachers considered the sessions as positive and important to children's well-being and health improvement.

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## DEPRESSION PREVALENCE IN PATIENTS WITH TYPE-2 DIABETES BASED ON GENDER

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### Background

Diabetes Mellitus type 2 (DM2) is a metabolic disease, which tends to take on epidemic proportions. Studies have shown that DM2 is associated with an increased incidence of psychiatric disorders such as depression, coupled with poor glycaemic control, with increased presence of complications particularly retinopathy and macrovascular complications, with poor life quality and generally worse clinical outcomes.

### Aim

The aim of this study was to investigate the prevalence of depression among patients with DM2 and the correlation of gender-based depression, at primary care level.

### Method

The study involved 131 patients, 65 men and 66 women, with a mean age of 62.9 years, attended to regular examination at outpatient diabetes clinics of AHEPA University Hospital from April 2014 to July 2014. For the incidence of depression the Beck Depression Inventory (BDI-II) questionnaire was used as it has been validated and translated for the Greek population. For the collection of primary data a questionnaire was used to capture demographic, social and medical history data. The statistical analysis was conducted using the statistical program SPSS v. 22.

### Results

It was found that 71.3% of patients with DM2 showed mild depression and 7.8% severe depression. Female patients recorded a higher rate of mild degree of depression 70.4% versus 59.8% of men. Of the women, a higher rate on the scale of BDI-II were those residing in a rural area ( $19.4 \pm 11.3$ ), dealing with the housework ( $21.3 \pm 13.5$ ), who have a low income > 600 € ( $20.7 \pm 12.7$ ) and those with high blood sugar (47.4 percent).

### Conclusion

The incidence of depression in patients with DM2 who took part in the study found fairly high. The co-morbidity between depression and DM2 should be taken seriously in consideration by health care professionals in the provision of care at primary care level. Early recognition of depressive symptoms can contribute significantly to a better clinical outcome of DM2..

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## PATIENT SAFETY IN DIABETES CARE FOR PATIENTS OVER 64 YEARS RECEIVING HOME CARE SERVICES

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**Background:** A majority of patients referred to home care services are over 64 years. The projected increase of this age group and the increased prevalence of diabetes in older people, underscore the patient safety aspects in diabetes care in home care services.

**Aim:** (1) Explore how studies of older persons with diabetes receiving care in the home from registered nurse, licensed practical nurses or nursing aides inform a patient safety perspective.

(2) Investigate the relationship between components of patient safety and factors in persons with diabetes receiving home care services.

**Method:** Computerized search of literature was performed in the databases: CINAHL, Medline, Embase and Cochrane Library. The key words and MeSH-terms were: 'Diabetes Mellitus', 'type 1 diabetes', 'type 2 diabetes', 'Community health services', 'Community health nursing', 'Home health care', 'Home visits', 'Home nursing, professional', 'health services for the aged', 'community health service', 'community health nursing', 'home care services', 'home health nursing', 'home nursing', 'respite care', 'health care service for the aged', 'community care', 'community health nursing', 'home care', 'visiting nursing service', 'aged', 'geriatr', 'elderly', 'geronontol', 'all ages 65 years and older'. Inclusion criteria were:

1. Publications from 2000 and after.
2. Reporting persons with diabetes receiving professional care at home.
3. Reporting health care personnel delivering care in the home for a person.
4. Reporting risk factor in the patient situation or in the care management.
5. Reporting accidents, incidents or adverse events.

Whittermore and Knaff's theoretical framework was used to analyse the literature.

**Result:** 2785 papers were identified by combination of the MeSH-words. 84 articles met the inclusion criteria. Preliminary analysis have identified three patient safety informing components in the retrieved articles: Management decision components (two sub-components); Components of the patients' condition (seven sub-components); and care components (nine sub-components).

**Conclusion:** Preliminary analysis of studies among older persons with diabetes receiving home care services have been conducted inform a patient safety perspective. A further exploration of the material is needed to investigate the relationship between components of patient safety and diabetes care in home care services.

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## EXPERIENCES AND PERCEPTIONS AMONG WOMEN WITH GESTATIONAL DIABETES MELLITUS: A META-SYNTHESIS TO INFORM TYPE 2 DIABETES PREVENTION INTERVENTIONS

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**Background:** Gestational diabetes mellitus (GDM) affects between 2% and 7.5% of pregnancies and numbers are increasing. Women with GDM are at high risk of developing type 2 diabetes mellitus (T2DM), which can be prevented or delayed by lifestyle modification. However, of the few diabetes prevention trials that have been conducted with this population, most show little effect, perhaps because they lack a perspective on the experiences and needs of women with GDM.

**Aim:** The aim was to identify important factors within women's experiences and perceptions of GDM that might contribute to the development of effective diabetes prevention interventions in this population.

**Methods:** We explored women's experiences of GDM, perspectives on future diabetes risk, and views on diabetes prevention through conducting an interpretive meta-synthesis of qualitative literature. We used electronic protocol searches supplemented by citation searches, assessed the study quality then conducted a synthesis using the principles of meta-ethnography described by Noblit and Hare.

**Results:** Sixteen qualitative studies were included, comprising 302 participants. Women's experience of GDM was characterised by feelings of shock, upset, denial, fear and guilt, a loss of normality and personal control. Many women viewed GDM as temporary and were unaware of their future diabetes risk. Others were fearful of T2DM and believed it inevitable. Women lacked information and were uncertain about how to reduce their T2DM risk. Prioritisation of the family's needs and lack of time were barriers to a healthy lifestyle after delivery. A focus on the needs of the infant further impeded the women's perspective on their own health needs.

**Conclusion:** Factors that require consideration when developing a type 2 diabetes prevention intervention in this population include: addressing the emotional needs of women with GDM; providing women with clear information about future diabetes risk; and offering an intervention that fits with women's multiple roles as caregivers, workers, and patients, focusing on the health of the whole family.

The telemedical consultations, where a DSN is coming to the island Aeroe twice a month, are now permanent treatment.

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## USER INVOLVEMENT IN DIABETES SELF-MANAGEMENT INTERVENTIONS; REVIEWING HOW PEOPLE WITH DIABETES HAVE BEEN INVOLVED AS CO-RESEARCHERS IN DIABETES RESEARCH

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### Background

An increasing international interest has been put on the importance of including patients as co-researchers in designing and conducting research. The assumptions underlying user participation or consumer involvement in developing health care research are that patients have a unique perspective to add.

### Aim

To provide an overview of how people with diabetes have been involved as co-researchers in designing and conducting diabetes self-management interventions; influences on refining research questions, developing and evaluating interventions and dissemination of findings.

### Methods

We searched the Cochrane Library (Issue 1 2006 to December 2013), Medline, Embase, Pubmed, Cinahl Ebsco, PsycINFO, ISI Web of Science, ongoing studies. Reference lists from relevant articles were examined to add further research not identified by the databases

### Results

Levels of user involvement and influences are identified for all stages of research; research agenda setting, designing, developing and evaluating studies. Further findings related to success factors and barriers for user involvement in diabetes self-management research are described.

### Conclusion

Involvement by patients and the wider community can contribute to producing new and modified interventions that are relevant to patients' issues and needs, and which reflect patients' priorities. There are several challenges to involvement in diabetes research, which are supported by the wider literature on patient and community involvement.

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## ADAPTATION IN ADULTS WITH NEW ONSET TYPE 1 DIABETES: A META-SYNTHESIS

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### Background

Fifty percent of all cases of type 1 diabetes (T1DM) are diagnosed in adulthood. Yet how adults accept and adapt to T1DM is poorly understood.

### Aim

The aim was to synthesise the literature on the personal experiences of adults ( $\geq 18$  years) with new onset T1DM ( $\leq 5$  years) regarding the early process of adaptation.

### Methods

A systematic review of qualitative studies was undertaken in 6 electronic databases. Studies containing identifiable quotations from newly diagnosed adults with T1DM were included. Quality was appraised using the Critical Appraisal Skills Programme (CASP) tool. A meta-synthesis was performed by translating studies into each other through comparison of quotations and key concepts across studies and re-interpreting the combined data to develop a deeper understanding of adaptation.

### Results

Title and abstract of 1611 papers were screened, full text of 75 papers were retrieved. Nine records concerning 8 studies from 3 different countries containing data from 14 women and 19 men were included.

The synthesis revealed 6 superordinate constructs with supplementary sub-constructs describing different aspects of adaptation to diabetes: The immediate impact related to a degree of physical, psychological, and social disruption. Constructing a personal view of diabetes related to the personal perception of diabetes and an association or dissociation of diabetes with sense of self. The reconstruction of a view of the self was influenced by self-identity, the views of others, and the dilemma of diligence in managing diabetes. The impact of diabetes on life context was related to experience of social stigma, the life structure, and the influence of significant others. Moreover, adaptation was influenced by people's engagement in learning about diabetes and the support they received which affected their utilisation of experiential learning. Behavioural adaptation related to various behavioural strategies.

### Conclusion

We found varied experiences regarding diabetes impact on life that seem to affect the early process of adaptation. The findings map out a process of adaptation that to some degree is influenced by various aspects that might be essential to attend to in supporting adaptation following the diagnosis.

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### TIME AND COMPETENCE CONTRIBUTE TO SHARED DECISION-MAKING

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**Background:** Registered nurses (RNs) play a key role in supporting patients with type 2- diabetes. A person-centered care with shared decision-making is considered central for the patient's possibilities to manage their daily life and reach their treatment targets.

**Aim:** To study factors associated with RNs involving patients (with type-2 diabetes) in shared decision-making regarding goal-setting for HbA1c, blood pressure, and lifestyle changes.

**Methods:** A questionnaire was used to collect data (list size, number of type 2 diabetes patients, having a diabetes RN responsible for diabetes patients, whole time equivalent (WTE) RN/500 type 2 diabetes patients, time RN spent with the patient, having guidelines, postgraduate diabetes education, postgraduate pedagogy, and patient education) in the Swedish primary healthcare. Multiple logistic regression analysis was used to measure the associations.

**Results:** Totally 880 (75.9%) primary healthcare centers (PHCCs) responded to the questionnaire with a median list size of 7746 (median type 2 diabetes patients 320). A total of 96.8% of the PHCCs had an RN responsible for patients with diabetes, a median of 0.75 WTE RN/500 diabetes patients, 76.7% had one RN with at least 15 European Credit Transfer and Accumulation System (ECTS) in postgraduate diabetes education, and 36.1% with at least 7.5 ECTS in postgraduate pedagogy. RNs shared decision-making with patients with type-2 diabetes regarding goal-setting for HbA1c at 37.7% of the PHCCs, for blood pressure at 32.5%, and for lifestyle changes at 54.2%. Having an RN with 7.5 ECTS in postgraduate pedagogy made it more likely for type 2 diabetes patients to be involved in shared decision-making in goal-setting for HbA1c, odds ratio (95% CI) 1.48 (1.05, 2.07), for blood pressure 1.69 (1.07, 2.66), and for lifestyle changes 1.39 (1.004, 1.914). Finally, the more time RNs assigned to patients with diabetes, the more likely it was for patients to be involved in shared decision-making, in goal-setting for lifestyle changes 1.42 (1.04, 1.95).

**Conclusion:** RNs having 7.5 ECTS in postgraduate pedagogy and the more time RNs were assigned to patients with type-2 diabetes were crucial factors that contributed to RNs involving their patients in shared decision-making.

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### PRECONCEPTION: MOTIVATIONAL FACTORS INFLUENCING BEHAVIOR CHANGES OF DIET AND PHYSICAL ACTIVITY IN WOMEN WITH DIABETES

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**Background:** Women's pregnancy with decompensated diabetes is associated with increased risks for mother and fetus. Behavior change will allow diabetes compensation improvement and a better pregnancy outcome. HAPA model enables to identify motivational stage, intentional and volitional behavior, predisposing individual health behavior.

**Aims:** Identify the women's stages and motivational factors related to health behaviors, using HAPA model.

**Methods:** Questionnaires were applied to a sample of 32 women with diabetes, at two moments (T1;T2) 6 weeks apart, and telephone follow-up 6 months after T1, evaluating dietary and physical activity (PA) behavior.

**Results:** At T1, women who made a balanced diet, had greater intent (6.24), and planning (6.32) to maintain behavior.

Regarding women who consider change but are not at action, intention and planning values were lower (4.90; 4.00).

About PA practice, women who had already planned to change, give more importance to risk perception (4.80), self-efficacy of action (4.80), and intention (4.47), compared to women who had not changed behavior, respectively (3.80; 3.80; 2.87).

Self-efficacy was positively related to healthy eating (-0.796 \*).

At T2, women who have balanced diet, had greater intent (6.52) and planning (6.50) to maintain behavior, and less results expectations (4.06) compared to women not into behavioral action (5.30; 4.47; 4.80).

Regarding PA, women who have changed, valued more positively coping planning (6.21), recovery of self-efficacy (6.39) and action control (6.42), compared to women who haven't change their behavior (5.19; 5.17; 5.36).

After 6 months, most women consumed at least two pieces of fruit per day (77%) and at least once a day vegetables (84.6%). In relation to PA practice, 42% of women practiced AF at least three times a week.

**Conclusion:** The results are consistent with literature: the maintenance behavior is higher when there is a greater planning and intention to do and that self-efficacy is related to healthy eating. Thus, and taking into account the benefits of diabetes compensation in pregnancy outcomes, becomes fundamental personalized coaching to contribute to the motivation to change and maintenance of healthy behaviours..

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### VISUAL FUNCTIONING AND QUALITY OF LIFE AMONG PATIENTS WITH DIABETIC MACULAR EDEMA.

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#### Background

One of the most common causes of vision impairment in patients with diabetes is diabetic macular edema (DME) and is regarded as the most feared late diabetic complication. In January 2011 a treatment for DME was approved, called anti-Vascular Endothelial Growth Factor treatment. The treatment involves an injection into the vitreous of the eye and places increasing demands on the patient because of more visits and a stressful treatment. Therefore it is of most importance to capturing patients' thoughts and feelings, so called Patient reported Outcome (PRO).

#### Aim

To examine patient-reported outcome (PRO) in a selected group of Swedish patients with diabetes-related macula edema about to receive anti-vascular endothelial growth factor treatment for diabetic macular edema.

#### Method

Visual functioning was measured with National Eye Institute Visual Functioning Questionnaire 25 (NEI-VFQ-25), quality of life was measured with Short Form- 36 (SF-36). The initial eye examination included measurement of visual acuity with the ETDRS, and retinal thickness by OCT. In addition, medical variables were collected. The data collection was performed at baseline, after 4 months and one year. In this abstract we reported the result from the baseline.

#### Result

The participants were 30 men and 29 women (mean age, 68.5 years) and 92% of them had type 2 diabetes. With NEI VFQ-25, the participants showed the lowest score for the subscale of general health (mean 35.65 ± 22.04) and the highest for dependency (mean 93.48 ± 18.12). For SF-36, the participants gave the lowest score in the subscale of general health (mean 56.55 ± 22.14) and the highest for the subscale of role emotional (mean 88.73 ± 22.32). The mean ETDRS score in the eye planned for treatment was 63.9 (± 13.2) and the mean central retinal thickness was 396 (± 129).

#### Conclusions:

Patients diagnosed with diabetes macula edema about to receive anti-VEGF treatment reported low general health. Hence, it is of most importance to follow up patients' thoughts and feelings (PRO) after the treatment is performed in order to promote improvements in the quality of patient care.

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### D-NET – CONNECTING DIABETES PROFESSIONALS WORLDWIDE

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#### Background

In 2014 the International Diabetes Federation (IDF) estimated that 387 million people have diabetes and that by 2035 this will rise to 592 million. To be able to cope with the growing burden of diabetes, the number of diabetes professionals needs to increase. In high-income countries diabetes professionals have been able to improve care practices considerably over the last decades. However, 77% of people with diabetes live in low- and middle-income countries. Knowledge sharing through an online platform provides new knowledge to health professionals in low resource settings and new insights to professionals in high resource settings.

#### Aim

In 2015 IDF has launched the new D-NET, an online diabetes network for health professionals. The new platform has been built on the results of the D-NET survey conducted in 2014 among members of the previous D-NET and diabetes professionals about their needs for professional development.

#### Results

248 respondents completed the survey, representing 61 countries from all seven IDF regions, 182 English speaking and 66 Spanish speaking. Over 50% of respondents indicated that they had worked in diabetes less than 10 years, and 136 were D-NET members compared to 112 non-members. Over 75% of members indicated being satisfied with the previous D-NET. Over 80% of non-members indicated that they did not use online platforms for knowledge sharing with other professionals, but over 90% of non-members indicated that an online platform could help in their daily work.

#### Conclusions

Insights from the survey have helped IDF in redesigning D-NET to fit the needs of diabetes professionals worldwide. The survey and activity on the new platform confirm the willingness of diabetes professionals to share their knowledge, which D-NET enables them to do at any time or place. The new D-NET provides bi-weekly discussions led by international experts, an interactive library, an event calendar, and a question board to connect D-NET members. Because of free registration, D-NET currently has more than 2200 members, including nurses, educators and physicians from around the globe.

D-NET is an initiative of the International Diabetes Federation, supported by an unrestricted educational grant from AstraZeneca.

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## PREVALENCE OF CHRONIC COMPLICATIONS IN TYPE 2 DIABETES MELLITUS PATIENTS OF AN URBAN AND A RURAL POPULATION

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### Background

Diabetes Mellitus (DM) has been associated with the appearance of microvascular and macrovascular complications frequently resulting in death of these patients.

### Aim

The aim of the study is to determine the prevalence of chronic complications among patients with type 2 Diabetes Mellitus (T2DM) and the definition of the differences between rural and urban population.

### Methods

352 T2DM patients who attended an Internal Medicine Outpatient Clinic were eligible in this study. These patients answered a structured questionnaire in order to record social-economic and demographic factors, while somatometric features and chronic complications were also recorded.

### Results

Among the 352 patients of this research (50.2% male) of average age 70.42±12.53 years old, 168 (46.9%) belonged to rural population. At least one chronic complication was diagnosed in 229 (65%) patients. 158 (45%) patients appeared with macrovascular and 148 (42.04%) with microvascular complications. Cardiovascular disease was present in 28.9%, cerebrovascular disease in 16.5% and neuropathy in 24.5% of patients while diabetic retinopathy in 21.5%, nephropathy in 18.7% and diabetic foot in 4.2% of patients. The factors determining the development of complication were age (p=0.016), duration of diabetes mellitus (p=0.013), smoking (p=0.004), gender (p=0.035), hypertension (p=0.048) and distance of the urban center (p=0.008). After adjustment to age, gender is deprived of its statistical significance (p=0.131). After multi-variable analysis, the factors that preserve their statistical significance are diabetes duration (p=0.010), smoking (p=0.012) and the distance of urban center (p=0.036).

### Conclusion

The number of T2DM patients with microvascular or macrovascular complications is significant in rural and urban population. The factors which are affecting the emergence of these complications seem to be the duration of diabetes mellitus, smoking and the accessibility to medical units.

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## DIFFERENCES IN PREVALENCE OF DIABETES MELLITUS IN GREECE BETWEEN 2003 AND 2014 WITH A FUTURE PROJECTION

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### Background

Diabetes mellitus (DM) is becoming a worldwide epidemic.

### Aim

The aim of the present study is to examine DM prevalence in the adult population of Salamina island, where relevant studies have been carried out in 2003 and 2006 with the same methodology, as well as to estimate DM prevalence in Greece for 2035 according to most recent data.

### Methods

Data was derived from three consecutive population-based surveys conducted in Salamina, during three election days (13 October 2002, 15 October 2006 and 25 May 2014). There were 2805 randomly selected adults (> or =20 years) in 2002, 3478 in 2006 and 2527 in 2014 of similar age and sex distribution to the target population.

### Results

The rates per age group for the 2002, 2006 and 2014 surveys were: 0.4%, 0.6% and 0.3% (p=0.128) in individuals aged 20-29, 3.6%, 3.7% and 1.9% (p=0.048) in individuals aged 30-39%, 7.3%, 7.2% and 9.4% (p=0.033) in individuals aged 40-49, 21.6%, 21.2% and 26.4% (p=0.026) in individuals aged 50-59, 31.8%, 31.2% and 30.2% (p=0.214), in individuals aged 60-69, and 35%, 36% and 31.8% (p=0.030) in individuals aged over 70. The mean age for diabetes diagnosis was 57.6±11.9 while the mean diabetes duration was 12.3 years for 2014 comparable with the other two surveys (p=0.086). Using a Markov model to estimate the future diabetes prevalence, a dramatic increase in diabetes prevalence was predicted for 2035 (19.8%)

### Conclusion

DM prevalence is higher than the one predicted according to older studies, basically confirming IDF's predictions. An increase of prevalence is observed in younger ages and, according to the prediction for 2032, approximately one out of five people in Greece will have diabetes which indicates a dramatic increase in diabetes prevalence among Greek adults.

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## DIABETHEATER© IN POLAND – AN ATTEMPT TO DEFINE THE ROLE OF THE EDUCATION THROUGH THE ART IN GROUP OF PATIENTS WITH DIABETES

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**Background:** The art enables us to look deeply into ourselves and is also one of the means of emotional expression. Numerous artistic techniques help to localize the problem, solve it and also externalize emotions, aspirations and ambitions.

**Aim:** The aim of the study was to estimate the usage of the Diabetheater© “From the Angle’s Diary” to assess the role and the place of education through art in the group of patients with diabetes.

**Method:** Diabetheater© “From the Angle’s Diary” was formed in February 2012 by the group of volunteers of CESOM. “From the Angle’s Diary” shows three aspects: hypoglycemia, discrimination, lack of family education. Among the audience were: the people with diabetes in different age with their families, the specialists of different medical domain, the representatives of Polish nationwide associations, the headmasters of schools. In analysis of therapeutic and educational values of performed art opinions of audiences, which were written down on the cards of “Memorial Book” were consulted. In result 240 entries were analyzed. 160 were qualified to the category: patient. 38 were qualified to the category: medical staff. 42 were qualified to the category: remainders.

**Result:** On the basis of analysis it should be stated that art met with great interest among audiences. What is more it had educational and therapeutic advantages which should be described as: development of emotional self-awareness:

*“I meet a lot of wonderful and valuable people, who – while not being ill and not appearing in this kind of environment – probably I would have never met [...]”*- diabetic; developing the ability to express emotion: *“Everyone of us give some small piece of ourselves, our emotions, experiences play their own role (what is not easy) in order to awake feelings, reflections among audiences [...]”*-actor of Diabetheater©; stimulation of empathy: *“Through the one of the form of art such as theatre we saw problems and pain of the person who suffer from incurable disease and how she have to cope with these problems every day”*

- doctor.

**Conclusion:** Education through the art has the influence on the patient with diabetes and everyone who is engaged in creating Diabetheater©. Facing the fast development of diabetes in the world it is very important to invite specialists of different kinds of medicine, representatives of association, municipality and media that will take part in educational actions, indicating the great role of the whole therapeutic team.

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## A COMPARATIVE STUDY OF QUALITY OF LIFE OF CHILDREN AND ADOLESCENTS WITH TYPE 1 DIABETES MELLITUS AND SOUND

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### Background

The incidence of Type I diabetes in childhood and adolescence has increased during the last years posing a challenge to healthcare professionals.

### Aim

Purpose of this study was to explore and to identify the factors that affect the quality of life between children with Type I diabetes and healthy peers.

### Method

The sample of the study was 87 children with Type I diabetes, age 5-18 and 119 healthy peers. The questionnaires that were used were “ PedsQL 3.0 Type I Diabetes Module ” and “ PedsQL 4.0 Pediatric Quality of Life Inventory ”. Statistical methods included descriptive statistics and logistic regression modeling.

### Result

The children with diabetes ranged from 5-18 years, with a mean age of  $12.64 \pm 3.8$  years. From the results of the statistical t-test for independent samples found no statistically significant difference between diabetic children and adolescents in relation to quality of life ( $t = 1.85, p = 0.07$ ), despite the initial finding that children reported better quality of life by adolescents. Patients who used insulin pump rated higher on the scale PedsQL subsets associated with the treatment of the disease, indicating better quality of life compared with those who have insulin injections. Also, there was a statistically significant difference in patient participation in sporting activities ( $t = -2.16, p = 0.034$ ). Statistically significant difference was found regarding the well-being of patients with parents who believed that their children had excellent health to give higher ratings to the quality of life ( $F = 3.37, p = 0.04$ ). In checking the quality of life between healthy controls and their parents found a statistically significant difference regardless of age ( $z = -2.62, p = 0.008$ ).

### Conclusion

The majority of children with SDT I showed a high level of quality of life by achieving better rates in the intensive-therapy, metabolic control ( $HbA1c < 8\%$ ) and exercise while it seemed that the use of insulin pump therapy is gradually increasing in our country.

# First Announcement 21st FEND Annual Conference

9-10 September 2016  
Munich Germany

On behalf of the Foundation of European Nurses in Diabetes we cordially invite you to attend the 21st Annual Conference of FEND

Kristin de Backer  
FEND Chairman

Anne-Marie Felton  
FEND President

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[www.fend.org](http://www.fend.org)

### More dates for your diary

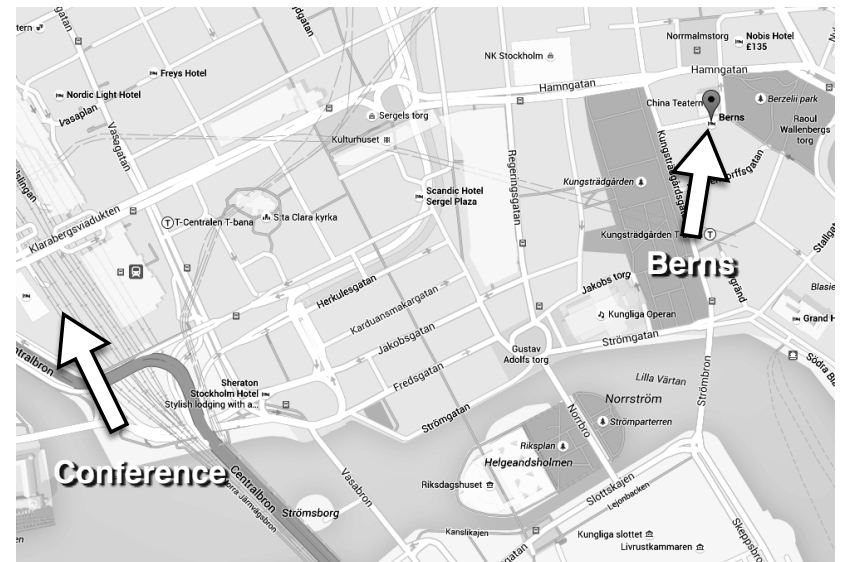
**IDF World Diabetes Congress**  
2-6 December 2015  
Vancouver, Canada  
[www.idf.org/worlddiabetescongress](http://www.idf.org/worlddiabetescongress)

**52nd EASD Annual Meeting**  
12-16 September 2016  
Munich Germany  
[www.easd.org](http://www.easd.org)

# Conference Dinner

Friday 11 September  
1930 Pre Dinner Cocktails  
2000 Dinner

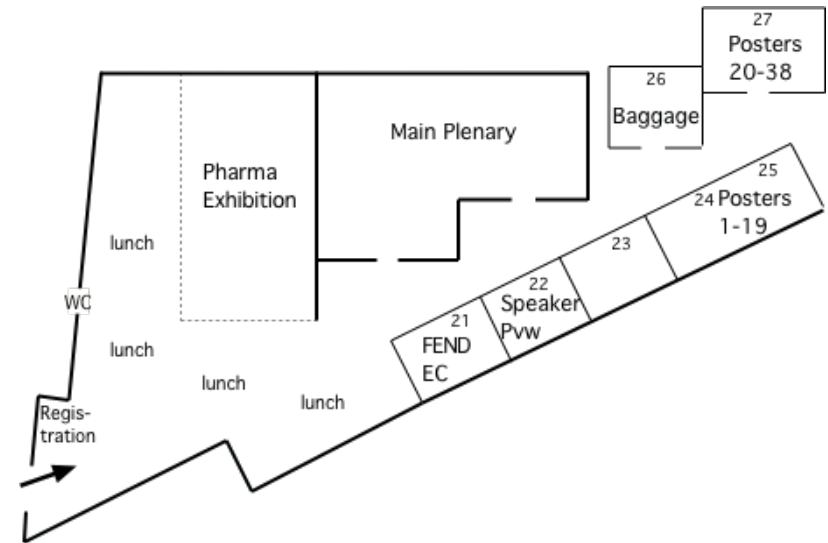
**Venue:**  
Berns, Stora Salongen  
Berzeli Park, Stockholm  
**Metro**





FEND Award		
1999	T. Birdsall	UK
2000	D. Weisman	Israel
	P. Nikkanen	Finland
2001	A. Joergensen	Denmark
2002	A. Munzinger	Germany
	B. Osterbrink	
	C. Nonn	
2003	M. Vidal	Spain
2004	P. Banck-Petersen	Denmark
2005	E. Turner	UK
2006	K. Alexandre	Switzerland
2007	S. Amsberg	Sweden
2008	M. Graue	Norway
2009	I. Lopes	Portugal
2010	A. Haugstvedt	Norway
2011	A. Faber	Netherlands
2012	S. Dereli Yilmaz	Turkey
2013	F. Bassin	Switzerland
2014	Iren Tiberg	Sweden

## Location Plan



## Pharmaceutical Exhibition

- AnnaPS
- American Medical Systems
- Connecting Nurses
- Novo Nordisk
- Owen Mumford
- Roche